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The role of Government financial support and Innovation Adoption on the performance of SMEs in South Africa

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Abstract

Small and Medium Enterprises (SMEs) are seen as a primary tool for driving economic performance in South Africa. However, SMEs' higher failure rate remains to be one of the biggest obstacles in the SME sector in South Africa. There are number of challenges that SMEs are faced with due to their size, including lack of skills, lack of access to capital and their inability to incorporate innovation in their firms. The purpose of this research is to investigate the relationship between innovation adoption and SME performance, determine the role of government financial support on SME performance and SME innovation adoption.

This study adopted a quantitative research method based on a positivist research paradigm to test the hypothesis generated. A sample size of 152 was collected from South African SMEs through self-administered questionnaires. Multiple regression was applied to test the relationships between dependent and independent variables. Evidence revealed that government financial assistance is essential for enhancing SME performance and encouraging innovation in small businesses.

Keywords: Government financial support, Innovation adoption, SME performance

DECLARATION

I, Pulane Thapelo declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Pulane Thapelo

Signed at ……

On the …….. day of …… 2019

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1. CHAPTER 1

1.1 Context of the Study

According to the Global Entrepreneur Monitor (2017), South Africa is one of the most successful efficiency driven economy, however despite this finding, South Africa is still facing high unemployment rate, high levels of poverty and unskilled labour force. The Small and Medium Enterprise (SME) sector in South Africa is estimated to approximately 5,9 million enterprises (Business Tech, 2018). SMEs provides employment for more than 10 million people in South Africa, with 91% of formal enterprises participation in the South African economy and 57% contribution towards Gross Domestic Product (Kongolo,2010). It is anticipated that the development of the SME sector will continue to grow and contribute towards economic growth and this will assist with the reduction of poverty and unemployment, with this said, it is truly indisputable that SMEs are an important contributor to the country's economy.

The SME sector's success is often short lived as 80% of emerging firms often failing within their first three years of operating (Chimucheka & Rungani, 2011). The few that survive battle to sustain growth due to challenges such as human capital development, access to financing, market access, infrastructure, innovation adoption, and legal and regulatory environment (Cant & Wiid 2013; Kongolo, 2010; Olawale & Garwe 2010). South Africa's poor economic performance is a major barrier to the real potential of the SMEs.

However, the South African SME sector has better environmental conditions and more advanced Information and Communication Technologies (ICT) infrastructure development when compared to other Southern African countries such as Botswana and Zimbabwe, (GEM, 2017). Nevertheless, this positive aspect is sabotaged by a number of obstacles that leads to the lack of innovation adoption such as shortage of resources, lack of knowledge, finance and shortage of skills. Previous studies on innovation adoption report on SMEs in developing countries have not fully capitalised on technological developments to extend their businesses beyond traditional borders (Afolayan, 2014). Doh and Kim (2014) stated that in order for SMEs

to survive and remain competitive, SMEs must incorporate innovation in to their system. Innovation adoption plays an important role in the economic performance of Small and Medium Enterprises (Anjum, 2018; Han, Chung, Son, & Kwon, 2017). Innovation adoption has become essential for technology-oriented businesses that aim to promote economic competitiveness and entrepreneur well-being in communities. SMEs, regardless of their sizes are enthusiastic to adopt advanced technologies and thus become innovation potential (Ribeiro-Soriano a, McDowell & Sascha Krausc, 2019).

A recent study conducted by Zhang and Chen (2014) indicates the significance of innovation adoption on increased profitability of SMEs. According to Atalay, Anafarta and Sarvan (2013) there is a positive relationship between SMEs involved in innovation adoption and firm performance. Anjum (2018) further supports this by stating that successful adoption innovations improve SME performance, create job creation and contribute to the economic development of any country. Meanwhile, Doh and Kim (2014) have maintained that sustainable economic performance has been a central topic for scholars, policymakers and government for decades and a variety of arguments have been put forward to discover what drives economic performance. Government irrespective of their countries, have been responsible for determining factors that affect entrepreneurship at the local and national level, (Doh & Acs 2010). This is because entrepreneurship is regarded as one of the important drivers of sustainable economic development in the current knowledge-based economy.

In recognition of the SME 's significant role in the economy, the government has committed to creating foundation to support and nurture the development of SMEs with the goal of into turning them into an engine for the development of the country. The government intervention is also viewed as an external source of pressure apart from the suppliers, customers and competitors. The role of national government plays an important role on the development of SMEs and therefore, crucial as a standard setting and knowledge dispersing body (Seyal & Rahman, 2003).

Although the literature indicates that there is a positive relationship between innovation adoption and the performance of firms, SMEs are still faced with challenges such as lack of

financing, difficulties of adopting innovation, poor management capabilities and low productivity (Rosli, & Sidek, 2013). To address these challenges, the South African government has established policy initiatives to improve SMEs' access to financing and information infrastructures, and to provide SMEs with regulatory, legal and financial frameworks beneficial to entrepreneurship, emerging and established firms (Doh & Kim, 2014).

1.2 Theory Section

The two theories that will be used to underpin this study are: The Entrepreneurial Ecosystem Theory and Innovation Theory.

1.2.1 Entrepreneurial ecosystem Theory

Entrepreneurial ecosystem refers to the economic, social and environmental factors affecting entrepreneurial activity in a region (Mason & Brown, 2014). Ecosystems consist of a number of different interconnected actors that include; universities, government, formal and informal networks, research and development institutions, investors and venture capitalists (Isenberg, 2011; Roberts, Murray & Kim, 2019). This theory is adopted in the study to emphasize that entrepreneurship does not happen in isolation and it requires a conducive environment where all elements need each other to function.

There are six factors that affect the entrepreneurial ecosystem in South Africa, these factors include; emerging and growing firms, finance, environment, skills, networks and culture, and Regulation (GEDI, 2017). When the experts were asked to comment on the three factors hindering entrepreneurial activity in South Africa, access to finance, education and training and government policy were the most areas of concern (GEM, 2017). According to GEDI (2017) South Africa's poor education system and inefficient job market continues to be critical and contributes to the country's high unemployment rate.

To reduce high unemployment rate, the South African government should provide favourable environment through reforms and regulations that makes it easy to conduct business and reduce unnecessary bureaucratic burdens. However, initiatives established by the government in

assisting emerging enterprises to be sustainable do not seem to be making a positive impact as intended as 80 percent of small businesses are not doing well (GEDI, 2017; NDP, 2012).

Ntiamoah and Kwamega (2016) stated that South Africa is one of the countries with low developed venture capital market and investors are not confident enough to finance small businesses due to the high degree risk associated with entrepreneurial activity, crime, lack of trust in government officials, and favouritism by politicians. This also lessen SMEs access to finance, mainly because the criteria that private financial institutions such as banks utilise do not seem to favour small businesses, due to their newness and lack of financial information (Damanpour & Schneider, 2008; Naidoo, 2009).

GEM experts highlighted that due to limited financial resources of small business, access to the market remains to be one of the key components hindering entrepreneurial activity in South Africa. For instance, emerging firms are faced with distribution challenges because the market is mainly influenced by well-developed enterprises that makes it difficult for SMEs to distribute their products to large retail stores (Isenberg, 2011). It is essential to note that access to finance is not the only factor in developing entrepreneurial activity. Market opportunities, adequate infrastructure and education, & training can also increase successful businesses.

1.2.2 Innovation Adoption Theory

The theory of innovation was developed by Schumpeter in the 1930s in which he posited that an entrepreneur can gain competitive advantage by introducing successful innovations (Atalay et al., 2013). The theory of Innovation gained attention over the years because it is regarded as an important driver of sustainable economic development and growth in this current knowledge-based economy (Doh & Kim, 2014). According to Damanpour and Schneider (2008) researchers describe innovation as the development and adoption of new ideas or behaviours in an organization.

This theory has been adopted in this study to understand and explain the state of innovation adoption of SMEs in South Africa (SA). This is because SMEs play a significant role in the

economic development of any country (Rosli & Sidek, 2013). Doh and Kim (2014) stated that SMEs need to be innovative in order to survive and remain competitive. The innovative ideas adopted by the SMEs help them in reconsidering their competitive position at the firm level under intense competition at the global level (Chesbrough, 2010).

Moghavvemi, Hakimian, Feissal and Faziharudean (2012), argues that there is a low usage of innovation adoption in developing countries because SME owners/ entrepreneurs are hesitant to take part in innovation due to the high cost associated with innovation implementation, which acts as a contributor to the high failure rate of SMEs. However, Kumar and Subrahmanya (2010) argued that it is easier and less costly to introduce innovations that are already known and tested in the industry than introducing innovations that are new to the market.

Moghavvemi, Salleh and Standing (2016) indicate that SMEs should be more innovative to enhance business performance. Innovation has a positive impact on the performance of business in terms of productivity, profitability and market share value (Moghavvemi, Salleh, Akma, Zhao & Hakimian, 2011).

1.3 Motivation for the study and problem statement

SMEs are an economic driver of any country's economy (Chimucheka & Rungani, 2011). The South African SME sector's estimated contribution towards GDP is 57 percent and is viewed as a solution to reduce poverty and unemployment (Afolayan, 2014). However, SMEs are failing to create employment due to their high failure rate with an estimation of failure of 70% to 80% in South Africa, (Chimucheka & Mandipaka, 2015). The failure of SMEs to incorporate innovation into their business is a problem that can result in lost opportunities such as the potential for business growth and improved efficiency rate. (Kalane, 2015; Kim and Garrison, 2010) argued that business owners' reluctance to encourage and adopt innovations in their businesses is caused by the perception that innovations are too expensive to implement in order to address financial challenges faced by small businesses, the South African government has created initiatives to help previously disadvantaged individuals that were previously excluded to participate in the economy by improving access to funding. However, despite the

government's intervention to develop small business, the performance of SME sector in South Africa continues to decline. This raises questions on whether government initiatives are adequate to help SMEs grow, or is there a discrepancy between what is really needed by SMEs and what is provided by the government. This motivated the researcher to find out the role of innovation adoption and government financial support on the performance of SMEs in South Africa (Worku, 2016).

1.4 Research purpose

The purpose of this research is to investigate the relationship between innovation adoption and SME performance, determine the role of government financial support on SME performance and fostering SME innovation adoption.

1.4.1 Research Questions

- How does innovation adoption affect the performance of SMEs?
- What is the nature of the relationship between government financial support and SME performance?
- What is the nature of the relationship between government financial support and innovation adoption?

1.5 Conceptual definition of terms

1.5.1 Entrepreneurship

Kirzner (2015) states entrepreneurship as a phenomenon that involves an individual who has a constructive strategy with regards to new opportunities in the business world while taking risks to maximise profit. Schumpeter (1934, as cited in Herrington, Kew, Kew, & Monitor, 2010) defined entrepreneurship as a new combinations including the doing of new things that are already being done in a new way. According to Rumelt (1987 as cited in Herrington et al., 2010) entrepreneurship is the establishment of new business venture; new business venture meaning the introduction of new products and process in a business.

1.5.2 Innovation Adoption

Innovation Adoption is the acceptance of new products and services in an organisation regardless of whether the products and services are new to the industry (Rahman, Yaacob, & Radzi, 2016). Roger (1995, as cited in Moghavvem et al., 2011), defined innovation adoption as "the process through which an individual or another decision-making unit passes from knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation, of the new idea, and to confirmation of this decision SMEs regarding the innovation.

1.5.3 Small and Medium Enterprises

Although there are various definitions of what an SME is, The National Small Business Act 1996 of South Africa defined Small and Medium Enterprises as registered enterprises operating in both private and public sector that consist of one or more owners, the enterprise could have one or more branches, South Africa (1996). According to the new revised Schedule 1 of the National Definition of Small Enterprise in South Africa, "small enterprise" means a separate and distinct business entity, together with its branches or subsidiaries, if any, including cooperative enterprises, managed by one owner or more predominantly carried on in any sector or subsector of the economy mentioned in column 1 of the Schedule and classified as a micro,

a small or a medium enterprise by satisfying the criteria mentioned in columns 3 and 4 of the Schedule'' (Department of small business development, 2019).

1.5.4 Enterprise Performance

According to Ahn, Minshall and Mortara (2015) enterprise performance is the outcome of evaluating the organisation's effort to achieve its goals, performance is measured in terms of Profitability, /return on investments and human resource growth.

1.5.5 Government Financial Support

Government Financial Support is a program developed by the state to assist entrepreneurs with funding with the intention of developing and promoting their businesses, the state's support can be in the form of tax incentives, grants and loans (Agwa-Ejon & Mbohwa 2015).

1.6 Contribution of the study

There are various studies undertaken to understand factors that have an effect on SMEs performance. However, many of these studies looked at these factors in isolation, for instance research has been conducted on how government assistance affect firm performance (Lesakova 2012; Ntiamoah & Kwamega, 2016; Olawale & Garwe, 2010) or how innovation adoption affects the growth of small businesses (Shouyu, 2017; Terziovski, 2010; Varis & Littunen, 2010). There are few studies that have combined both innovation and government assistance to see how they contribute to firm performance (Doh & Kim, 2014). The researcher could not find studies that links both government funding and innovation adoption in south Africa. The study fills a gap in the current body of entrepreneurship literature by providing new insights on how government funding and innovation adoption affect the performance of SMEs and how this assistance affect innovation adoption for small businesses.

The research finding will provide a better understanding for policy makers on how government funding and innovation adoption affects the development of SMEs, and will assist the government in implementing effective policies and business development programs to improve the SMEs sector in South Africa thereby improving the country's economy. The findings of the

study will assist entrepreneurs in understanding the significance of innovation adoption in increasing productivity in their businesses and provide guidance on how government funding can assist in improving the growth of their enterprises.

2 LITERATURE REVIEW

This chapter reviews empirical studies undertaken pertaining to SME innovation adoption, the environment and government financial support in the context of SME performance. The review of literature is then extended to develop hypotheses on the relationships between the variables noted above. The dependent variable will be SME performance and the independent variables will be innovation adoption and government financial support. The conceptual framework of the study is also informed by this theoretical review.

2.1 The Concept of Small and Medium Enterprises (SMEs)

The definition of Small and Medium Enterprises (SMEs) varies across different institutions and countries. Most definitions of SMEs are based on quantitative characteristics such as the number of employees, sales and business assets, (Kushnir, Mirmulstein & Ramalho, 2010). Mago and Toro (2013) considered factors such as the size of residents in a country, different industries, political factors and international economic distribution and the role of government on business development when defining SMEs. Peter, Adegbuyi, Olokundun, Peter, Amaihian and Ibidunni (2018) suggested that new definitions should be industry-specific where (Gibson & van der Vaart, 2008) argue that there should be one definition used in different countries in various stages of development.

Gibson and van der Vaart (2008) suggest that profitability in relation to per capita national income should be used as a measure to define SMEs. The classification of SMEs in the South African Small Business Act 102 of 1996 classified SMEs based according to the sector, Number of employees, Profitability and total gross asset value (Government Gazette of the Republic of South Africa, 1998). According to the South African Small Business Act 102 of 1996, an SME is a separate entity managed by one or more individuals, including one or more branches and is part of any sector or sub-sector in the economy with less than employees 201 and Turnover of R50 million (South Africa, 1996). Literature indicates that definitions of SMEs varies across different countries and are influenced by the level of business/ entrepreneurship activities in a

country, the size of SMEs and economic development. Based on literature one can conclude that there is no universal definition for Small and Medium Enterprises.

2.2 Innovation adoption on SME performance

Researchers from various academic disciplines have analysed innovation from multiple perspectives and different levels of analysis (Crossan & Apaydin, 2010). Although the term creativity and change have been used interchangeably to describe innovation, the term innovation has been originally described by Schumpeter as the introduction of products and services to the market while adoption is described as the introduction of new products to the company, which is externally generated (Orlando, Renzi, Vagnani &Volpe, 2013).

Moghavvemi et al. (2012) defined Innovation Adoption as an individual or the firm's decision to accept or reject new products or ways of conducting business that is already known in the industry but is new to the business and passes through a sequence of stages before the acceptance of a new product. Adoption does not happen as a single business activity but it forms part of the process resolving in the integration of a product or service that is new to the adopting organisation (Wells, Campbell, Valacich, & Featherman, 2010).

Literature on innovation and firm performance has been acknowledged by scholars all over the world (Terziovski, 2010). Literature suggests that innovation is one of the determinants of SMEs success (Orlando et al., 2013). Tidd and Bessant (2018) defined SME success as firms that keep innovating with the aim of gaining competitive advantage, this indicates that SMEs that participate in innovation activities shows growth and sustainable performance compared to non-innovative firms.

According to Tidd (2001, as cited in Saunila, Rantanen and Ukko, 2012) there are two categories that are used to measure innovation adoption and business performance. The first category is accounting and financial performance and the second category is measured through market performance, for instance the share or growth of the market.

Pett and Wolff (2011) argued that prior studies have determined the relationship between innovation and profitability by the number of innovations produced by the firm and emphasized

that innovation is important for the profitability of return on assets (ROA). Nedelko and Potocan (2013) also used ROA to measure organisational performance, it was discovered that the adoption of innovation which involves both administrative and technical innovation leads to increased profitability. Tan, Choy Chong, Lin and Eze (2010) argued that innovation speed is one of the most important predictors of financial performance measured by ROA. According to Gharakhani, Rahmati, Farrokhi and Farahmandian (2013), the impact of innovation is mediated by quality.

It was further suggested that innovation has a positive impact on profitability, partly because innovation affects quality which in turn affects profitability (Gharakhani et al.,2013; Terziovski, 2010). Varis and Littunen (2010) measured firm innovation using subjective scale and found out that a firm's innovativeness is positively related to firm performance: - in terms of profitability.

According to Love, Roper and Du (2009), A firms' success is not primarily dependent on the number of new innovations but is more reliant on the capabilities which others lack. Rosenbusch, Brinckmann and Bausch (2011) argued that SMEs are more likely to benefit if they develop, communicate and embrace innovation orientation, which implies that the capability to adopt innovations can be a critical factor when a firm aims to increase their profits.

SMEs are likely to gain competitive advantage in a highly competitive market by proving attractive niche products due to their firm size and greater agility (Varis & Littunen, 2010). All of these advantages that are attributable to innovation assist SMEs to successfully compete with established businesses, SMEs can avoid price competition by offering highly innovation products (Rosenbusch et al., 2011). According to Brinckmann, Grichnik and Kapsa (2010), New or innovative products can create new product demand which may lead to firm growth. If innovative SMEs can create innovative products that will prevent their competitors to enter the market and the position of the company can be strengthened and innovation can result in increased profits and business growth (Dai & Liu, 2009).

H1: There is a significant positive relationship between innovation adoption and the performance of SME in South Africa

2.3 Environment on the performance of SMEs

Entrepreneurship – or the establishment of new firm is an essential process of economic geography (Kamil, Kot, Jan & Gabriela 2017). Although empirical research focused on established enterprises as employers of geographic economy, the established firms started small and attracted scholars' attention when they became established. However, the situation has changed as researchers are now focused on entrepreneurial ecosystems – dynamic regional, social, actors and cultural processes that encourage new venture creation and firm development (Kamil et al., 2017). The term ecosystems was commonly used after the work of Moore (1993), which emphasised the firm's ecosystem as its external environment.

Entrepreneurial environment was commonly used in the literature from the 1970s to 2015, but this changed in the early 2000s when the concept of entrepreneurial ecosystem become dominant in 2016. Other theories, such as system of entrepreneurship and infrastructure for entrepreneurship, continue to be utilised but continue to be less prevalent (Alvedalen & Boschma, 2017). Mason and Brown (2014) defined entrepreneurial ecosystem as a connected group of actors in a local geographic area, who are dedicated to sustainable development through the support and facilitation of new sustainable ventures. Isenberg (2011) claimed that environment and ecosystem can be used interchangeably.

Whether or not an entrepreneur develops an enterprise successfully and increases competitiveness depends on many factors. A positive business environment might lead to an increased interest in entrepreneurship in a state that could result in higher employment rate and an increased GDP (Belás, Bartoš, Ključnikov, & Doležal, 2015). Some researchers believe that business growth is mainly affected by legal systems and high levels of state regulation and corruption (Djankov, La Porta, Lopez-De-Silanes, & Shleifer, 2002). Eniola and Entebang (2015) stated that the government's intervention in supporting SMEs will result in increased entrepreneurial activity. Common usage of the term "ecosystem" in a social science rather than an ecological context became widespread only after the work of Moore (1993), which highlighted the business ecosystem as the firm's external environment.

2.4 Government Financial Support on SME performance

SMEs are faced with several limitations in resources that act as barriers toward innovation and thereby affecting the firm's performance (Halim, 2018). Ntiamoah & Kwamega (2016) stated that the government is more likely to support established SMEs rather than supporting the infant stage due to limited government resources. Kim, Kim, Suh, and Zheng (2016) stated that previous studies have considered government support programs as external factors of enterprise innovation. The findings of the study conducted by Cerulli and Poti (2008) revealed that there is a positive relationship between government support and business sales. Lesakova (2012) also pointed out that government support has resulted in increased productivity because of the increased number of patents that have played a great role as an important output factor in innovation performance.

Peter et al., (2018) further argued that access to finance supports the growth and development of businesses. The Nigerian government has created a number of financial institutions and implemented policy measures to facilitate credit at a fair rate to SMEs (Ihua, 2009). This suggests that access to finance does not only assist firms with facilitating market entry, firm development and risk reduction but it also encourages innovation and entrepreneurial activity which contributes positively to economic performance (Ntiamoah & Kwamega, 2016). According to Ahuja, Yang and Shankar (2009), there is a positive relationship between innovation adoption and government support.

Other scholars believe that there are number of ways to assist SMEs in terms of financing it is impossible to measure the degree of accuracy whether the financing offered is adequate to meet the needs of the SME sector due to the lack of information, especially taking into consideration the high demand for access to finance (Nzaramba, 2012).

Although some studies have indicated a positive relationship between government support and innovation adoption. Some studies state that it is difficult to determine the effect of government support on SME performance because SMEs are likely to make informal payments for receiving support from the government, making it difficult to measure whether benefits of government support outweigh the costs (Nguyen, Van, Bartolacci & Tran 2018). According to Fajnzylber,

Maloney and Montes-Rojas (2009) government support does not have a positive effect on the firm's profitability in Mexico. Other theories such as rent-seeking, stipulates that government support may not be beneficial to firms provided that there is unequal distribution of government resources due to social networks or political connections (Zhang, Zhou & Zhou, 2014). Van Vu, Tran, Nguyen, and Lim (2018) further argued that even though there are several government support programs for businesses, SMEs are still facing discrimination which has a negative outcome on the performance of SMEs.

H2: There is a positive relationship between government financial support and SME performance in South Africa.

2.5 Government financial support for SME Innovation

Worku (2016) stated that in order to overcome a high failure rate of SMEs, government policies and investment should be utilised to foster entrepreneurship and innovation. Financial and investment policies are one of the crucial operational priorities in developing economies to support investment of SMEs. In established economies, economic development is dependent on innovation whereby access to finance is seen as an important factor in this process. For instance, a study conducted in USA by Holl and Rama (2012) revealed that innovative SMEs in the high-tech sector are those that received funding from the state. The government is more likely to invest in innovation activities as compared to the private sector due to uncertainty and high risk generated by such investments in innovation (Jugend, Jabbour, Scaliza, Rocha, Junior, Latan, & Salgado, 2018).

Literature suggests that government support directly and indirectly affects business innovation by stimulating technology innovation (Cano-Kollmann, Hamilton, & Mudambi, 2016). The government can support business in different forms; that is in terms of tax incentives, grants, government-sponsored labs and direct investment through public venture capital (Jugend et al., 2018). Considering the importance of SMEs on the economy, it is understandable that the government from both developing and developed countries have established tax and non-tax policies to encourage investment in SMEs while assisting SMEs to be competitive. Tax

incentives is defined as a reduction in tax that is used to encourage companies to SMEs generally depend on external resources for support due to their size and limited resources (Ghobakhloo, Zulkifli, & Aziz, 2010).

On the contrary, a study undertaken by Hanadi and Aruna (2013) indicates that financial institutions and government are less supportive of SMEs. This result is supported by Dutta and Evrard (1999, as cited in Ghobakhloo, Hong, Sabouri and Zulkifli, 2012) by stating that government support is not always beneficial for innovation adoption by SMEs, the results from the study indicates that despite the government's effort to assist SMEs in innovation by increasing public spending on innovation projects, there are adoption barriers built into governmental agency mechanisms designed to help these businesses. These adoption hindrances are attributable to the gap between what is really needed by SMEs and what is provided by the government (Worku, 2016).

Ghobakhloo et al., (2012) further argued that government funding does not appear to be an important element supporting innovation adoption within SMEs. Even though the study conducted by Ghobakhloo (2011) reveals that government assistance has not generally been found to be helpful, other studies in developing countries, have revealed that innovation adoption in SMEs has improved through government policies and initiatives (Alam and Noor, 2009; Thurasamy, Mohamad, Omar & Marimuthu, 2009). Fathian, Akhavan and Hoorali (2008) argue that an Iranian government plan for innovation development process has resulted in significant improvement in innovation adoption and E-readiness within Iranian SMEs. Tan, Chong, Lin and Eze (2009) also found out that Malaysian SMEs do not agree with the view that cost is a significant determinant of innovation adoption.

Tan et al. (2009) discussed that since SMEs are aware of government financial support innovation costs are not considered as the main barrier by Malaysian SMEs. This view is supported by Alam and Noor (2009) who confirmed that innovation adoption in Malaysian SMEs is not directly affected by perceived innovation costs. There is underlying belief that all types of financial support to SMEs have been provided by the state for innovation adoption (Alam & Noor, 2009; Tan et al., 2009). For instance, SMEs in Malaysia do not take into consideration the costs of training needed for successful innovation adoption as a barrier since

government agencies have offered and provided a number of necessary training programs (Tan et al., 2009). Based on the arguments mentioned above it could be concluded that with regard to the supportive policies and comprehensive innovation support provided by the government to SMEs, the innovation adoption process seems to be simplified (Holl & Rama, 2012; Thurasamy et al., 2009).

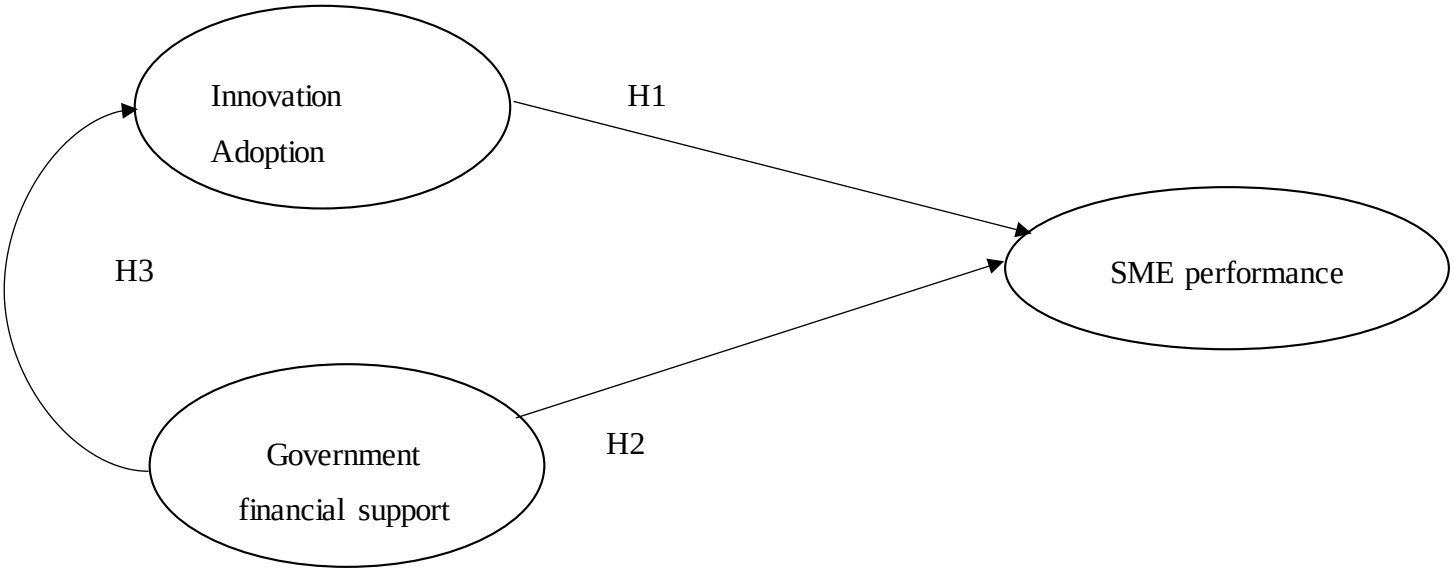
H3: There is a positive relationship between government financial support and SME innovation adoption in South Africa

2.6 Table 2.1 Literature review summary table

Author(s)	**Focal entrepreneurial phenomenon**	**Locus of entrepreneurship**	**Relationship between Innovation, government support and SME performance**
Orlando et al., (2013). Wells et al. (2010).	Innovation Adoption and firm performance	Small business owners/ Managers	Innovation plays a role in the development of an enterprise
Kamil et al. (2017)	Environment and firm performance	Small business owners/ Managers	A healthy environment can encourage entrepreneurship and plays a vital role on SME performance
Ghobakhloo et al. (2012) Alam and Noor (2009) Tan et al., (2009)	Government financial support and SME innovation	Small business owners/ Managers	Government plays an important role in fostering innovation adoption on SMEs
Nguyen et al. (2018) Nzaramba (2012) Ahuja et al., (2009)	Government financial support and firm growth	Small business owners/ Managers	Government financial support and the development of firm enterprise

2.7 Conceptual model

The Conceptual model represent the relationship between government financial support and innovation adoption and their direct effect on the performance of SMEs. The figure below also shows the effect of government financial support on SME innovation. The framework below is developed to illustrate the direct effects of each of the independent variables on the dependent variable.



This chapter reviewed the literature of government financial support and innovation adoption on the performance of SMEs. The literature has shown that a good business environment creates favourable conditions for the development of SMEs. In addition, prior studies have indicated that government financial support has resulted in increased productivity because of the increased number of patents that have played a great role as an important output factor in innovation performance. Furthermore, innovation adoption has been found to be one of the determinants of SMEs success. Innovative firms show growth and sustainable performance compared to non-innovative firms.

3 CHAPTER 3: RESEARCH METHODOLOGY

This chapter describes the research methodology used in this study. The research methodology explains how the study will be conducted to address the objective of the study. This section consists of methodological concepts such as research methodology, research design, population and sampling, research instrument procedure used for data collection and data analysis and interpretation. The methodology explains the relationship between different constructs - namely innovation, Government business development programs, and SMEs performance (financial information and human resource growth). The research methodology defines the method used to address the hypothesis stated in Chapter 2.

3.1 Research paradigm

Research paradigm is defined as set of beliefs that guide the researcher's actions (Lincoln, Lynham, & Guba, 2011). The research paradigm in which this study falls under is positivism. The positivism paradigm is an epistemological methodology that is based on quantitative data and observation. The positivist paradigm uses a deductive approach by which theories are analysed and hypothesis are generated. According to Cooper and Schindler (2014), a qualitative study is exploratory and relies on the experiences and words of participants whereas quantitative methodology relies on numeric results analysis the relationship between variables.

This study adopted a quantitative approach to examine theories that already exist, (Cooper and Schindler, 2014), including innovation adoption, government financial support and SME performance. The methodology selected assisted the researcher to measure the dependent and independent variable to determine if there is a significant correlation between the different variables and where correlation exist, the nature of correlation could be expanded upon. A deductive approach will be followed in this study to assist the researcher to accept or reject hypothesis formulated from existing theories to reduce bias when analysing and interpreting data.

3.2 Research Design

Research design is a detailed plan indicating the methods to be followed when gathering and analysing data (Hair, Wolfinbarger, Bush and Ortinau, 2010). A cross sectional approach was applied in this study to measure the identified dependent and independent variables. A self-administered questionnaire will be used to collect data and test the relationship between Innovation Adoption, Government financial assistance and SME performance.

3.2.1 Population

In quantitative research, the population is the group that the researcher plans to generalise into. The theoretical population of interest in this study consist of SMEs that have benefited financially from at least one of the recognised government business development agencies in South Africa. In this study government business development agencies include the following: National Youth Development Agency (NYDA), Small Enterprise Development Agency (SEDA), Small Enterprise Finance Agency (SEFA), Khula Enterprise Finance, National Empowerment Fund (NEF) and Department of Trade and Industry (DTI). This study was carried out in nine provinces of South Africa, for the results to be generalizable to South Africa. Surveys were sent out to a registered businesses and each entity was presented by one employee. In this study a registered business is recognized as a company that is registered with Companies and Intellectual Property Commission (CIPC) and/ or South African Revenue Services (SARS). The targeted population in this study is owners of SMEs.

3.2.2 Sample and Sampling Method

In the absence of a sampling frame, the sample of the study was selected using non-probability sampling. Convenience sampling was used because it is cost-effective, less time consuming and it is the best method to reach out all the participants in South Africa. A targeted total sample of 150 completed questionnaires was expected to be collected for analysis. **Table 3.1** below represent the summary of anticipated survey characteristics.

Table 3.1

Variable	**Description**
Target population	SMEs that have received financial assistance from the government
Geographical survey	South Africa (Nine Provinces)
Targeted sample size	150
Sampling unit	Individuals
Respondents	Owners of registered enterprises

Table 1: Survey Summary

3.3 The Research Instrument

A self-administered questionnaire was used to collect data for the proposed study (Appendix C). The research instrument was administered to SMEs that received financial support from the government. The research instrument was developed to collect data on the observations of government financial support, innovation adoption on SME performance. Section 1 of the research instrument consist of sample demographic data which consist of five questions. Section 2 consists of three scales used to capture the data relating to Innovation Adoption, Government

financial assistance and SME performance. The scale consists of 27 items divided into three sections collecting data on Innovation Adoption, Government financial assistance and SME performance.

The scale items are represented on a seven-point Likert scale ranging from 1 = strongly agree to 7 = strongly disagree. Although five Likert scale has proven to be reliable, the researcher chose to use a 7 Likert scale to improve the quality of data. Research has shown that though the 5-point Likert scale can be treated as continuous data, the 7-point Likert scale behaves even better. Qualtrics software will be used to distribute questionnaires to respondents in this study. The research instrument can be found in Appendix C. The questions are categorised into multi choices. In addition, biographical data was gathered on the respondents. The biographical section in the research instrument consisted of gender, age, ethnicity, business size and government action. The data collected from the biographical section was used for descriptive purposes.

3.4 Procedure for data collection

The primary data was collected through a research survey using a structured research instrument (Appendix C). The research instrument was uploaded on Qualtrics for electronic transmission to respondents. The research instrument was sent by Email, instant messaging, Social and professional platforms such as Facebook, Twitter and LinkedIn was also used to gather data. The collected raw data was uploaded to excel for screening and then exported to SPSS for analysis. Emails and instant messaging was used as a follow up for participants that do not respond on time.

Below are the steps undertaken for data collection

- The researcher contacted a number of South African government business development agencies in a form of an email and requested to have the survey sent out to their clients as part of data collection for this study.
- Only one of the agencies managed to respond on time and requested a formal meeting with the researcher so that the researcher could explain what the study entails before the survey could be distributed.

- The objective of the study was explained to the executive committee, and afterwards permission to have the survey distributed was granted.
- The survey was distributed to SMEs that benefited financially from the government. The government business development agency selected on this study has a database of SMEs across all nine provinces, which is a national representation of the country's SME demographics. This method was useful as it assisted the researcher in categorising manageable population of the study.

- The researcher also used platforms such as Facebook, LinkedIn and WhatsApp to get more participants for the study.
- A follow up email was sent out to participants who did not respond on time. Follow ups were done every week to improve the response rate
- The approach of using online platforms proved to be efficient as it enabled the researcher to reach many business owners at once.

3.5 Data analysis and interpretation

Data analysis is the most significant section in research as data analysis entails making sense of the data that has been collected on a particular research problem. (Flick, 2013; Leech, Barrett & Morgan, 2013). The collected data was processed using the statistical programme and analysed using descriptive statistics. Correlation between variables was tested. Regression analysis was also conducted to test the relationship between independent variables (Innovation adoption and government financial support) and dependent variable (SMEs performance). Exploratory factors analysis was used to reduce the data in the data set to a controllable size. All these analyses were conducted using SPSS.

3.5.1 Descriptive Statistics

According to Field (2016) descriptive Statistics enables the researcher to give a profile of the main characteristics of the sample of respondents from which the data collected using simple statistics such as measures of central tendency (mean and standard deviation). These

measurements simplify the data which can be represented in the form of percentages, pie charts, graphs and frequency distributions. This was used to explain the demographic data collected in the section of the research instrument (Field, 2016).

3.5.2 Correlation analysis

Correlation statistics is a method that is used to test the strength of relationship between dependent and independent variables (Cooper & Schindler, 2014). This method is useful when measuring the relationship between variables. Spearman rho correlation coefficient is used in Correlational statistics to measure the strength of relationship between two variables. It can take any value from -1 (as total negative linear correlation) through 0 (0 is no linear correlation) to +1 (where 1 is total positive linear correlation), (Field, 2016).

3.5.3 Exploratory factor analysis (EFA)

Exploratory factor analysis is a statistical method that is used to minimise the enormous amount of data to a reduced set of summary variables and to explore the underlying theoretical structure of the phenomena (Field, 2016). The main benefit of using EFA is the reduction of data into controllable portions and the disadvantage of using this technique is that enormous quantity of data can be lost during the process of extraction and rotation (Field, 2016). EFA will be used in this study to determine if the survey items will load onto the pre-determined factors, which are; Innovation adoption, government financial assistance and SME performance.

3.5.4 Multiple regression analysis

Regression analysis is defined as statistical method used to fit a linear model to data and use it to determine values of dependent variables from independent variables (Field, 2016). Regression analysis is classified into two categories, that is simple regression and multiple regression. A simple regression is conducted when there is one independent variable whereas multiple regression analysis is conducted when the is two or more independent variables (Field,

2016). The statistical output of regression is referred to as coefficient. The regression coefficient reveals how the dependent variable increases when the independent variable increases by one, while holding other independent variables constant (Field, 2016).

3.6 Validity and Reliability

Since this study used an online survey to measure different constructs, it is essential for the researcher to test for construct, scale, validity and reliability. Reliability and validity testing was conducted to ensure that the research instrument is testing what it's supposed to measure (Field, 2016). The researcher will check reliability by looking at estimations of Cronbach's alpha. There are many methods of testing validity, this includes both internal and external validity.

3.6.1 Validity Testing

3.6.1.1 Internal Validity

Cooper and Schindler (2014) defined Internal validity as the capability of a research questionnaire to measure what it is supposed to measure. To improve the internal validity of the study the researcher distributed the same questionnaire across all the nine provinces in South Africa. Random selection technique was used to improve the results obtained from respondents who received financial assistance from the government in the nine provinces. Respondents were asked to be honest when answering the questionnaire. All these steps were followed during the research process to ensure high internal validity.

3.6.1.2 External Validity

External validity refers to the generalisation of research findings (Rudolph & Leedy, 2018). This approach ensures that research findings can be applied in the real world (Cooper & Schindler, 2014). Data was collected across different settings: the data collected will be from different provinces with different financial development, different age groups, different ethnicities and business owners who received assistance from different support programs. Therefore, the study shows the diversity that can be used to generalise SMEs across South Africa.

3.7 Reliability Testing

Reliability refers to the measure in which results show consistencies between constructs (Rudolph & Leedy, 2018). Reliability is based on items provided on questionnaires that should show reliable results. Reliability is an essential contributor to Validity but is not an adequate condition to Validity, (Field, 2016). Reliability is concerned with the extent to which the measurement of the research instrument does not consist of random errors. Reliability testing was conducted to determine the correlation between constructs using Cronbach's Alpha. Reliability analysis was also conducted to examine the internal consistency of the scale used in this research using Cronbach alpha. The value of the coefficient must be between 0 and 1. Values close to 1 suggest that there is a high internal consistency of the scales. A coefficient greater than 0.7 reveals that a scale's reliability is satisfactory.

3.8 Ethical Consideration

Research ethics takes into consideration how a researcher conducts their research and the approach the researcher takes with regards to their research. Ethics is about the level of respect the researcher should have towards the participants that will take part in their research or study, (Jax, Barton, Chan, De Groot, Doyle, Eser & Haines-Young, 2013). Ethical Clearance protects the participants from being exploited and provides the researcher with permission to use the information provided by the participants to formulate their research, (Bell, Taylor, & Driscoll, 2012). Jax et al., (2013) further explained that the best way to ensure that the researcher has ethical clearance is to have all the participants to sign a consent form. The below section ethics were addressed.

The researcher made use of the consent form (Appendix B) which explained the objective and purpose of the study. The consent form clearly explained to respondents that their participation is voluntary, confidential and they are not forced to take part in the study. The study was anonymous and no information that could be used to identify the respondents was requested.

A letter of ethics clearance (Appendix D) was obtained from the University of Witwatersrand and was made available to all participants upon request. The data collected will be stored for a period of five years should further analysis be required.

3.9 Conclusion

This chapter discussed the research methodology of this study. This was a quantitative study that adopted positivist paradigm approach. Data was collected using a structured research instrument. the research instrument used a seven point Likert scale to measure respondents' answers to questions relating to government financial assistance, innovation adoption and SME performance. The data collected was analysed in SPSS using descriptive statistics, EFA and regression analysis. Reliability was performed to examine the internal consistency of the scale used in this research using Cronbach alpha. Finally, External and Internal validity was also conducted to ensure that the research instrument test accurately measures what it is supposed to measure.

4 CHAPTER 4: EMPIRICAL RESULTS FROM THE STUDY

4.1 Introduction

This chapter is a representation of the results of the study. The research instrument was distributed electronically to respondents using an online survey tool named Qualtrics. The collected data was extracted into the excel spreadsheet and uploaded to SPSS for analysis. This section outlines the sample characteristics of the respondents, the reliability of the measurement scale, exploratory factor analysis of the results, validity measurement of the scale and regression analysis of relationships of the results set out. The questionnaire consisted of four sections with a mixture of close-ended questions and seven Likert scale questions.

4.2 Respondents Characteristics

An online survey was sent out to respondents through an online anonymous link on the Qualtrics survey platform. A total of 203 responses were received in which 35 responses were excluded because they did not meet the criteria of SMEs that received government financial support. Out of the 168 that remained, not all data was usable. A total of 16 responses had missing data which was mainly incomplete responses. The researcher was left with a sample size of 152 after cleaning and screening the data for outliers and missing values. Figure 1 illustrates respondents gender profile.

Table1: Response rate

Respondents	**Frequency**	**Percentage**	**Data**
SMEs that received government funding	152	75%	Viable
SMEs that did not received government funding	35	17%	Disqualified
Incomplete	16	8%	Missing Values
Total Responses	**203**	**100%**	

4.2.1 Gender

The results reveals that 34% of respondents are female and 66% were male.

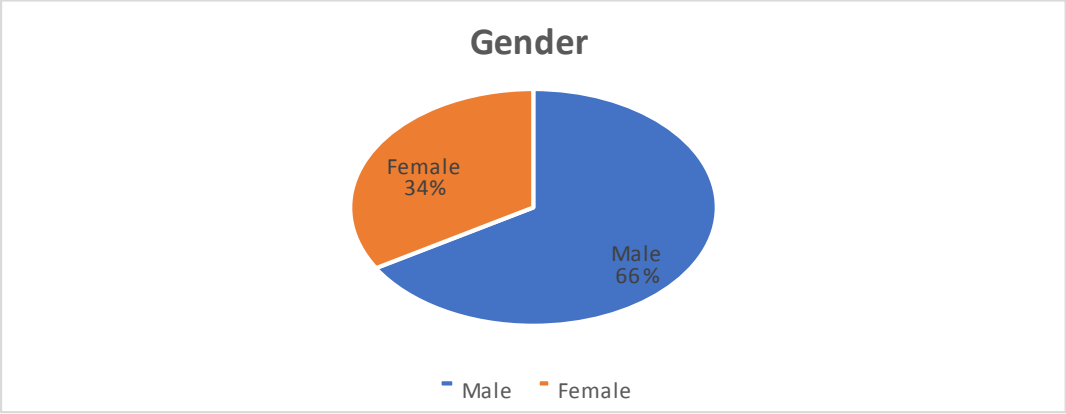


Figure 1: Respondents gender profile

4.2.2 Ethnicity

This study made use of different ethnic group presented below. 93% were Africans, followed by 5% of Asians, 2% of white and 1% for the category of other.

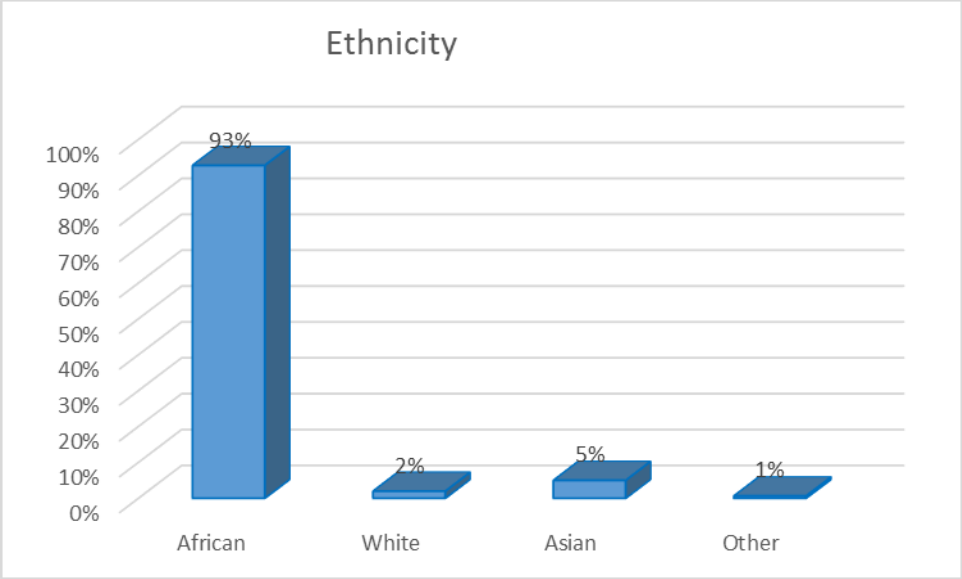


Figure 2: Ethnicity

4.2.3 Respondents Age

The questionnaire included a section where participants were asked to provide their age as different age groups provides different feedback methods. The sample demonstrates that 66% of respondents are aged between 25- 34, followed by 20% of respondents aged between 35 – 44, 9% were aged between 18-24, followed by 5% of 45-54 and a minority of entrepreneurs aged 55 – older showing 1%.

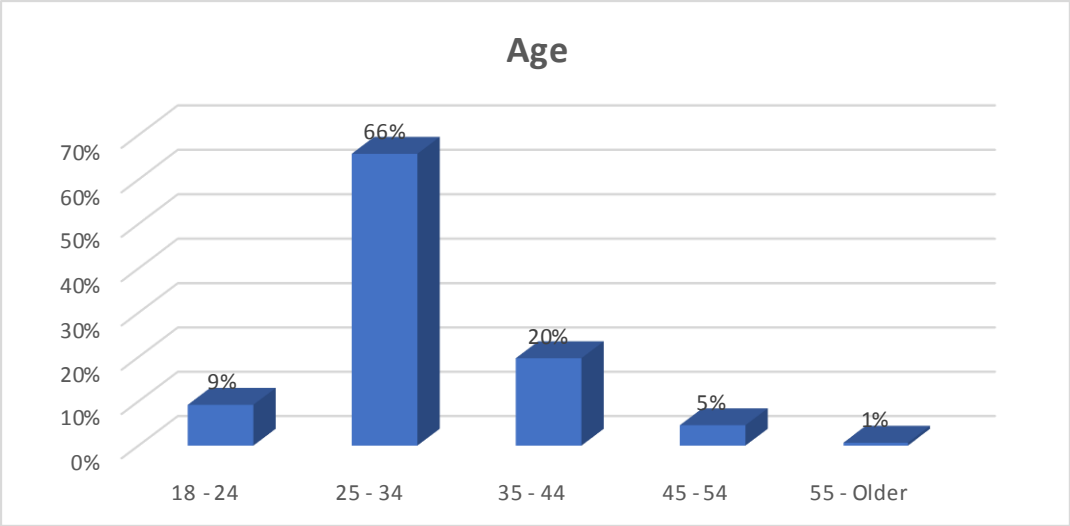


Figure 3: Respondents age profile

4.2.4 Business size

The study's main focus is on formal Micro, Small and Medium Enterprises, that is SMMEs that are registered with the CIPC, the data collected shows that most enterprises are: Micro (26%), Small (60%) and Medium (14%). Figure 4 illustrates Business Size

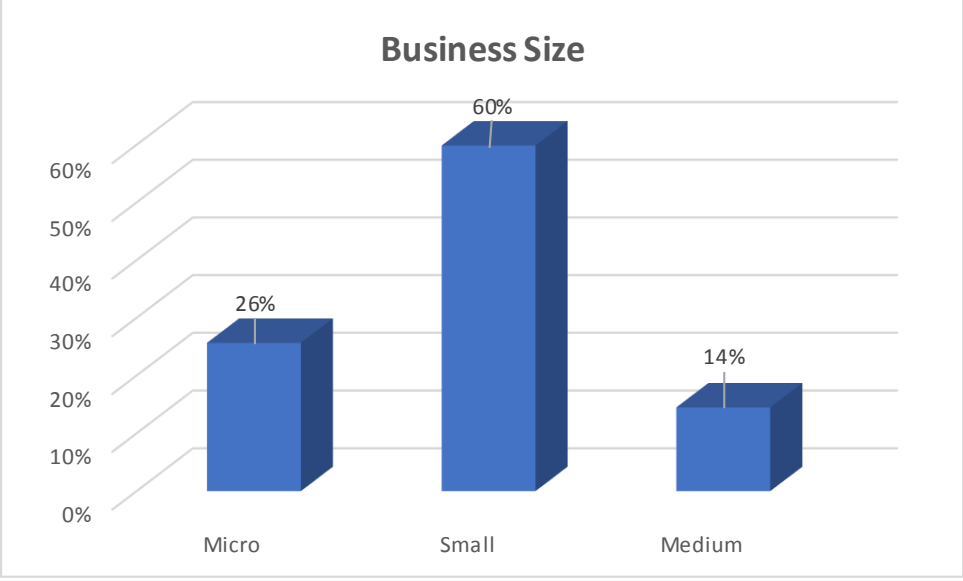


Figure 4: Business Size

4.2.5 Government Action

Participants of this study were asked the question: "What kind of government assistance helped your firm the most during this current economic situation?" Figure 5 shows that the majority (31%) of respondents in this study have received government loans, followed by (26%) of respondents that have received government grants, followed by (18%) of respondents that benefited from lowering of taxes and subsides to keep employees on the payroll and 7% respondents claiming that they have benefited from the simplification of regulations.

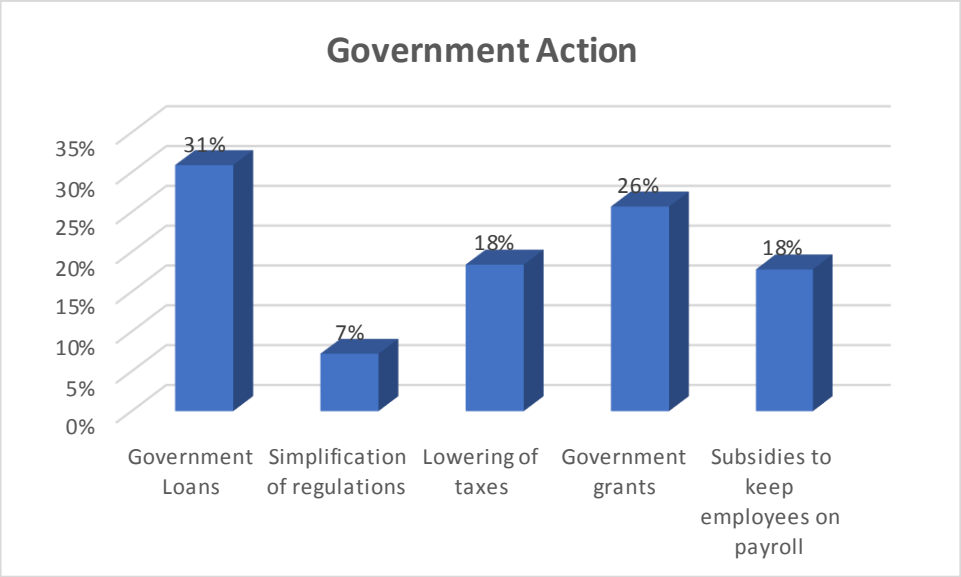


Figure 5: Government Action

4.3 Descriptive analyses of the measurement scales

Table 2 illustrates the distribution frequencies of responses to the scale items on innovation adoption. The results show that 69 % of the respondents either agreed or strongly agreed with the statement: IA1 (86%), IA2 (86%), IA3 (59%), IA4 (43%). IA5 on the below table shows that small business owners are eager to adopt innovation in their businesses with 18% of respondents agreeing to the statement "I prefer the traditional way of conducting business because it is complicated to use new technologies".; however, they do not implement it because

it is expensive, this is based on statement IA6. Statement IA6 and IA7 were reversely scored to reduce bias from participants. Interestingly 20% on IA6 agreed that they last ones to adopt technologies which is a contradiction to the statement IA3.

4.3.1 Frequency distribution of innovation adoption scale

Table2: Frequency distribution of innovation adoption scale

Innovation Adoption	Innovation Adoption	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly Agree
IA1	Are you aware of new technologies in your industry?	1%	0%	2%	3%	9%	57%	29%
IA2	I always learn about new technologies in my industry.	1%	2%	1%	2%	9%	54%	32%
IA3	When it comes to technology, would you say you are keeping up with your competitors?	1%	5%	5%	6%	24%	41%	18%
IA4	I do not implement new technologies in my business because it's expensive	4%	18%	6%	7%	22%	32%	11%
IA5	I prefer the traditional way of conducting business because it is complicated to use new technologies	20%	37%	9%	5%	10%	16%	3%
IA6	My business is the last one to adopt new technologies	10%	38%	13%	6%	14%	15%	5%
IA7	I am constantly learning about new technologies in the market	13%	4%	5%	3%	15%	48%	13%

4.3.2 Frequency Distribution of government financial support

Table 3 illustrates the distribution frequencies of responses to the scale items on government financial support. The results demonstrate that 49% of respondents either strongly or agree to first statement Gov1. 47% of respondents agreed that government has made it easier for them to access capital which fosters innovation. At least 10% of the respondents disagreed with the statement Gov1 – Gov7 and 12% show that respondents neither agreed nor disagree.

Table3: Frequency distribution of government financial support scale

GOV	Government funding	Strongly disagree	Disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Agree	Strongly Agree
GOV1	Did you find it difficult to obtain financial assistance from the government to purchase new technologies for your business?	1%	18%	3%	11%	19%	32%	17%
GOV2	Government provides extra incentive / benefits to businesses that engage in innovation	6%	11%	7%	14%	22%	36%	5%
GOV3	Government provides extra incentive / benefits to businesses that engage in innovation	4%	16%	7%	11%	15%	38%	10%
GOV4	Government laws/regulations made it easier to acquire new technologies in the business.	4%	13%	7%	16%	17%	38%	5%
GOV5	Government financial support encouraged me to use new technologies in my business.	4%	10%	9%	9%	14%	47%	8%

4.3.3 Frequency distribution of SME performance scale

Table 4 presents the distribution frequencies of responses to the scale items on SME performance.

The results show that 55% of the respondents either agreed or strongly agreed with the statement PEFT -PEFT6 and PEFG- PEFG2, which implies that their firms has shown growth in terms of profits and the number of individuals employed after the implementation of technology in their firms.

Table4: Frequency distribution of SME performance scale

Perf	SME Performance	Strongly	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly Agree
PEFT	I have seen a steady increase in sales after implementing new technology in my business.	5%	14%	1%	8%	18%	56%	13%
PEFT2	My company is growing in terms of job creation after acquiring new technologies in my business.	1%	3%	3%	11%	22%	50%	11%
PEFT3	The use of technology has increased productivity in my business	0%	2%	1%	3%	14%	61%	19%
PEFT4	My business obtained more clients after implementing new technology in the firm	1%	4%	1%	5%	19%	55%	15%
PEFT5	I have employed more staff after implementing new technology in the firm	5%	15%	7%	14%	18%	39%	2%
PEFT6	My business turnover increased by the following percentage after acquiring new technologies	5%	50%	14%	13%	8%	7%	4%
PEFG	My business has shown growth in the number of employees after receiving financial assistance from government	1%	9%	4%	9%	22%	45%	10%
PEFG2	My business turnover increased after receiving financial assistance from government	1%	8%	2%	7%	22%	52%	8%
PEFG3	My business turnover increased by the following percentage after receiving financial assistance from government	8%	46%	17%	13%	7%	7%	2%
PEFG4	I have employed more staff after receiving financial assistance from government	6%	7%	9%	11%	17%	47%	4%

4.3.4 Descriptive Statistics

The results from the descriptive table are displayed in Table 5. The questions were based on a seven point Likert scale which ranged from 1 strongly agreed to 7 strongly disagreed. The analysis indicated that the means of the responses are all above the midpoint of 3.5 for all measurement scales. IA1_R has the biggest mean at 6.05 and government variable GOV_R has the lowest mean. The values for mean and median are similar, which indicates that there are no issues with skewness. The standard deviation for all values is less than the mean and all the values are the same which indicates a low spread. The skewness of the scales were less than zero which indicates a left skewed distribution. However, based on the minimum criteria of -3, the results were considered not to be severe (Field, 2016). Kurtosis indices were less than three, this indicates platykurtic, which is flatter than a normal distribution.

Table5: Descriptive Statistics

	N		Mean	Median	Std. Deviation	Skew ness	Std. Error of Skew ness	Kurtosis	Std. Error of Kurtosis
	Valid	Missing							
IA1_R	152	0	6.05	6	0.923	-1.986	0.197	6.867	0.391
IA2_R	152	0	6.04	6	1.041	-2.254	0.197	7.03	0.391
IA3_R	152	0	5.43	6	1.35	-1.178	0.197	1.053	0.391
GOV2_R	152	0	4.63	5	1.663	-0.76	0.197	-0.5	0.391
GOV3_R	152	0	4.68	5	1.781	-0.617	0.197	-0.943	0.391
GOV4_R	152	0	4.63	5	1.639	-0.687	0.197	-0.683	0.391
GOV5_R	152	0	4.92	6	1.658	-0.942	0.197	-0.307	0.391
PEFT_R	152	0	5.57	6	1.137	-1.547	0.197	2.608	0.391
PEFT2_R	152	0	5.4	6	1.219	-1.433	0.197	2.33	0.391
PEFT3_R	152	0	5.87	6	0.94	-1.819	0.197	5.134	0.391
PEFT4_R	152	0	5.64	6	1.136	-1.793	0.197	4.042	0.391

4.4 Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis was conducted in SPSS to determine whether the variables in innovation adoption, government financial support can be grouped together into specific factors. There are two main conditions required for data analysis to be performed: that is, the measurement between variables and the sample size, the bigger the sample, the better (Field, 2016). To validate the assumptions, Kaiser Meyer-Olkin (KMO) was conducted in conjunction with Bartlett's Test of Sphericity.

4.4.1 KMO and Bartlett's test

The Kaiser Meyer-Olkin Measure of Sampling Adequacy is above 0.6 (KMO = 0.826) which means that the sample size and correlation between variables were sufficient for factor analysis. Bartlett's Test of Sphericity was also conducted to measure and determine if the variance from the sample of the population is equal. Bartlett's Test of Sphericity shows a significant p-values of 0.000 which indicates that the factors are valid and significant since the p-value is less than 0.005.

Table 6: KMO and Bartlett's test

KMO and Bartlett's Test

Kaiser Meyer-Olkin Measure Sampling Adequacy. of		0.826
Bartlett's Test of Sphericity	Approx. Chi-Square	725.598
	df	55
	Sig.	0.000

4.4.2 Total Variance Explained

Factors were extracted using principal Axis Factoring method, because only factor analysis can be used to estimate underlying factors (Field, 2016). Promax rotation method was applied. The results are presented below. Table 7 reveals how the variance is divided among the 11 possible factors that were extracted. Three out of eleven factors were extracted with eigenvalue greater than 1.0, which is common criteria for a factor to be considered useful. Factor 1 has the strongest influence with a variance of 36.40%, followed by factor 2 with variance of 13.48% and Factor 3 with variance of 8.75%, making up a total of 58,63% in variance.

Table 7: Total variance explained

Total Variance Explained

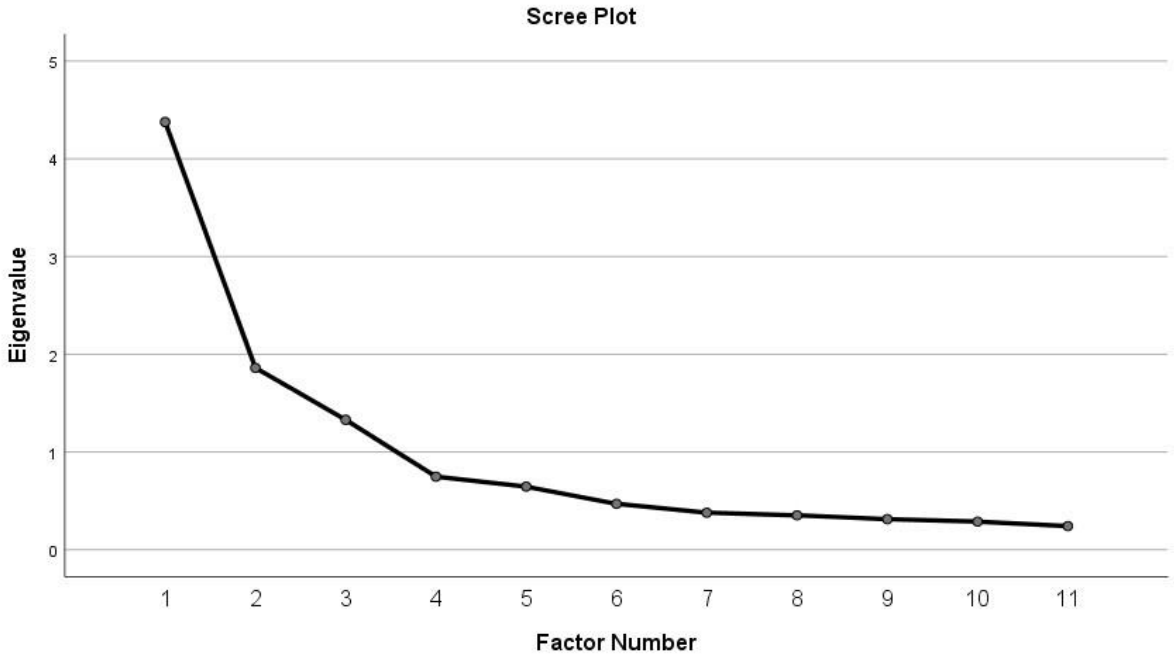
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.377	39.790	39.790	4.004	36.399	36.399	3.263
2	1.861	16.920	56.710	1.482	13.477	49.876	3.310
3	1.329	12.083	68.793	0.963	8.752	58.628	1.811
4	0.747	6.795	75.589				
5	0.645	5.860	81.449				
6	0.469	4.266	85.715				
7	0.379	3.443	89.158				
8	0.351	3.195	92.353				
9	0.312	2.839	95.192				
10	0.287	2.613	97.805				
11	0.241	2.195	100.000				

Extraction:Method: Principal Axis Factoring.

4.4.3 Scree Plot for the dependent and independent variables

The scree plot of eigenvalues on figure 6 shows three factors above the inflection point of the values at eigenvalue 1.

Figure 6: scree plot of eigenvalues for SME performance



4.4.4 Pattern Matrix for dependent and independent variables

A principal axis factoring method was used to test 11 items that measure SME performance. Table 8 show factor loading of the final model, the results show that the scale items loaded onto three factors: Factor1 (scale items, GOV2_R to GOV5_R), Factor 2 (scale items, PEFT_R to PEFT4_R) and Factor 3 (scale items, IA1_R to IA3_R). There was convergence between Kaiser Meyer-Olkin Measure of Sampling Adequacy and scree plot of eigenvalue greater than one. Given the sample size (N = 152) and factor loadings greater .3, it is concluded that the factors are significant at p=0.01 and the variables are important.

Table 8: Factor loadings for SME performance

Pattern Matrix[a]

	Factor 1	2	3
IA1_R			0.939
IA2_R			0.610
IA3_R			0.545
GOV2_R	0.465		
GOV3_R	0.829		
GOV4_R	0.720		
GOV5_R	0.930		
PEFT_R		0.746	
PEFT2_R		0.681	
PEFT3_R		0.808	
PEFT4_R		0.775	

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

4.5 Reliability of Measurement Scales

4.5.1 Reliability of measurement of Innovation Adoption

Reliability test using Cronbach's Alpha was conducted on innovation adoption scale, consisting of three items. Although the Cronbach Alpha for scale items IA1_R and IA2_R is less than the acceptable value of 0.7, the total reliability statistic in table 9, showed that the instrument attained acceptable reliability, α=0.703. The scale could be improved to α= 0.723 by removing scale item

IA3_R on Table 10, however the scale was retained as the Cronbach's Alpha showed the acceptable value of 0.7. Therefore, based on the results, Innovation adoption could be considered to be consistent as the Cronbach's Alpha meet the common criterion of alpha 0.7.

Table 9: Overall Reliability statistics for Innovation Adoption

Reliability Statistics

Cronbach's Alpha	N of Items
0.703	3

Table 10: Reliability statistics for Innovation Adoption

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
IA1_R	11.47	3.774	0.682	0.459
IA2_R	11.47	4.026	0.470	0.671
IA3_R	12.09	3.032	0.472	0.723

4.5.2 Reliability of measurement of government financial assistance

The total reliability statistic for government financial assistance measure scale was α=0.837. showing an acceptable consistency of the scale. Table 12 shows that the removal of scale item GOV2_R could improve the reliability of the scale to α = 0.872. However, the item was retained as the scale met the minimum criteria.

Table 11: Overall reliability statistics for government financial assistance

Reliability Statistics

Cronbach's Alpha	N of Items
0.837	4

Table 12: Reliability statistics for Government financial assistance

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
GOV2_R	14.23	20.549	0.482	0.872
GOV3_R	14.17	16.421	0.761	0.751
GOV4_R	14.23	18.271	0.686	0.787
GOV5_R	13.93	17.280	0.765	0.751

4.5.3 Reliability of measurement of SME performance

The overall statistics for SME performance in table 13 is $\alpha = 0.850$. SME performance could be considered to be internally consistent with Alpha for scale items greater than 0.7. Scale items in Table 14 are above 0.7 and have proven to be worthy of retention, resulting in a decrease if the alpha is deleted.

Table 13: Overall Reliability Statistics for SME performance

Reliability Statistics

Cronbach's Alpha	N of Items
.850	4

Table 14: Reliability Statistics for SME performance

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PEFT_R	16.91	7.986	0.683	0.812
PEFT2_R	17.08	7.570	0.687	0.813
PEFT3_R	16.61	8.795	0.716	0.806
PEFT4_R	16.84	7.940	0.693	0.808

4.5.4 Summary of reliability matrices

Table 15 below is a summary of reliability results. The overall reliability of The total reliability statistic for innovation adoption showed that the instrument attained acceptable reliability, α=0.703, Government Funding, α= 0.837 and Performance α= 0.850. All of these scales were retained as they showed the acceptable value of the Cronbach's Alpha of 0.7. Therefore, based on the results, the below constructs could be considered to be consistent as the Cronbach's Alpha meet the common criterion of alpha 0.7.

Table15: Summary of reliability matrices

Constructs	Number of Items	Cronbach's Alpha
Innovation	3	0.703
Government Funding	4	0.837
Performance	4	0.850

4.5.5 Normality test between the dependent and independent variables

Skewness and Kurtosis measures the symmetry and level (peakness or flatness) of the distribution (Field, 2016). Based on the normality valuations conducted the results showed that the distribution of all variables is normal and significant at p-value<0.005.

Table16: Test of Normality between the dependent and independent variables

Test of Normality

	Kolmogorov-Smirnov[a]			ShapiroWilk		
	Statistic	df	Sig.	Statistic	df	Sig.
IA_Constr	0.180	152	0.000	0.890	152	0.000
GOV_Constr	0.185	152	0.000	0.891	152	0.000
PEFT_Constr	0.225	152	0.000	0.846	152	0.000

a.Lilliefors Significance Correction

4.5.6 Correlation Matrix

Table 17 represents the correlation matrix of items relating to SME performance. Correlation matrix was conducted to compare relationships of all pairs of questions that test the same construct by calculating the mean of all paired correlations. Inter-item correlations between innovation adoption (IA1_R – IA3_R) and performance (PEFT_R - PEFT4_R) showed low values which are < 0.3. However, the items were retained as it did not improve the overall alpha if removed. Government financial assistance (GOV2_R - GOV5_R) and performance (PEFT_R - PEFT4_R) showed a positive and moderate correlation, with most items > 0.3 except for two items indicating that all items correlate with their respective scales (Field, 2016). Inter-item correlations between innovation adoption (IA1_R – IA3_R) and government financial assistance (GOV2_R - GOV5_R)

also showed positive and small correlations between items. The results showed that items correlated with each other, giving an indication that they could be grouped together.

Table17: Correlation Matrix

Correlation Matrix												
		IA1_R	IA2_R	IA3_R	GOV2_R	GOV3_R	GOV4_R	GOV5_R	PEFT_R	PEFT2_R	PEFT3_R	PEFT4_R
Correlation	IA1_R	1.000										
	IA2_R	0.570	1.000									
	IA3_R	0.542	0.308	1.000								
	GOV2_R	0.067	0.116	0.042	1.000							
	GOV3_R	0.126	0.107	0.101	0.454	1.000						
	GOV4_R	0.112	0.137	0.142	0.378	0.669	1.000					
	GOV5_R	0.115	0.155	0.086	0.455	0.743	0.671	1.000				
	PEFT_R	0.152	0.048	0.161	0.267	0.406	0.338	0.329	1.000			
	PEFT2_R	0.095	0.014	0.076	0.467	0.486	0.427	0.468	0.594	1.000		
	PEFT3_R	0.297	0.175	0.274	0.210	0.367	0.372	0.321	0.615	0.572	1.000	
	PEFT4_R	0.205	0.062	0.139	0.325	0.376	0.383	0.302	0.551	0.596	0.638	1.000

4.5.7 Correlation between Innovation adoption, government funding and SME performance

Spearman correlation was carried out to determine the relationship between the dependent and independent variables. Hypothesis 1 states that there is a significant positive relationship between innovation adoption and performance of SME in South Africa. Spearman's rho coefficient value between innovation adoption and SME performance signifies a moderate,

positive and significant relationship between SME performance and Innovation adoption at (R-value 0.271, p = 0.001).

Another relationship that was assessed in the study is between government financial assistance and SME performance. Table 18 shows a positive, strong and significant relationship between government financial assistance and SME performance at (R-value = 0.490, P =0.000). The R-value of 0.179 indicates a positive, small but significant relationship between Innovation adoption and government financial assistance, this suggests that as government funding for SMEs increase, the level of innovation adoption by SMEs also increases. Hypothesis 2 states that: Government financial support has a positive effect on SME performance in South Africa, this hypothesis has been accepted.

Table 18: Correlation Matrix of independent variables and dependent variable

Correlations

			IA_Constr	GOV_Constr	PEFT_Constr
Spearman's rho	IA_Constr	Correlation Coefficient	1.000		
		Sig. (2-tailed)			
		N	152		
	GOV_Constr	Correlation Coefficient	.179*	1.000	
		Sig. (2-tailed)	0.027		
		N	152	152	
	PEFT_Constr	Correlation Coefficient	.271**	.490**	1.000
		Sig. (2-tailed)	0.001	0.000	
		N	152	152	152

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

4.6 Regression analysis

A multiple regression was performed to test the role of innovation adoption and government financial assistance on SME performance. This section was carried out to test the relationships and hypothesis generated between the dependent and independent variables.

4.6.1 Diagnostic model summary

The results from the model show r –value of 0.530, which indicates a strong and significant relationship between the variables, this implied that the model was good predictor of the outcome. R^2 which is the coefficient of determination, measures how well the model fits the data (Field, 2016). R^2 value of 0.281 indicates that 28.1% of the variance seen in SME performance is explained by government financial assistance and innovation adoption. The Durbin-Watson of
2.077, which is between 1.5 and 2.5 indicates that the data is not auto correlated.

Table19: Diagnostic model summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.530[a]	0.281	0.271	0.789	2.077

a. Predictors: (Constant), GOV_Constr, IA_Constr

b.

Dependent Variable: PEFT_Constr

4.6.2 ANOVA

The results in Table 20 show that F (2,149) = 29.091, P<0.005. This indicates a significant relationship, which means that both government financial assistance and innovation adoption

is significant in predicting SME performance. Therefore, the data is in support with Hypothesis 1 and 2.

Table 20: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.225	2	18.113	29.091	.000[b]
	Residual	92.771	149	0.623		
	Total	128.996	151			

a. Dependent Variable: PEFT_Constr

b. Predictors: (Constant), GOV_Constr, IA_Constr

4.6.3 Regression coefficients for Hypothesis 1, 2 and 3

The results in Table 21 show that government financial assistance (B=0.479, P-Value = 0.000) is significant and positive related to SME performance. This is because the coefficient for government financial assistance was positive and P-value is less than 0.05.

Table21: Regression Coefficients Model for SME perfomance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
				Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	3.449	0.448		7.698	0.000	2.563	4.334		
	IA_Constr	0.125	0.073	0.120	1.704	0.091	-0.020	0.270	0.972	1.028
	GOV_Constr	0.304	0.043	0.497	7.049	0.000	0.219	0.389	0.972	1.028

a. Dependent Variable: PEFT_Constr

The coefficients result in Table 22 show (B=0.166, P-Value = 0.041), shows a positive and significant relationship between government financial assistance and innovation adoption, this is because the p-value is lesser than 0.05.

Table 22: Regression coefficient model for Innovation Adoption

Coefficients[a]

Model				Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
				Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	5.376	0.235		22.868	0.000	4.911	5.841		
	GOV_Constr	0.097	0.047	0.166	2.061	0.041	0.004	0.191	1.000	1.000

a. Dependent Variable: IA_Constr

4.6.4 Hypothesis Results

Table 23: Hypothesis

	Alternative Hypothesis	**Testing Outcome**
H1	There is a significant positive relationship between innovation adoption and the performance of SME in South Africa	Not Supported
H2	There is a positive relationship between government financial support and SME performance in South Africa.	Supported
H3	There is a positive relationship between government financial support and SME innovation Adoption in South Africa	Supported

4.7 Chapter Summary

This Chapter reported the results from the data collected. Descriptive statistics was used to describe the sample population. The study compromised of a sample size of 152 in which 66% were males and 34% were female. The measurement of scales for innovation adoption, government financial assistance and SME performance were analysed to test the reliability of the scales using Cronbach's Alpha and the results proved to be reliable.

Results collected in this study indicated that 86% respondents are aware and are always learning new technologies in their industry. This is a clear indication that SMEs in South Africa are enthusiastic to carry out innovative activities. This is further confirmed by 69 % of respondents in the study that confirmed that their enterprises have seen a steady increase in sales after implementing new technologies in their business, 61% respondents revealing that their businesses have created employment after acquiring new technologies in their business and 80% respondents indicated that the use of technology has increased productivity in their enterprises.

SME performance was also measured using government financial support as a predictor variable. The results of the study showed that 55% of respondents confirmed that their businesses have shown growth in the number of employees after receiving financial assistance from government and 60% respondents showing that their business turnover increased after receiving financial assistance from government. To test the validity of results, the Exploratory Factor Analysis was conducted, in which only three factors were extracted. The EFA model explained 58,63% variance in the data.

To test the effect between the dependent and independent variables, correlation analysis was conducted which indicated. Spearman's rho coefficient value between innovation adoption and SME performance signifies a moderate, positive and significant relationship between SME performance and Innovation adoption at (R-value 0.271, p = 0.001). shows a positive, strong and significant relationship between government financial assistance and SME performance at (Rvalue = 0.490, P =0.000). The R-value of 0.179 indicates a positive, small but significant relationship between Innovation adoption and government financial assistance, this suggests that as government funding for SMEs increase, the level of innovation adoption by SMEs also increases.

For further analysis, regression analysis was conducted. Two out of three hypothesis were supported. The first hypothesis was rejected because the overall model was found not to be significant, this is because P-value was more than 0.05 which is the acceptable criterion. The relationship for the second (H2) and third (H3) hypothesis was found to be positive and significant at P-value < 0.05.

5 CHAPTER 5: DISCUSSION OF EMPIRICAL FINDINGS OF THE RESEARCH

Based on the results in Chapter4. This chapter discussed the results from Exploratory Factor analysis, followed by the final factors that were used in the multiple regression analysis. This section further explains the findings from the multiple regression analysis used to test hypothesis formulated in the study. The discussion presented in this section are similar with the findings from the literature.

5.1 Demographic profile of respondents

5.1.1 Gender

From the 152 responses analysed, it was found that the percentage of females that participated in the study was 34% and males 66%. This is in consistence with the findings of several studies that suggested that men are likely to pursue entrepreneurship than women (Haus, Steinmetz, Isidor & Kabst, 2013). The GEM report that was assessing the gender gap in South Africa indicated that males have higher level of entrepreneurship than women (Herrington, & Kew, 2014). Klyver and Grant (2010) further argued that men have higher self-efficacy and higher risk appetite than women. (Sullivan and Meek, 2012) found out that women network intensively than men, however women's network are not helpful in enhancing business opportunities. Women in South Africa are amongst the previously underprivileged group to contribute to the economy. The low representation of women entrepreneurs in South African may be the result of gender inequality that form create obstacles to women's participant to the economy. Haus et al., (2013) found out that women are often faced with challenges such as access lack of access to resources and education, lower societal status and higher levels of domestic responsibility.

5.1.2 Ethnicity

This study made use of four different ethnic group presented below. 93 percent were Africans, followed by 4 percent of Indians, 2 percent white and 1% for the category of Asians and other. A demographic study conducted by statsSA (2011) indicated that the population of South Africa is approximately 58 775 022, with Africans being the highest with, 47 443 259 followed by coloureds with 5 176 750, white 4 652 006 and Asians/Indians 1 503 007.

5.1.3 Age

The decision to venture into business is driven by different motivations effects of which can be depend on the individual's age. Venter and Urban (2015). states that younger individuals are more likely to undertake entrepreneurship when they have no family and financial responsibility when compared to the adult population. Previously, the youth was not actively encouraged to participate in entrepreneurship, this is because work experience was considered as a perquisite for succeeding in entrepreneurial endeavour. It was believed that individuals with work experience are more likely to acquire entrepreneurial competencies and might become successful entrepreneurs (GEM, 2017). Other studies that investigated youth entrepreneurship suggested that the youth is different in a number of different areas; that is access to capital, Societal attitudes, psychology and influence from society and environmental conditions (Netshitenzhe, 2014). The results from this study is in consistent with the findings with literature from on youth entrepreneurship as individuals aged between 25-34 are more involved in entrepreneurship activities than adults. There is a decline in the age category of adults aged between 35-44 with 20% to adults aged between 45-45 with 5% and a further decrease in individuals aged 55-older (1%).

5.1.4 Business size

SMEs are seen as the drivers of the economy: the results of the study reveal that there is a high percentage of small business in SA at 60%, followed by Micro businesses 26% and Medium (14%). Most firms remain small and not expand to employ more than six employees. Although it is difficult to enumerate the number of SMEs in South Africa because the sector is divided into formal and informal businesses, it is estimated that SMEs in South Africa make up to 91 percent of formal businesses, contributing 60 percent towards employment and 34 percent towards GDP.

5.1.5 Government Action

The South Africa government provides the SME sector with financial and non-financial support. Financial assistance is provided in terms of grants and/or loans. Government grants is defined as the sum of money that government agencies provide to small business (Meuleman & Maeseneire, 2012). The results showed that majority (31%) of respondents received government loans compared to (26%) of respondents that received government grants, this is because government grants are non-repayable and a loan is capital that is borrowed by the business and must be paid within the agreed period. Therefore, based on uncertainty and risks that comes with SMEs, it is likely and safer that government provides grants than loans. Also the disadvantage of using grants is that there are restrictions placed on how the funds can be used, this is because grants are taxpayers' money. There is an equal (18%) distribution for respondents that received wage subsidies and lowering taxes to sustain their businesses. Wage subsides is a great initiative from the government because it encourages small business owners to hire individuals in ongoing jobs by providing funding to the initial costs of hiring a new employee which reduces unemployment. Lowering taxes for SMEs encourage entrepreneurship because reducing overall tax burden on small businesses assist can help achieve more neutral tax treatment of firms of varying sizes, implying efficiency gains, and encourage compliance with the tax laws of a country. 7% of respondents believed that they have benefited from simplification of regulation because it creates favourable environment of SMEs which will encourage entrepreneurship.

5.2 Hypothesis Outcome

5.2.1 Innovation Adoption on SME performance

H1: There is a significant positive relationship between innovation adoption and the performance of SME in South Africa.

Innovation has become relevant in the context of today's progressively competitive business environment in the attainment of the international sustainable development (Chege & Wang, 2020). Scholars have emphasized that Innovation adoption is an important tool in promoting business growth, and thereby, the competitiveness of the business (Orlando et al., 2013; Wells et al., 2010). It is therefore essential for SMEs to incorporate innovation to remain competitive and participate in a global market (Ribeiro-Sorianoa et al., 2019). The ability of SMEs to innovate can result in the establishment of extensive business network and good business performance.

To test the relationship between innovation adoption on firm performance, multiple regression was conducted. The regression coefficient model revealed that innovation adoption explains 28.1% of the variance in SME performance. The overall model showed that there is a positive relationship between innovation adoption and SME performance (B=0.120). This results implies that innovation adoption increases productivity and efficiency of the business's internal operations. This is supported by a higher percentage of respondents in the study that confirmed that their enterprises have seen a steady increase in sales after implementing new technologies in their business. The study has revealed that the ability of firms to acquire innovation resulted in increased productivity and job creation. This outcome is in consistent with the findings by Mustafa and Yaakub (2018) which indicated innovation adoption is one of the major determinants of SME success.

Contrary to the expectations, the overall of the model was found not to be significant at (P=0.091), although these findings are unexpected, the results of this study revealed that the relationship between innovation adoption and SME performance is not strong. This is because the p-value is above 0.05. Based on these results, the alternative hypothesis was rejected in favour of the null hypothesis. The results do not discredit that innovation adoption is not important for

business growth but demonstrates that there are internal and external factors that affect firm performance. This finding is supported by Shouyu (2017), which indicated that when firms incorporate innovation, employees, suppliers and customers may be forced to use new technology and these individuals may not realise the significance of innovation on increasing the productivity and efficiency of business internal operations which may result in a negative impact of innovation adoption in firm performance. If change is resisted by internal boycotts, it could result in innovation not being accepted by the market, thereby innovation will not improve performance. Access to capital was also found to be one of the challenges faced by SMEs, this result is shown in the scale measuring innovation adoption by SMEs where respondents revealed that they are aware and eager to incorporate innovation to their firms, however their biggest challenge in innovation implementation is cost related. These discoveries are in line with a study conducted by (Leiponen, 2005), which indicated that innovative firms are mostly likely to go undergo financial constraints, compared to non-innovative firms.

There has been an ongoing debate pertaining the effect of innovation adoption on SME performance, with some studies proving that innovation adoption has a positive effect business performance (Moghavvemi et al., 2012; Shouyu, 2017 & Terziovski, 2010). While some studies, Alam and Noor (2009) have indicated that the relationship between is not direct and is affected by other factors such as skills, lack of capital and the capability of SMEs to incorporate innovations to their firms. Based on the results of this study, it is concluded that innovation adoption has no significant relationship with SME performance in South Africa.

Alternative Hypothesis	**Results**
H1: There is a significant positive relationship between innovation adoption and the performance of SME in South Africa	Not Supported

5.2.2 Government financial support on SME performance

H2: There is a positive relationship between government financial support and SME performance in South Africa.

The South African government recognises that it needs to reduce unemployment, alleviate poverty and address inequalities and SMEs present a platform to achieve these (Serei, 2017). The data collected indicates that the government has created favourable environmental conditions that will allow SMES to grow and compete well. According to Nzaramba (2012) government financial support plays a vital role in improving SME performance, this is because SMEs are often faced with financial constraints. These financial limitations may arise from lack of working capital, lack of capital for short term or short term.

This study used regression analysis to test the relationship between government financial support and SME performance. The regression coefficient model reveals that government financial support explained 28.1% of the variance in SME performance. Based on the findings of the research, the null hypothesis was rejected in favour of the alternative hypothesis and it is concluded that there is a significant positive relationship between government financial support and SME performance (B=0.497; P=0.000). This results are in consistent with various studies that have indicated that there is a positive relationship between government financial support and SME performance (Kamunge, Njeru, & Tirimba, 2014; Mohammed, & Obeleagu-Nzelibe, 2014). The results clearly indicate that the provision of government funding reduces financial constraints and enhance the economic performance of enterprises which results in increased profits and employment creation.

Although, some studies have indicated that financial assistance is not sufficient for the development of SMEs (Nguyen et al., 2018), Several studies advocated that government financial support enhances firm performance (Ntiamoah & Kwamega, 2016; Peter et al., 2018). This is also supported by Ahuja et al., (2009) that government funding can assist in generating cash flows, which is a direct approach in enabling any financial limitations. Ntiamoah and

Kwamega (2016) further indicated that there is a significant positive relationship between government financial support and SME performance by emphasizing that access to capital promotes the growth and development of SMEs thereby enhancing the performance of SMEs. The findings of this study reveals that government financial assistance has a positive effect on SME performance in South Africa.

Alternative Hypothesis	Results
H2: There is a positive relationship between government financial support and SME performance in South Africa.	Supported

5.2.3 Government financial support on innovation adoption

H3: There is a positive relationship between government financial support and SME innovation Adoption in South Africa

The data collected indicates that enterprises that have benefited from the government are innovative because access to capital enables enterprises to transform their ideas to innovation. Innovation adoption change current business operations and allows enterprises to operate more efficiently (Ghobakhloo et al., 2012). Recognising the importance of innovation for SME growth, the government has made effort to accelerate innovations by providing incentive and/or benefits to businesses that engage in innovation (Juma, 2015). To support innovative firms, the government expands financial support and tax credits for small businesses (Patanakul & Pinto, 2014). These possibilities established by government policies, therefore, improve the firm's willingness to change, which will, in turn, encourage innovation.

The relationship between government financial assistance and innovation adoption was tested using regression analysis. The findings showed a positive and significant relationship between government financial assistance and innovation adoption (B=0.166, P= 0.041). As a result, the null hypothesis was rejected. With this said, the government's role in providing government

loans and grants has encouraged entrepreneurs to be innovative. Although there are various determining factors for innovation adoption, the findings of the paper demonstrate that financial assistance is one of the most important components in fostering innovation adoption for SMEs.

The importance of government funding on innovation adoption is realised in a dynamic environment because change is normal in a dynamic industry. Dynamic environment creates the need to be proactive using internally developed tacit knowledge. The findings of the study are consistent with the study conducted by (Worku, 2016) that a significant relationship exist between innovation adoption and government support. Jugend et al., (2018) mentioned that financial and investment policies are one of the crucial operational priorities in developing economies to support innovation and investment of SMEs. Holl and Rama (2012) found out that access to funding promotes growth and development in all enterprises, this simply means that access to finance is essential in facilitating market entry, minimising risk, encouraging innovation and the development of firms.

However, some studies Alam and Noor (2009) have found out that relationship between government financial assistance and innovation adoption is not direct, the outcome of successful innovation adoption is influenced by a competitive environment. Government financial support will not have a positive effect on innovation adoption if customers, suppliers and manufactures are reluctant to change, and this normally when enterprises operate in a stable environment. Therefore, government financial support is unlikely to be useful in encouraging innovation in SMEs if the market is unwilling to change its existing state. Although there are different views amongst scholars on the role of government financial assistance on SME innovation adoption, this study has found that there is a positive and significant relationship between government financial assistance and innovation adoption.

Alternative Hypothesis	**Results**
H3: There is a positive relationship between government financial support and SME innovation Adoption in South Africa	Supported

5.3 Conclusion

This study explored the role of government financial assistance and innovation adoption on the performance of SMEs in South Africa. The empirical findings of the paper illustrated that the relationship between innovation adoption and SME performance is positive but not significant, in this study, this implied that innovation adoption by SMEs does not affect firm performance. While respondents' results indicated that they are always learning about innovation, the overall results showed that innovation did not have a significant relationship to the success of their firm, this is because SMEs are faced with a number of challenges due to their small scale, the biggest obstacle that innovative firms are facing is financial constraints to invest in new technologies. Recognising the importance of SMEs to the economy, the South African government has established initiatives to encourage entrepreneurship and innovation. This includes tax incentives, grants, loans, subsides to keep employees on the payroll and simplification of regulations.

The findings of the study reveals that government financial support plays a significant role on SME performance, as a result, the null hypothesis was rejected. The government's role in providing government loans and grants has increased productivity in SMEs which resulted in employment and increased profits and make a significant contribution towards GDP. This finding was in line with a number of studies which emphasized the importance of financial assistance on the growth and development of SMEs. The findings of this paper revealed that government financial assistance is not only crucial for SME performance, but it also encourages innovation adoption for firms. The results of the paper has found the relationship between government financial support and SME innovation adoption to be positive and significant. Based on this results, the null hypothesis was rejected in favour of the alternative hypothesis. The findings of this study suggests that the government's investment in the SME sector is vital and it yields positive outcome. It can be concluded that government financial support is essential for encouraging innovation for firms and the development of SMEs.

6 CHAPTER 6: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Conclusion

The study examined the relationships that exist between innovation adoption, government financial support and SME performance. This section summarised the important outcome and empirical findings of the study. Conclusions, implications and recommendations are also presented in this chapter. This study adopted a quantitative approach based on post positivist research paradigm to test the hypothesis generated. Empirical analysis of the generated hypothesis is based on the data collected from 152 South African SMEs. The reliability of the scale was tested using Cronbach's alpha and the results met the minimum criteria of 0.7 and were acceptable. Exploratory Factor Analysis was conducted on the measurement scale and revealed that scale items can be grouped together and measured accurately. Multiple regression was applied to test the relationships between dependent and independent variables. Two out of three hypotheses were supported. The first hypothesis was rejected because the overall model was found not to be significant, this is because P-value was more than 0.05.

Regression analysis model showed a positive relationship between government financial assistance and SME performance. The model also showed a positive relationship between government financial assistance and innovation adoption. Therefore, based on the outcome of the results the null hypothesis was rejected in favour of alternative hypothesis. However, the first hypothesis (H1) was rejected because the regression model indicated an insignificant relationship between the variables.

6.2. Summary of main objective, hypotheses and main findings

The purpose of this study was to explore the relationships between government financial assistance, innovation adoption and SME performance. SMEs play a significant role to the South African economy and they have become the main source of employment. However, SMEs are faced with internal and external variables that threatens their survival. The failure of SMEs to implement innovation could result in lost opportunity to grow their business. Literature

suggest that SMEs the biggest challenge that SMEs are faced with is lack of resources such as access to capital and inadequate skills.

Recognising the importance of SMEs to the economy, the South African government developed initiatives to encourage entrepreneurship by improving access to finance and developing policies to assist SMEs in fostering innovation. The results of this study showed that SMEs that have received government financial support have improved business performance and are more likely to succeed and create employment. This finding is in line with literature that government funding is essential for the development and growth of SMEs. Thus, based on the results, the second hypothesis which stated that there is a significant positive relationship between government financial assistance and SME performance was supported.

The data collected also revealed that there is a positive relationship between government financial support and SME innovation adoption, therefore the third hypothesis was also supported. This finding suggest that financial and investment policies implemented by the government encourages SMEs to adopt innovation in order to remain competitive and compete on a global scale/ market, thus by making a significant contribution to the economy, create employment and alleviate poverty.

Interestingly, the finding of the first hypothesis which stated that there is a significant positive relationship between innovation adoption and performance of SME in South Africa was found not be significant which resulted in the rejection of the first hypothesis. This implies that innovation adoption by SMEs does not make a significant contribution to the economic performance of the business. This means that SMEs have low contribution towards GDP and employment. Although this finding goes against literature, some studies are consistent with the finding of this paper that the significance of innovation adoption is weak on the success of the business if it is rejected by employees, customers, suppliers and the market. It is also pointed out in literature that SMEs' lack of resources, both financial and non-financial could threaten successful innovation implementation (reference).

6.3 Research implications and Recommendations

6.3.1 Implications for academics

Prior studies have indicated the importance of SMEs in the economic development of a country. As a result, literature on SME development has gained interest over the years. However, despite extensive literature on understanding the role of government support on SME performance and SME innovation adoption in developing countries, the SMEs sector in South Africa continues to have inconspicuous sustainability issues. This study seeks to address a gap in the current body of entrepreneurship literature by highlighting the importance of innovation adoption and government financial support on the growth and sustainability of SMEs. This paper proves to be theoretically useful as it links innovation adoption, government financial and SME performance in South Africa.

The empirical findings of this study are significant given that literature on innovation adoption has insufficient attention in developing countries. And since the researcher could not find studies that investigated the role of both government financial support and innovation adoption on SME success, empirical evidence is needed to validate the claims suggested by literature regarding the impact of innovation adoption on firm performance and/or government financial support on firm performance in South Africa. The findings of this study will benefit South African entrepreneurship literature by highlighting the state of innovation adoption by SMEs and understanding the role of government on fostering innovation adoption and enhancing firm performance. Therefore, considering the social and economic role of SMEs in the South African economy, there is a need for extensive literature that links and determines the effect of innovation adoption and government financial support on the performance of SMEs which have been highlighted to be the determining factors of firm performance.

6.3.2 Implications for Practitioners and policymakers

Policy makers

The findings of this research has important policy implications. The main objective of policy makers is to drive development in SMEs to be able to create employment and alleviate poverty.

As a result, government initiatives have been put in place to assist small and medium businesses to access supporting services in different regions. Innovation and easier access to finance for SMEs has been a priority for policy makers as it fosters economic development. Therefore, the findings of this research will provide a clear picture for policy makers by providing a holistic view regarding the ability of SMEs to innovate and the effect of government financial support on enhancing business performance.

Based on the findings of the research, the importance of government financial support in improving innovative performance among firms may be realised and this may be utilised to predict improved ways of prioritizing investments to guarantee long-term economic growth, this will allow policy makers to review their policies to be in a better position in stimulating and developing the SME sector. Therefore, this study will not only assist the state in identifying the determinants of innovation adoption among SMEs in South Africa but it will assist the state to be in a better position in implementing effective policies and business development programs to improve the SMEs sector in South Africa thereby improving the country's economy.

SMEs

Extensive literature has proved that in order for firms to remain competitive, they need to be innovative. With this said business owners should make use of government financial resources to improve and grow their enterprises, especially because there is a higher demand for capital for firms that are innovative. Literature has proved that innovation is vital for the economic performance of any firm, regardless of its size. Therefore, innovation adoption must be part of the firm's strategic priority as it fosters growth. The findings of this paper has proved that access to capital is not the only determinant of achieving firm success but investing in both innovation and skill development is important for firm development and sustainability.

6.4 Limitations of the study

- Although the use of questionnaires is easier to distribute and cost-effective, the complexity of concepts may be captured by simpler questions. the researcher could not make a follow up with respondents as they remained anonymous.
- A small sample size of 152 was used. The study could have been strengthened by using a bigger sample size to provide substantially conclusive results regarding the role of innovation adoption and government financial support on SME performance.
- A restricted number of questions could be asked to reduce incomplete responses.
- The results of the study might be biased as the majority of respondents are from a single business development agency in South Africa.

6.5 Suggestions for further research

- Despite the importance of innovation adoption on SME performance and the benefits of governmental financial assistance on the firm success highlighted in literature, results pertaining to innovation adoption & SME performance and government financial support on SME performance in this study turned out to be negative, which was unexpected. Further analysis in this area should be conducted to explain the role of government in fostering innovation adoption and provide a clear picture on the role of innovation adoption on SME performance.
- This study focused on the adoption of innovation in general, therefore future studies should use this study as a foundation model to examine the different and specific innovation/ innovation adoption in different context. In addition, future studies should include different sectors in both rural and urban areas to be able to make comparisons on the success and obstacles of implementing innovation,

further analysis on innovation barriers, opportunities and policy issues must be conducted.

- Prior studies have emphasized the magnitude role of government support on firm performance, further analysis on the effect of government on the performance of SMEs should include non-monetary support. it is therefore important to know the obstacles besides financial support SMEs are faced with.

- The research was conducted in South Africa, future studies should be done in other countries, it would be interesting to compare and differentiate the empirical findings of other studies from other developing economies.

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Appendix A: Consistency matrix

The role of Government financial support and Innovation Adoption on the performance of SMEs in South Africa							
Subproblem/Aims	**Literature Review**	**Hypotheses or Propositions**	**Research questions**	**Variables (Independent & Dependent)**	**Source of data**	**Type of data**	**Analysis**
To assess the relationship between SME innovation adoption and the performance of SMEs in SA.	(Orlando et al., 2013. Wells et al. (2010).	H1: There is a significant positive relationship between innovation adoption and the performance of	How does innovation adoption affect the performance of SMEs?	IV1= Innovation Adoption DV1 = SME Performance	questionnaire questions will be distributed across South Africa	Ordinal data	Descriptive analysis Correlation analysis Regression analysis

		SME in South Africa					

To examine the relationship between government financial support and SME performance in SA	Nguyen et al., (2018) Nzaramba (2012) Ahuja et al., (2009)	H2: There is a positive relationship between government financial support and SME performance.	What is the nature of the relationship between government financial support and SME performance?	IV2= Government Financial Support DV2= SME Performance	questionnaire questions will be distributed across South Africa	Ordinal data	Descriptive analysis Correlation analysis Regression analysis
To assess the relationship between government financial support and SME	Ghobakhloo et al. (2012) Alam and Noor (2009)	H3: There is a positive relationship between government financial support and SME	What is the nature of the relationship between government financial support	IV3= Government Financial Support DV3= SME Innovation	questionnaire questions will be distributed	Ordinal data	Descriptive analysis Correlation analysis Regression analysis

innovation adoption.	Tan et al., (2009)	innovation Adoption.	and innovation adoption?				

Appendix B: Consent Form

WITS Business School

Information Sheet and Consent Form

My name is Pulane Thapelo, I am doing my Masters in Entrepreneurship and New Venture Creation at Wits business school. I am conducting a survey to assess the role of innovation adoption and government support on the performance of Small and Medium Enterprises (SMEs)in South Africa. You will be presented with information relevant to a seven Likert scale to answer some questions about it. The study will take you 10 minutes to complete and you have the right to withdraw at any time.

Ethical Considerations

Your **participation is voluntary and confidential,** and you are not being forced to take part in this study. You have the right to withdraw at any point during the study. By clicking the button below, you acknowledge that your participation in the study is voluntary, you are 18 years or older, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason.

Risks/discomforts

At the present time, I do not see any risks in your participation. The risks associated with participation in this study are no greater than those encountered in daily life.

Benefits

There are no immediate benefits to you from participating in this study. If you would like to receive feedback on the study, I can send you the results of the study when it is completed sometime after July 2020.

Contact details If you would like to contact my supervisor/lecturer in this study to discuss this research, please feel free to e-mail him at Mcedward.murimbika@wits.ac.za. The researcher's email address is 1797535@students.wits.ac.za.

○ Yes I consent (1)

○ No do not Consent (2)

Appendix C: Research instrument

Q32 Have you ever received financial assistance from the government?

○ Yes (1) ○ No (2)

Skip To: Ethnicity If Have you ever received financial assistance from the government? = Yes
Skip To: End of Survey If Have you ever received financial assistance from the government? = No

---

Ethnicity What is your ethnicity?

○ African (1) ○ White (2) ○ Asian (3) ○ Indian (4) ○ Other (5)

Gender What is your gender?

○ Male (1)

○ Female (2)

Age What is your age?

○ 18-24 (1) ○ 25-34 (2) ○ 35-44 (3) ○ 45-54 (4) ○ 54 - Older (5)

B_Size What is the size of your business?

○ Micro (1) ○ Small (2)

○ Medium (3)

GOV_A What kind of government assistance helped your firm the most during this current economic situation?

○ Government loans (1) ○ Simplification of regulations (2) ○ Lowering of taxes (3) ○ Government grants (4)

○ Subsidies to keep employees on payroll (5)

End of Block: Consent Form

Start of Block: Innovation Adoption

IA1 Are you aware of new technologies in your industry?

○ Strongly Agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6) ○ Strongly disagree (7)

IA2 I always learn about new technologies in my industry?

○ Strong Agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6) ○ Strongly disagree (7)

IA3 When it comes to technology, would you say you are keeping up with your competitors?

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6) ○ Strongly disagree (7)

IA4 I do not implement new technologies in my business because its expensive

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

IA5 I prefer the traditional way of conducting business because it is complicated to use new technologies ○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

IA6 My business is the last one to adopt new technologies

○ Strongly disagree (1) ○ Disagree (2) ○ Somewhat disagree (3) ○ Neither agree nor disagree (4) ○ Somewhat agree (5) ○ Agree (6)

○ Strongly Agree (7)

IA6 I am constantly learning about new technologies in the market

○ Strongly disagree (1) ○ Disagree (2) ○ Somewhat disagree (3) ○ Neither agree nor disagree (4) ○ Somewhat agree (5) ○ Agree (6) ○ Strongly Agree (7)

End of Block: Innovation Adoption

Start of Block: Government

GOV1 Did you find it difficult to obtain financial assistance from the government to purchase new technologies for your business?

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6) ○ Strongly disagree (7)

GOV2 Government provides extra incentive / benefits to businesses that engage in innovation

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

GOV3 Was government support helpful in assisting your business acquire new technology?

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

GOV4 Government laws/regulations made it easier to acquire new technologies in the business?

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

GOV5 Government financial support encouraged me to use new technologies in my business.

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6) ○ Strongly disagree (7)

End of Block: Government

Start of Block: Performance

PEFT I have seen a steady increase in sales after implementing new technology in my business.

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6) ○ Strongly disagree (7)

PEFT2 My company is growing in terms of job creation after acquiring new technologies in my business.

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6) ○ Strongly disagree (7)

PEFT3 The use of technology has increased productivity in my business

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3)

○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

PEFT4 My business obtained more clients after implementing new technology in the firm

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

Q35 I have employed more staff after implementing new technology in the firm

○ Strongly disagree (1) ○ Disagree (2) ○ Somewhat disagree (3)

○ Neither agree nor disagree (4) ○ Somewhat agree (5) ○ Agree (6)

○ Strongly disagree (7)

PEFT5 My business turnover increased by the following percentage after acquiring new technologies ○ 0 (1) ○ 10 - 20% (2) ○ 21 - 30% (3) ○ 31-40% (4) ○ 41-50% (5) ○ 51-60% (6)

○ Over 61% (7)

PEFG My business has shown growth in the number of employees after receiving financial assistance from government ○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

PEFG2 My business turnover increased after receiving financial assistance from government

○ Strongly agree (1) ○ Agree (2) ○ Somewhat agree (3) ○ Neither agree nor disagree (4) ○ Somewhat disagree (5) ○ Disagree (6)

○ Strongly disagree (7)

PEFG3 My business turnover increased by the following percentage after receiving financial assistance from government ○ 0 (1) ○ 10-20% (2) ○ 21-30% (3) ○ 31-40% (4) ○ 41-50% (5) ○ 51-60% (6) ○ Over 60% (7)

Q34 I have employed more staff after receiving financial assistance from government

○ Strongly disagree (1) ○ Disagree (2) ○ Somewhat disagree (3) ○ Neither agree nor disagree (4) ○ Somewhat agree (5) ○ Agree (6) ○ Strongly agree (7)

End of Block: Performance

Appendix D: Ethics certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF GRADUATE SCHOOL OF BUSINESS ADMINISTRATION ETHICS COMMITTEE
CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: WBS/BA1797535/531**
PROJECT TITLE	The Impact of Innovation Adoption and Government Financial Support on the performance of SMEs in South Africa
INVESTIGATOR	Miss Pulane Thapelo
SCHOOL/DEPARTMENT OF INVESTIGATOR	MM (Entrepr & New Venture Creation)
DATE CONSIDERED	10 December 2019
DECISION OF THE COMMITTEE	Approved unconditionally
RISK LEVEL	MINIMAL RISK
EXPIRY DATE	28 FEBRUARY 2020

ISSUE DATE OF CERTIFICATE 17 February 2020

CHAIRPERSON _____
(Dr MDJ Matshabaphala)

cc: Supervisor: Dr Murimbika

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am are authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

_____
Signature

Date 28 / 02 / 2020

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES