An assessment of the role of the textile and clothing industry in the South Africa economy

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Dissertation accepted in fulfilment of the requirements for the degree *Masters of Commerce in Economics* at the North-West University

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Graduation ceremony: June 2021

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DEDICATION

I dedicate this to my mother, your endless support and prayers kept me going. Thank you for believing in me. To my baby brother, I wish you remained a baby forever. I always ask you, why do you have to grow up. To my grandmother, thank you for your unconditional love.

DECLARATION

I, Lerato Boitumelo Mabeleng, declare that:

"*An assessment of the role of the textile and clothing industry in the South African economy.*"

Is my own autonomous work with the exception of distinguished resources that are well acknowledged by means of thorough references. Neither entire nor any part of this work has been submitted to other universities to acquire any form of degree or qualification.

Signature: L.B. Mabeleng Date: 2020/08/14

ACKNOWLEDGEMENTS

I would like to thank the Almighty Living God, of peace love and reconciliation, who brought me this far.

I thank my mom and grandmother for doing their very best in raising me to be the woman I am. My mother, Makibiti Mabeleng, instilled hard work and discipline in me and always expected the best from her children. My father, Adam Mabeleng, thank you for instilling the importance of education. I have made it this far because of you. You have prepared me for the endless opportunities that lie ahead. I thank my lovely brother; your warm love pushed me to the very end.

To Dr Thomas Habanabakize and Professor Steve Dunga you have been my pillar of strength since I met you. Your support gave me courage to succeed. Mr Jacques De Jongh thank you very much, it has been an amazing journey.

ABSTRACT

The economy of any country, be it developed or developing, is constituted and based on the performance of three major economic sectors, namely the primary, secondary and tertiary sectors. The primary sector is mostly built on primary or natural resources and serves as the supplier to raw materials which are transformed into the semi-final and final products by the secondary sector. Thus, the secondary sector comprises industries whose role is the transformation of raw materials into a usable finished product. Contrary to both primary and secondary sectors that are tangible, the tertiary sector is naturally intangible, and it consists of the provision of various services that include technology, finance, and education. Although the global economy has been evolving from the primary sector to the tertiary sector through the secondary sector, each of these sectors is still playing its significant role in the social and economic development of countries.

The secondary sector and its sub-sectors (industries) play an integral and significant role in support of national economic growth. The textile and clothing industry is one of the sub-sectors of the South African secondary sector that play an important role in both economic and social life. During recent decades, the South African manufacturing sector has been faced with serious challenges from both domestic and global constraints. These challenges include the volatile exchange rate, unbalance between imports and exports, high unemployment rate, global competition, output reduction, and negative repercussions of the 2008 global financial crisis. The aforementioned limitations impose adverse implications on the South African economy.

Based on the above discussion, the main objective of this study was the assessment of the role of the textile and clothing industry in the South African economy. In support of the primary objective, the study set the following as empirical objectives: (i) to analyse the share of the South African textile and clothing industry towards economic growth and national income; (ii) to analyse the long-run relationships between employments, exports, real effective exchange rate and output of the textile and clothing industry on South African economic growth; (iii) to determine the short-run relationships between exports, employment, real effective exchange rate and output in the textile and clothing industry on South African economic growth; and (iv) to investigate the causal relationships between employment, exports, real effective exchange rate and output in the South African textile and clothing industry and economic growth in the country. Secondary time-series data from 1994 to 2018 acquired from the South African

Reserve Bank and Quantec website were used to achieve the abovementioned empirical objectives. The data were analysed using different statistical and econometric approaches. These approaches comprise descriptive statistics, pairwise correlation, unit root, and stationarity tests, the autoregressive distributed lag (ARDL) model, error correction model (ECM), and the Toda-Yamamoto causality tests.

The study findings indicated that the textile and clothing employment, gross value added, and exports and exchange rate are jointly significant to impact on long term behaviour of the South African economy. It was also found that each of the explanatory variables possesses a long term effect on the South African economy. Gross value-added and the exchange rate were found to have more effect on the South African economy compared to the other underlined variables taking into consideration the gravity of effects from the above variables towards economic growth. The results from the ECM analysis suggested that both employment and exports have a positive short term impact on the South African economy whilst the real effective exchange rate negatively impacts the economic short term improvement.

Based on the empirical findings, with the aim of the South African economic improvement, the study recommended the promotion of both domestic and foreign direct investment policies; promotion of local firms and domestic markets; labour skills empowerment, innovation, and technology promotion; promotion of textile and clothing production model aiming at high-value markets and export-orientated products; and the introduction and implementation of textile-clothing recycling model. Some constraints accounted for in conducting this study include a limited data sample size, selection of most significant variables in the textile and clothing industry, and the time constraints. Thus, grounded on these limitations, future studies should consider more textile and clothing industry features that may influence the country's economy; analyse the impact of textile and clothing industry on economic performance using data with low frequency (quarterly or monthly data); and lastly, apply an alternative approach to test the asymmetric effect of the textile and clothing industry on economic growth.

Keywords: Textile and clothing industry, manufacturing sectors, employment, exports, output, economic growth, South Africa.

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LIST OF ABBREVIATIONS

ABS	:	Australian Bureau of Statistics
ADF	:	Augmented Dickey-Fuller
AGOA	:	African Growth and Opportunity Act
AIC	:	Akaike Information Criteria
BER	:	Bureau for Economic Research
CUSUM	:	Cumulative Sum of Recursive Residuals
ECM	:	Error Correction Model
ECT	:	Error Correction Term
EPZ	:	Export Processing Zone
EU	:	European Union
FDI	:	Foreign Direct Investment
GDP	:	Gross Domestic Product
GVA	:	Gross Value Added
HDI	:	Human Development Index
IDC	:	Industrial Development Corporation
ILO	:	International Labour Organisation
IMF	:	International Monetary Fund
KPSS	:	Kwiatkowski-Phillips-Schmidt-Shin
MFA	:	Multi-Fibre Arrangement
SADC	:	Southern African Development Community

SARB	:	South African Reserve Bank
SBIC	:	Schwarz Bayesian Information Criterion
SIC	:	Schwarz Information Criterion
STATS SA	:	Statistics South Africa
T-Y	:	Toda-Yamamoto
USA	:	United States of America
WTO	:	World Trade Organisation

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

Economic cycles play an important role in global social wellbeing. Other things being constant, when economic activity is at an expansion (peak), people experience a better standard of living, whilst during contraction (especially when the economy reaches its trough), social life becomes difficult (Penner, 2016:1). The global economy, more recently, has illustrated disparities in growth between developed and developing countries. While economic growth has improved at a strong pace within the latter, advanced economies have struggled. Whilst various factors have contributed to the decline in exports, high energy prices, industrial actions, and political uncertainty have become prominent concerns (International Monetary Fund (IMF), 2018:21). Consequently, this has brought with it fluctuations in commodity prices and imbalances between importers and exporters (IMF, 2018:19). Moreover, besides these issues globally, unemployment rates have shown noteworthy increases. This challenge has partly been a result of enhanced technology and the use of automation in production processes, which in some economies have contributed to fewer job opportunities (Acemoglu & Restrepo, 2017:1). These advancements, although imposing some challenges, have likewise brought with it renewed focus on the importance of tertiary sectors and their contribution to contemporary economic performance.

Notwithstanding the importance of these sectors, improved technology focus has reduced the recognition of the importance of primary and secondary sectors. From this point of view, Graetz and Michaels (2018) argue that the use of technology tools such as robotics has reduced the cost of production, lasted to increases in output, and has reduced the share of employment mainly for low-skilled and low educated workers. Simultaneously this has been associated with increases in demand for high skilled workers. Despite these lines of arguments, primary and secondary sectors such as land and mining, if properly utilised, have proven to be important drivers of job creation, especially in developing countries (South Africa, 20161:11). These sectors are a key provider of inputs in tertiary sectors, such as the services sector (Kilian, 2018). Given that the secondary sector mainly transforms raw material from the primary sector into a semi-finished and finished product, any fluctuations within the primary sector have repercussions on secondary sector employment (Khaliji *et al.*, 2013:14). Consequently, before

shifting the focus towards international trade, appropriate use of the primary sector and secondary sector's in the domestic country is a significant prerequisite for economic development. The latter to be achieved, various industries from the secondary sector also have to play their role. These industries involve the textile and clothing industry.

The textile and clothing industry is a set of firms that transform raw material through a different process, into finished products. Among others, the transformation process includes spinning, knitting, and weaving and transformation of fabrics into finished products (Stengg, 2001:7). The industry is complex and important, for its output plays a significant role for both business and private households alike (Barnes *et al.,* 2004:2*;* Ho *et al.,* 2017: 1370*).* This industry is linked to different economic sectors with various forward and backward linkages associated with it. For instance, some of the inputs used in textile and clothing production are acquired from the agriculture sector and processed in the manufacturing sector (Stengg, 2001:5). This indicates how important the textile and clothing sector is towards any country's developmental objectives. The significance of the textile and clothing industry is recognised throughout the world and especially within the Southern African Development Community (SADC) region, given its contribution towards economic growth and employment creation (Muradzikwa, 2001:3).

Throughout history, the sector's performance has been strongly linked to progress in terms of trade, gross domestic product (GDP) growth, job creation, and employment growth. Moreover, it provides advantages for export growth in developing countries that utilise labour cost opportunities and fills the gap of evolving niches to meet buyers' demands (Ahmad & Kalim, 2014: 697; Keane & Velde, 2008:12). The industry's role in job creation has largely been linked to its capacity to employ a large number of unskilled labour from rural areas (Brenton & Hoppe, 2007:1). Furthermore, since the industry operates with low capital, low investment, and employs low skilled workers, it can adjust quickly to market conditions and economic fluctuations (Nordas, 2004:18).

All these advantages have been associated with the progress made in developing countries. For instance, within Macedonia, the textile industry contributes approximately one third to total employment and a third to the aggregate exports in the manufacturing sector whilst contributing about three percent to the total economic growth of the country (Krstevska & Petrovska 2013:4). Agarwal *et al*. (2017:687) likewise highlight the significant contribution of the textile

industry in the Asia –Pacific Trade Agreement (APTA) facilitating a multi-benefit among countries within a trade agreement.

Furthermore, this industry has been shown to be indispensable to the Asian economic development process. For instance, the industry has remained the backbone of Pakistan's economy. It has a significant contribution towards both GDP (9.5%) and exports by 60 percent. Additionally, in Pakistan's economy, the textile industry is the biggest employer contributing 39 percent of the total manufacturing labour force (Ataullah *et al.,* 2014:69). Nonetheless, despite the contribution of the textile and clothing industry to the global economy (especially due to the reduction of unemployment), this industry being a component of the manufacturing sector can contribute to the consumption of natural resources and the emission of polluting sewages and gases generating serious environmental and human health concerns (Majumdar & Sinha, 2019:177).

Within the South African context, the textile industry has likewise shown to play a vital role in economic stability. In 1996, the industry contributed 14.7 percent to total employment in the manufacturing sector and 6.5 percent to the gross value-added totals (Tregenna, 2008:7). In 2019 around 95 000 workers were employed in the textile and clothing industry, and the industry contributed nine percent to the national GDP (Charles, 2019:1). Despite this noteworthy importance, the industry has shown signs of deterioration for the last ten years with arguably, limited attention afforded to it. Breitenbach (2007:30) argues that the contribution of the textile industry towards employment has been declining since 1996. Specifically, between 2001 and 2006, its share of total employment declined primarily due to the growth level of textile product imports, especially those emanating from China and India (Breitenbach, 2007:42). From this point of view, the high speed of globalisation has made it difficult for the industry to compete with low-income countries (Stengg, 2001:6). This all has contributed to domestic economic losses reducing the industry's contribution to GDP and job creation.

The textile and clothing industry plays a significant and exceptional role in the South African economy. It contributes to job creation, economic growth, and social welfare. The textile and clothing industries are also one of those industries that assists many households from undergoing deep poverty (Van der Westhuizen, 2007:1). It is one of the industries that create both formal and informal employment. The textile industry remains the ideal model to sustain entrepreneurship, for it emboldens productivity, hard work, and self-reliance (Acuma, 2017:8). A major challenge faced by this industry has been a high speed of globalization, which has

made it difficult for countries similar to South Africa to compete in the global markets (Claassens, 2017:1-11; Stengg, 2001:3). The more globalised environment and competition, in some instances, have made it less expensive to import textile and clothing products as opposed to producing them through domestic factories. Consequently, domestic economies, especially those with high labour costs, are set to lose a part of their GDP and whilst undergoing job destruction. Given the aforementioned, it is important to conduct this study as it adds to the body of knowledge on the subject within the South African context. In this case, the study primarily seeks to assess the role of the textile and clothing industry in the South African economy.

1.2 PROBLEM STATEMENT

The global economy is faced with multiples challenges, which among others, include slow growth, fuel price fluctuations, and, more recently, the incompatibility between growth and labour capacity (World Bank, 2018:116). Due to import penetration from developed and other developing countries, the high cost of factors of production, and labour unrest, South African industries have become less competitive (Edwards & Jenkins, 2015:454; Ganda & Ngwakwe, 2015:252). Additionally, globalization has likewise imposed various challenges, which has been greatly linked to weaker performing manufacturing sectors of developing countries. Moreover, the integrated world has contributed to economic sectors, particularly in manufacturing, mainly due to the adoption of technology as a means of production (Ford, 2015:19). In developing countries, the manufacturing sector, especially the textile and clothing industries, are facing various challenges. Among these challenges includes improper infrastructure, unskilled workers, various electricity crises, high tax rates, difficulties towards securing sufficient bank loans, political crisis, market and product diversification, and stagnation of investment (Rakib & Adnan, 2015:77). The adoption of advanced technology is mostly considered in developed countries to alleviate the issue of unemployment amongst unskilled workers and low productivity within this industry. The adoption of technology is moving the textile and clothing industry from its traditional roots. The use of technology brings smart functionality into textiles and clothing by speeding up the design process and increasing the total outcome (Papachristou & Bilalis, 2015:32).

Contrary to developed countries that are improving their textile and clothing industry through technology growth yet reducing job opportunities, one of the major concerns in developing countries, which includes South Africa, is the challenge of high rates of import penetration

(Claassens, 2017:1-11). Imports growth within textile and clothing industries cause harm not only for the industry's ability to create jobs but also on its contribution towards total exports and GDP. Consequently, to cope with the import issue, the South African textile industry is using more capital in spinning and weaving than labour inputs (Black, Craig & Dunne, 2016:2; Claassens, 2017:3). Although production in the manufacturing sector, via textile and clothing industries, might have improved, jobs in this sector are facing a downward trend because of the use of capital intensive and improved technology production practices (Gilfillan, 2017:8). This signifies the importance of understanding the needed areas of growth and the potential that the textile and clothing industry has. This sector is considered to be amongst the leading options to improve economic growth and employment, for it is counted amongst the major labour-intensive industries in the country (Claassens, 2017:1-12). Modern and contemporary globalised pressures, however, have brought with it various implications for these industries, especially in the South African context. However, due to global competition faced within the South African textile and clothing industry, it is important to reassess the significance of this industry towards the national economy (Bhorat & Rooney, 2017:6-7; Giovannetti & Sanfilippo, 2016:11).

Given the significance and contribution of the textile and clothing industry for the manufacturing sector as well as local and national economy to assist in job creation and to improve total exports in the manufacturing sector (Koszewska, 2018:338; Resta *et al.*, 2016:621-632), it is important to analyse the role of textile and clothing industry in South Africa. This outstanding contribution from the textile and clothing industry suggests a better understanding of the effect of this industry on specific economic variables that play an important role within the South African economy. Therefore, the aim of the study is to add to the existing literature on the textile and clothing industry by assessing the contemporary role and significance of the textile and clothing industry within the South African economy.

1.3 OBJECTIVES OF THE STUDY

The following objectives have been identified and formulated for the study:

1.3.1 Primary objective

The primary objective of the study is to analyse the impact of the textile and clothing industry on South Africa’s economic growth.

1.3.2 Theoretical objectives

For this study to achieve its primary objective, different theoretical objectives are formulated:

- To define key concepts and elucidate different aspects of the sectoral composition of the economy;
- To discuss and provide an overview of the different theories relating to economic growth and international trade which have relevance to the economic contribution of textile and clothing industries;
- To review the empirical literature on the contribution of the textile and clothing industry towards the economic performance of developed and developing countries and more specifically, South Africa;
- To review and discuss the nature of textile and clothing industries' performance from the perspective of various countries.

1.3.3 Empirical objectives

Following the primary objective of the study, the following empirical objectives were formulated:

- To analyse the role of the South African textile and clothing industry towards economic growth and national income;
- To analyse the long-run relationships between employment, exports, and output of the textile and clothing industry on South African economic growth;
- To determine the short-run relationships between exports, employment and output in the textile and clothing industry on South African economic growth;
- To investigate the causal relationships between employments, exports, and output in the South African textile and clothing industry and economic growth in the country.
- To provide strategies and policy recommendations that can possibly assist the textile and clothing industry's revitalization process.

1.4 RESEARCH DESIGN AND METHODOLOGY

1.4.1 Literature review

Secondary sources such as academic articles, papers, and commercial abstracts, journals, theses, books, bibliographic databases, and the internet search engine were employed as a source of essential information. The literature review discusses theoretical literature and empirical literature in order to assist in elucidating the relationship between the performance of the industry and economic growth.

1.4.2 Empirical study

1.4.2.1 Data collection

In order to stay objective, the current study followed the quantitative approaches built on a paradigmatic functionalist basis. Henceforth, the present study was based on a time series analysis using a secondary dataset. The analysis focused on annual data between 1994 and 2018. The selected period for analysis was based on the fact that the South African economy experience enormous changes since 1994, thus including series of pre-1994 can possibly lead to erroneous results. Additionally, annual data are used owing to the lack of monthly and quarterly data. Analysis of the fluctuating effect of regressors on the dependent variable over 25 years assisted in determining the relationship between the textile and clothing industry's performance and South Africa's economic growth. The data for analysis is obtained from both the South African Reserve Bank (SARB) and the Quantec database. A total of 25 annual observations were included in the analysis.

The study employed GDP at constant prices as the dependent variable, whilst employment, total exports, and gross value-added from the textiles and clothing industry were treated as independent or explanatory variables. The real effective exchange rate was also included to serve as a control variable for the analysis. All variables were transformed into a natural logarithm, as it allowed for an easy interpretation of the regressed variables. Table 1.1 below indicates the variables, their acronyms, and databases from which they are acquired.

Table 1.1: Variables labelling and sourced construction

Variable	Acronym	Database
Gross domestic product	GDP	South African reserve bank
Employment in the textile and clothing industry	EMP	Quantec database
Exports from the textile and clothing industry	EXP	Quantec database
Gross value added in the textile and clothing industry	GVA	Quantec database
Real effective exchange rate	EXR	South African reserve bank

Source: Author's own compilation

1.4.2.2 Data analysis

The empirical objectives of the study were attained through the use of different econometric models and statistical approaches. These approaches were used to determine the short-run and long-run relationships as well as the causal relationships between the textile and clothing industry and economic growth in South Africa. These involved unit root tests to assist in determining the stationarity level of variables and the order of integration. Given that the study's data sample is small and that variables are a mixture of I(0), I(1) the autoregressive distributed lag (ARDL) model was considered the most appropriate model for cointegration analysis. Furthermore, the Toda-Yamamoto causality test was used to define the causal relationship amongst the variables.

1.4.2.3 Model specification

The general model on which the analysis is built on is shown in equation 1.1 below:

$$LnGDP_t = f(LnGDP_{t-1} + LnEMP_t + LnEXP_t + LnGVA_t + LnEXR_t + e_t) \ldots\ldots\ldots\ldots\ldots\ldots (1.1)$$

Where $LnGDP_t$ is the logarithm of the national gross domestic product at time t, $LnEMP_t$ is the logarithm of employment within the textile and clothing industry at time t, $LnEXP_t$ is the logarithm of the total exports of the textile and clothing industry at time t, $LnLGVA_t$ is the gross value-added or output in the textile and clothing industry at time t, $LnEXR_t$ is the logarithm of the effective exchange rate at time t and e_t is the error term or white noise. The analysis included descriptive analysis, trend analysis, unit roots, the bounds test for cointegration, and an error correction model (ECM) for the short-run analysis. In addition to this, causality, stability, and diagnostic tests were also completed as part of the empirical analysis of the study.

1.5 ETHICAL CONSIDERATIONS

This study was conducted using secondary data, which is made publicly accessible from the South African Reserve Bank and the Quantec database. The data is available for the use of the public and is available in the public domain. Ethical clearance was granted from the Faculty of Economic and Management Sciences' ethics committee (Ethics number: NWU-0105-19A4). Throughout the conduct of the study, all the North-West University's ethical guidelines were strictly followed, whilst all work sourced were dully acknowledged through the use of the NWU Harvard method.

1.6 SIGNIFICANCE OF THE STUDY

Whilst a more globalized world has contributed positively towards the prosperity of various countries, increased trade competition holds various implications, especially for the developing world. None more so has this been evident on the performance of the South African textile and clothing industry. Through the analysis conducted in this study, various concerns regarding the contribution of the industry towards much needed economic growth and wellbeing are addressed and elucidated on. The findings of the study in this regard provide much-needed insight into the current state of the South African textile and clothing industry and the specific nuances affecting its potential as a growth catalyst. In doing so, the research added to the limited body of knowledge surrounding the contemporary role of the industry within South Africa, which has the potential to inform and advise the industry's policy landscape. With this in mind, the study provides various recommendations and strategies that can assist in better managing the textile and clothing industry not only in South Africa but also in other developing countries with similar economic conditions.

1.7 CHAPTER OUTLINE

Chapter 1: Introduction and background

The first chapter provides the introduction and background of the study. It also presents the aim and structure of the study.

Chapter 2: Literature and empirical review

This chapter provides a theoretical review of the major concepts covered. It also reviews and evaluates the theories and literature specific to the interest of the study detailing and reviewing

the interactions and relationships between imports of goods and the local textile and clothing industry in South Africa.

Chapter 3: A global and regional review on the nature and performance of textile and clothing industries

Chapter three firstly presents an empirical review of the performance of the textile and clothing industries within selected developed and developing countries. In doing so, it highlights the role played by this industry towards economic growth and employment within those countries. Secondly, this chapter provides and discusses trends amongst the included variables under consideration for the period between 1995 and 2019. In doing so, it provides context surrounding the relationships between the selected variables that are analysed and discussed in Chapter 5. This chapter was not limited to the South African economy as it compared industrial trends from various economies across the globe.

Chapter 4: Research design and methodology

This chapter firstly discusses the sample period and data collection. Secondly, the chapter provides a detailed discussion of the statistical approach and econometric model employed by the study to analyse the long-run and short-run relationships between the variables. This chapter also presents the study design and the adopted philosophical paradigm. Furthermore, it elucidates the approach used to determine the causal relationship between the study variables.

Chapter 5: Analysis and discussion of empirical findings

This chapter focuses on the data analysis, which was carried out with the purpose of addressing the empirical objectives of the study. It presents the empirical outcome of the study and elucidates the discussion of the results.

Chapter 6: Conclusion and recommendations

The final chapter provides a summary of the entire study and a concise conclusion of the main findings. It further presents the appropriate recommendations attempting to inform possible revitalization strategies for policymakers and stakeholders. Based on the limitations of the current study, the chapter likewise details suggestions of areas of inquiry for future studies.

CHAPTER 2

LITERATURE AND EMPIRICAL REVIEW

2.1 INTRODUCTION

The textile industry is one of the most labour intensive industries within the manufacturing sector, and it plays an important role not only in developed but also for developing countries' economic growth (Adamopoulos, 2010:83). Besides its share towards the latter, this industry employs a significant number of low skilled and unskilled workers (Bhagwati, 1958:201-205; Rebelo, 1991:500-521). Thus, it contributes to job growth or unemployment eradication. Its share in total exports also remains significant, especially within the international trade landscape (Lucas, 1988:3-42). This chapter provides various definitions and descriptions of the textile and clothing industry together with economic growth, and employment concepts that form a background for the study's discussion and analysis.

The structure of the current chapter is presented as follows: Firstly, the conceptualisation and definitions of the key concepts, including an overview of growth in the textile and clothing industry, are provided. Secondly, the chapter presents and discusses the various theories that pertain to growth and trade. Thirdly, given the importance of trade and the international exchange within these industries, the chapter discusses different forms of markets and strategies used to gain trade advantages. This is followed by a discussion of the textile and clothing industry in the South African context, followed by an empirical review of the significance of this industry in developed and developing countries' economies. Lastly, the synopsis closes the chapter's presentation and discussion and highlights the main ideas from the concepts that follow below. The latter assists in achieving theoretical objectives such as defining key concepts and elucidate different aspects of the sectoral composition of the economy.

2.2 CONCEPTS AND DEFINITIONS

This study's main focus is on the role of the textile and clothing industry within South Africa. Since the effectiveness of these industries depends on other economic indicators, it is important to define and conceptualize the main concepts that form the core discussion and analysis of the study.

2.2.1 Economic growth

The textile and clothing industry's outcome plays a vital role in the country's economic growth. As one of the key concepts and useful variables for the study, economic growth needs to be defined and elucidated. According to the International Monetary Fund (IMF) (2012:20), economic growth can be defined as an economic cycle focusing on inflation alterations and market value of goods and services. In this regard, economic growth refers to percentage growth in the real gross domestic product (GDP). Economic growth is a key driver of improvement in the population's standard of living rather than the increment of the economy's productivity. Contrary to the IMF's definition, Adamopoulos (2010:83) defines economic growth as a concept that emphasises the level of productivity growth.

Prior to the definitions provided by Adamopoulos (2010) and the IMF (2012:31), Smith (1904:72) had defined economic growth as an increment of the adjusted gross domestic product for inflation using various components that subsidise the process of economic growth making GDP a complex issue. Further, Levine (1997:47) argued that the size of the workforce, labour productivity, and improved technology remain the major drivers of economic growth. That is to say, all aspects of growth have to improve to stimulate development and economic growth. Economic growth is an indispensable mechanism that stimulates people's value and freedom leading to high levels of life expectation and health improvement, and ultimately a better standard of living (Sen, 1999). Economic growth is primarily determined by investment, human capital levels, together with trade openness (Lewis, 1980:18; Chen & Feng, 2000:21; Marx, 1973:19; Rostow, 1960:7).

2.2.2 Primary, secondary and tertiary sectors

Any country's economy depends on three major sectors. These are primary, secondary, and tertiary sectors. The primary sector is mostly concerned with natural resources such as land, forestry, fishery, and mining. The primary sector is regarded as the fundamental and basis sector as it supplies various raw materials that are used in the secondary sector to produce semi-finished and finished materials (Kjeldsen-Kragh, 2007:17). Development of the primary sector leads to developments in secondary sectors as enough resources are supplied in abundance (Praburaj, 2018:4). Contrary to the primary sector, the secondary sector consists of the industrial sector. This sector is engaged in manufacturing tangible and finished goods, and in all activities that involve construction (Kjeldsen-Kragh, 2007:21). The major aim of the

secondary sector is to produce goods and materials needed for domestic and international customers and markets. Therefore, the secondary sector plays an important role in the country's economy, especially in terms of export-led growth, which is closely linked to the country's exchange rate and currency stability. Additionally, the secondary sector supports and boosts development in both primary and tertiary sectors (Hussmanns, 2004:3)

Contrary to both primary and secondary sectors that are tangible in nature, the nature of the tertiary sector is intangible. This sector is commonly known as the services sector. Services such as medical, finance, beauty, hotels, and education needed by consumers are provided by the tertiary sector. These three sectors work hand in hand; for instance, the early civilisation began within the primary sector then continued with the secondary sector through industrialisation supported by the services sector (Patro & Acharya, 2005:3). Consequently, a country's development and the majority of its economic growth are based on the results from these three sectors. Additionally, countries are classified in terms of development based on the dominance of one of these three sectors. A country whose major economy is based on the primary sector is considered an under-developed nation; a country whose major part of GDP comes from industries is considered as a developing country, whilst a country where a large portion of GDP is generated by the tertiary sector (services), is classified as a developed one (Ōmae, 1990:9; Vollrath, 2009:325).

2.2.3 Manufacturing sector

The secondary sector has an important role in the country's development and social welfare. A country whose economy is based on the primary sector has to sell its raw material to get income, while those with the ability to transform their raw material into semi-finished and finished goods are able to export the finished products. (Zoltan, 1987:359). Thus, manufacturing remains an indispensable sector in terms of export-oriented growth, especially in middle-income countries (Herman, 2016: 982; Söderbom & Teal, 2003:15). Besides its role in exports, the manufacturing sector contributes to job creation and job sustainability (Ali, 2018:26). In addition, aside from the global benefits of the manufacturing sector, this sector remains one of South Africa's main economic pillars. Despite the fluctuation in South African job creation, the textile and clothing industry remains as important as other industries in the secondary sector (Bhorat & Rooney, 2017:12). In 2016, the manufacturing sector accounted for more than 60 percent of South African exports (IDC, 2017:7). The manufacturing sector is composed of

various industries that include: food and beverages (F&B), clothing, textile, chemical, metal, and the automotive industry. The focus of this study is the textile and clothing industry.

2.2.4 Textile and clothing industry

The textile and clothing industry is a complex and heterogeneous industry that incorporates various activities (Stengg, 2001:1). These activities start from the transformation of raw material into fabrics, fibres, and yarns that are in return used to manufacture finished and semi-finished products such as geotextiles, hi-tech synthetic textiles, industrial filters, wool, bed linen, household furniture garments, sports equipment and medical textiles (Stengg, 2001:11). Textiles are described as all those products that comprise of yarns, fabrics and made-up textile commodities (kitchen linens, luggage, carpets) demonstrating Standard International Trade Classification (SITC) 65 (Seyoum, 2010:8). On the other hand, clothing is classified under SITC 84, and it comprises all garments and accessories, headwear, neckwear, and gloves. Additionally, it includes made-up products used in clothing accessories and apparel (Seyoum, 2010). Clothing can be made of any textile material such as fibre, wire, or pliant fabric that is woven, felted, knit, sewn, and needled (Calanese Corporation, 2001:9).

2.2.5 Employment

It is difficult, if not impossible, to find a standardised definition of employment. The definition of the term "employment" depends on the perspective of the person who is defining it (Habanabakize, 2018:293; Hussmanns, 2004:3). Consequently, employment can refer either to the activity or to the person performing the activity. Various scholars provided a number of definitions for the concept of employment. Black *et al.* (2013: 129) have described employment as each activity a person performs for himself/herself or performed for another person in exchange for profits, wages, or any other form of payment. Taking into account the person who performs the activity, Krugman and Wells (2013:214) view employment as the aggregate workers within the economy, currently employed for part-time or full-time jobs. The term employment may also refer to the state of any individual within the workforce, over an identified time period, carrying out an economic activity that generates benefits, income, or revenue in the form of cash or salary (Hussmanns, 2004:8). As one can see, these definitions denote both self-employment and paid employment.

Nonetheless, an employed person is, specifically from a South African perspective, seen as the one whose age falls between 15 and 64 years old, spending at least one hour running his/her business or performing any activity that provides him/her wage in the form of remuneration (Stats SA, 2015:6). Public and private are the two types of employment that exist in the economy (Lewis, 2016:2). Employment is classified as public if the activity performed by an employee is provided by government agencies or government institutions. On the other hand, private employment refers to jobs that are issued by individuals, firms, or the corporate sector (Lewis, 2016). From these two types of employment (public and private), it is possible to deduce the other two groups of employment, namely formal and informal employment.

2.2.5.1 Formal versus informal employment

Both formal and informal employment exists in any country's economy, and in most cases, many people are informally employed in developing countries (Chen, 2005:13). Growth of informal employment results from various social issues. These issues include a mismatch between the structures of economic opportunities, the imbalance between industrial employment and population growth rate, state regulation of the economy, global competition, and the nature of capitalism growth (Castells & Portes 1989:19; Moser 1978:6; Sethuraman 1976:3; Tokman, 1978:75). Informal employment refers to those people performing their activities within informal sectors without any formal or written agreement from their employers. These employees lack access to various employee benefits, such as pension income and medical support from their employers (Stats SA, 2015:11).

Contrary to informal employment, formal employment refers to individuals working within the formal sector, performing (in most cases) secured employment, and with the access to all employment benefits provided by their employers (Gallin, 2001:537). Both forms of employment (formal and informal) are provided from both the private and public sectors. For instance, most Sub-Saharan countries' employment (around 80 percent) in the private sector is informal. In other cases, employees such as new graduate' internships are considered informally employed. They do not have the same benefits as other formally employed workers, and working procedures are different (Johannes & de Laiglesia, 2009:3). Generally, there is no standardised definition of the informal sector. Consequently, while economists discuss employment, their discussion refers to formal employment, and since the informal sector (or informal employment) involves illegal activities, in some cases, the informal sector is referred to as the shadow economy or underground economy. Nonetheless, in countries with low

economic growth such as South Africa, informal sectors are regarded as a continuous source of employment and income for many individuals (Mohr, 2015:245).

2.2.5.2 Employment measurements

Contrary to the definition of employment, Mohr (2015:244) argues that employment is easily measured. The level of employment or the number of employed people is attained by accounting people with jobs at the time of the measurements. On the other hand, the number of unemployed people is known by counting people who are able and willing to work yet without jobs at the time of the measurements. This is a simple form of measurement of employment, and unemployment is only considered theoretical. In practice or real life, measuring the total number of employed and unemployed people is not an easy task. It is not easy to ascertain when a person is really employed, and even when these people are classified, the figure (numbers) differs based on the definition used (strict or expanded definition) (Mohr, 2015:246). Additionally, two measurements of employment levels were suggested by Hall and Taylor (2007:71). Firstly, employment can be measured using a survey to determine the number of people with jobs during the survey period. The second method consists of a survey conducted by employers. In this method, employers will provide the number of their employees, and the aggregate of the statistics provided by these employers will determine the national level of employment. The difficulty in measuring the employment level resides in determining when a person is really fully employed (Mohr, 2015:245).

2.2.6 Exports of goods and services

Exports is another economic indicator that can influence the level of economic growth. However, the magnitude effect of exports on economic growth depends on the total output, country openness to trade, and the demand elasticity of exportable products. This is why exports contribute more to the economic growth in the developed countries when compared to their developing counterparts, as the former experience a higher manufacturing growth rate than the latter (Kilavuz & Topcu, 2012:201). Growth in one industry impacts on other industries within the same sectors based on the benefit from positive externalities (Kaldor, 1968:386). This explains how growth in the textile and clothing industry can contribute to the exports in the manufacturing sector, which, in return, impact more on economic growth. In some developing and low-income countries, such as Cambodia, Bangladesh, Pakistan, and Sri Lanka, the textile and clothing industry accounts for more than 50 percent of the total

manufacturing exports (Keane & te Velde, 2008:1). Given the significance of exports towards economic growth and the high level of interconnectedness that these activities share with textile and clothing industries, one of this study's objectives is to determine the effect of textile and clothing exports on South Africa's economic growth progress.

2.2.7 Real effective exchange rate

The previous sub-section focussed on the effect of exports on economic growth. However, a country's export is not achieved in an isolated manner. Many economic factors influence the level of exports, and these factors include a nation's exchange rate. The exchange rate plays a significant role in the trade openness of a country (Chinn, 2002:1). However, there are various types of exchange rates. These include real exchange rate, nominal exchange rate and real effective exchange rate. While a nominal exchange rate refers to the relative price of two currencies determined by the policies of those two countries and has no significant role in trade among countries, the real exchange rate is firstly adjusted to the inflation rate, and it plays an important role between countries' trade relations (Sumner, 2017). Centrally to both nominal and real exchange rates, the real effective exchange rate refers to the weighted average of a country's currency in relation to other currencies' exchange rates. This type of exchange rate is used to evaluate the power of one country's currency relative to the world's major currencies, and this type of exchange rate is also referred to when measuring a depreciation or appreciation of a country's currency (Divakar, 2018). Since South Africa is open to trade to several countries, the study analysis will consider the real effective exchange rate.

2.3 A THEORETICAL OVERVIEW ON ECONOMIC GROWTH, TRADE, AND INDUSTRY PERFORMANCE

The textile and clothing industry does not operate in isolation. Its operating model follows a number of theories. These theories include growth theory, trade theory, competitive advantage theory, and the new trade theory. In the next section, various theories are elucidated and discussed, thriving to achieve the theoretical objectives formulated in Chapter 1.

2.3.1 The divergence between economic growth and economic development

The concepts, economic development, and economic growth are closely linked and yet not synonymous. The literature offers various definitions that highlight the distinction between these two concepts. Nonetheless, for this study's purpose, only two definitions are considered.

Todaro and Smith (2006:811) view economic growth as a stable procedure by which production capacity expands over a certain time period in order to increase the national output and income levels. On the other hand, McConnell and Brue (2002:137) define economic growth as an external shift observed in the production possibilities curve of a society or nation. McConnell and Brue (2002:136) maintain that this shift may result in various sources that include increases in production quality, resource supplies, or technology improvement.

It is important to highlight that the two abovementioned economic growth definitions are qualitative in nature. These definitions do not elucidate how the nation's wealth is spread. That is, based on these two definitions, it is difficult to know if a country enjoying economic growth will surely experience improvement in its people's wealth (Ogbokor, 2015:54). Consequently, one could ask if using the economic growth term is really the same as using economic development. The literature considers the term economic development as a process leading to an improved standard of living within a community, a society, or a country. In other words, a country that experiences economic development allows people to have easy access to the economic health and basic needs such as food, clean water, sanitation, shelter, health, and education (Lucas, 1988:3-42). Additionally, economic development refers to a process leading to a country's general improvement in human capacity, literacy level, security needs, health facilities, physical infrastructure, welfare schemes, regional rankings, and competitiveness (Meier, 1968:112-134). Despite the distinctions, the literature suggests that economic growth leads to the process of economic development.

Freedom, self-esteem, and life-sustenance are the three major components of economic development identified and elucidated by Goulet (2006:11-18). He explains that life-sustenance deals with the accessibility to basic life needs. These life needs include food, potable water, shelter, clothing, cleanliness, and education. These are also the criteria used to determine whether a country is developed or not. An economically developed country should be able to provide these basic needs to its people (Goulet, 2006:11-18). Self-esteem is concerned with feelings of confidence, dignity, pride, and independence. A developed country is one that possesses power, capability, capacity, and influence. Instead of being exploited by any other country, an economically developed country is able to condition relations on equal footings with its peers (Galbraith, 1980:23-40). Based on these facts, developing countries remain in the continuous pursuit of economic development that would free them from dependence on their developed counterparts and get the freedom allowing them to own their

future and giving them the ability to make their own decisions. These abovementioned three core values or aspects of economic development were also explained by Sen (1999:22). Sen (1999:22) suggests that economic development should always be considered as a leading process towards capacity and social life improvements. One of the indicators that ascertain the existence of economic development within a given country will be that its population has full access to their basic needs (Goulet, 2006:11). Thus, both Sen (1999:22) and Goulet (2006:11) highlight the significance of the economic growth of a citizen's welfare in any country.

Based on the abovementioned difference between economic growth and economic development, one can notice the following inferences: firstly, these two terms, "economic development and economic growth are not substitutes, yet they are complementary. Secondly, while economic development aims for improvement in general social wellbeing, economic growth is mostly concerned with increases in gross domestic product and market productivity. Additionally, economic growth is a predecessor of economic development. Nonetheless, achieving economic growth for a nation does not necessarily mean that economic development will also be achieved ipso facto (Ogbokor, 2015:55). Regardless of these disparities, it is important to note that the main focus of the study is economic growth and not economic development.

2.3.2 Solow's neoclassical growth theory

As discussed above, economic growth remains an indispensable factor in countries' development; thus, it needs to be well understood. The Solow neoclassical growth model is one of the voluminous appendages of the traditional growth theory, and it commenced with scrutiny of Solow (1956:65-94). On the basis of these two economists' ideas, a paramount of literature was established overtime on country growth performances. According to Dasgupta (1999:361), the Solow Neoclassical Growth model is attached to the production function expressed in equation 2.1 below:

$$Y=AF(K, L) \quad \text{(2.1)}$$

The F denotes a notation of a function in relation to the national outputs (Y), variation in technology (A), and the two major factors of production, namely capital (K) and labour (L). According to Solow (1956:65-94), technical change refers to any development that may cause

a shift in the production function. This change is either due to the education or technological improvements of a country.

The neoclassical growth theory is an economic theory indicating how steady economic growth should be accomplished with the problem answered through the three driving forces, namely labour, capital, and technology. Besides these mentioned three factors (labour, capital, and technology), the theory argues that other factors such as foreign trade (imports and exports) play an important role in the country's economic growth (Todaro & Smith, 2009:74). From this point of view, by varying the amount of labour within the production function, the equilibrium state would be accomplished (Todaro & Smith, 2009:75). In the presence of new technology, labour and capital have to be adjusted to maintain the growth equilibrium. This theory emphasises that technology change has a major influence on economic growth and that technological advancement happens by chance. The theory argues that economic growth will not continue unless it continues with advanced technology (Todaro & Smith, 2009:77). The theory highlights that, due to their saving levels, closed economies experience slow growth, especially in the short run. Open economies, nonetheless, enjoy economic growth in both the short and long term, regardless of their saving levels (Bhagwati, 1958:201; Rebelo, 1991:500). The country with an open economy enjoys its partners' economic growth. Thus, trading among countries plays an important role in domestic economic performances. For instance, a country that exports capital increases its returns on investment while a country that imports capital boosts its capital stock and increases productivity. Thus, the more the country is involved in international trade, the more there are opportunities and changes in growth in its economy (Ghattak, 1978:17).

A number of economists, such as Karl Marx (1973:92), Adam Smith (1904:106), David Ricardo (2004:73), John Maynard Keynes (1936:223), Solow (1956:191), and more others, have come out with various types of growth theories. What is common among these theories is that these economists agree that economic growth is the foundation of countries' improvement and people's standard of living. For instance, Smith (1904:65) employed the growth models and related tools to assess why some nations have improved their economies whilst others are still struggling.

The existing theories argue that economic growth is a process in which both financial and real sectors interact to generate an active economic growth (Smith, 1904:65). Figure 2.1 below exhibits Solow's (1956) neoclassical growth model and elucidates the power of technology

improvement to influence the long term growth in the economy. Using the Solow growth model, labour productivity is considered as the main driving force of the total outputs. The per capita output is measured using the economy's total output (Y) and divides it with the labour force in the economy (L) (Solow, 1956:14). This per capita output (Y/L) is regarded as the substitution of the standard of living and the determinant of economic prosperity levels (Solow, 1956:7). In the view of the neoclassical theory, government involvement within economic activities are less needed, for it is considered to worsen the economic situation (Stiglingh, 2015:13).

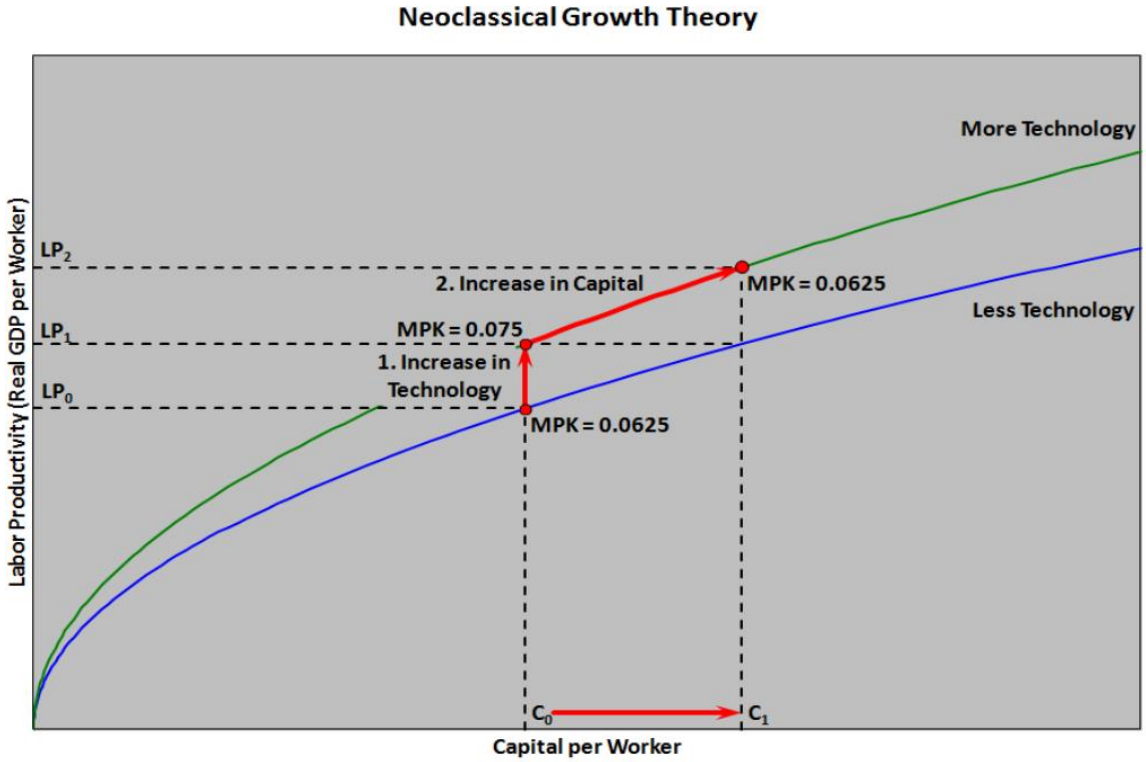

Figure 2.1: Solow's neoclassical growth model

Source: Stein (1969:154)

The Solow neoclassical theory advocates that the country's long term growth sustainability depends on that country's level of technological growth and the commitment to building a better quality within the labour force (Solow, 1956:71). Solow (1956:72) asserted scientific processes that are autonomous to economic forces, which determines the speed of positive changes within technology. This theory emphasises that while analysing or interpreting economic growth, scholars should use the long term growth rate as it provided exogenously from the exogenous forces instigated by the economic system. Nonetheless, as it is illustrated

in Figure 2.2 below, Solow's neoclassical model is opposed by the endogenous growth theory stipulating that the quickness of progress in technology and economic growth depends on long-term economic factors such as research and development and innovation (Aghion & Howitt, 1998:23).

Solow's neoclassical growth model encompasses various economic advantages, and one of these is that it establishes a substantial enhancement over another one-sector growth model such as Harrod-Domar model that attempts to elucidate economic growth through using a fixed capital coefficient (Ozdemir, 2017:136. This shows the upper hand of the neoclassical model because it includes other factors of production, namely labour, technology, and other vital exogenous features such as international trade (Todaro & Smith, 2009:129). Additionally, the neoclassical growth theory provides a flawless insight into the connectivity amongst economic growth, the role of technology, innovation, and international trade (Jones, 2002:74). Furthermore, unlike other growth theories or models, the Solow neoclassical growth model allows for substitution among factors of production through the use of the total production function. Consequently, various development economists find Solow's neoclassical growth model to be more grounded compared to most of the modern economic growth models (Mankiw, 2013:124).

Nonetheless, the neoclassical model has experienced various criticisms. The most important criticism faced by this approach is that it seems to be powerful in theory and not in practice. Besides, it is more flexible, and it does not provide empirical models amenable towards estimation and evaluation (Tiryaki & Tiryaki, 2007:121). Moreover, this theory fails to plainly explain how the determinant of the steady-state of the economy, namely savings, human capital, technological change and population growth emerge and fluctuate over the course of the growth process (Arora & Vamvakidis, 2005:48-50; Nelson & Winter, 1974:887-889; Perkins *et al.*, 2006:43). Additionally, the major deficiency of neoclassical theory remains its inability to elucidate various rudimentary issues in relation to the economic growth process. The neoclassical theory, based upon its premise, suggests both equal and unequal growth rates among countries, yet the theory does not explain that model (McCallum, 1996:41). Nonetheless, the reality remains that, in the long run, countries archive unequal economic growth (Ogbokor, 2015:59). However, despite these criticisms, Solow's model remains the foundation of economic growth theories (Easterly, 2001:52).

Thus, in linking the aforementioned theory to this study topic, it is important to highlight that the theory can be applied in the textile and clothing industry in order to increase its contribution to economic growth. Instead of focussing on labour improvement, the theory elucidates the significance of capital growth in firstly promoting the textile and clothing industry, leading to better performance of the economy. However, using more capital and technology can improve productivity and revenue in the economy yet destroy more jobs. Therefore, a balance between the use of technology and improving labour demand remain indispensable to create equilibrated welfare (Schulte & Howard, 2019:2).

2.3.3 New growth theory/Endogenous growth theory

Due to the inability of the neoclassical theory to explain the causes of the great disparity in the levels of national income between developed and developing economies, the new growth theory grew out of frustration (Dasgupta, 1999:355). The endogenous theory emerged in the 1980s, suggesting that economic growth is generated by the economic system, not from exogenous or outside drivers (Romer, 1994: 3). Contrary to the neoclassical theory that gives more privilege on capital, labour, and technology as a means of production and drivers of economic growth, the advocates of endogenous growth theory suggest that productivity improvements emanate from investment in human capital and innovation (Funke & Strulik, 2000:512). The endogenous growth theory does not invoke technological changes to explain, for instance, why per capita income level has increased subsequent to the industrial revolution. Due to the policy implication (smother or promote production and innovation), under the endogenous growth theory, instead of being a constant term in growth models, technology is considered as a normal variable.

However, they invoke the contribution of private and public sectors within the innovation process (Grossman & Helpman, 1994:23; Romer, 1994:3). Additionally, the proponents of this theory highlight the significance of a knowledge-based economy for a country to sustain and maintain its competitive advantage within foreign markets, especially in fast-growth industries (Pack, 1994:55). Madsen *et al*. (2010:37) assert the following benefits of acquiring knowledge or economic ideas: the first is that every industry or market possesses the potential to experience increasing returns to scale or economies of scale. The second is that investment in R&D remains a groundwork of technical evolution. Lastly, if leaders possess economic knowledge and economic ideas, government policies have the power to assist and create new

businesses, expand existing ones, and encourage entrepreneurs to stimulate job opportunities within the economy.

Endogenous growth theory can be subdivided into two categories, referencing the previous discussion. The first category of the endogenous growth model emanated from the works of Romer (1986:3), Lucas (1988:6) and Rebelo (1991:7). Then followed the works of other economists (Aghion & Howitt, 1992:9; Grossman & Helpman, 1994:11) that expanded more unambiguously on the technological change within endogenous models (Oviatt & McDougall, 1994:45). The aforementioned models underlined the role of promoting economic growth and investment in research and development. By way of comparison, technical change is regarded as an endogenous variable contrary to the neo-classical model that considers technological progress as an exogenous component (Melitz, 2003:1695).

It is argued that the knowledge acquirement is positively associated with the scale of economic activity proportional to capital accumulation (Romer 1986:1037). Constant returns to consistent factors play an essential role in sustainable growth. He furthermore, acknowledged the likelihood of knowledge spill over, which may result in diminishing returns to capital within a specific firm. Correspondingly, Lucas (1988:3) raised and then applied a total production function method that allow external factors to the human capital.

In their contribution to endogenous growth literature, Aghion and Howitt (1992:323) reinforced the Schumpeterian model of growth using creative destruction. This model gives opportunities for learning by doing and replaces outdated methods by new innovation. Additionally, the new growth theory, contrary to the neoclassical model, suggests that the technological level within the economy originates from international capital transfers among developed and developing countries (Todaro & Smith, 2009:147). Therefore, it can be noted that through these global movements, international trade (imports, exports) plays a significant role in the nations' economic growth. The contribution of imports towards economic growth is significant as it acts as a channel of knowledge transfers and technological spill overs from developed to developing countries, which upsurge the output levels within the developed countries (Grossman & Helpman, 1991:147).

Contrary to Solow's model, the endogenous growth theory suggests that economic growth is generated by internal factors rather than external ones (Freeman, 2002:205). This assumption supported Smith's (1904) view suggesting that economic growth remains an endogenous

phenomenon (Chang & Caudill, 2005:20). In Smith's (1904) view, economic growth is subjected to the activities and decisions made by economic agents (Romer, 2011:136). In the endogenous theory, more attention is given to the concept of new knowledge. In this theory, the new technical knowledge is perceived as a current good that will become a public good in the future or long run (Ray, 2010:58). Figure 2.2 indicates that the endogenous growth theory mostly depends on the constant returns to scale. This is essential to accumulate factors of production and to generate continuous economic growth (Stiglingh, 2015:15). In this case, increasing production will result in higher outputs (Dornbusch *et al.*, 1998:81).

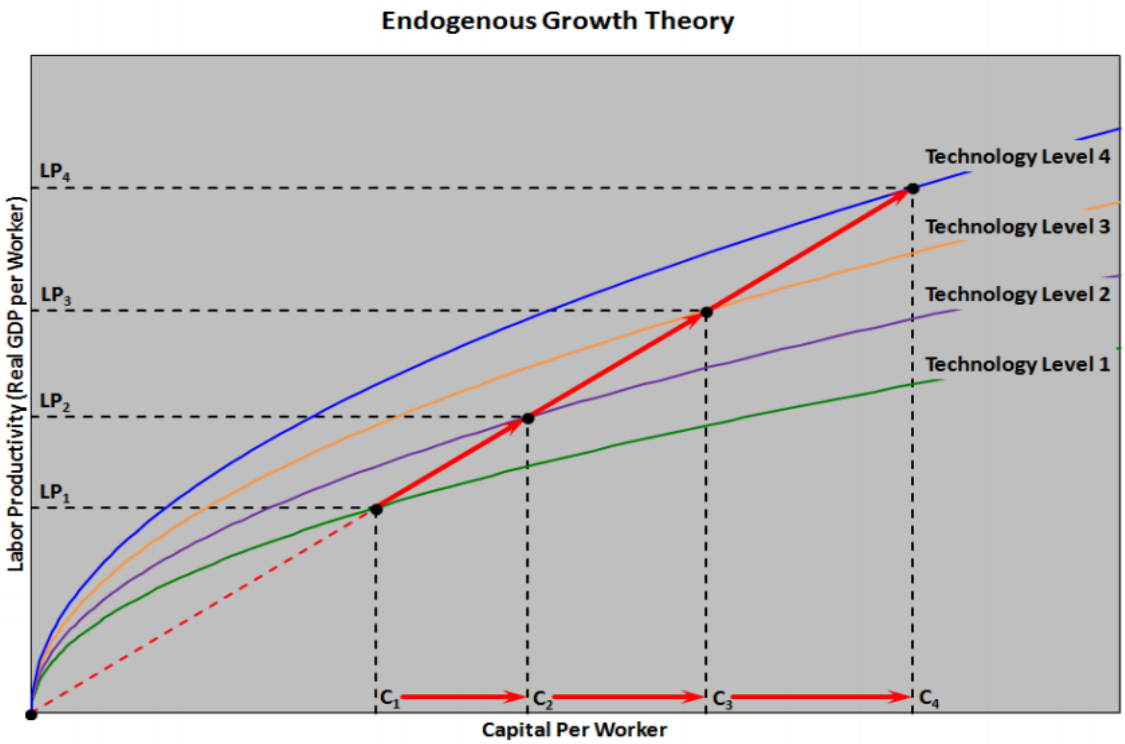

Figure 2.2: New growth theory/Endogenous growth theory

Source: Stiglingh (2015:16)

Nonetheless, Hufbauer (1991:14) argues that similar to the neoclassical model, the endogenous growth theory encountered various challenges and criticisms. The first challenge was the measurement of human capital (Ali *et al.*, 2018:3). In this regard, human capital is measured using a number of proxies. For instance, while measuring human capital, one can use the following proxies: expenditure on education, literacy rate and, primary and secondary admission ratios. Secondly, in using various proxies, it is not certain that those used proxies are reliable and meaningful to the human capital theory. Furthermore, the lack of a standardised definition of human capital creates a large discrepancy in defining and measuring

different proxies employed across countries over time (Hufbauer, 1991:23). Although the general view seems to be that the technology growth destroys jobs, this theory is significant to the textile and clothing industry as technology improvement can lead to high production and contribute towards export growth, economic growth, and job creation within the industry. Countries that benefits from technology growth are those with skilled labour and those with unskilled labour may experience difficulties in benefiting from innovation and advanced technology (Schulte & Howard, 2019:3). Thus, it important to firstly improve the quality of the labour force before focussing on technology improvements as a means to promote growth within these secondary industries.

2.3.4 International trade theory

In the early days of neoclassical economics, the main concern of economists was how different types of economies would evolve. Amongst these ideas was free trade, which received considerable attention at the time. Nonetheless, this idea was not completely new since it was an expansion of Smith's (1776:311) theory of free trade. Further, the idea of free trade was supported by William Smart, who argued that trade should be free for its involvement of protection comes at the expense of its scientific reputation The same claims were made by most of the new international trade theories and their policy. This was followed by the idea of Paul Samuelson stipulating that in the trade process, the comparative advantage remains both nontrivial and true (Samuelson, 1968:9). On these valid and solid scientific claims of international trade, Johnson (1971:48) added that the relevance and significance of international and free trade reside in its beneficial entirety than its protection. Thus, free trade is the best policy to be offered to the economy as policy guidance, and none should question the sincerity of the Samuelson theory, for it was the master leading economic theory (Gomes, 2003:3). Samuelson's theory was considered by McCloskey (1980:21) as the centre of commercial policies in Britain. Since some of the scientific claims of international trade are discussed, it is important to look at the different trade theories.

2.3.4.1 The export promotion school and import-led growth school

The previous section highlighted the significant role played by foreign or international trade. This type of trade involves imports and exports. This section focusses on the role of both imports and exports towards economic growth. Firstly, imports and exports are defined,

followed by the elucidation and discussion on the export promotion school and import-led growth school.

As mentioned above, imports and exports are core components of the country's economy. Whilst imports refer to the aggregate quantity of goods and services bought from a foreign country; exports denote the aggregate amount of goods and services sold by a country into the foreign markets of other countries (Krugman & Wells, 2013:128). Although sometimes imports have a significant impact on economic growth, the relationship between the two (imports and economic growth) is not straightforward, mostly because imports, to some extent, are considered as an outflow toward the national income circular flow (Grossman & Helpman, 1991:40). In other words, import expenditure growth leads to national income reduction. Contrary to the imports, the export variable is considered to be important, and for that reason, the next section discusses the relationships between exports and economic growth.

The origin of export promotion as one of the solutions to low economic growth is attributed to the 16th century where, in the European economy, entrepreneurs and mercantilists realised that growing the international trade in agricultural commodities, minerals, and manufactured goods would assist in expanding national outputs (Myint, 1958:26-28). Given that a huge quantity of these products and commodities were being produced within the primary sector using land and labour as major factors of production, countries needed to trade their surplus with the outside world. This trade type was aiming to increase national income. This was the beginning of international trade, giving an explanation to export promotion through absolute advantages and comparative advantage. In the view of Smith (1776:96), an absolute advantage occurs if one country is able to produce commodities at a lower input cost in comparison to its rival countries.

On the other hand, a country enjoys a comparative advantage if it can produce commodities at a lower real cost than other countries (Ricardo, 1817; Sodersten & Reed, 1994:78-82). During the Smith (1776:21) and Ricardo (1917:42) era, most of the countries were inspired to get involved into export orientation for it was a means of promoting specialisation which was believed to reduce the level of general prices within domestic markets while increasing national output (Lal, 1993:43). According to Myint (1958:113) implementing export orientation policy within the country's economy, assists in using idle resources which produce commodities to be sold into foreign markets and increases domestic income.

The export promotion school pinpoints that the outward-orientation stimulates and encourages domestic firms and companies to engross new technologies, which, in return, generates economic growth (Fischer, 1992:37). A country that is engaged in foreign trade exposes the export of its industry with innovative technical expertise, which improves the long-run industry's productivity. Additionally, the revenue acquired by low developed countries from outward-orientation empowers these countries and enables them to access global technology (Balassa, 1978:12). Furthermore, export revenue allows low developed countries to invest in foreign markets (Conconi *et al.*, 2016:18). As a result, economic growth in these countries is improved through return on investment from foreign markets.

Based on the discussion above, it is indubitable that export promotion significantly influences a country's economic growth. Nonetheless, Balassa (1978:45) asserts that the role of government in this process remains indispensable. The absence of government in the export promotion is the barrier to exports-led growth (ELG) efficiency, especially in developing countries. Despite the significance of the export-led growth highlighted above, this school of thought encountered fierce criticism from the protagonists of imports-led growth. Three arguments from those who fight against export-led growth were advanced by Carbaugh (2003:66).

The first argument stipulates that, due to their inability to compete in the global market, slow demand for commodities produced in lower developed countries was experienced over time; consequently, in the long run, producers suffered losses. The second argument is that the price index for the export ratio to imports ratio has always been in the rich countries in tests. As when they buy commodities from poor countries, they pay less (low price), and when they are selling their manufactured products to the poor nations, the price is too exorbitant. Consequently, international trade aggravates the inequalities and exploration between developed and developing countries (Carbaugh, 2003:66). Lastly, the advocates of import promotion argue that the rising of quotas, tariffs, and other trade barriers imposed against exports from low developed countries by more developed countries justifies why low developed countries should prefer import-substitution over the export promotion (Carbaugh, 2003:67).

In addition to these three arguments against export promotion, Sheehey (1990:23) asserts that in the view of those who advocate for import-substitution, technological change within developed countries causes economic growth in lower developed countries to stagnate.

Moreover, if it happens that developing countries have access to new technology, they replace labour for capital, which results in job destruction and unemployment growth, especially for low-skilled and non-skilled people (Sheehey, 1990:23). Furthermore, Sharmal and Dharkal (1994:21) maintain that the anti-trade economists believe that by trying to compete with developed countries, low developed countries end up reducing their prices at the expense of their export income. Developed countries with their advanced technology are able to manufacture raw material, bought at a lower price, into semi-finished and finished products that are sold at a high price in global markets, and increase their economic growth. All of these mentioned reasons indicates that export promotion encompasses both positive and negative effects on economic growth.

In terms of cointegration between exports and the clothing and textile industry, it is contended that in some of both developed and developing countries, the textile and clothing industry plays a significant role with regards to the export levels (Keane & te Velde, 2008:11; Heymann, 2011:19). Textile and clothing products are tradable; thus, they contribute to the total export from the manufacturing sectors (Tandon & Reddy, 1990:270; Ahmed, 2007). However, developing countries tend to benefit less compared to their counterparts in developed countries. The reason for the low benefit within the developing country is that they are less competitive, and they import more than they export. Consequently, those countries with a less developed textile and clothing industry do experience job destruction (Keane & te Velde, 2008:16; Heymann, 2011:21).

The growth theory explained above is not independent of a specific country's economic performance. A country's trade openness plays a significant role in its economic growth. This involves trading within foreign markets. Nonetheless, regardless of the benefits that might come from international trade, trading conditions between trading countries do matter in regard to its textile and clothing industries' performance and, subsequently, their economic growth. Not only can a country's economy be influenced by endogenous factors such as land, labour and geographical location; but also by its trading partners' income level and growth rate (Arora & Vamvakidis, 2005:13). Consequently, it is significant to explore a number of trade theories.

2.3.4.2 The traditional version of classical trade theory: the static model

Different scholars start their discussions and arguments about the benefits of international trade, especially in regard to the theory of absolute advantage. In Smith's (1776:98) view,

international trade can be compared to the normal exchange between two regions or two individuals, as they provide similar benefits. If a person can obtain any needs, goods, or service at a lower price than what it would cost them, then it is more profitable if both sides of the trade allow such exchange as each of them has an absolute advantage in that sort of trade (Schumacher, 2012:22).

Through this trade, each country will be able to produce more units. The absolute advantage infers that a country should export commodities that are more efficiently produced and import those commodities that are less efficiently produced (Allen, 1965:101-112). Therefore, as long as the theory prevails, a country will export commodity A to another country and import commodity B. In contrast, the later will export commodity B to the host country and import commodity A.

Despite that, the theory of absolute advantage elucidating on the cause and benefits of trade has been criticised on various grounds. In the first instance, despite that Smith's (1776:97) absolute advantage theory provides reasons that support the trade between developed and developing nations, this theory lacks the ability to explain why developed countries should trade with one another (Schumacher, 2012:22). The second deficiency of this theory is that it fails to comprehend the fact that developing nations' industries remain less efficient compared to industrialised nations in the production process and, consequently, necessitates special treatment within the industrialised global market in order to allow those industries to become competitive. Additionally, Smith's (1776:116) absolute advantage theory's assumption is censured for being unrealistic (Tinbergen, 1962:211).

2.3.4.3 The comparative advantage theory of David Ricardo

In response to Smith's (1776:28) absolute advantage theory's shortcomings, David Ricardo constructed the comparative advantage theory. Ricardo's (1917:82) competitive advantage theory is the expansion of Smith's absolute advantage theory. However, contrary to the absolute advantage theory, the Ricardian comparative advantage theory advocates that instead of focusing on the production of a varied series of goods, countries should entirely specialise in the production of goods, where they can gain more comparative advantage (Ricardo, 1817:27). In the presence of this form of production, trading will effortlessly occur amongst countries. Moreover, the Ricardian theory endowments factor, such as the relative amount of capital and labour in a country, is not directly considered (Salvatore, 2007: 112). Not only can

a country gain from trading the commodity for which its absolute advantage is high, but it can also benefit from trading both commodities. In other words, one country has a comparative advantage in investing its resources in producing commodities regardless of whether other countries have an absolute advantage in producing them (Ricardo, 1817:9).

It is important to explain further why both countries can apply the labour theory of value assumption. This assumption means that the price of producing a commodity depends absolutely on the quantity labour employed to produce that commodity (Schumacher, 2012:22). This explanation involves two implications: either the used labour is homogenous, or it is the only used factor of production used to produce a given commodity (Mayer *et al*., 2011:4-27). For those countries that favour free trade, comparative advantage theory has been used more than absolute advantage theory (Hill, 2011:9).

The Ricardian comparative advantage played a significant role in international trade. However, similar to Smith's (1776:311) absolute advantage theory, it experienced criticisms from the following standpoints, as highlighted by Markusen *et al*. (1995:54). Firstly, the comparative advantage theory ignores the hypothesis of economies of scale and its implications on specialisation and cost differentiation. Secondary, this theory overlooks the effect of trade on a country's global income distribution. Thirdly, the comparative advantage theory proposes that trade is grounded on differences in cost, yet it fails to elucidate what causes these differences. Lastly, as the case on the absolute advantage theory, most of the comparative advantage theory's assumptions are idealistic.

2.3.4.4 Comparison between absolute and comparative advantage theories

These two theories are discussed in several books on economics worldwide. From the idea, absolute advantage theory is considered as the introduction of the comparative advantage theory. Others, however, highlight that the absolute advantage theory remains applicable only if a country is producing few commodities; thus, it describes only a minor portion of international trade (Salvatore, 1990:2). Consequently, the absolute advantage theory can be viewed as a specific case of the comparative advantage theory. In other words, Ricardo completed what Smith started (Bhagwati, 2002:3–5). Contrary to this view, Krugman (2009:37) asserts that these two theories oppose and exclude each other. In his view, it is the comparative that determines the countries that will produce a commodity, not the absolute theory. Supporting Krugman, Brandis (1967:169) considered the absolute advantage theory to

be inapplicable to international trade. Since these two theories (absolute and comparative) are understood, it important to have a look at the competitive advantage theory. The theory can assist the textile and clothing industry in selecting items that can be produced at a low cost. By increasing the quantity of those items, more cash will flow into the industry, leading to economic improvement.

2.3.4.5 Competitive advantage

Competitive advantage is a concept often used in business literature. Nonetheless, though it is usually used in both practitioner's fields and academics, its definition remains unclear (Flint, 2000:4; Klein, 2002:10). Inconsistency in the definition of competitive advantage can be explained by the fact that while for some scholars the concepts mean superior financial performance (Ghemawat & Rivkin, 2001:9; Peteraf, 1993:6), for others it is seen as a firm's attribute (Barney, 1991:5; Peteraf & Barney, 2003:11); and for other scholars, the concept stands for some kinds of activities or strategies that improve financial performance (Ghemawat, 1991:21; Porter, 1996:42). In the view of Bridoux (2007:19), the main issue faced by researchers in regard to the concept of competitive advantage is not to find a consistent definition but rather the unclear role that it plays within the hypothetical structure.

Porter (1985:12), in this regard, attempts to explain it as a concept that leads a firm or a company's performance within competitive markets. It assists a firm to grow its value, and it generates customers' satisfaction. To achieve these two objectives (creation of a firm's value and customer satisfaction), Porter (1985:14) recommended three strategies, namely cost leadership, focus, and differentiation. While talking about competitive advantage, studies focus on its three core aspects, namely (i) source of competitive advantage, (ii) factors that withstand a firm's competitive advantage, and (iii) the benefits generated by a competitive advantage towards the firm (Coff, 2003:9). The role of competitive advantage for the firm is to increase its value and/or reduce its cost of inputs for a particular good or service (Lippman & Rumelt, 2003:6).

2.3.4.6 Industry specific competitive and comparative advantages within textile and clothing industries

It is imperatively important to note that the firm's performance has to be understood alongside the industry in which it competes. According to Porter (1980a:38; 1980b:43), industrial

competition can stimulate companies or firms to develop competitive advantages by establishing strategies. In this case, the competitive strategies have to adjust following the industrial sector development. The ultimate objective of a competitive strategy for a company or a firm can either be to modify competitive rules or assist in coping with them (Porter, 1980a:9; 1980b:27). In Porter's (1980a:19; 1980b:8) view, within any industry, the rules of the competition are illustrated through the five force model. The model assists in defining the firm's ability and its competitive position. The role of this five force model is to assist the company in achieving its most benefits and reduce harming forces that may pull back the company's performance. The figure below illustrates the five force model.

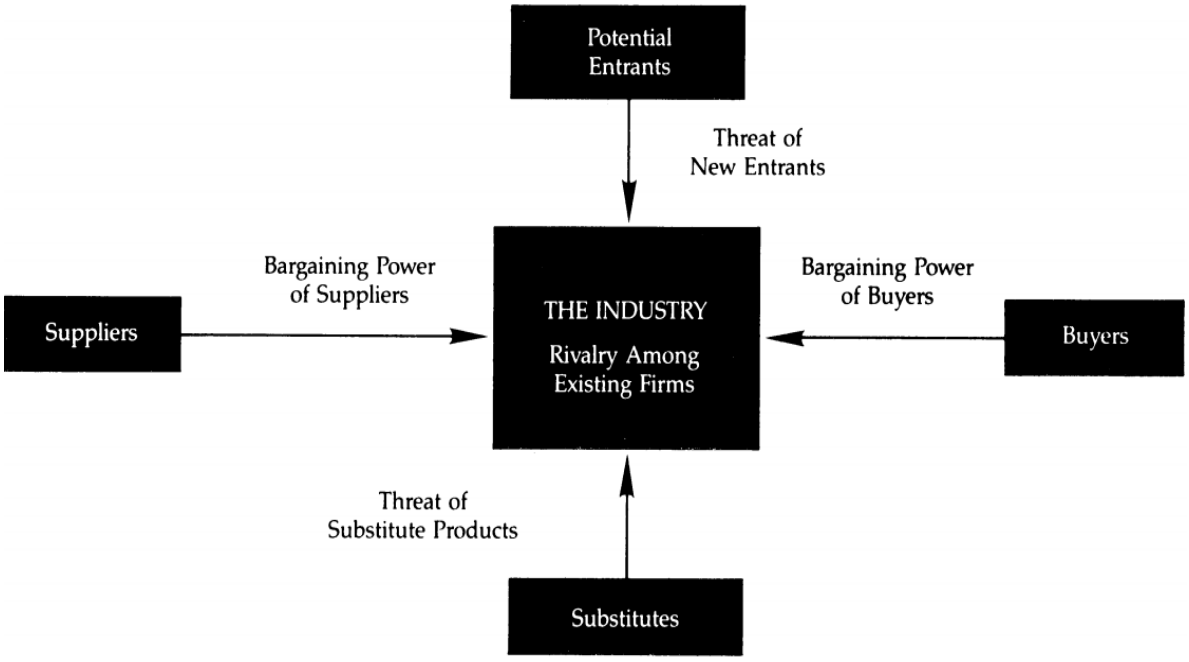

Figure 2.3: Five forces driving industry competition

Source: Porter (1980b:31)

In order to achieve its competitive advantages, industries need to take precautions and measures. On the one hand, industries may either take the defensive approach, positioning themselves where their capabilities offer the best protection against the existing array of competitive forces. On the other hand, the industries may take an offensive approach. This is done by evolving strategies predisposed to impact on the balance of existing forces or to exploit an alteration within the competitive balance before rivals discover it (Porter, 1980b:30). The competitive advantage requires industries to perform different types of structural analysis, and this analysis follows steps.

The first step that the industry has performed within the structural analysis is an examination of the environment in which the company is competing. This assessment assists the company determining its strengths and weaknesses. Secondly, the company has to evaluate its strategy and position within the industry's environment. The combination of these two steps allow the company to know the next business movement. Consequently, the industry's success is determined by its relationships with its environment. The environment, in this context, plays an important role in the industry's performance. (Porter, 1980b:30). Instead of being a matter of luck, the power of competition within an industry is embedded in the underlying industry economics. This justifies why all industries have unequal potential.

The core of the competitive strategy for any company remains a discovery of its position in the industry where it can best perform with those abovementioned competitive forces or else how it can influence those forces in its favour (Shih, 2013:45). The knowledge of the fundamental sources of competitive pressure reveals the minimum attractiveness of an industry. This knowledge highlights the vital strengths and weaknesses of an industry. It also elucidates the areas where strategic alterations can yield the greatest reward; and further identifies the industry trends that possess significant potential, be it threats or opportunities (Porter, 1980b:31). There are various strategies adopted by industries to excel in their competition.

Firstly, cost leadership is considered as the clearest of competitive advantage strategies. Using this strategy, a firm determines how to become a low-cost producer within the industry. The cost advantage sources are multiple, and they are subjected to the industry's structure (Kilduff, 2000:9; Yuasa, 2001:81). These sources include the search of preferential admittance to raw materials, proprietary technology, and economies of scale. In television sets, for instance, automated assembly, a low-cost design, and a global scale to amortize research and development. In security guard services, cost advantage necessitates exceptionally low overheads, low-cost labour, and well-organized training processes due to the high turnover. To achieve low cost in production, a firm must find all sources that lead to cost advantages and exploit them at the maximal level (Porter, 1985: 12-13). The firm that is able to achieve and maintain the cost leadership becomes the commander of prices within the industry, and it increases its wealth as lower cost leads to a higher return on investment. Nonetheless, the cost leadership strategy achieves better results if the firm is able to differentiate itself from its competitors. The next section deals with the differentiation strategy.

Secondly, differentiation is the second generic strategy. This strategy is employed by the industry to generate a uniqueness that results in adding or creating the industry's value (Porter, 1980a). Differentiation advantage is attained in various forms. These forms include branding, design, product development, and services and technology. Using a differentiation strategy through technology industries differentiates themselves from other countries using new components and materials manufacturing new products with a competitive edge (Shih, 2013:46). A firm can differentiate itself from its rivals in various ways. It can either be based on the production of commodities, marketing approach, delivery system, or many other factors. A firm that is capable of attaining and sustaining differentiation performs well within the industry, and its price premium surpasses the additional costs incurred in differentiating itself from competitors or in being unique. Contrary to the cost leadership strategy, it is possible to find many prosperous differentiation strategies within the industry (Porter, 1985:14).

Lastly, the aim of the focus strategy is to concentrate on specific types of products, customers, or markets (Porter, 1980a). In other words, the manufacturing industry or firm has to define niches or market segments (Parrish *et al.*, 2004). The focus strategy does not work in isolation; it rather works when adopted a long-run strategy with differentiation and cost strategies. A combination of these three strategies is adopted by an industry with the aim of competing against rival industries that manufacture substitute products or against new entrants (Shih, 2013:47). For instance, to differentiate themselves from those that are labour intensive and to extend the market boundaries, some of the textile industries in the United States of America (USA) focus on products that are more capital and technologically intensive (Parrish *et al.*, 2004). In connection with the production, horizontally cohesive manufacturers focus on selective activities that yield benefits from economies of scale and production flexibility (Kilduff, 2000:9; Yuasa, 2001:83).

2.3.4.7 New trade theory

In section 2.2, this study explained how, in the traditional theory of trade, countries enter into a trade based on their absolute or comparative advantages. In this regard, a trade occurs within similar countries. In other words, countries that trade with each other are those producing similar products or commodities (Enke, 1946:15). Traditional theories, thus, explains a portion of international trade, in reality (real world), however, countries trade even when they are producers of unrelated products. Since there is an unplanned part of a trade, scholars looked beyond the explanations of classical (traditional/old) theories and conceptualised new trade

theory that involve trade among dissimilar countries. The aim of new trade theories was to eradicate the weaknesses of the orthodox trade theories (Grubel, 1967:17)

The new trade theory started in the 1970s, and it contributed enormously towards the current understanding of international trade (Neary, 2016: 269). The new trade theories do not reject the features of comparative advantage; rather, they explain more evolved reasons for trade beyond an absolute and competitive advantage. These reasons include increasing returns to scale, differentiation, and imperfect competition. Consequently, the new trade theory is not new as it builds on traditional theories (Enke, 1946:13; Lovasy, 1941:9). The new trade theory focusses on the imperfect competition. While in perfect markets, many sellers and many buyers are assumed, and the industry becomes price takers, and imperfect market industries are able to influence the price of their products. This happens because selling industries are few in the markets, or their product is considered by customers as sturdily differentiated from those of competing industries (Lovasy, 1941:16). Under this condition, each industry has the power to choose the price for its products. In other words, in an imperfect market, industries are price setters (Kruger & Obstfeld, 2009:117). The section below focuses on explaining imperfect market competition, for it plays a significant role within the new trade theory.

The major issue associated with forsaking perfect competition was that of model exhaustion and cessation. Lancaster (1980:51) and Krugman (1979:17) rumoured that with a monopolistic market structure, a firm with the industry is able to differentiate their products from one another and gain in that way, providing to them some level of monopoly power and price setting. On the other hand, given the existence of barriers to entry, industries keep producing until their economic profits become zero. Industries differentiate their products based on their customers' preferences. This differentiation of products will benefit both industries and consumers as product differentiation enhances consumer wellbeing in giving them the preferred variety of goods (Helpman, 1981:2).

Krugman (1979:47) depicted two analogous countries within a monopolistic competitive industry that can both gain by engaging in an intra-industry trade with one another. The quintessence of this model is confined within three equations, where in the first equation, marginal cost (MC) equals marginal revenue (MR), which results in the price over marginal cost mark up. The second equation is where the average cost (AC) equals to price (P), and this establishes the level of output for the specific industry and lastly; in third equation, labour demand (LD) equals to labour supply (Ls), which establishes the number of industries

operating within the industry (Lovasy, 1941:27). Thus, using these models, industries gain from an improved scale of production and product differentiation, which results in lower prices.

According to Kruger and Obstfeld (2009:121), in the monopolistic competition, two important assumptions hold. The first assumption is that each industry in the industry is assumed to apply the differentiation strategy. That is because customers do not pay more attention to the slight difference that may exist among industries' prices; they rather want to purchase this industry's specific product. This product is the one insulating each industry from its rivals. The second assumption is expected to take prices charged by its competitors. That is, it has to ignore the effect of its own price on other industries' prices. Consequently, the monopolistic competition model suggests that each industry behaves as it was monopolistic, regardless of the competition from its rival industries. The European automobile industry (General Motor, Ford, Fiat, Peugeot, Nisan, Volvo, and Volkswagen) can be taken as an example of monopolistic industries. Nonetheless, since an industry that makes more profits attract competitors or rival industries, the monopolist competition is rarely found in practice (Kruger & Obstfeld, 2009:120). The type of imperfect competition that is often found in the real world is the oligopoly.

2.4 AN EMPIRICAL REVIEW ON THE ROLE OF TEXTILE AND CLOTHING INDUSTRIES AS DRIVERS OF ECONOMIC GROWTH

The textile and clothing industry plays a significant role either in developed or developing countries. The following section undertakes an elucidation of how this industry influences those mentioned groups of countries.

As one of the industries within the manufacturing sector, the textile and clothing industry, one of the oldest industries, is considered as new industries within several developed economies. However, these industries have largely contributed to the global economy and assisted most countries in improving their economic development, and upgrading their automation and industrialization (Kim *et al.*, 2006:1). The industries, particularly in the clothing sector, are described as labour intensive, with the use of low skilled workers, low levels of capital, and innovative technology. Due to these mentioned characteristics, the textile and clothing industry has the largest number of employees within the global manufacturing sector (Kim *et al.*, 2006). The labor-intensive capacity is considered as the main driving force for cost reduction. Another significant feature of the textile and clothing industry is that this industry forms a gateway to

industrialization within the emerging economies (Nordas, 2004:21). Furthermore, the textile and clothing industry employs a significant number of the less-skilled and unskilled labour force.

2.4.1 Textile and clothing industries in developed countries

The textile and clothing industry impacts on both developed and developing economies. In the American economy, especially in the Massachusetts economy, the textile industry has been paramount. Not only does it have a direct impact, such as increasing the number of total exports within the manufacturing industry and the increment of the national income, but also in creating jobs for different categories of job seekers (Barrow & Sweeney, 2000:12). In the Canadian economy, the textile industry is one of the major employers and therefore contributes significantly to the country's economy. The textile and clothing industry in these countries is sustained by high levels of investment and technological improvements (Council, 2011:13). It is not only in these two developed countries that these industries play an indispensable role but also in many other developed regions. Some of the studies conducted in those countries to determine the role of the textile and clothing industry in the economy are presented below.

The study conducted by Greta and Lewandowski (2010:1) indicated that despite the fact that it is difficult to find a developed country specializing in clothing or the fashion industry, Italy is ranked as one of the major exporters of textile products and clothes in the world. The study also revealed that employment within the Italian textile industry has been experiencing transformation owing to the high competition from countries which attribute low labour cost. Notwithstanding the employment decline within the industry, it remains significant in terms of global trade and the balance trade surplus in the Italian economy. These results were supported by the study by Lenzo *et al.* (2018:13). Using a case study methodology to analyze the sustainability and performance of the Italian textile industry, they concluded that the revenue from the textile industry enhances both country's economic growth and social wellbeing. Another study was also conducted by Lenzo *et al.* (2017:4) to assess the social life for the textile sector workers and local communities. Their findings showed that the textile industry assists in creating a company's value and jobs for local communities.

Additionally, a study was conducted by Laitala and Klepp (2018:6), which investigated the care and production of clothing focusing on mending and making in Norwegian homes. This study applied a questionnaire and survey method, while others analysed the responses of

respondents through the use of longitudinal design. The authors' findings revealed that the practice of mending and making cloves from homes has various benefits, including economic and educational. Moreover, the respondents indicated that making clothes cannot be limited to economic and educational; it is also extended to creativity enhancement and environment protection within economic structures.

Using a translog cost function approach, Truett and Truett (2019:11) analysed the performance of the Portuguese textile and clothing industry. Findings revealed that an increase in labour demand could be a solution to the issue of the high cost of capital. Nonetheless, the study highlights that labour demand can increase only if the cost of labour decreases. Whilst the aforementioned studies showed that textile and clothing industries play an important role in their local economic structures, these industries may also have a negative impact on social development and wellbeing. In this regard, Gwozdz *et al.* (2017:14) conducted a study to assess the effect of clothing consumption on the environment in the Western countries namely Germany, Poland, Sweden, and the U.S. Around 4617 respondents were involved in the study which made use of an ANOVA approach for analysis. Findings suggested that some clothing products are harmful to the environment.

2.4.2 Textile and clothing industries in developing countries

Developing countries, particularly in Africa, Asia, Latin America, and Eastern Europe, have gained opportunities to improve and extend their national economic growth through textile and clothing exports (Kim *et al.,* 2006:8; Nordas, 2004:14). In this regard, Taplin and Winterton, (2004:2) asserted that at the stage of industrial development, countries enjoy a cost advantage. While investors tend to focus on the competitive cost, they migrate to factories that employ cheaper labour. This is what Dicken's (2003:4) describes as a "global shift," where a decline of industry in one country generates opportunities for another country, and where job losses in one country result in job creation in another. Thus, in recent decades, productivity activities of textile and clothing industries have constantly been repositioning following the economic development of countries (Abernathy *et al.*, 1999:18; Dickerson, 1995:23; Gereffi, 2005:9; Kim *et al.*, 2006:11). Due to the globalisation properties, global trade in textile and clothing industry products has achieved a greater volume than ever (Datamonitor, 2010:2).

In developing countries, the textile and clothing industry absorbs a significant number of unskilled, low-skilled, and immigrant workers living in rural areas (Ahlawat & Renu. 2018:78).

Regardless of comparatively low start-up investment costs, expansion of the clothing and textile industry provides a foundation upon which more technologically demanding activities from other industries are built (Brenton & Hoppe, 2007:4). In other words, the textile and clothing industries become a better channel for enhanced technological imports through incomes obtained from garment exports (Brenton & Hoppe, 2007:3). Additionally, due to the economic fluctuations within developing countries, the textile and clothing industry has the ability to adjust quickly to those economic changes (Nordas, 2004:19). Economic growth in some of these developing countries is largely dependent on the manufacturing sector, especially the clothing industry. These countries include Bangladesh, Haiti, Cambodia, Lesotho, and China. African countries, such as Lesotho, Madagascar, and Mauritius, are more dependent on clothing exports. For instance, clothing exports contribute 64 percent in Lesotho, 56 percent in Madagascar, and 35.5 percent in Mauritius. Nonetheless, countries whose exports are dependent on their clothing industries are categorised as low-income countries with the exception of China and Honduras (Keane & Velde, 2008:9).

The role of the textile and clothing industry is not limited only to its share towards economic growth, but also to the social wellbeing and personal status within the society. In developing countries, the textile industry not only creates employment within the sector but also stimulates various activities in the manufacturing and agriculture sectors, which results in job growth within those sectors (Ozsoz, 2014:5). In addition to this, the textile and clothing industry provides an opportunity for economic participation to those who could be less considered. The study conducted in Bangladesh ascertained that many women are employed in the textile and clothing industry. This employment allows women to participate in the household's income, health and education improvement, family freedom, and women recognition in social life (Hasan *et al*., 2016: 43). Since the textile and clothing is recognised as a labour-intensive industry, it creates a significant number of formal jobs for low and nonskilled people within developing countries, especially on the African continent (Kamau, 2010:19). Besides, its power for job creation, the textile and clothing industry provides for both unskilled and skilled people (Brautigam, 2009:6; Kamau, 2010:31).

Table 2.1 exhibits how the textile and clothing industry plays an important role in both developed and developing countries. However, one can see that the African continent remains behind, considering the contribution of the textile and clothing industry toward manufacturing products.

Table 2.1: Contribution of average volume of world merchandise export trade

Region	Total exports			
	2015	2016	2017	2018
Developed economies	2.4	1.0	3.6	2.1
Developing economies and CIS	1.7	2.3	5.6	3.5
North America	1.1	0.3	4.2	4.3
South and Central America	-0.4	0.7	3.0	0.6
Europe	2.9	1.2	3.7	1.6
Asia	1.4	2.3	6.8	3.8
Other regions (Africa and Middle East)	3.2	2.9	1.6	2.7

Source: Author's own construction from the WTO (2019)

2.4.3 Textile and clothing industries in sub-Saharan Africa and South Africa

Different sub-Saharan countries' economies benefit more from the textile and clothing industry, especially in terms of total manufacturing exports and job creation. A number of studies (Diriba *et al.*, 2019:3; Jauch, & Traub-Merz, 2006:11; Joomun, 2006:14; Morris & Staritz, 2014:1) were conducted in this area and have proven how valuable this textile and clothing industry is to these countries. Some of those studies and their findings are presented below.

The study of Nicita (2006:11) used a survey method to analyse whether the textile industry benefits poor people in the economy of Madagascar. The study findings firstly suggested that the industry contributes more to the country's export levels. In addition to this, the textile industry was found to be significant in crating job. Nonetheless, due to the lack of required skills, these jobs created by the industry are more likely to advantage urban people than rural people. These results were also supported by the study of Fukunishi (2008:4). His study employed a Cobb-Douglas form and linear regression to analyse if the exports from the clothing industry have an effect on poverty reduction within sub-Saharan African countries. Findings revealed that export growth in the clothing industry has assisted both in poverty reduction in Kenya and Madagascar.

In addition to the aforementioned studies, Hlabana (2007:21) used a case study approach to investigate the role of the textile industry in spurring local economic development levels in

Lesotho. The study's findings indicated that the textile industry plays a significant role in poverty reduction and contributes enormously to job creation. Additionally, this industry remains one of the industries that attract more foreign investors to Lesotho.

Furthermore, the study of Motswapong and Grynberg (2014:3) analysed opportunities and challenges faced by the textile and clothing industries in Botswana. The study's outcomes highlighted the significance of these industries within the Botswana economy. However, owing to its lack of strong participation within global trade, the textile and clothing industry in Botswana was drastically affected by the 2008 financial crisis, which weakened these industries' power and reduced its overall contribution towards the country's economy. Motswapong and Grynberg's (2014:9) findings further stimulated the study of Sekakela (2016:11) that examined the influence of trade benefits between China and Botswana. The study findings revealed that owing to the Chinese imports Botswana lost its contribution to the South African region market.

Similar to their southern African counterparts, the South African textile and clothing industry economy has likewise proven pivotal to the economy, especially in light of the country's unemployment challenge (Manenzhe, 2018:12). A large number of the South African workforce is composed of unskilled women and other workers without formal education. Although it is challenging to find employment without a good education, the textile and clothing industry employs a large number of less-skilled and unskilled workers (Morris, 2008:9). Consequently, this industry assists in the joblessness eradication (Manenzhe, 2018:12). Additionally, the study by Van Zyl and Matswalela (2016:5) analysed the level of competitiveness of the South African textile and closing industry to other emerging markets, and the results indicated that the South African clothing industry has a strong competitive advantage in comparison to these markets.

Nevertheless, the textile and clothing industry is considered a small industry in the South African manufacturing sector. However, it is categorised as one of the larger employers. For instance, in the city of Cape Town's local manufacturing sector, the textile industry is the second largest employer. Besides, in 2017, this sector's contribution to the metro's export sector was R4.4 billion. The contribution of the textile and clothing industry towards the provincial total economic growth within a decade – that is between 2007 and 2017 – accounted for 0.55 percent (Bizcommunity, 2019). Additionally, in 2013, textiles, clothing, footwear, and Leather (TCFL) industries created about 80 000 jobs, which accounts for about 14 percent of

the total jobs from the manufacturing sector. During this period, the industries' contribution to the country's economic growth was approximately eight percent (IDC, 2014:17). However, this study also revealed that due to a growing labour cost, the export level within the South African textile and clothing industry experienced a significant decline. Additionally, on the global level, the South African textile and clothing industry is less competitive, partly due to high taxes on imported fabrics used in making cloths. This challenge causes a reduction in both employability capacity and contribution to the economic growth of the textile and clothing industry (Bizcommunity, 2019).

2.5 CHAPTER SYNOPSIS

This chapter's goal was to provide the study conceptualisation, define key concepts, and discuss various theories that concern the study. In section 2.2, the main concept of the study, namely economic growth, employment, gross value added, and the real effective exchange rate was defined. Additionally, to these definitions and elucidations, the importance of the primary, secondary, and tertiary sectors towards economic growth were highlighted.

The study's theoretical framework was represented and discussed in section 2.3 that discussed main economic theories relating to this study. In this regard, different theories that include growth and trade theories were presented and discussed. The growth theories were comprised of Solow's neoclassical growth theory, and New Growth, or Endogenous growth theory. To better explain these theories, section 2.3.4.1 also included two important schools of thought, namely, the export promotion school and import-led growth school. Section 2.3.4 was allocated to the presentation and description of a number of trade theories such as international trade theory, the traditional version of the classical trade theory, the comparative advantage theory of David Ricardo, and the new trade theories.

Additionally, this section discussed and compared absolute and comparative advantages with reference to the textile and clothing industry. Various strategies, namely, differentiation, focus, and cost leadership, were found to be some of the key factors that can assist industries in achieving competitive advantages. Section 2.4 is based on the review of other scholars' empirical findings on the role of textile and clothing industries within both developing and developed countries. It alluded that for the developed countries, the textile and clothing industries are not as important towards economic growth as are in developing countries. This

section also discussed the textile and clothing industry in Sub-Saharan Africa and South Africa in a specific way.

The main role of this industry remains to create more jobs for low skilled and unskilled workers. This was found to be the case in the South African economy where a large number of women and people without high qualifications are employed within this sector. Thus, the textile and clothing industry, besides creating jobs assisting in improving the household's standard of living by providing income, increases the opportunity of participation for low skilled people in the country's economy. The next chapter deals with trends analyses for textile and clothing industry from various economic regions.

CHAPTER 3

A GLOBAL AND REGIONAL REVIEW ON THE NATURE AND PERFORMANCE OF TEXTILE AND CLOTHING INDUSTRIES

3.1 INTRODUCTION

The previous chapter discussed the core concepts, namely employment, economic growth, exports, and real effective exchange rate. Additionally, different theories such as growth theories and international trade theories that hold relevance for the performance of textile and clothing industries were elaborated on. This was followed by an empirical review of the role and impact of these industries within various countries. The current chapter, building on this, focusses on the performance and nature within the textile and clothing industry. This chapter firstly reviews the global trend within the textile and clothing industry. Secondly, trends in revenue and employment for the textile and clothing industry within various selected developed economies are also discussed. Thirdly, the chapter discusses the textile and clothing industry's performance in developing countries. In this section, selected countries that dominate the Asian textile industry are selected. Thereafter, the chapter reviews the nature of these industries within the sub-Saharan African region. Finally, the chapter provides a comprehensive review of the South African textile and clothing industry. The aim of this chapter is to achieve the third and fourth theoretical objectives which sets to review the nature and performance of the textile and clothing industries in various economic regions around the globe.

3.2 GLOBAL TRENDS ON THE PERFORMNACE OF TEXTILE AND CLOTHING INDUSTRIES

The economy has been progressing over time. In early development, the main source of the economy was the primary sector. However, through the secondary sector and the onset of global integration, major economic activities have shifted to predominantly tertiary activities. Thus, any country whose economy is based on the primary and non-developed secondary sector, have been categorised as low per capita income, and it is considered as a developing country (Agarwal, 2020:9). With a decline in the manufacturing sector, the tertiary sector's activities have become a major source of income and employment within the developed countries (Sheehan, 2006:47). Although the share of manufacturing toward economic development has globally declined, this sector remains important in both developed and

developing countries (Chakarvarty & Mitra, 2008:22; Herman, 2016: 977), especially in the textile and clothing industry.

The textile and clothing industry is an innovative and dynamic industry. Despite its feature of being labour-intensive, it is considered as a low wage industry depending on the type of market segment focused upon. For instance, in the fashion market, the textile and clothing industry is featured by high flexibility, new technology, and comparatively well-remunerated workers whilst in less flexible and low-quality market segment workers are moderately low paid (Hadjimichalis & Vaiou, 2017:114). The competitiveness among firms within an industry relates to the firm's aptitude to produce designs or products that meet customers' tastes and preferences at an affordable price (Nordås, 2004:3). Additionally, the geographical location of the industry possesses an imperative contribution towards the access to factors of production and low logistics cost.

The textile and clothing industry is one of the core in the world's social and economic development. It has a critical contribution towards a country's gross domestic product (GDP), and it creates employment opportunities, especially to low-skilled, non-skilled women workers (Hadjimichalis & Vaiou, 2017:114). In developed countries, the textile and clothing industry assists in building and developing economic conditions, while in developing countries, it assisted in improving the people's living conditions (Keane & Velde, 2008:11). The influence of the textile and clothing industry to the economic growth and social livelihood improvement is expressed through the contribution of its share towards manufacturing exports and the ability to create employment within local economies. The textile and clothing contribution towards the economy is not recent as even sixteen years ago, the share of this sector towards employment and output was remarkable for both developing and developed economies (UNIDO, 2004:28).

Throughout the time, textile and clothing industry experienced an improvement resulting from various trade agreements. Nevertheless, due to their inefficiency, some of these agreements did not last for long time, giving birth to new ones compatible with the globalisation concept. For instance, the year 2005was characterised by the abolishment of the Multi-Fibre Arrangement (MFA). This allowed easy trading of textile and clothing products within country members of the World Trade Organization (WTO) (Koch, 2019:140).

Similar to other economic industries, the textile and clothing industry experience a severe negative effect of the 2008 financial crisis. The crisis caused the developing countries to lose over eight thousand clothing, footwear and textiles companies and more than seventy-two million jobs were lost across the globe (ITGLWF, 2009).

In a global context, the top three largest importers of textiles in 2018 were the European Union, USA, and China (developing country) totalling 37.5 percent of the world's total textile imports (Lu, 2019:21). This implies that the textile and clothing industry remains important for both developed and developing countries. The difference is that developed countries are more competitive compared to their developing counterparts. There was a decline in the market share of the top three, of which in 2017 had 37.7 percent. The shifts in the world apparel manufacturing and exports are attributed to the increasing diversification of the textile import market (Lu, 2019:23). Table 3.1 below represents the top ten major countries that exported and imported textile and clothing products in 2018.

Table 3.1: Top 10 exporters and importers of textiles in 2018

	Value	**Share in world exports/imports**				**Annual percentage change**			
	2018	**2000**	**2005**	**2010**	**2018**	**2010-18**	**2016**	**2017**	**2018**
Exporters									
China	119	10.3	20.2	30.4	37.6	6	-4	5	8
European Union	74	36.4	34.8	26.9	23.5	1	1	5	7
Extra-EU exports	23	9.8	9.9	8.1	7.2	1	0	5	8
India	18	3.6	4.1	5.1	5.8	4	-6	6	4
United States of America	14	7.0	6.1	4.8	4.4	2	-5	3	1
Turkey	12	2.4	3.5	3.5	3.8	4	0	5	4
Korea republic	10	8.1	5.1	4.3	3.1	-1	-6	-2	0
Chinese Taipei	9	7.6	4.8	3.8	2.9	-1	-7	3	0
Viet Nam	8	0.2	0.4	1.2	2.6	13	9	21	13
Pakistan	8	2.9	3.5	3.1	2.5	0	-7	2	2
Hong Kong, China	7	…	…	…	…	-5	-13	-4	-3
Domestic exports	0	0.8	0.3	0.1	0.0	-13	3	7	3
Re-exports	7	…	…	…	…	-5	-13	-4	-3
Above 10	**272**	**79.2**	**82.7**	**83.3**	**86.3**	**-**	**-**	**-**	**-**

	Value	Share in world exports/imports				Annual percentage change			
	2018	2000	2005	2010	2018	2010-18	2016	2017	2018
Importers									
European Union	77	34.9	33.6	27.8	23.1	0	1	6	-2
Extra-EU imports	33	9.8	10.0	10.0	9.7	2	1	5	6
United States of America	30	9.7	10.5	8.7	9.1	3	-3	3	2
China	18	7.8	7.2	6.6	5.3	0	-12	4	3
Viet Nam	18	0.8	1.6	2.6	5.3	12	4	22	10
Bangladesh	11	0.8	1.1	1.7	3.3	12	7	7	17
Japan	9	3.0	2.7	2.7	2.7	3	0	3	6
Hong Kong, China	7	…	…	…	…	-6	-13	-4	-3
Retained imports	…	0.9	0.3	0.1	…	…	…	…	…
Indonesia	7	0.8	0.4	1.6	2.1	6	3	-4	21
Mexico	7	3.5	2.8	1.9	2.0	3	-4	1	4
Turkey	6	1.3	2.1	2.4	1.8	-1	-2	12	-10
Above 10	**183**	**63.4**	**62.2**	**56.2**	**54.6**	-	-	-	-

Source: Own compilation from Lu (2019)

As shown by the figures in Table 3.1, the Chinese global share exports were 10.3 percent in 2000 and increased to 37.6 percent in 2018. This increase has been attributed to its competitive prices. China is one of the dominant players within the global textile and clothing market. The competitiveness of Chinese industries results from low labour costs, which contributed to less expensive goods being supplied by the country. The implication of the expansion of Chinese products within the rest of the world is the decline of gross value added and employment in other developing countries (Bonga-Bonga & Biyase, 2018:1). The European Union has experienced a decline in its exports from 36.4 percent to 23.5 percent between the years 2000 and 2018. This decline is attributed to the competition from China and other developing countries. The USA has had a slight decrease from seven percent to 4.4 percent, also due to the Chinese low-cost strategy. China is regarded as a developing country but, the comparison is necessary with regards to countries like the USA and the EU due to its leading role in the textile and clothing industry (Lu, 2019:8).

In 2016 Italy, France, Spain and German were leading the European Union the textile and clothing industry and the later accounted 23.5 percent of global exports (Bonga-Bonga &

Biyase, 2018:4). The competitiveness of these industries results from their innovation and advanced technology. In 2017, textile manufacturing contributed 77.4 billion euros whilst clothing manufacturing contributed 65.4 billion euros (Eurostat, 2019:16). The nature of the textile industry depends on the country in which the industry is operating. From the statistics in Table 3.1, it can be concluded that the major exporters of textile products are also core importers. This implies that the movement in this industry depends on a country's economy and its relations within foreign markets.

3.2.1 Textile and clothing industries within developed countries

The previous section highlighted the global significance of textile and clothing industries economies and how, over time, in response to various economic and social occurrences, the composition and nature of these industries have changed. In order to fully comprehend their structures, it is significant to analyse these industries from a perspective that distinguishes between both developed and developing regions, respectively. Henceforth, the next section focuses on trends in the performance of these industries in a selected number of developed countries.

3.2.1.1 Canada

Canada is a north American country whose textile and clothing industry is outstanding. This industry commenced in 1820 and was based on production of cotton and wool (Wyman, 2005:12). As result of population growth, the Canadian textile and clothing industry expanded in the 19th century. Moreover, during this period, the Canadian economy enjoyed import protection. The aim of import protection was to limit the number of textile products entering the country and enhance the consumption of the domestic product. Furthermore, the development of the textile industry in Canada was benefited from political integration (Martin *et al.*, 2018:5). Government policy and strategy were to integrate all textile industries across the country. Additionally, the Canadian textile and clothing industries are situated in areas in which cotton and wool are produced and where labour is effortlessly accessed (Martin *et al.*, 2018: 5; Wyman, 2005:7). Thus, a high number of textile industries are located within the cities. The strength and competitiveness of the Canadian textile and clothing industries within the global market between 2001 and 2013 were debilitated by the fast growth of textile and clothing industries from low-income and developing countries (Behrens *et al.*, 2016:3). As a result of higher competition, this industry experienced significant job losses between 2005 and

2013. The number of workers within the industry dropped from 150 000 to 50 000 workers. This decline was mainly caused by low labour productivity within the industry, as depicted in Figure 3.1.

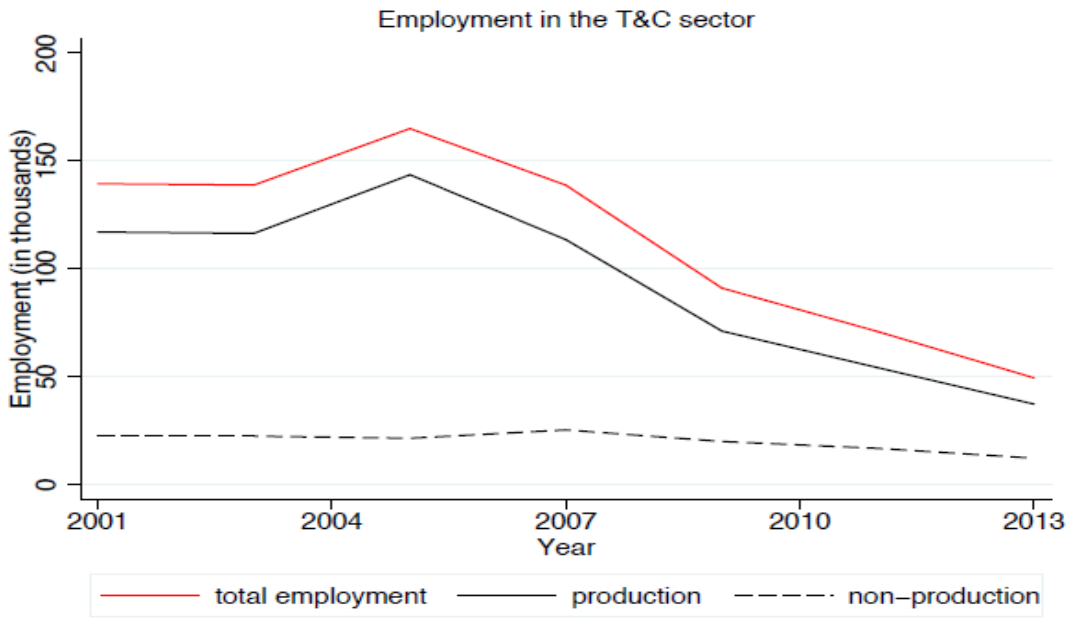

Figure 3.1: Canadian employment trends in the textile and clothing industry (2001-2013)

Source: Martin *et al.* (2018)

The job losses experienced between 2001 and 2013, as depicted in Figure 3.1, was caused by the industrial extension where due to the large size of many textile and clothing firms which resulted in hiring significant number of non-productive workers. Consequently, both industry production and export levels were negatively affected (Holmes & Stevens, 2014:370). The effect of the plant size on textile and clothing volatility is exhibited in Table 3.2. The statistics in the table depicts the contribution of textile and non-textile plants towards exports.

Table 3.2: Number and percentage of exporters within the Canadian textile and clothing industry (2001-2013)

Year	Number of plants			Percent exporter		Average plant size		Percent multiunit	
	All	Textile	Percent textile	Textile	Non - textile	Textile	Non-textile	Textile	Non-textile
2001	52051	4465	8.58	39.80	43.81	32.39	33.33	4.77	9.33
2003	51893	4386	8.45	41.43	45.06	31.54	33.96	4.58	8.99
2005	49228	3803	7.73	43.33	45.60	30.01	35.32	4.05	8.57
2007	46272	3170	6.85	45.55	45.95	28.13	36.21	3.82	8.22

Year	Number of plants			Percent exporter		Average plant size		Percent multiunit	
	All	Textile	Percent textile	Textile	Non - textile	Textile	Non-textile	Textile	Non-textile
2009	44684	2910	6.51	45.84	45.31	27.41	36.21	3.37	7.78
2011	42219	2696	6.39	45.51	45.48	25.81	35.59	2.74	7.65
2013	35336	2057	5.82	45.99	45.82	25.30	37.92	2.67	7.18

Source: Own compilation based on Martin *et al.* (2018)

3.2.1.2 Australia

Based on estimates from the human development index (HDI), Australia is ranked second among the top 10 world developed countries, and it has been experiencing a great development in its local textile and clothing industry. The industry dates from the early 1940s, and in the 1950s, it began to expand with the country (Williamson, 2010:2). The industry continued to grow owing to firms' integration and the protection that limited textile and clothing imports. This exposure to global competition allowed increases in both imports and exports of textile and clothing products. Figure 3.2 represents exports from textile and clothing products from Australia and the imported products from the rest of the world between 1988 and 1996.

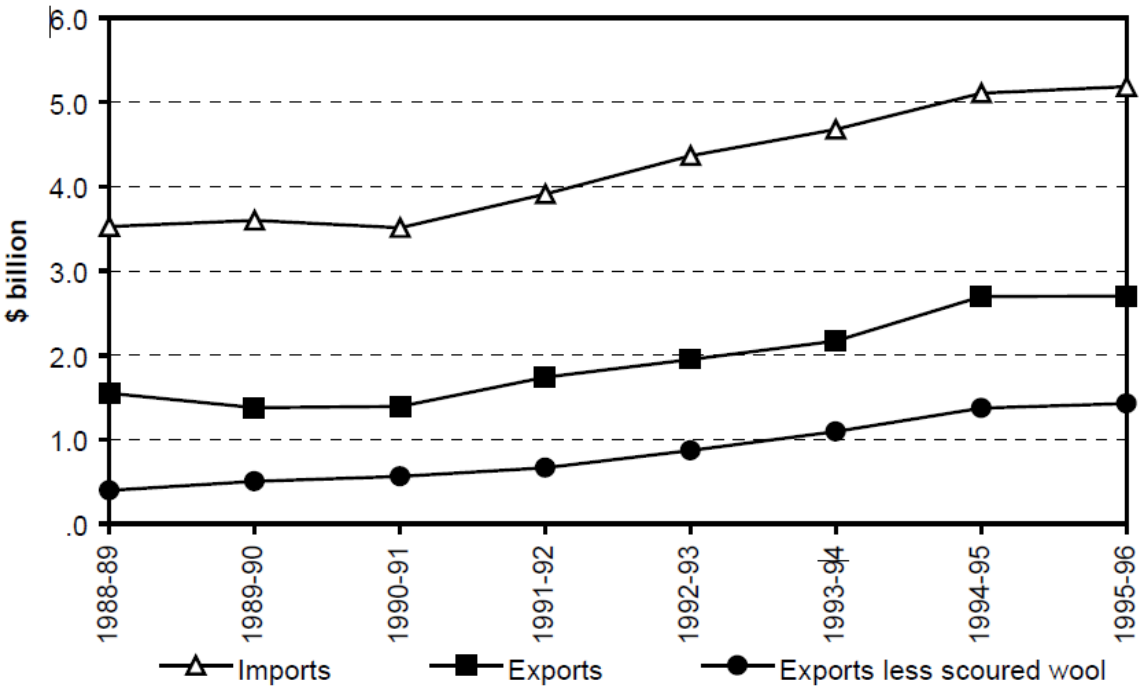

Figure 3.2: Australian textile and clothing exports and imports (1988 – 1996)

Source: Australian Bureau of Statistics (ABS) (1997)

Regardless of its contribution to the total exports, during the period of 1988 to 1996, in terms of average value of exports and per capita (per employee) exports, the textile and clothing industry was lagging behind compared to other manufacturing industries. This had a negative impact on the employment level during the abovementioned period. For instance, between 1985 and 1989, total employment from the textile and clothing industry decreased by approximately 12 percent; and from 1985 to 1997, about 13 400 jobs were lost (Industry Commission, 1997: 8-12). One of the reasons that caused the decline in the level of employment is that labour remained expensive though the land is less expensive. Additionally, to the labour cost, from 2014, Australian textile clothing has also faced other challenges, including a sharp increase in lease costs and increasing competition. All these challenges negatively impacted the textile and clothing industry.

Irrespective of these challenges faced by the textile and clothing industry, in 2017, only the clothing segments were able to provide around 220 000 jobs, and the textile exports towards the European countries accounted for over $6.1 billion, which supported the industry's growth (Gaille, 2018). Furthermore, adding leather and footwear to textile and clothing employment, this industry is capable of employing around 37,000 people annually (Gaille, 2018). In addition to the jobs created within the textile and clothing industry, revenue from the clothing industry has shown to significantly support the country's impressive growth performance (Australian Bureau of Statistics, 2019). Figure 3.3 illustrates the clothing industry's turnover between 2004 and 2017. As depicted, the Australian clothing industry improved between 2004 and 2017.

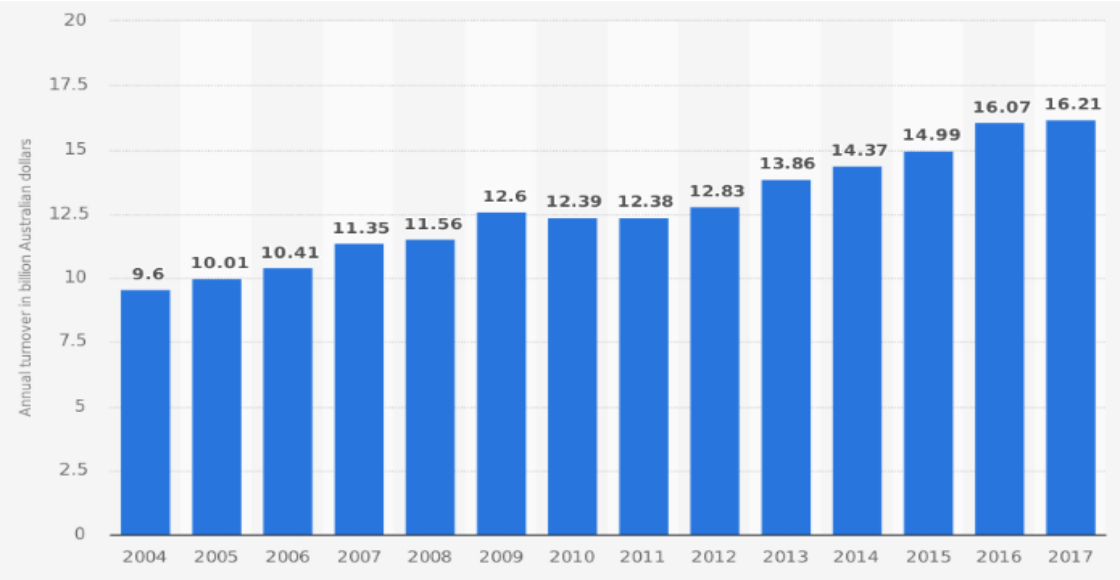

Figure 3.3: The Australian clothing industry annual turnover (2004 – 2017)

Source: Australian Bureau of Statistics (2019)

The industry's best performance, besides an increase in turnover, allowed for substantial employment growth within the industry. This has greatly assisted the development in the Australian textile and clothing industry which has likewise been grounded on the industry's flexibility and integrated design capability through its universities (Australian Bureau of Statistics, 2019:17)

The industry works in collaboration with different universities, and the latter assist in research and development, innovation, and the internet of things. Advanced technology is used as a tool to increase industry productivity and turnover. Not only does the revenue increment lead to job creation within the industry, but it has likewise shown to contribute to economic growth that assists in creating more jobs in other industries, illustrating noteworthy forward and backward linkages (Australia, 2018:3). Furthermore, the strength of the Australian textile and clothing industry resides in its export capacity, flexibility, innovative high-tech textiles, and the country's strong economy. Nonetheless, in 2008, this industry faced a number of challenges. These challenges include market limitation, environmental practices, ethical adaptation, international competition, and unreliable government support. All these issues led to low market share and the industry's low revenue and job loss (Walsh, 2009).

3.2.1.3 Italy

Italy is one of the developed countries that are dominant in terms of textile, clothing, and apparel production and exports within the European region. The main driver of the Italian textile and clothing industry has largely been the exports and employment orientation the industry has showcased. The Italian textile and clothing industry comprises of small firms, yet their turnovers have been remarkable since 1998. Both textiles and clothing hold a big share in terms of employment and turnover (Bianchi *et al.,* 2001:11).

The textile industry in this country plays an important role in economic growth and the country's development (Bianchi *et al.,* 2001:2). There are many factors that contribute to the Italian textile industry's success. These factors include advanced technology in production, innovative abilities, and easy access to capital and other factors of production. However, this success of the industry has been disturbed by industry development from countries with high investment and low labour costs that contributed to high global market competition (Greta & Lewandowski, 2010:20-25). Nonetheless, the Italian textile and apparel industry remains the leading industry among similar European industries. The role played by the textile industry

towards economic growth comes from its production capability and share of exports. Italy is regarded as one of the major exporters of textile products in the world (Nordas, 2004:15), and the Italian textile industry has been greatly contributing to global exports since the 1960s (Greta & Lewandowski, 2010:21; Jones, 2002:248). Looking at Table 3.3, the Italian textile and fashion industry experienced significant growth during the period between 2005 and 2008. However, during this period, the number of people employed by the industry has declined. The decrease in the number of workers can be explained by the decline of the number of enterprises within the industry (Greta & Lewandowski, 2010:32). Table 3.3 illustrates selected trends in the Italian textile and fashion industry between 2005 and 2008.

Table 3.3: Selected statistics of the Italian textile and fashion industry (2005 – 2008)

Subject	2005	2006	2007	2008
Sales value	51851	52836	54186	52513
Change in %	……..	1.9	2.6	-3.1
Productivity value	43676	44171	45227	43133
Change in %	……	1.1	2.4	-4.6
Number of enterprises	61624	59750	58004	57682
Change in %		-3.0	-2.9	-0.6
Number of employees	524930	516674	512956	503855
Change in %	…….	-1.6	0.7	-1.8

Source: Own compilation based on Greta and Lewandowski (2010)

Following the decline of employment experienced by the industry between 2005 and 2008, Table 3.4 also indicates that even between 2010 and 2015, employment within the textile and fashion industry has been gradually decreasing. However, the turnover did not follow the same trend with the employment level as the industry experienced positive growth of 1.1 percent in 2015. The logical explanation of the disparity between employment and turnover trends might be the use of more capital and technology. Nonetheless, compared to previous years, the employment level was substantially stabilised in 2015 (ISTAT, 2016:32).

Table 3.4: Selected statistics of the Italian textile and fashion industry (2010 – 2015)

Subject	2010	2011	2012	2013	2014	2015
Sales (millions euro)	49660	52768	51090	50720	52066	52639
percent variation	……..	6.3	-3.3	-0.7	2.7	1.1

Subject	2010	2011	2012	2013	2014	2015
Companies (no.)	53086	51873	50039	48590	47.619	47286
percent variation	……..	-2.3	-3.5	-2.9	-2.0	-0.7
Employees (thousands)	458.6	446.9	423.3	412.3	406.4	405
percent variation	……..	-2.6	-5.3	-2.6	-1.4	-0.3

Source: Own compilation based on Greta and Lewandowski (2010)

The textile and clothing industry in developed countries started with difficulties, and it was considered as one of the major sources of employment. However, owing to government support, technology growth, and import protection; the textile and clothing industry benefited from domestic demand. Therefore, besides its contribution to job creation, the textile and clothing industry within these selected economies has been regarded as one of the national income generators.

3.2.2 Textile and clothing industries within developing countries

3.2.2.1 China

Similar to most developing countries**,** Asian countries are also undergoing the same challenges of downward employment trends. Additionally, a significant distinction is that in those other developing countries such as China, they might face a decline in the employment contribution while still contributing to economic growth. In other words, they are shifting from labour production towards capital and technological production. In Jiangsu, between 2001 and 2011, the textile industry experienced significant growth in terms of job creation. However, from 2012 to 2015, the level of employment within the sector shrank from 13,322,000 employees in 2008 to 8,365,000 in 2015, respectively (United Nations, 2017:6). Table 3.5 displays the assets and employment trends in Jiangsu's textile industry between 2001 and 2015.

Table 3.5: Size of assets and employees of enterprise in Jiangsu's textile industry (2000 – 2015)

Year	Number of enterprises	Total assets (CNY billion)	Number of employees
2001	2348	113.440	8,313,000
2002	2727	127.059	8,503,000
2003	3132	151.155	9,161,000

Year	Number of enterprises	Total assets (CNY billion)	Number of employees
2004	3665	176.114	10,054,000
2005	4740	214.910	10,947,000
2006	5510	256.228	11,498,000
2007	6382	294.214	12,410,000
2008	7013	333.915	13,322,000
2009	8239	329.625	11,800,000
2010	8493	388.952	12,451,000
2011	5227	361.494	9,622,000
2012	4848	383.647	9,122,000
2013	4880	418.692	8,958,000
2014	4730	434.068	8,662,000
2015	4632	440.805	8,365,000

Source: Own compiled with data from the Jiangsu (2017)

Contrary to most other developing countries where the textile and clothing industry strive to survive on their own, improvement of the textile and clothing industry in China has largely been grounded on significant levels of government support. Besides, in order to extend and increase revenue from the textile and clothing industry, the Chinese government has implemented the strategy of "go global." This strategy aims to create economic and trade zones in other less developed countries where their small, medium and micro enterprises (SMMEs) can operate at their full capacity with less competition (Wang, 2009:16). In 2008, China had more than 19 economic trade zones around the globe. The recognition of this industry by the Chinese government is based on its share of economic growth and total exports (Dudin *et al.*, 2015:14). The key determinants assist in growing the share of the textile and clothing industry towards China's economic growth, and total exports are suppliers' selection, competitive price, quality, lead time, and quick response (Chen *et al.*, 2015:1658).

International trade plays an important role in the Chinese economy as it accounts for eight percent of the yearly gross national product (Hitt, 2005:8). This trade between China and the rest of the world is also reinforced by high levels of exports of the textile and clothing industry,

which has been experiencing a gradual increment. For instance, between 1995 and 2002, the share of Chinese exports of the textile and clothing industry grew from 16 percent in 1995 to 22 percent in 2002, respectively. In 2005, Chinese exports from the textile and clothing industry covered one-third of the global textile exports, and in 2006, within the first three quarters, the Chinese textile and clothing industry was able to generate a revenue of 217 billion US dollars (Zhou *et al.,* 2007).

Besides employment creation, the Chinese textile industry contributes immensely to global textile product exports. For example, in 2018, China was ranked number one amongst the top ten exporters of textile products. The Chinese share with the global textile exports accounted for more than 10.3 percent in 2000 and have increased to 37.6 percent in 2018 (Lu, 2019:7). The dominance of Chinese textile and clothing exports caused other developing countries to become less competitive. Consequently, they experienced low income from the textile and clothing industry, followed by job destruction.

3.2.2.2 India

The Indian textile and clothing industry is traditionally crucial to the country's economy owing to its important contribution towards employment and exports (Kim, 2019:3). The history of the textile and clothing industry suggests that this industry has been playing a significant role in the Indian trade. The nature of the textile and clothing industry in India is labour-intensive, and it is the second-largest employer in the Indian economy as it employs more than 60 million people. Additionally, this industry empowers women and reduces poverty in rural areas (Ministry of textiles, 2018:51).

Based on 2011 statistics, the textile industry generated revenue close to $55 billion (Ray *et al.,* 2016:9). In 2017, the Indian textile and clothing industry generated around $22 billion, and this was equivalent to eight percent of Indian total exports. One of the reasons that make the success of the Indian textile and clothing industry remains its diversity. Thus, the Indian textile and clothing industry is structured as follows: 46 percent of the industry is made by knit and non-knit garments, 17 percent is comprising Cotton exports, 14 percent is made by other textile articles, while the remaining 23 percent is made by other fabric and fibre exports (Landes *et al.,* 2005:13). Product diversification allows the industry to export and attain sales within different markets and countries. Figure 3.4 displays different countries that import Indian textile and clothing products. As indicated by Figure 3.4, Sri Lank is the main importer of

textile products from India, while the US imports more garment than other individual countries. Generally, the destination of Indian products is based on geographical proximity and trade agreement between countries, as most of its products are bought by its neighbour countries.

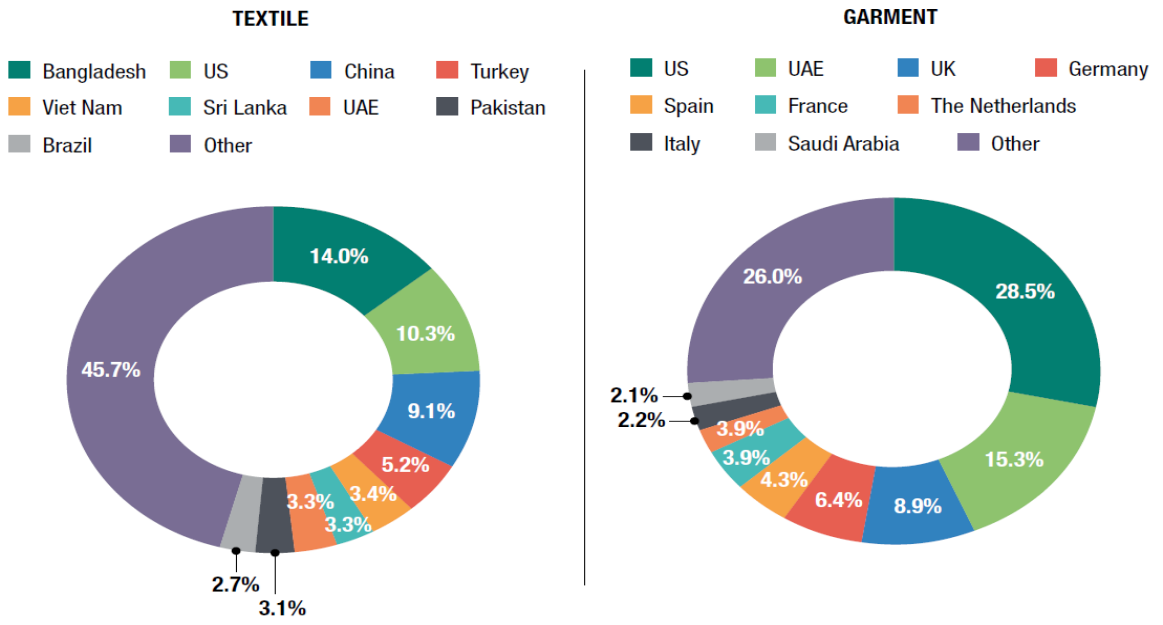

Figure 3.4: India's textile and garment exports by destination during 2017 (millions of US dollars)

Source: Balchin and Calabrese (2019)

As in other countries analysed above, the Indian textile and clothing (garment) industry started developing when the government decided to support and put in place policies that are in favour of domestic industries, yet in support of export growth (Mezzadri & Srivastava, 2015:21; Tewari, 2006:8). In order to protect domestic industries, the Indian textile industry is domestically based, and the government ensured that an integration toward globalisation moves as slow as possible, and strict labour laws were introduced in order to protect workers within smaller industries. The government supports domestic industries through subsidies and different types of licenses, whilst import taxation was established by the Indian government (Tewari, 2006:8). However, in recent years where India accepted to trade within trade blocs, government support towards the textile and clothing industry has focussed more on subsidies and targeted access to global markets (Kane, 2015:17).

Contrary to other developing countries in which the foreign direct investment (FDI) plays an important role towards the textile and clothing industry's development, due to protection

policies, FDI did not play a significant role to India's textile and clothing industry till 2015 where the Indian government saw the importance of FDI towards textile and garment production (Balchin & Calabrese, 2019:33). Nonetheless, the focus remains on the improvement of local ownership as most of the firms within the industry belong to Indian citizens, and the government keeps protecting and supporting domestic firms. India ranks third amongst the top five exporters of textile products and fifth in clothing products. Table 3.6 indicates that in 2017 India was slightly behind China and the EU in textile exports and whilst similarly lagging behind China, the EU, Bangladesh, and Vietnam in clothing exports (World Trade Organization, 2018:21).

Table 3.6: Top five world exporters of textile and clothing products (2000 – 2017)

Textiles					
Country/Region	**Value (US$ Billion)**		**Share World Exports (percent)**		
	2017	**2017**	**2010**	**2005**	**2000**
China	110	37.1	30.5	20.3	10.4
EU	69	23.4	27	34.9	36.7
India	17	5.8	5.1	4.1	3.6
U.S	14	4.6	4.8	6.1	7.1
Turkey	11	3.9	3.6	3.5	2.4
Clothing					
China	158	34.9	36.7	26.6	18.2
EU	130	28.6	28.4	31	28.7
Bangladesh	29	6.5	4.2	2.5	2.6
Vietnam	27	5.9	2.9	1.7	0.9
India	15	4.1	3.2	3.1	3.0

Source: The World Trade Organisation (2018)

3.2.2.3 Turkey

Despite the fact that Tukey is considered a bridge between developing and developed countries, it has largely been classified among the former. The textile and clothing- or ready-wear industries play a paramount role in support of the Turkish economy. This support is accounted for from this industry's share of the country's gross domestic product, total exports, and employment opportunities (Duran & Temiz, 2016: 506). The Turkish textile sector comprises 53,000 companies, and these companies create more than 400 000 jobs in the clothing industry

only. In 2014, this sector contributed 17.5 percent of the total exports and generated a turnover that amounted to $27.6 billion, with approximately eight percent increase compared to $25.8 billion acquired from the industry in 2013. The increase in Turkish textile revenue was owing to the flexibility of the industry (Tan, 2015:8). Industry flexibility allows the production of variable items and thus attracts and meets the preferences of different consumers. Besides the industry's flexibility, there exist other factors that assist the Turkish textile industry which among the most predominant include and largely hinges on the industry's global competitiveness. The factor strives of the country's favourable exchange rate policies, low labour cost, incentive policies, geographical location, employment, and the machinery pool (Nordas, 2004:27). From these advantages and many more, the Turkish textile and clothing industry enjoy higher revenue and creates many jobs (Tan, 2015:12).

According to Şabanoğlu (2019), the Turkey textile manufacturing began during Ottoman Empire and ever since Turkey keeps its notable share in the global textile and clothing industry. In 2017 Turkey was ranked among the top five textiles worldwide largest. The industry reflects signs of growth, seeing a doubling of size since 2000 due to exports in textile and clothing leaving Turkey arriving in high-end places in Europe, together with Italy, Germany, Spain and the United Kingdom ranking as the top four destinations. Stats SA (2019) further alludes that in 2016, exports in the aforementioned countries brought more than ten billion dollars. For Turkey's businessmen and population, textile and clothing manufacturing is noticeably a lucrative business. The industry comprises of over 52 000 clothing and 20 000 textile manufacturers, who generate revenue of approximately 50 billion euros. In the same year, 2016, the Turkey clothing and textile companies made a turnover of more than 3.721 billion Turkish lira (Şabanoğlu, 2019:10). Additionally, the Turkey textile and clothing industry is characterised as labour intensive, associated low labour costs and a strong linkage to progressive informal employment (Duran & Temiz, 2016:510).

The Australian Bureau of Statistics (2019) further alludes that Turkey's textiles and clothing revenue is supported by domestic consumption. In 2017 the industry experienced increase in turnover resulting from growth in the household expenditure. In addition, The Turkey's economy benefits from both imports and exports. Table 3.7 below exhibits Turkey's textile and clothing import and export levels.

Table 3.7: Turkey's textile and clothing imports and exports in US dollars (1989 – 2015)

Year	Textiles			Clothing		
	Export	Import	Net Export	Export	Import	Net Export
1989	1 330 972	293 170	1 037 802	2 740 787	5 550	2 735 237
1990	1 440 449	567 240	873 209	3 330 682	16 124	3 314 558
1991	1 429 076	537 348	891 728	3 478 251	26 121	3 452 130
1992	1 618 685	706 856	911 829	4 179 163	29 470	4 149 693
1993	1 592 262	1 017 975	574 287	4 339 448	45 614	4 293 834
1994	2 194 370	1 110 396	1 083 974	4 581 636	35 179	4 546 457
1995	2 526 550	1 810 635	715 915	6 118 750	48 954	6 069 796
1996	2 722 354	1 932 836	789 518	6 067 023	152 208	5 914 815
1997	3 352 039	2 323 914	1 028 125	6 697 152	232 704	6 464 448
1998	3 548 950	2 316 984	1 231 966	7 057 654	242 723	6 814 931
1999	3 477 794	1 906 871	1 570 923	6 515 961	208 112	6 307 849
2000	3 672 213	2 123 801	1 548 412	6 533 095	263 760	6 269 335
2001	3 942 661	1 920 722	2 021 939	6 661 072	238 876	6 422 196
2002	4 244 056	2 839 047	1 405 009	8 056 608	283 287	7 773 321
2003	5 261 666	3 440 633	1 821 033	9 961 747	422 444	9 539 303
2004	6 428 477	4 169 512	2 258 965	11 193 385	651 348	10 542 037
2005	7 075 507	4 440 514	2 634 993	11 833 105	787 840	11 045 265
2006	7 584 693	4 686 040	2 898 653	12 051 921	1 097 719	10 954 202
2007	8 942 139	6 008 750	2 933 389	13 886 333	1 566 561	12 319 772
2008	9 399 326	5 646 119	3 753 207	13 590 731	2 216 248	11 374 483
2009	7 723 826	4 718 389	3 005 437	11 555 926	2 147 280	9 408 646
2010	8 963 669	6 539 558	2 424 111	12 760 244	2 835 229	9 925 015
2011	10 772 416	7 557 232	3 215 184	13 947 693	3 271 716	10 675 977
2012	11 054 288	6 440 721	4 613 567	14 289 647	2 677 184	11 612 463
2013	12 148 882	6 789 494	5 359 388	15 393 251	3 139 926	12 253 325
2014	12 516 098	7 117 244	5 398 854	16 667 624	3 228 715	13 438 909
2015	10 952 168	6 231 926	4 720 242	15 120 787	3 015 623	12 105 164

Source: Own compilation based on Başkol (2018)

Contrary to developed countries in which the textile and clothing industry is more likely to be income drivers than employment catalysts, the textile and clothing industry in developing countries remains the critical source of employment. Developing countries that are enjoying the strong textile and clothing industry are shown to owe their success mainly to the introduction and implementation of policies that support local production and consumption.

Since most Sub-Saharan countries are also considered as developing countries in which the textile and clothing industry plays a significant role, it is necessary to discuss the nature of the textile and clothing industries within those countries, including South Africa.

3.2.3 Textile and clothing industries in sub-Saharan African countries

3.2.3.1 Kenya

The manufacturing sector plays an important role in improving or boosting economic growth not only in developed countries but also within their devolving counterparts. For instance, in 2004, the manufacturing sector accounted for 20 percent of the Kenyan gross domestic product (GDP), and it created over 30 0000 formal jobs and 3700000 of informal jobs. Furthermore, the textile industry contributed more to this success of the manufacturing sector, being a manufacturing sub-sector (Jauch & Traub-Merz, 2006:148). The Kenyan textile and clothing industry is not a recent industry, as it dated since the start of early colonisation practices (Kinyanjui *et al.*, 2004:2). However, its development increased over time. In 1945, Kenya accounted for 74 established industries, and most of these were owned by private investors. Between 1963 and 2006, after Kenyan independence, the textile industry improved significantly, and it had a capacity to provide employment opportunities that accounted for approximately 30 percent of the total labour force within the manufacturing sector. Additionally, Kenyan textile and clothing industries provide a market for small-scale farmers and producers of cotton. This industry supports more than 200 000 producers of cotton (Jauch & Traub-Merz, 2006:148).

In order to support and enhance the Kenyan textile and clothing industry, in 1990, the Kenyan government imposed a 100 percent duty on imported goods. As a result, the Kenyan clothing and textile industry increased its production capacity by more than 70 percent (Republic of Kenya, 2004:18). During this period, the major customers of the textile and clothing industry in Kenya were domestic buyers. Nonetheless, of this access, the Kenyan government decided to open its border towards international trade that promotes exports, skills and technology transfer, foreign exchange earnings, industrialisation enhancement, and the creation of employment opportunities (Republic of Kenya, 2004:21). Since this openness, the Kenyan textile industry has started experiencing a crisis. The crisis was due to ongoing deterioration of the domestic population purchasing powers, high competition, penetration of less expensive imports, and the elimination of import quotas. Consequently, a number of textile and clothing

companies decided to lay off employees, and others had to close their doors, which resulted in a loss of more than 12 000 jobs (Jauch & Traub-Merz, 2006:149). Despite this disturbance of the openness, the textile and clothing industry remained one of the major contributors to job creation within the manufacturing sector. Between 1993 and 2004, the total jobs created by the textile and clothing industry improved from 1,594 jobs in 1993 to 37,723 jobs in 2004, respectively (Jauch & Traub-Merz, 2006:150).

3.2.3.2 Mauritius

It is not only the Kenyan clothing and textile industry that faced the significant growth that was subsequently followed by a crisis. The textile industry also plays an important role in the Mauritius economy, especially in the manufacturing sector. Due to its capacity to focus not only on skilled workers but also on low-skilled and unskilled labour, the textile and clothing industry created many jobs for the Mauritius labour force since 1970. During the period that started in 1971, the Mauritius government introduced textile and clothing export promotion through the creation of the Export Processing Zone (EPZ) Act. This act mainly focussed on providing subsidies and allowances to the industry. In 1980, Mauritius schools actively produced educated labour that assisted and trained the unskilled labour in the textile and clothing industry with the aim of producing more and less expensive workers (Joomun 2006:193). During this period, the Mauritius clothing textile and clothing industry increased up to a total of 600 enterprises within the industry (Robeck *et al.*, 2012:168).

Mauritius is one of the largest producers of fashioned knitwear, and it is also the first producer and exporter of pure new wool products towards the European countries. According to the Apparel Export Promotion Council (AEPC) (2008), this successfulness of the Mauritius textile and clothing industry is mostly influenced by monetary policies that allowed the Mauritius currency to remain powerful and stable. The following are the main factors that assist in the development of the Mauritius textile and clothing industry:

- A good relationship between Mauritius and its neighbouring countries;
- A well-developed free port sector that facilitates logistics, shipment services, and quality control, and;
- Free access to the sea and air connections that link the country with major markets.

Those mentioned factors allowed Mauritius' textile and clothing industry to increase their production and export levels. Considering only the revenue from clothing sectors, in 2005, Mauritius yielded more than $361 million, as indicated in Table 3.8 below.

Table 3.8: Mauritius textiles and clothing products and their values in 2005

Product	Value ($) million
Trousers	72
Pullovers	82
Shirts	152
Other	155
Total	361

Source: Own construction based on AEPC (2008)

The textile and clothing industry contributes eight percent of total employment, 50 percent of total exports, and five percent of Mauritius' gross domestic product (Robeck *et al.*, 2012:170). However, due to the openness towards international trade, the production and productivity of unskilled domestic labour started becoming insufficient to meet global expectations. Thus since 1990, producers shifted their employment towards workers from Asian countries, including China and India, who could work more hours and get paid the same level of wages as local workers. Thus, in 2004 the Mauritius textile and clothing industry had already employed 15,000 foreign workers (Joomun, 2006:195). Furthermore, with the arrival of the African Growth and Opportunity Act (AGOA) in 2000, most African countries were providing subsidies to open their economies, allowing the establishment of free markets that allowed the flow of US products towards African countries. Unfortunately, Mauritius was excluded from this act, and consequently, it lost some of its African customers (Robeck *et al.*, 2012:169). Currently, Mauritius textile and clothing industry remains one of the quickest growing industry and its contribution towards economic growth and job creation remain crucial. Besides creating direct and indirect jobs, owing to its competitive piece within the African markets, this industry assist other industry to create jobs also (Rossier, 2017).

3.2.3.3 Lesotho

The textile and clothing industry in Lesotho started in the 1980s as a backup of the South African manufacturing industries that were facing economic embargo. This industry and South African industries that were operating in Lesotho were receiving support from the Lesotho

National Development Centre (LNDC) (Hlabana, 2007:27). The first textile and clothing industry in Lesotho was located in Maputsoe, close to its border with the Free State province in South Africa. During the apartheid sanctions in this country, most foreign investors within the textile and clothing industry decided to relocate to Lesotho. In addition, with the creation or introduction of the AGOA act, the textile and clothing industry accessed free financial support and enjoyed a free trade market. This facilitated the industry's expansion and job creation (LNDC, 2002:3).

Economic growth in Lesotho, like many other developing countries, is mostly dependent on the manufacturing sector in both employment and economic growth. Between 2002 and 2003, this sector contributed 20.6 percent to the gross domestic product and 14 percent between 2009 and 2010. As on one of the manufacturing sub-groups, the textile and clothing industry is dominant and has continued to play an important role directly to the manufacturing sector's improvement and indirectly to the country's economic growth. The share of the textile and clothing industry towards economic growth in Lesotho, accounts for approximately 7.7 percent of the total growth. Additionally, in 2016 this industry accounted for approximately 60 percent of the total exports from the manufacturing sector (Ayoki, 2016: 3). Despite the challenges faced by the textile and clothing industry in Lesotho, this industry is still playing a significant role in the country's export levels. Figure 3.5 exhibits a comparison of Lesotho's textile exports with other selected sub-Saharan countries.

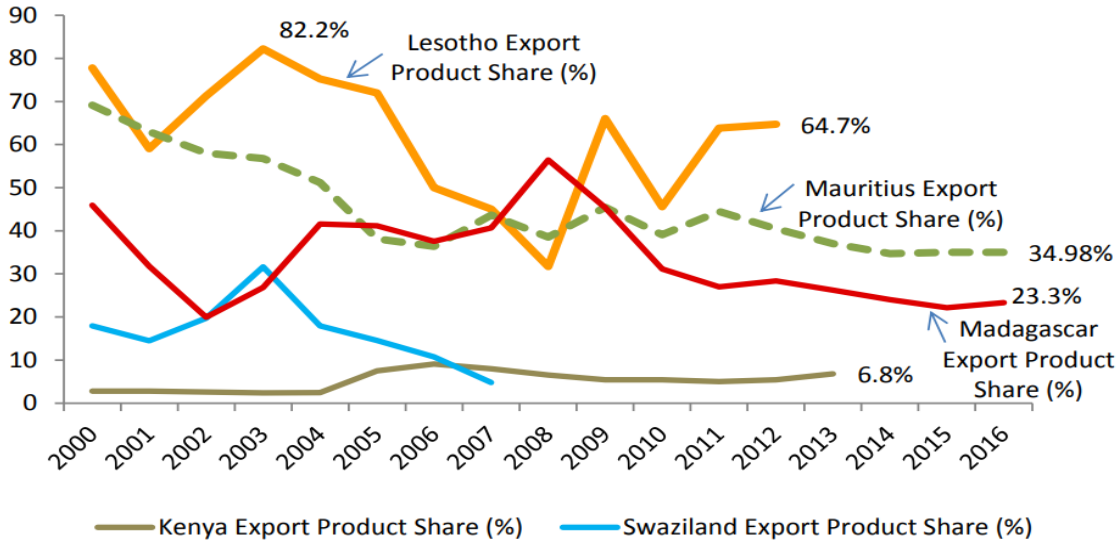

Figure 3.5: Export product share of selected sub-Saharan African countries (2000 – 2016)

Source: Ayoki (2016)

Figure 3.5 indicates that the Lesotho economy enjoys a significant advantage in textile and clothing exports compared to similar countries on the figure. Its share of export products is 82.2 percent, followed by Mauritius 64.7 percent and Madagascar 23.3 percent. The country with the lowest share of the export product is Kenya, with 6.8 percent. The Lesotho textile and clothing industry remains significant towards the economy mostly because the country imports less than it exports. Thus, the industry is able to increase revenue and create more jobs (Ayoki, 2016:7). Despite fluctuations in exports that result from the manufacturing sector, the textile industry remains significant. As depicted by Figure 3.6, the Lesotho textile industry's exports experienced a sharp decline between 2008 and 2009, as a result of the financial crises. As shown, exports from the textile and clothing industry, in Lesotho, increased more than exports during the period running from 2000 to 2012.

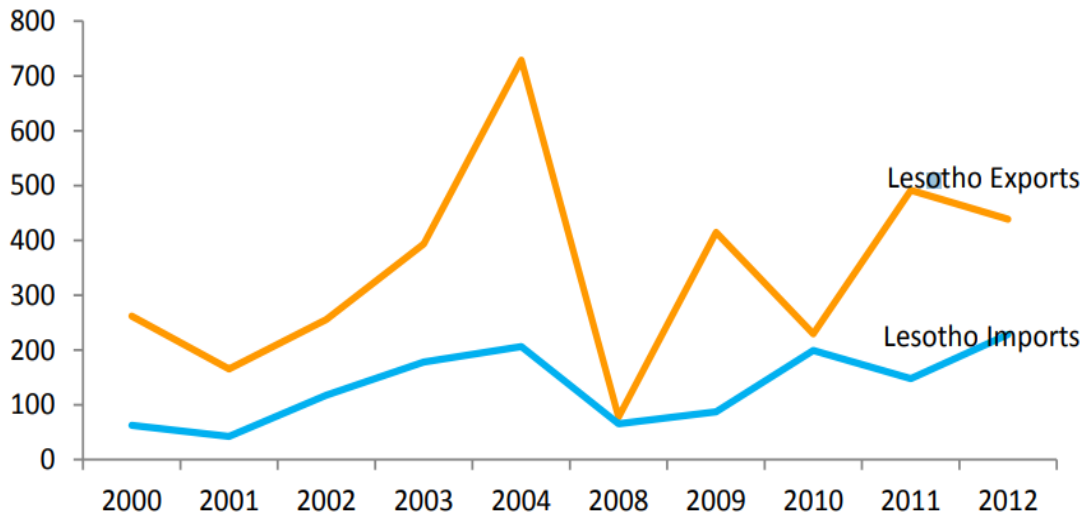

Figure 3.6: Lesotho's textile and clothing imports and exports (2000 – 2012)

Source: Ayoki (2016)

Besides the exports into other African countries, when comparing the sub-Saharan African countries, Lesotho ranks first among the top 15 that export a high volume of textile and clothing products in the United States of America (Ayoki, 2016:4). Additionally, to its contribution to economic growth, the Lesotho textile and clothing industry employs more than 40,000 people, where most of them are less skilled and women. This employment capacity makes the textile and clothing industry to be considered as the largest source of employment within the country. Lesotho is also known as one of the African countries with a successful history in manufacturing exports, especially in the textile and clothing industry. The success of the textile

and clothing industry in Lesotho is a result of access to key markets, preferential trade, and a high level of foreign direct investment (FDI), cost advantages (labour is less expensive in Lesotho), and duty-free access to Europe (Brown, 2016).

3.2.3.4 Madagascar

In the same line with Lesotho, the textile and clothing industry plays a significant role in Madagascar's economy, especially in terms of exports and job creation. Similar to Lesotho, the Malagasy economy depends mostly on the performance of the textile and clothing industry as the latter is the source of revenue and employment (Morris & Staritz, 2014:248). This industry is the major source of exports, employment, and poverty reduction (Morris & Staritz, 2014:246). The success of the textile and clothing industry in Madagascar is largely driven by government and industrial policies in support of the textile and clothing industry. Those government policies are well implemented through the better use of foreign direct investment. Moreover, the Madagascar economy enjoys the benefits from the EPZ law that provides 30 years of exemption from all duties on imports and exports, accelerated depreciation allowances, special access to foreign currency, capital transfers and a range of tax concessions, unrestricted foreign currency controls and imports of incentives (Morris & Staritz, 2014:247).

The EPZ allows firms registered under its umbrella to be allocated in any country and to be owned by anyone. Thus, the EPZ industries can also be 100 percent owned by foreign investors. Moreover, this strategy supports flexibility and product diversification within the textile and clothing industry (Chen & Landry, 2016). All of these mentioned factors that support production and exports from the textile and clothing industry in Madagascar's economy are built on the country's political stability. With stable institutions, foreign investors are motivated and attracted to invest in Madagascar industries. The critical markets for the Malagasy exports are located within the USA and the EU (Balchin & Calabrese, 2019:35). Regardless of a few years of a slight decline (especially since the financial crisis of 2008), the Malagasy textile and garment exports are still playing a significant role in the total exports. Figure 3.7 exhibits the textile and garment exports towards the total Malagasy exports. In the figure, it can be seen that the share of the garment exports increases over time, especially between 2010 and 2016. This suggests that the contribution of garment revenue toward economic growth has been increasing and that Madagascar benefits from trade.

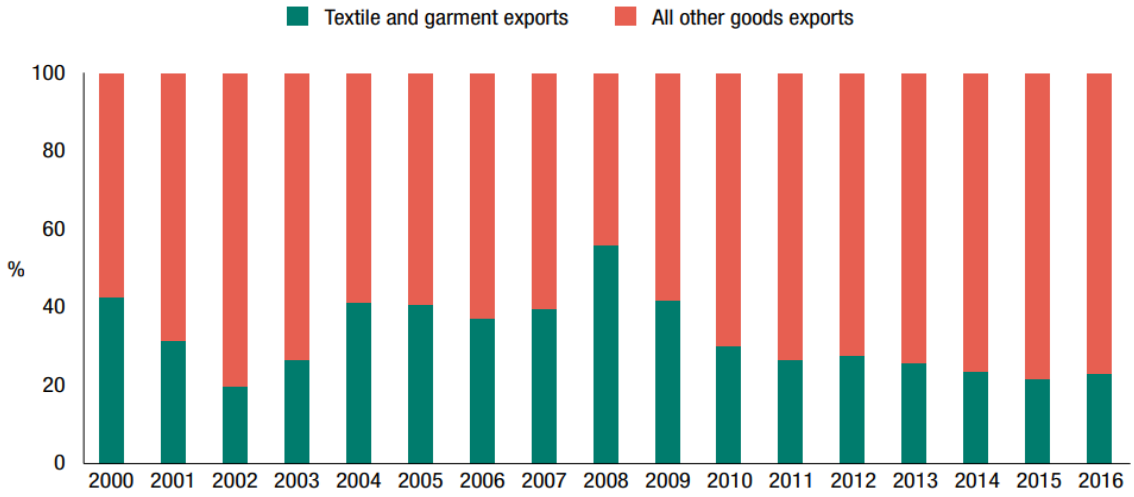

Figure 3.7: Textile and garment exports share on the Madagascar's total goods exports (2000 – 2016)

Source: Balchin and Calabrese (2019)

3.2.3.5 Ethiopia

The history of the textile industry in Ethiopia began in 1939 in a city called Dire Dawa, and the arrival of the textile industry makes the beginning of Ethiopian industrialisation (Ethiopian Textile Industry Development Institute (ETIDI), 2014:2). The Ethiopian textile industry encloses cotton producing, garment, knitting, ginning, spinning, dyeing, and weaving. The cotton used by the industry is produced within the country as three million hectares of land are available for cotton production, even though only about four percent of this land is used to produce the required cotton (Wagaye & Walle, 2018:117). In 1991, the Ethiopian manufacturing sector estimated less than 20 textile factories, and most of them were owned by the government. Recently (in 2014), the number of textile and clothing factories has increased to 108 (Van der Pols, 2015:8). Table 3.9 below exhibits the number of textile and apparel factories and the number of people employed in those factories - in 2014 - and how women are represented.

Table 3.9: Number of textile and clothing factories and their contribution towards employment in 2014

Area of operation	Number of factories	Number of workers	Women as percentages
Ginning	17	2000	55
Spinning	1	443	60

Area of operation	Number of factories	Number of workers	Women as percentages
Dyeing & printing	1	50	50
Integrated textile	21	24291	80
Weaving & knitting	13	2067	50
Handloom	4	433	55
Garment factory	51	8200	85
Total	108	37484	

Source: Author's own construction based on Van der Pols (2015)

As depicted in Table 3.9, the textile and clothing industry plays a significant role in creating employment, especially for women. In fact, none of the factories displayed in the table employ less than 50 percent of women. This industry is also a vital driver of poverty reduction. Owing to the country's high production of cotton, the production of textiles followed an upward trend, subsequently improving the Ethiopian economy and poverty reduction rates since 1939 (Akter, 2017:21). Additionally, in 1991, the textile and clothing industry was considered as a critical area for economic development and poverty reduction (Diriba *et al*., 2019: 586). Based on its rapid growth, the Ethiopian textile and clothing industry is expected to increase its production and export levels in 2020. In this year (2020), the earnings from total export were expected to increase by up to $1 billion from which the share of the textile and clothing industry will account for 22 percent (de Haan & Theuws, 2018).

The success of the Ethiopian textile and clothing industry is supported by the attention given by the government towards the industry. The Ethiopian government considers the textile and clothing industry as one of the key priorities that need assistance for their abilities of potential employment creation. Additionally, the Ethiopian government included the textile and clothing industry in its Growth and Transformation Plan (GTP) to ensure that the industry performs well (Van der Pols, 2015:5). The other sub-Saharan governments should learn from the Ethiopian government in taking care of their textile and clothing industries.

Textile and clothing industry in sub-Saharan countries are mostly labour intensive and operates in a similar manner as other developing countries, with the exception of some of the other developing countries such as China and Turkey which are more capital and technological intensive than labour intensive.

3.3 AN OVERVIEW OF THE SOUTH AFRICAN TEXTILE AND CLOTHING INDUSTRY

The South African textile and clothing industry began in the early 1920s and 1930s. The main focus was the production of sheeting, rugs, and blankets (Morris *et al.*, 2004:13). However, in the post second world war, this industry expanded its capacity to the production of clothing, furnishings, industrial textile, and in 1960 the industry focus moved to synthetic fibres (Roberts & Thoburn 2003:76). The textile and clothing industry in South Africa was established under economic challenges. The industry could not achieve the benefits of economies of scale as its production was mainly adapted towards domestic consumption within the constraints of low economic growth (Vlok, 2006: 242). However, this industry remains critical to the economy as it creates jobs, especially for women and the low skilled work force (Matswalela, 2012:29; Vlok, 2006:227).

The textile and clothing industry is classified as one of the manufacturing industries in South Africa. The contribution of clothing, footwear, and leather (CTFL) towards manufacturing employment were estimated at 14 percent in 2013, and it was one of the largest sources of income tax in South Africa. Additionally, during the same year, this sector created around 80 000 jobs, and its contribution towards GDP was approximately eight percent (The South African Textile and Clothing Industry, 2014). Regardless of the role played by the textile industry, the South African economy has gone through countless reforms which have been inclined on social progress on issues such as unemployment, poverty, and inequality (Vlok, 2006: 221). The South African textile industry has also been through reforms (Stats SA, 2018:5). These textile and clothing firms are mostly located in urban areas where labour is available and considered less expensive (Vlok, 2006:227). However, in the countryside where more population is concentrated, this industry is main employer, source of formal employment and the household income (Forstater, 2010:9).

The South African textile and clothing industry joined the World Trade Organisation (WTO) after its democratisation in 1994. Since then, the industry was open to the global market and international trade. Due to the depreciation and devaluation of the South African currency between 1990 and 2000, the South African textile and clothing industry was able to increase its export levels. This high quantity of exports did not last for a long period, the reason being since 2002 the Rand (the South African currency) value has largely appreciated, and as a result, exports declined until late 2009 (Lu, 2019:19). Additionally, since the accession to the WTO,

trade liberalisation accentuated the possibility of imports, especially those from China. This has caused an unparalleled crisis within the industry, characterised by job losses of a large-scale. Since 2003, more than 55,500 job losses were recorded in the textile and clothing industry, leading to a 37 percent reduction in employment level since 1996, together with a decline of production capacity (Vlok, 2006:228).

3.3.1 Size of the industry

According to Lu (2019:11), it is not easy to determine the exact number of companies within the textile and clothing industry. The main cause is the informal nature of the industry. The second reason is that operations in the textile and clothing industry can be set up approximately anywhere. Nonetheless, it is estimated that 2000 companies of clothing, textile, footwear, and leather are registered and active. Among these companies, about 1600 (approximately 80 percent) are registered under the textile and clothing industry (Stats SA, 2019:8). The majority of companies within South Africa's textile and clothing industry employ between 20 and 200 workers, meaning they are either small or medium (Stats SA, 2019:8).

The textiles contribute R17.4 billion while clothing contributes R16.6 billion. The textiles have contributed 18.7 percent while clothing contributed only 9.4 percent towards total exports taking into account the total exports. This implies that the majority of sales are generated from the domestic market. Parenthetically, it is vital to emphasize that analogous to developed economies, South Africa's clothing and textile retailers produce substantial value chain power towards economic growth (Stats SA, 2018:13).

3.3.2 Ownership

While larger and more established businesses, especially within the textile industry, are mostly owned by white people, a significant number of small and medium-sized businesses, mainly in the clothing industry, belong to black people (WTO, 2018:8). These small and medium businesses owned by black people are generally located in Durban and its townships and Cape Town and its townships. Progressively, even black people are buying some formal, larger operation companies (Vlok, 2006:229). While a number of firms is retained by foreign or foreign multinationals, most of them belong to the indigenous population. Contrary to other countries such as Ethiopia in which most textile and clothing industries are owned by the government, the South African textile and clothing industry is mostly owned by private

individuals. However, this industry is receiving government support in order to overcome the challenge of competitiveness (Bekker, 2016).

3.3.3 Employment

Due to a large number of small and informal firms in the clothing industry, it is difficult to provide the exact number of firms and their employment (Jauch& Traub-Merz, 2007:228; Morris *et al.*, 2004:7). Additionally, the shutting down of some firms in some places often results in the creation of new firms elsewhere or production capacity growth within the existing firms that acquire new equipment and machinery. Although each of those unregistered companies employs a small number of people, given that there are many companies, this industry employs a significant number of people. Consequently, these companies are most important to the industry due to their flexibility in terms of wage rates, lead times, and productivity runs (Naumann, 2002:4).

The textile and clothing industry is a more labour-intensive industry within the manufacturing sector, and it is the most significant employer of low-skilled workers within poor communities (Lu, 2019:32). In 2005, the recorded number of employees recorded by Stats SA (2005:12) suggested that approximately 143 000 people were employed by the textile and clothing industry. This number amounted to 12 percent of the total number of people employed in the manufacturing sector. Among these people, 97 544 were employed in the clothing industry, while 45 319 were employed in textiles, and these were recorded as formal employment (Vlok, 2006:24). If informal employment was to be included, the total number of people employed in the textile and clothing industry could be estimated at approximately 200 000 in 2018. This increase is good, reflecting a positive recovery from the global crisis and also a positive input in creating employment. The majority of people employed in the textile and clothing industry is formed by blacks/Africans and women. This implies that job losses in the textile and clothing industry have an uneven effect on women-headed households (Stats SA, 2018:21).

3.3.4 Performance of the textile and clothing industry in South Africa since 1994

A large number of companies within textile and clothing are mainly concentrated in provinces in Gauteng, KwaZulu-Natal, and the Western Cape (Gibbon, 2002:12). However, in the early 1960s, most of the clothing companies were concentrated in the city of Johannesburg, but due to restriction imposed by the apartheid regime limiting black labour to work in urban areas, the

textile and clothing industry has moved and expanded in Cape Town and Durban where they could have access to coloured and Indian labour. Because a large number of leading retailers relocated to Cape Town, the Cape Town region has become the major centre of the textile and clothing industry in South Africa (Van Zyl & Matswalela, 2016:382). Figure 3.8 exhibits the employment trend from the textile and clothing industry from 1995 to 2016. As can be seen, employment declined since 2000, and the lowest level was experienced in 2015. More jobs were lost in clothing enterprises, and this might be the result of more import penetration, particularly from China.

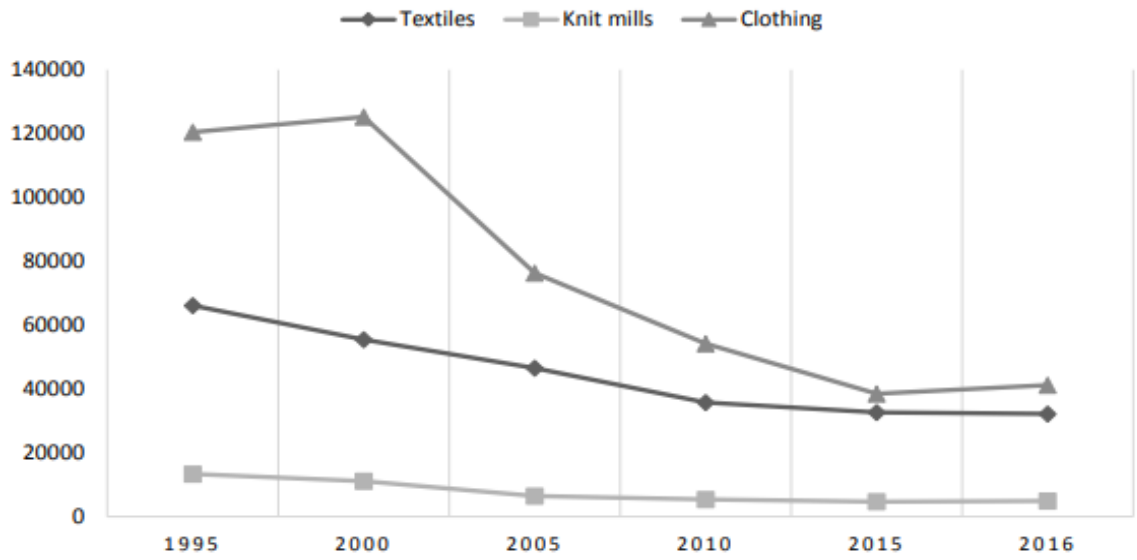

Figure 3.8: Textile and clothing industry employment trends (1995 – 2016)

Source: Claassens (2017)

These three provinces experienced a decline in the number of clothing companies. Between 1995 and 2001, KwaZulu-Natal suffered the highest decline of 13.6 percent. The number of firms in the textile and clothing industry improved in 2004; during this period, the total number of companies in the textile and clothing industry was 827 (WTO, 2004:29). During the period of 1996, the textile industry experienced employment volatility. Considering the period from 1996 to 2003, official employment in the clothing industry experienced a decline of 9.4 percent due to the 2003 financial crisis. That is, from 125 181 in 1994 to 113 464 employees in 2003, respectively. In the textile industry, the employment level reached its peak in 1996, where 76 930 people were employed. Nonetheless, this employment level declined to 76 000 employees in 1997 and 50 596 in 1998, respectively; and it was worsened in 2003, where only 53 736 where employed in the textile industry. In 2003, the share of the textile and clothing industry towards total employment in the South African manufacturing sector was 4.2 percent (Morris

et al., 2004:9). In 2004, the total sales from the textile and clothing industry amounted to R34 billion, of which textiles contributed R17.4 billion and clothing R16.6 billion. Regardless of this contribution, since 2000, the number of people employed in both textile and clothing industries has been declining, but a major decline was experienced with clothing companies (Claassens, 2017:8; Morris *et al.*, 2004:6).

As mentioned and highlighted in Figure 3.8, the employment level faced a serious decline within both the textile and clothing industries. These job losses, in the view of Claassens (2017:10), were caused by insignificant policies such as free trade agreements implemented by the government, which resulted in import growth and low consumption of domestic products. The currency depreciation is one of the factors that impede on the South African trade. According to Thuy and Thuy (2019:1), currency depreciation would have a long run of positive impacts on countries' exports. However, it is not the case for South Africa as the country has recently been facing the issue of low economic growth and a weak currency when compared to its major trading partners. Moreover, some of the materials used for production are imported, and if the currency is weak, production costs are higher, leading to low competitiveness (Mogoe, 2013:60). Figure 3.9 illustrates how the exchange rate also played an important role in the value of the textile trade leading to lower exports compared to what South Africa was exporting from the local textile industry. As depicted, when the exchange rate increased between six to 14 rand per one US dollar, the textile import level was almost threefold of exports (Claassens, 2017:11).

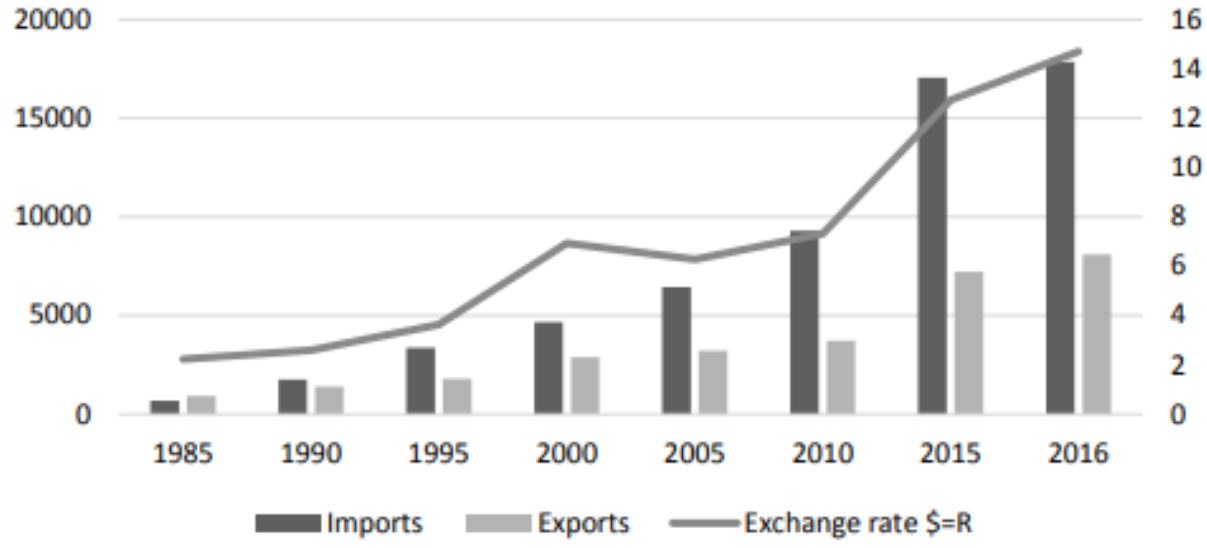

Figure 3.9: Textile exports and imports compared to the exchange rate (1985 – 2016)
Source: Claassens (2017)

Stats SA (2018:6) further alluded that the South African textile industry in 2016 has achieved $1.07 billion in textile and clothing exports but also spent as much as $2.92 billion on clothing imports. Amongst the latter, 46 percent of the textile value emanated from China. According to Cotton SA (2018:32), South Africa, in 2017, imported 62 000 tons of textile fibres to be used in the domestic industry. Of the fibres, 36 percent were cotton, and two percent of the total fibres were imported from China. This is due to the fact that textiles from China are cheaper than other countries and also that South Africa considers the country a major trading partner seeing their partnership in the BRICS agreements (Lu, 2019:15). BRICS countries made an agreement on free trade and tariff facilitation. The most pertinent issue of a free trade agreement among BRICS countries is the disparities in their economic structure, environment, and trade volume. Consequently, the sensitivity of tariff and trade facilitation differs. Some countries might lose where others are making profits (Wu *et al.*, 2013:1). South Africa is one of those countries that are negatively affected by volume trade within BRICS as it imports more than it exports.

The textile industry in South Africa is supported by over 19 000 hectares of land under irrigation for cotton, of which the majority of the land is situated in Limpopo and Northern Cape. A further 17 600 hectares are dryland, which is also used for growing cotton (Cotton SA, 2018). According to Stats SA (2018:6), about 14 percent of South African total manufacturing was contributed by the textile industry, which includes footwear and clothing. A total of 80 000 people are directly employed by the textile industry in South Africa, and the textile industry contributes around one percent of the South African GDP. Moreover, 21 percent of the South African total industry revenues, which are $7.4 billion each year, emanate from the textile industry, which includes footwear and clothing (Stats SA, 2018:12). The average household in South Africa spends about five percent of its income on products in the textile industry (Stats SA, 2018:3). The South African textile and clothing industry's volume of trade was also affected by energy instability, commonly known as "load shedding." In textile and other manufacturing industries, load shedding pushes industries to stop their production while variable and fixed costs are not stopped (Smith, 2018:19). Figure 3.10 illustrates the growth in total sales from the textile and clothing industry between 1994 and 2018.

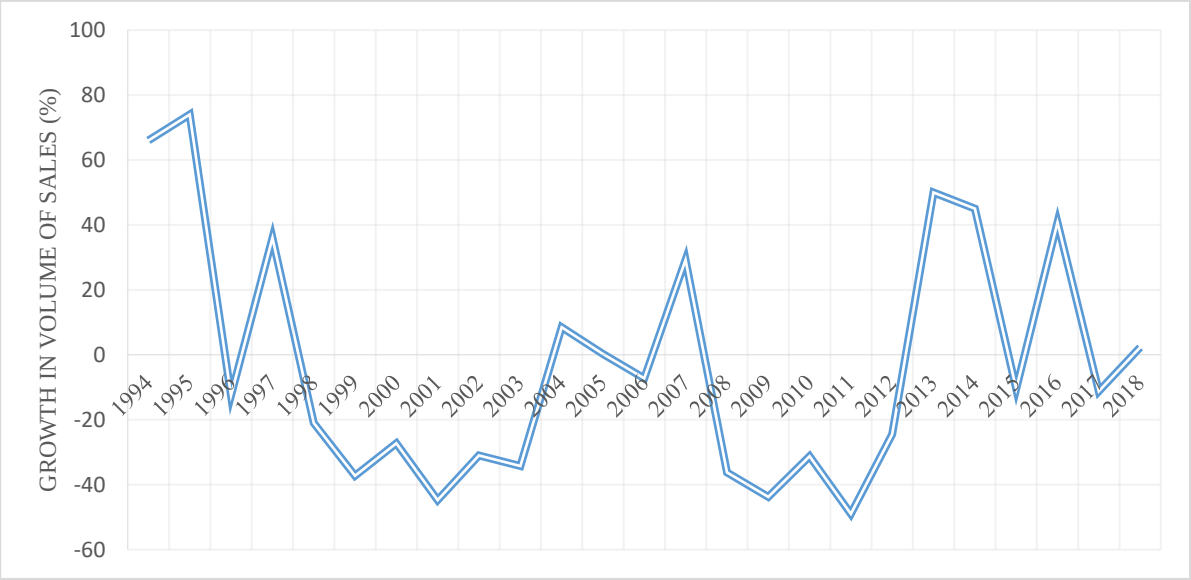

Figure 3.10: Growth in the volume of sales (%) in textiles and clothing industry (1994 – 2018)

Source: Author's own compilation with data from World Bank (2019)

According to the WTO (2009:19), the industry from 2004 had increasingly become exposed to international competition, which resulted in poor growth performance and the exit of a number of small producers and traders. The sales trend before the global crisis was attributed to the entry of China into the WTO. The industry since then has struggled fundamentally to compete with China and other low-cost producers that have flooded the industry with lower-priced textiles due to labour cost and less advanced technology. The South African textile industry was affected by the regulatory framework in which a system of quotas for Chinese importers failed in its quest to provide relief in the domestic industry as imports from other countries increased but from different sources, especially from China. High levels of imported textile and clothing products have led to the low competitiveness of domestic industries. In March 2009, the biggest textile firm in South Africa, Frame Textiles, closed down, leading to 1 400 jobs being lost (WTO, 2009:36). Figure 3.11 exhibits changes in textile and clothing value-added by the manufacturing sector between 2003 and 2016.

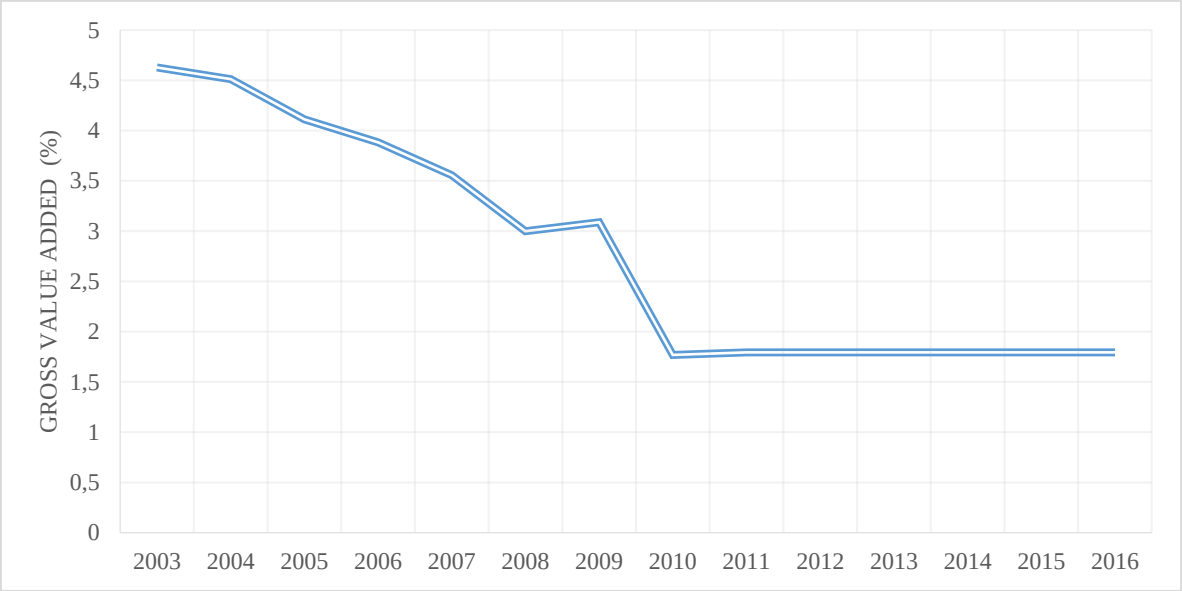

Figure 3.11: Gross value added (GVA) (%) in the South African manufacturing sector (2003 – 2016)

Source: Author's own compilation with data from World Bank (2019)

Figure 3.11 suggests that the contribution value of the textile and clothing industry between 2010 and 2016 was just below two percent after a major decline from 4.6 percent to below two percent from 2003 to 2010, respectively. In the first and second quarters of 2019, the textile industry has contributed only close to zero percent to the total change in the manufacturing production, though possessing a weight of 3.12 percent potential contribution to the economy (Stats SA, 2019:3). The clothing and textile industry in South Africa is challenged with rigid rivalry from low-cost manufacturers.

The South African textile and clothing industry is close to the fifth of the total manufacturing employment industry in the South African economy (IDC, 2014:8). China has had a negative impact on the textile industry in South Africa as well as illegal imports of textile goods into the country (Stats SA, 2019:21). The 2008 global financial crisis presented lessons to South Africa as it affected the textile industry globally and locally in a negative way (Moyo, 2015:120). The textile and clothing industry in 2017 has seen a decline in employment due to increased garment imports, which fundamentally lead to a decline in local garment production (shown in Figure 3.12). This decline has continued into 2018 (Cotton SA, 2018).

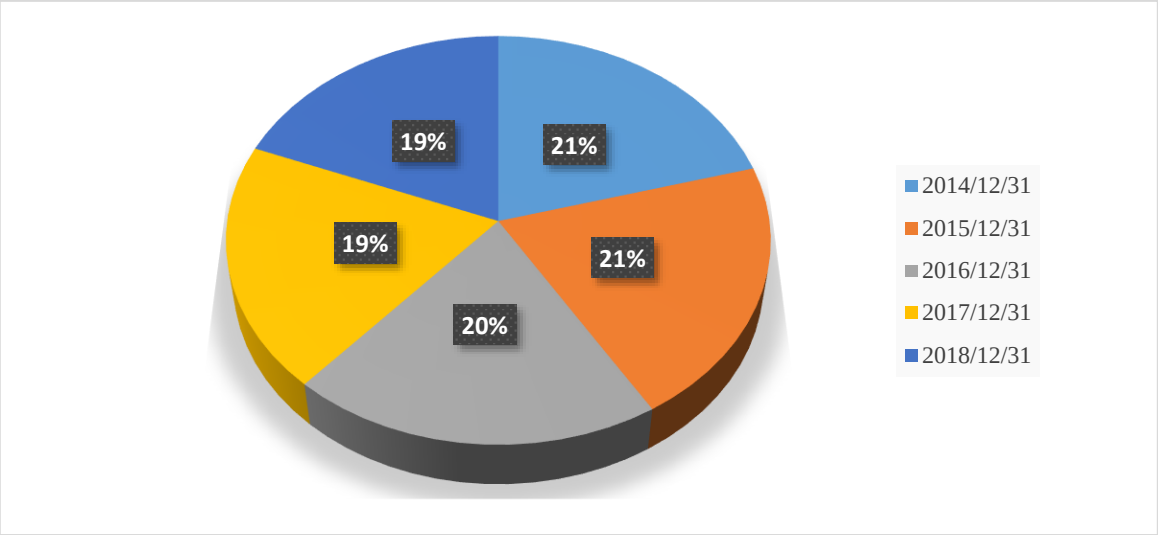

Figure 3.12: Physical volume production of the textile and clothing industry (2014 – 2018)

Source: Own compilation (Data obtained from Stats SA, 2019)

Between 2014 and 2018, the industry experienced a decrease in the demand for both domestic products and employment level as result of less expensive import penetration, especially those from China (Bonga-Bonga & Biyase, 2018:5; Cotton SA, 2018). The industry also suffered from the country's economic status as the country was downgraded resulting in low demand for goods and services (Edwards & Jenkins, 2015:447).

Cotton SA (2018) has raised the biggest challenge in the clothing and textile industry in improving economic growth, which has been curbing consumer spending. This trend has primarily been seen from 2014 to 2018, which has severely affected the industry. In the 3rd quarter of 2017, the real growth rate slowed to two percent. The results do not allude that the textile industry affected the GDP. The economy of the country in the context of the textile and clothing in 2017 experienced an increase in prices of products in the first nine months of 2017, compared to 2016. The policy deficiency that manifests during the downgrading of the South African credit rating, had a robust impact on the local textile and clothing industry. Consequently, the industry is utterly facing difficulties to compete (Cotton SA, 2018). The production capacity utilised for textiles was 65.1 percent in the first quarter of 2018 compared to 65.6 percent experienced in the first quarter of 2017. That of clothing was 75.8 percent compared to 76.2 percent in the first quarter of 2017. The aggregate manufacturing's capacity utilisation stood at 80.5 percent, about one percent greater than for the first quarter in 2017 (Stats SA, 2018:3).

Although it was said that the textile and clothing is a niche of employment for less-skilled people, their future is uncertain. Due to technology, digitalisation, computerisation, automatization, and robotic production improvement, a good number of jobs are being lost and with no sign that the rate of job destruction will stop or be reduced (ILO, 201:15). Although this issue of job loss, largely a result of investing more in robotics to facilitate the transition to industry 4.0, is experienced more in developed countries, it is certain that the clothing and textile industries within developing countries are the next victims. Although the globalisation appears to be an opportunity for some countries, its other side represents a threat to others. For instance, the Asian textile and clothing industries are benefiting more from the abolishment of the quotas compared to other countries. The Asian textile and clothing products are being exported in other countries at a low price, and not only does this affect those importing country's economies, but they also do harm the textile and clothing industry in a particular way (Yücel, 2010:11).

3.4 CHAPTER SYNOPSIS

In order to have a better knowledge of the South African textile and clothing industry and to understand its position on the regional and global markets, it was indispensable to conduct a trend analysis. This trend analysis encompassed the global performance and difficulties of textile and clothing industries from both developed and developing countries. The reviews of those trends revealed that, in most cases, the textile and industry's success is built on the capability of producing diversified products that result from the flexibility feature of the industry. Additionally, government support in terms of subsidies and policies that favours the textile and clothing industries play an important role in making the domestic industry more competitive on the global markets. Although the textile and clothing industry plays a crucial role in the economy relative to gross domestic product and job opportunities, this industry is being faced with a good number of challenges. The most dominant challenge that affects most countries is openness and the reduction or abolition of quotas. This challenge weakens the domestic industry through the introduction of less expensive products within the local markets. The reduction of domestic demand for local products leads to shutting down for some firms.

There are more lessons that South Africa can learn from other countries. As aforementioned, though it experiences the shortage of labour, the Australian textile and clothing industry capitalises on its land-extensive to produce and grow its own raw materials. In this context, South Africa has both advantages. The land and labour are abundantly available yet

underexploited. Policies and strategies that allow the full use of factors of production to improve the South African textile and clothing industry are imperatively required.

One factor that assists developed and some developing countries to improve their textile and clothing industry's exports and revenues is the Exchange Rate Policies. For instance, the power of Turkish competitiveness is that almost all its textile products importers use the same currency, and this currency is more likely to retain its value against other currencies. In the South African context, the Rand fluctuation is more likely to negatively impact on the South African textile and clothing industry's performance. Another advantage that improves the Turkish textile industry is good management established in maximising the presence of low labour cost. This would also be an advantage in South Africa as the country has more than enough labour yet underutilised. Additionally, in order to strengthen the textile and clothing industry, the South African government should establish and implement incentive policies, as is the case in a country with a well-established textile and clothing industry (Yavan, 2011: 150). Subsequently, the share of the textile and clothing industry towards economic growth and job creation declines. The next chapter presents and discusses the data and methodology used to achieve the study's empirical findings.

This chapter has shown that the textile and clothing industry in the developed countries contributes more to economic growth or income growth than employment as the industry has shifted from labour intensive to technology and capital intensive. However, in most developing countries, the textile and clothing industry remains a key driver of employment creation, and these industries can only be sustained if the government subsidise industries and import penetration are well controlled.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The previous chapter explained how the study variables have been fluctuating following time variations. In other words, chapter three focussed on data trend analysis. Since the main aim of the study is to empirically provide the effect of explanatory variables on the dependent variables, it is necessary to explicate the process. In regard to this fourth chapter, the data sample and series under the study are explained. The chapter also presents the methodology used to examine the relationship between the dependent and explanatory variables. Each variable's definition and measurements are provided. Given that the study uses statistical and econometric analyses, this chapter presents the two approaches separately. Firstly, the preliminary statistics to be applied to variables are discussed. Secondly, econometric approaches are explained. Thus, considering their importance in determining the order of integration for variables, various types of unit root and stationarity tests are discussed in this study. The Autoregressive distributed lag (ARDL) model is also established in detail, followed by other methods that assist in examining the causal relationship between variables. However, prior to causality tests, a number of diagnostic tests are presented and discussed. All the methods and approaches discussed in this chapter assisted in achieving the following empirical objectives set in Chapter 1.

- To analyse the contribution of the South African textile and clothing industry towards economic growth and national income;
- To analyse the long-run relationships between employment, exports, and output of the textile and clothing industry on South African economic growth;
- To determine the short-run relationships between exports, employment, and output in the textile and clothing on South African economic growth;
- To investigate the causal relationships between employments, exports, and output in the South African textile and clothing industry and economic growth in the country.

Lastly, this chapter closes with a summary of all elements discussed throughout the chapter.

4.2 SAMPLING AND DATA SELECTION

Considering the current study, a functionalist approach is applied and all the study variables are suggested to have an indispensable contribution to the overall functionality and stability of South African economic growth (Thompson *et al.,* 2016:190). In this regard, the concept of functionalism considers the effect of macroeconomic variables in enhancing the aggregate growth of the entire economy (Hassard, 2015:536). Thus, the functionalist paradigm was employed to ensure the accuracy of the quantitative study's findings.

The selected data involves a time series that comprises of five variables namely economic growth measured in the gross domestic product (GDP), total employment in the textile and clothing industry, total gross value added of the textile and clothing industry, total exports from the textile and clothing industry and the real effective exchange rate. The analysis focused on annual data between 1994 and 2018. The selected period for analysis was based on the fact that the South African economy experience enormous changes since 1994, thus including series of pre-1994 can possibly lead to erroneous results. Additionally, annual data are used owing to the lack of monthly and quarterly data. Throughout the analysis, economic growth is considered as the dependent variable while the level of employment, gross value-added, and total exports within the textile and clothing industry and the real effective exchange rate are used as independent variables to predict changes in the dependent variable. While total exports, total employment, and value-added in the textile and clothing industry were sourced from the Quantec database, gross domestic product figures were acquired from the South African Reserve Bank (SARB) website. The subsequent section will focus on the general description of each variable.

4.3 VARIABLES AND MEASUREMENTS

4.3.1 Gross domestic product at constant prices

As discussed above, the study's dependent variable is the South African gross domestic product (GDP). GDP is the general quantitative measurement of a country's total economic activities. In a specific way, GDP refers to the market value (in monetary terms) of all goods and services produced within the country over a specified time period (Bojanic, 2012:51-70). In South Africa, as in other countries, the gross domestic product is mainly calculated using the production approach. According to the SARB (2019:1), the real domestic product has experienced a decline of 3.2 percent in the first quarter of 2019, and this was recorded as the

highest decline since 2009. This decline, as stated by the SARB (2019:1), resulted from the contraction of production in economic sectors, namely primary, secondary, and tertiary sectors. The South African GDP is measured in millions of Rand, and this contributes to the total growth of the South African economy.

4.3.2 Gross value added (GVA) in the textile and clothing industry

The gross value added (GVA) is described as the measurement of the value of the goods and services produced in a specific industry or economic sector. The GVA at basic prices refers to the output valued at basic prices subtracting intermediate consumption valued at purchasers' prices (SARB, 2019:13). Additionally, the South African economy experienced a decline in gross value added from the manufacturing sector. In the fourth quarter of 2018, the gross value added in the secondary sector increased by three percent and yet declined by 7.4 percent in the first quarter of 2019. The manufacturing sector lost 8.8 percent of its contribution to the total value added from the secondary sector (SARB, 2019:10).

4.3.3 Employment in textile and clothing industry

Employment refers to the activity performed by an individual that yields in getting wage/earnings or profits (Black *et al.*, 2013:129). In the South African context, he/she is employed as a person whose age ranges between 15 and 64 years, spending at least one hour per day performing a task that can bring him salary or profit (Stats SA, 2015). The simple measurement of employment is to compute the total number of people with jobs during the survey period (Mohr *et al.*, 2015:244). The South African employment level is worsening since 1994 after the apartheid era. As mentioned above, gross domestic product and gross value added have also seen contraction, and this decline might have a negative repercussion on the employment level. In the second quarter following the contraction in both GDP and GVA, the unemployment rate increased up to 29 percent (Stats SA, 2019:9). Instead of general employment, this study focusses on employment in the textile and clothing industry in determining how it affects the total growth in the gross domestic product of the country. In 2002, the number of people employed in the textile and clothing industry was about 200 000 workers. Unfortunately, this number declined to 19 000 workers in 2017. This explains in part why the county is experiencing unemployment growth, specifically in low and skilled labour (McKaiser, 2017:13).

4.3.4 Exports in the textile and clothing industry

Since the study focuses on economic growth, export from the textile and clothing industry was taken as an independent variable to examine what effect it might have on the South African economy. With regards to trade, exports from the textile and clothing industry are considered as a function of international trade where goods or services produced in one country are sold in other countries. Exports from this industry play a significant role in a county's economy as it does not only enhance the country's economic growth but also stimulates gross national output and job creation (Fukase, 2013:322; Nguyen, 2015:16). The South African total exports are measured in millions of Rand (SARB, 2015:14). Instead of using total export, the current study utilises the share of the textile and clothing industry on the total exports from the South African manufacturing sector. Increases in the textile and clothing exports positively impact the South African economy while an increase in imports of textile products leads to low economic growth.

4.3.5 Real effective exchange rate

The real effective exchange rate is another explanatory variable included in this study. This type of exchange rate is calculated by the South African Reserve bank (SARB) based on the weighted average of the South African currency (Rand) and the currency of its major trade partners. According to Wang (2009:170), an increase in the real effective exchange rate is equivalent to the appreciation of the domestic currency or deprecation of foreign currencies and vice versa. He adds that this scenario is only possible if the exchange rate is directly quoted. However, the exchange rate in South Africa is indirectly quoted. Consequently, the rise of the real effective exchange rate index refers to the South African currency appreciation, and its decline suggests the currency depreciation (Chiloane, 2014:304). The real effective exchange rate was chosen as a more accurate measure due to it being measured against a basket of currencies.

4.4 ECONOMETRIC FRAMEWORK AND MODEL SPECIFICATION

Before the application of complex econometric analysis, the study employs simple statistical analysis to describe the statistical behaviour of variables of interest.

4.4.1 Descriptive statistics

The descriptive statistics plays an important role in quantitative analysis. Besides its power to provide a simple deception of the study variables, it can also suggest an overview of each variable's trends and variations. The descriptive statistics can either be tabulated or presented in the graphical form. A summary description of variables, among others, include mean and median, maximum and minimum, standard deviation, skewness, kurtosis, Jarque-Bera's probability, and the total number of observations included in the study. While mean and median are used to measure the central tendency, the minimum, maximum, and standard deviation are used to measure the variables dispersion (Albright, 2011; Brooks, 2014:65; Macfie & Nufrio, 2006:536).

The skewness is referred to as a distribution of deviation from the symmetric average. A positive skewness suggests that a large number of values is peaked to the right while the alternative suggests that a large number of values is peaked to the left. When the skewness ranges between one and zero, it is a sign that a model is normally distributed (Cox *et al.,* 2010:483). On the other hand, the kurtosis is used to determine a distribution between peak and flatness. A negative kurtosis suggests a flatter shape whilst a positive kurtosis implies a peaked shape. A high value of kurtosis implies the presence of one-sided (tail) distribution (Cox *et al.,* 2010:483).

4.4.2 Pairwise correlation

While providing a simple description of one dependent and one independent variable, a correlation analysis is the appropriate statistical tool. The correlation coefficient ranges between -1 and +1, meaning that variables under consideration can either be positive or negative (Ahlgren *et al*., 2003:8). When the correlation coefficient is close to zero, then that implies that the two variables under the study possess a close relationship. The distance from zero implies the disparity between the variables. Nonetheless, the zero correlation means the absence of relationships among variables (Cohen & Cohen, 1983:21; Habanabakize *et al.,* 2017:8). Both descriptive statistics and correlation analysis are applied to this study to provide an overview of the study variables before other complex statistical and econometric tests regarding the analysis of both long and short-run relationships amongst the variables are conducted.

4.4.3 Time series data

According to Gujarati and Porter (2003:25) and Brooks (2014: 5), time-series data refers to a set of observations on the values that one variable takes at different times. This type of data can be collected at regular time intervals, for instance, daily, weekly, monthly, quarterly, and annually. In equation 4.1 below, a time series can be defined as follows:

$$Y = [y_t, y_{t-1}, y_{t-2}, y_{t-3}, \ldots y_0] \quad (4.1)$$

Where y_t denotes the data point at the period of time *t.*

The time series differs from cross-sectional data as the former is collected at a different time whilst the latter is collected at one point in time. Most of the research conducted using time series have one common feature, which is to determine the relationship between the dependent and independent variables. Several techniques or approaches are used to establish a short-run and long-run relationship among time series variables. Among these approaches, one can mention unit root and stationarity tests that assist in determining whether a variable is stationary or not. Additionally, from the unit root result, the variable's order of integration is known. The knowledge of the order of integration allows a researcher to determine a suitable model or approach for co-integration. Additionally, unit root and stationarity tests assist in obtaining reliable regression results. This is because regression is conducted on variables within the unit root or non-stationary variables, and the obtained results are considered as spurious results.

4.4.4 Spurious regression

A spurious regression refers to an econometric analysis involving two or more non-stationary independent variables. In this phenomenon analysis, the t-statistics appear to be significant, suggesting a relationship among variables while, in reality, these variables have no relationship. In the spurious regression, two or more variables separate from one another, and they consequently lose their joint relationship (Westerlund, 2005). The feature of this type of regression is misleading high goodness of fit (Brooks, 2014:318; Habanabakize, 2016:53). A researcher should perform a unit root or/and stationarity tests to evade a spurious regression or erroneous findings. A time series is stationary if its mean, variance, and covariance are constant over time. Mostly a time series $\{y_t , t \in Z\}$ is considered to be (weakly) stationary if it includes the following properties:

(i) Variance (y_t) <∞ , for all t ∈ Z

(ii) E[y_t] =$\mu$for all t∈ Z suggesting a constant mean

(iii) Cov (y_r , y_s) =Cov((y_{r+t} , y_{s+t}) for all r , s, t ∈ Z

The method that can be used to ensure that a time series comprises of these properties is to conduct unit root or stationary tests. These various tests can assist in determining the absence or presence of the unit root within a time series. A few of these are discussed below. However, it is important to look at a quick way that can reveal the presence of unit root within the series under consideration.

4.4.5 Model specification

In order to determine the relationship among variables and the effect of explanatory variables on the dependent variable, the study employed a dynamic model. The dynamic model allows a researcher to analyse when the long-run equilibrium within a model is achieved. It also permits to forecast for a model adjustment (Pesaran (2015:301). The causation among variables can also be determined using the same dynamic model. Thus, Pesaran (2015:303) suggests that the ARDL remains the appropriate model when the study is analyzing data that are a mixture of an order of integration, and when the used data sample is small. For the current study, the abovementioned model was applied to equation 4.2 in order to achieve the main objective of the study.

$GDP = f(EMP + EXP + GVA + EXR + e_t)$……....(4.2)

In equation 4.2, the e_t is added on the explanatory variable as it represents all other variables that might influence changes in the South African economy that are not included in the current model.

4.4.6 Unit root tests

Without testing for unit root, a researcher should plot the time series of interest to determine the series trending. If the series is upward trending, that should be the sign that the series' mean is changing over time. Additionally, comparing the goodness of fit R^2 to the value of Durbin-Watson (DW) statistics, one can have an idea concerning series stationarity. If R^2 is greater than the DW statistics, that can be an indication that the series is not stationary (Newbold &

Granger, 1974:8). Based on this, the study employed various unit root tests to determine the level of integration of variables.

4.4.6.1 Dickey-Fuller (DF) (1979) unit root tests

One of the pioneers of the unit root test was Dickey and Fuller (Dickey & Fuller, 1979). Their aim was to test both the null hypothesis and alternative. Following the presentation of Brooks (2014:361), the AD unit root uses the following procedures:

The null hypothesis suggests that that $\phi = 1$ from equation 4.3 below:

$$y_t = \phi y_{t-1} + u_t \quad \text{(4.3)}$$

The null hypothesis implies that the series contains a unit root. For the alternative hypothesis $\phi < 1$ meaning the series has no unit root, or rather it is stationary. In practical regression, equation 4.3 is not employed. In order to facilitate the calculation and interpretation, Equation 4.4 is employed.

$$\Delta y_t = y_t = \psi y_{t-1} + u_t \quad \text{(4.4)}$$

In the equation 4.4, $\psi = \phi - 1$. In other words, testing f $\varphi = 1$ is similar to a test that tests $\psi = 0$.

Due to the high DF critical value and the instability of the unit root procedure, the test can be oversized. Thus, it is possible to reject the null hypothesis while a series contains a unit root (Brooks, 2014:362). The Dickey-Fuller test produces valid results, and it is only applied on a series with uncorrelated error term (u_t). In case the u_t the Augmented Dickey-Fuller test is appropriate for the unit root test. Since the DF test leads to uncertain results, the Augmented Dickey-Fuller (ADF) comes as a solution to the DF deficiencies.

4.4.6.2 Augmented Dickey-Fuller (ADF) (1981)

The DF unit root test is valid only when applied to a series that is AR (1). The Augmented Dickey-Fuller test solves the issue of correlation within the error terms by adding the lagged difference term of the dependent series or variableΔy_t. Thus, the ADF unit root tests assume that the series is AR (ρ) Then the transformed DF to ADF equation 4.5 is written as follow:

$$y_t = (\phi_1 - 1)\, y_{t-1} + \sum_{i=1}^{\rho-1} \gamma_i \, \Delta y_{t-i} + u_t \quad \text{(4.5)}$$

From equation 4.5, equation 4.6 can assist in computing the t-statistic of the ADF test:

$\Delta y_t = (\phi_1 - 1)\, y_{t-1} + \sum_{i=1}^{\rho-1} \gamma_i \, \Delta y_{t-i} + u_t$ ..... (4.6)

The Augmented Dickey-Fuller test is also subjected to the lags *p* selection. In case *p* is too low; that is, a small number of lags is selected, the test suffers the autocorrelation issue. On the other hand, if *p* is too large, implying that a high number of lags is selected, the test loses its power. Thus it is imperative, according to Schwert (1989:16) is to maximum lag to p_{max}. Thus, considering a linear trend or constant in the equation/model 4.7, the subsequent model is deduced:

$y_t = d_t + \phi_1 y_{t-1} + \sum_{i=1}^{\rho-1} \gamma_i \, \Delta y_{t-i} + u_t$ ..... (4.7)

Where $d_t = \sum_{i=0}^{\rho} \beta \, t^i$, for ρ = 0, 1,contains the deterministic of the model.

4.4.6.3 Phillips-Perron test (PP test)

The Phillips-Perron (1989) unit root test is the alternative to the Augmented Dickey-Fuller test. The main difference between these two tests is how each of them handles the issue of serial correlation and heteroscedasticity within the errors. Both tests are applied in the moving average (ARMA) structure to estimate error within the regression, while the PP test overlooks the serial, the ADF test employs parametric auto-regression (Ndolela, 2019: 49). The PP test is applied to regression in equation 4.8 as follows:

$\Delta y_t = \pi y_{t-1} + \beta_i D_{t-i} + u_t$ ..... (4.8)

Where Δy_t represents the time series, u_t denotes I(0) with mean that is more likely to be heteroscedastic; $\beta_i D_{t-i}$ indicates the component of the deterministic trend. Using the PP test, by altering test statistics, heteroscedasticity, and serial correlation within the errors are amended. Besides, those abovementioned three tests, DF, ADF, and PP; the Kwiatkowski-Phillips-Schmidt-Shin test (KPSS) are additional tests that are often used to determine the stationary of economic time series.

4.4.6.4 Kwiatkowski-Phillips-Schmidt-Shin test (KPSS)

As it was mentioned in the previous paragraph, it is difficult to determine the number of lag to be included in a model when applying the ADF and PP unit root tests. The issue is that, if few

lags are used, the test is over empowered, and this can lead to the rejection of the null hypothesis even when the series has a unit root. On the other hand, if more number of lags are utilised, the test loses its power, and this can result in failing to reject the null hypothesis while the series has no unit root (is stationary) (McCarthy,2015:5; Meyer & Habanabakize, 2018:7). To evade this issue within time series, Kwiatkowski-Phillips-Schmidt-Shin test (1992:5) introduced the KPSS stationarity test. The null hypothesis in the KPSS test suggest that the variable (series) y_t is assumed to be stationary. The KPSS stationarity test has a common null hypothesis with the Lagrange Multiplier (LM) test. For both of these tests, better results are obtained if the null hypothesis is not rejected. Contrary to both ADF and PP tests' results that are subjected to the size of data, the outcome from the KPSS stationarity test is independent regardless of whether applied on large or small sample sizes (McCarthy, 2015:5). The KPSS estimation is represented as follow in equation 4.9 and 4.10:

$y_t = \delta_0 + \delta_{1t} + u_t$ ..... (4.9)

$u_t = u_t - 1 + \varepsilon t \sim iid\ (0,\sigma_e^2)$ ..... (4.10)

Where δ_0 symbolises intercept, *t* denotes time trend, and u_t indicates the white noise errors whose variance is zero. The null and alternative hypotheses in the KPSS test are set as follow:

$H_0 : \sigma_e^2 = 0$

$H_1 : \sigma_e^2 \neq 0$

If the series y_t is stationary at level, then it is noted as I (0). Otherwise, it contains a unit root, and it is written as I (1). This indicates how the KPSS stationarity test differs from the ADF and PP unit root tests. Brooks (2008:331) provides differences between the ADF, PP, and KPSS null hypotheses:

ADF/PP	KPSS
$H_0 : y_t \sim$ I (1)	$H_0 : y_t \sim$ I (0)
$H_0 : y_t \sim$ I (0)	$H_0 : y_t \sim$ I (1)

These null hypotheses can produce the following outcome:

ADF/PP	KPSS

1. Reject H_0 and Fail to reject H_0
2. Fail to reject H_0 and Reject H_0
3. Reject H_0 and Reject H_0
4. Fail to reject H_0 and Fail to reject H_0

Results from the first and second options above reach similar conclusions, and the following two, 3rd and 4th, produces contradictory results (Brooks, 2008:331). The current study will apply these three tests on the times series of interest to ensure better and sounding results. The selection of the appropriate model depends on the stationarity or unit root test results. In case all variables are stationary at I(1), a VAR model is estimated, and the Johansen co-integration is utilised to determine a long-run relationship among variables. However, the time series under consideration is a mixture of I(0) and I(1), the ARDL models are estimated, and the bound test for co-integration is used to determine the long-run relationship amongst the variables (Habanabakize, 2019:60)

All these highlighted tests for unit root and stationary of variables are used to test if none of the variables is integrated of the second-order that is I(2). The sample size of the study consists of 25 annual observations and the relationship among the variables is tested using a single equation that assists in determining the responsiveness of the dependent variables towards shocks within the independent variables. These mentioned reasons justify why the autoregressive distributed lag (ARDL) model is appropriate for the current study.

4.4.7 Lag length selection

Before discussing the ARDL model, it is significant to highlight that lag selection plays an important role in choosing the optimal lag length and obtaining trustworthy results (Brooks 2014). There are two types of criteria generally used for lag selection, and those are Akaike information criteria (AIC) and Schwarz-Bayesian information criteria (SIC). These two criteria are mathematically presented by equation 4.11 and equation 4.12.

$$AIC = -2ln(LH) + 2k \quad \text{.....} \quad (4.11)$$

$$SIC = -2ln(LH) + kln(n) \quad \text{.....} \quad (4.12)$$

Where k denotes the parameters of regression to be estimated, n represents the total observations, and LH is the model maximum likelihood. Brooks (2014:360) argues that all

criteria are the same, and none of these should be treated as superior to others. Nonetheless, the SIC criteria are preferred over the AIC criteria, especially when applied on a small, simple size. Besides, the AIC tends to overrate the number of lags, and this is not encouraging for a small sample (Pesaran & Shin 1998:13). Thus, since this study's sample is small, the SIC is the chosen criteria for lag length selection. Since the unit root/stationarity tests and lag selection are discussed, the next section provides a thorough elucidation of the study modelling.

4.4.8 Autoregressive distributed lag (ARDL) model

The Autoregressive Distributed Lag (ARDL) Model was proposed by Pesaran and Shin (1999) and revised by Pesaran, Shin, and Smith (2001). This model was introduced in the econometric field to eradicate some of the deficiencies faced by various scholars. One of these deficiencies was the inability of some analysis tools such as those of Engle and Granger (1988:13), Johansen (1988:9), and Stock and Watson (1988:11) that are useful only when variables are integrated of the same order. The generic specification of the ARDL model is expressed as follows in equation 4.13:

$$y_t = \sum_{i=1}^{p} \alpha_i \, \Delta y_{t-i} + \sum_{i=0}^{n} c_i' \, \Delta x_{t-i} + u_t \quad \ldots\ldots (4.13)$$

Note: y_t is the dependent variable and *X* is the explanatory variable. Δ denotes the first difference sign, *p* and *n* represent lag lengths and u_t denotes the error term.

4.4.8.1 Advantages and drawback of the ARDL bounds test approach

Pesaran and Pesaran (1997) state that the ARDL approach encompasses many advantages compared to other co-integration approaches such as Engle Granger and Johansen. Firstly, this model is more appropriate and produces better results when applied to a small, simple size. Secondly, contrary to the traditional method that requires a system equation to determine a long-run relationship among variables, the ARDL method is able to estimate a single equation. Thirdly, while other methods request that variables under the study should use an equal number of lags, the ARDL model allows the use of different optimal lags. Fourthly, while other methods require the same other of integration for series under estimation, the ARDL approach can be applied on a mixture of I (0) and I (1). Additionally, this model is appropriate in case the stationarity nature of the variable is not clear. Thus, if the researcher intends to make a conclusion based on the Bounds test for co-integration, the unit root test appears not to be a necessity (Pesaran *et al.,* 2001:6). Furthermore, the ARDL model estimation provides the long-

run and short-run results simultaneously. Contrary to those mentioned advantages, the ARDL model is not appropriate to series that are integrated of second-order I (2) (Brooks, 2014:360). Additionally, this model cannot be applied to multiple equations.

4.4.8.2 The ARDL application

Applying the generic equation of ARDL model (equation 4.13) to this study variables, the equation 4.14 is obtained:

$$\Delta LGDP_t = \alpha_0 + \sum_{j=1}^{k}\beta_j \Delta LGDP_{t-j} + \sum_{j=1}^{k}\gamma_j \Delta LEMP_{t-j} + \sum_{j=1}^{k}\delta_j \Delta LEXP_{t-j} + \sum_{j=1}^{k}\tau_j \Delta LGVA_{t-j} + \sum_{j=1}^{k}\vartheta_j \Delta LEXR_{t-j} + \varphi_1 LnGDP_{t-1} + \varphi_2 LnEMP_{t-1} + \varphi_3 LnEXP_{t-1} + \varphi_4 LnGVA_{t-1} + \varphi_5 LEXR_{t-1} + e_t \quad (4.14)$$

Where Δ denotes variable at the first difference, $LGDP$ is the natural logarithm of economic growth, $LEMP$ is the natural logarithm of total employment in the textile and clothing industry, $LEXP$ represents the natural log of total exports from T&C industry, $LGVA$ is the natural log gross value added in T&C industry and $LEXR$ is the real effective exchange rate. While β_j, γ_j, δ_j , τ_j , ϑ_j represent the short-run relationship coefficients, φ_1, φ_2 , φ_3 , φ_4 and φ_5 indicate the long-run relationship coefficients. Finally, e_t denotes the white noise.

In order to test whether variables co-integrate or not, the following hypothesis were formulated:

H_0: $\varphi_1 = \varphi_2 = \varphi_3 = \varphi_4 = \varphi_5 = 0$: (for no cointegration)

H_1: $\varphi_1 \neq \varphi_2 \neq \varphi_3 \neq \varphi_3 \neq \varphi_4 \neq \varphi_5 \neq 0$: (for cointegration)

The conclusion on the presence or absence of a long-run relationship (co-integration) is made based on the comparison between the calculated F-value and the tabulated critical value from Pesaran *et al.* (2001). These critical values are subdivided into two sets. The first set, denoting the lower bounds (F_L) indicates that variables of interest are integrated at the level I(0) whilst the second set of upper bounds ((F_U) suggests that variables become integrated after being differentiated once I(1). Therefore, in case the calculated F-value falls below the lower bound ($F_{calc} > F_U$), the null hypothesis cannot be rejected, and the conclusion is that variables do not co-integrate. In contrast, if the calculated F-value exceeds the upper bound critical value ($F_{calc} > F_U$), the H_0 is rejected, implying the presence of co-integration among variables. However, without clarification, no conclusion is made if the computed F-value lies between

both lower and upper bound ($F_L < F_{calc} < F_U$). In case the second options prevail (rejection of the null hypothesis); thus, a long-run relationship exists between variables, the study proceeds to another step, which is the error correction model (ECM). The ECM estimation allows us to determine the model's errors and the speed of adjustment towards the long-run equilibrium. The estimation of the error correction model in relation to this study is expressed in equation 4.15.

$$\Delta LGDP_t = \alpha_0 + \sum_{j=1}^{k}\beta_j \Delta LGDP_{t-j} + \sum_{j=1}^{k}\gamma_j \Delta LEMP_{t-j} + \sum_{j=1}^{k}\delta_j \Delta LEXP_{t-j} + \sum_{j=1}^{k}\tau_j \Delta LGVA_{t-j} + \sum_{j=1}^{k}\vartheta_j \Delta LEXR_{t-j} + \delta ECT_{t-1} + e_t \quad (4.15)$$

Where ECT denotes the error correction term, and δ is the coefficient of the ECT. The ECT indicates how long (the speed) it would take the model to adjust its short-term disequilibrium. It is also imperative to conduct diagnostic tests to ensure that the model employed for the study produced accurate results. Some of these tests that justify the validity of the model are discussed below.

4.4.9 Diagnostic tests

Once the model is estimated, diagnostic tests are very important to examine the validity of the used model. These tests assist the researcher in discovering the misrepresentation and instability that may occur in the model (Tandrayen-Ragoobur & Emamdy, 2011:9). These same tests are applied to this study to assess whether the underlying ARDL assumptions still hold, and none of them was violated and that the obtained findings are not spurious. Various diagnostic tests are available to detect the model's errors and determine the accuracy of the study findings. The following tests below were used to assess the reliability of the findings.

4.4.9.1 Goodness of fit

The model goodness of fit is used to determine the robustness of the model and elucidate to which extend the model's exploratory variables are effective to describe the dependent variable. Generally, the R^2 is the most employed to test the goodness of fit for the model. It indicates the power of independent variables in elucidating changes within the dependent variables. The value of the R^2 falls between 0 and 1, the closer to 1 the better (Gujarati, 2003:84-87). However, Adeboye *et al.* (2014:20) argue that the high value of R^2 may be an indication that multicollinearity exists in the employed model.

4.4.9.2 Serial correlation

The autocorrelation test plays an important role in time series analysis. These tests assist in detecting whether the utilised data series is independent or not. The autocorrelation test is used to examine the series independency. In other words, the autocorrelation test is applied to series residuals to investigate whether they are white noise or not. Thus, there is dependence among variables if the results from serial correlation are considerably different from zero (Janacek & Swift, 1993). Besides the serial correlation tests, the statistical value of the Durbin-Watson (DW) is another simple indicator from which research can easily conclude whether the utilised data is serially correlated or not. Additionally, the Ljung-Box Q statistic is another detector of serial correlation. The following equation (Equation 4.16) suggested by Ljung and Box (1978:9) is mostly used:

$$Q_k = n(n+2)\sum_{i-1}^{k}\frac{r_i}{(n-i)} \quad \text{.....(4.16)}$$

Where n denotes the sample size, k is the number of lags used in the model, r_i is the i^{th} autocorrelation. Q_k is asymptotically approximate. Therefore the data series is more likely to be free of autocorrelation if Q_k is considerably large.

4.4.9.3 Heteroscedasticity

The use of the ARDL model follows an assumption that the data for the model are homoscedastic, meaning that the model residuals should be containing a constant variance. In the absence of constant variance within errors, the residuals are heteroscedastic (Williams, 2015:1). In the presence of unstable variance, the OLS estimates become ineffective. Fortunately, the literature presents a number of diagnostic tests that can assist in detecting the existence of heteroscedasticity within the used data. Among others, one can mention the Breusch-Pagan LM test, Glesjer LM test, Goldfeld-Quandt test, Harvey-Godfrey LM test, Park LM test, and White's test. Given that they are from various scholars; these tests produce different results. The most used to determine the likelihood of heteroscedasticity within the data is the Breusch-Pagan LM test. This test originated from Breusch and Pagan (1979:16), and it is expressed as follows in equations 4.17 and 4.18:

$$Var\ (\varepsilon_t^2) = \sigma_i^2,\ i = 1\ldots, n \quad \text{.....(4.17)}$$

$$Cov\ (\varepsilon_i\ \varepsilon_j) = 0,\ \ i \neq j = 1,2,\ldots, n \quad \text{.....(4.18)}$$

4.4.9.4 Normality test

The Jarque-Bera (JB) is used to investigate whether the data set used for analysis is normally distributed or not. In comparison to the normal distribution, the test analyses and provides the distinction between the kurtosis and skewness of the data set. The normality test is based on the assumption that the kurtosis and skewness are equal to zero (Mlambo, 2013:71). The Jarque-Bera normality test equation (equation 4.19) is expressed as:

$$Jb = \frac{T-K}{6} + (s^2 + \frac{(K-3)^2}{4}) \quad \text{.....(4.19)}$$

Where T denotes the number of observations, K is the number of parameters, K and s denotes kurtosis and skewness respectively. The Jarque-Bera test elucidates the bigger is the value of JB; the lower is the probability of having a normally distributed data series (Hamann, 2001:13).

4.4.9.5 Ramsey's RESET test

The Ramsey (1969:4) RESET test was introduced in econometric analysis to identify the presence of nonlinearities in the model used for estimation. The test assists in elucidating if the fitted value is explained by the nonlinear combinations. Thus, applied on a multiple regression, the Ramsey RESET test can take the following representation, as shown in equation 4.20:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_k x_k + u \quad \text{..... (4.20)}$$

Adding the fitted value to y_1^2 , the model is then estimated as :

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_k x_k + y_1^2 + u \quad \text{.....(4.21)}$$

Where y represents the independent variable, u is a multivariate normally distributed error. Additionally, β_1, β_2, β_3 and β_k represent the least square estimators.

4.4.9.6 Cumulative sum of recursive residuals (CUSUM)

Additional the abovementioned tests, the study applied the CUSUM test to assess the stability of the specified model. The specified model is stable; only the blue lines lie with the red lines that represent the critical value boundaries (Lee & Strazicich (2004:132). When a long run exists among variables and the validity of the model is justified through the diagnostic tests, it

is also significant to examine whether variables have a causality relationship. Thus, the next section discusses the causality tests.

4.4.10 Toda Yamamoto (T-Y) causality test

The Toda and Yamamoto (1995:12) Granger non-causality test was formulated to rectify mistakes and deficiencies associated with the Granger causality test, and it is used to modified Wald test procedures (Mavrotas &Kelly, 2001:8). This test begins with vector autoregression (VAR), and it allows the selection of the optimum lag length. It summaries the bivariate system of VAR model, as shown in equations 4.22 and 4.23:

$$Y_t = \alpha_0 + \sum_{k=1}^{n} \beta_{1,k}\, \gamma Y_{t-k} + \sum_{j=n+1}^{dmax} \beta_{2,j}\, Y_{t-j} + \sum_{k=1}^{n} \gamma_{1,k}\, X_{t-k} + \sum_{j=n+1}^{dmax} \gamma_{2,j}\, X_{t-j} + e_{1t}. \quad (4.22)$$

$$X_t = \delta_1 + \sum_{k=1}^{n} \theta_{1,k}\, X_{t-k} + \sum_{j=n+1}^{dmax} \theta_{2,j}\, X_{t-j} + \sum_{k=1}^{n} \vartheta_{1,k}\, Y_{t-k} + \sum_{j=n+1}^{dmax} \vartheta_{2,j}\, Y_{t-j} + e_{2t} \ldots (4.23)$$

Where the lag length *k* between variable X and in VAR model is extended to d_{max}. This d_{max} is used to select the optimum number of lag that permits error term (e_{1t} and e_{2t}) in both equations 4.32 and 4.33 to become white noise. Mutual causation exists between variables X and Y if both null hypotheses of no causality are rejected. Consequently, for all *k* and *j;* $\gamma_{1,k}$ = $\gamma_{2,j}$ = 0 and also $\vartheta_{1,k}$= $\vartheta_{2,j}$ = 0. Applying the Toda Yamamoto (T-Y) approach to this study allows the deduction of the causal relationship between economic growth, employment, exports, and the gross value added in the textile and clothing industry in the South African economy.

4.5 CHAPTER SYNOPSIS

The main objective of this study is to examine the impact of employment, total exports, and the gross value added from the textile and clothing industry on economic growth in South Africa. The current chapter elucidated the type and style of data employed to meet the abovementioned objective. The data time length starts from 1994 to 2018. This amounts to the sum of 26 yearly observations. The chapter highlighted various approaches and tests used to determine the stationarity and order of integration of variables of interest.

Nonetheless, given the small sample of data, the autoregressive distributed lag (ARDL) model is the best model for the study unless any variables are stationary after the second difference. This model was discussed in this chapter, followed by the discussion of the error correction

model. The aim of the error correction mod equation in this chapter was to provide steps to be followed to establish the model speed of adjustment towards the long-run equilibrium. The Granger causality and the Toda Yamamoto Granger non-causality tests were also discussed as approaches to be used in determining the causation among variables. Lastly, different diagnostic tests and their advantages were discussed. The role of these tests is to provide the authenticity and validity of the model used to regress the short-run and long-run relationship between variables. The subsequent chapter focuses on the application of the model and approaches explained in this chapter in order to achieve the study's empirical objectives.

CHAPTER 5

ANALYSIS AND DISCUSSION OF EMPIRICAL FINDINGS

5.1 INTRODUCTION

In the previous chapter, chapter four, various statistical and econometric approaches and models were provided and discussed. The aim of the presentation and elucidation was to prepare a solid framework that precedes the empirical analysis. The current chapter (Chapter 5) exhibits the estimations and results established from the models and approaches discussed in Chapter 4. The empirical assessment within this chapter starts by providing the graphical and descriptive representation of trends observed within both dependent and independent variables across the considered time. Subsequently, the chapter represents a pairwise correlation assessment to establish movements and fluctuations that occurred within the series under consideration during the observed period. Thereafter, through the unit root and stationarity tests, the variables' order of integration is established. The order of integration is crucial in selecting the appropriated model for the long run (co integration) and short-run relationships amongst variables.

The autoregressive distributed lag (ARDL) model was applied to variables to empirically estimate the relationship between economic growth, exports, value-added, and employment within the South African textile industry. Once the short and long run is established, the chapter provides findings from causality testing. Since it is more likely to obtain spurious results when an unappropriated model is used for results estimation, this chapter also provides the results from different diagnostic and residual tests to ensure the accuracy of findings. Before the chapter's summary, the regression findings of the empirical objectives, as highlighted through Chapter 1, are discussed.

5.2 PRELIMINARY ANALYSIS

Before conducting a thorough econometric analysis, it is significant to examine the series movements through graphical representation and discussion. The graphical analysis can serve as a preliminary assessment of structural breaks, outlier deficiencies, or heterogeneous variances of the series of interest (Lütkepohl & Krätzig, 2004:40). The graphical representation and analysis are important as it can assist in having an idea about the appropriate model even before the establishment of variables order of integration. The current study, therefore,

established a graphical representation and assessment of variables under consideration. Figure 5.1 to Figure 5.5 illustrates a descriptive representation for each variable or series aiming to diagnose a likelihood of deficiency that may exist within the same variable. Each series representation commences in 1994, following the establishment of a democratic South Africa, and it ended in 2018.

5.2.1 Gross domestic product (GDP)

As depicted in graph 5.1, the South African gross domestic product (GDP) experienced steady positive growth between 1994 and 2018. Nonetheless, between 2008 and 2009, this economic growth experienced a decline, and this decline may be owing to the global financial crisis (Moyo, 2015:126). As it is shown in Table 5.1, since the 2008 financial crisis, the South African economic growth has been deteriorating, and this had a negative impact on the textile and clothing industry's performance (Moyo, 2015:127). On the other hand, the South African economy is still struggling to achieve significant economic growth due to challenges faced by the secondary sector in general and the textile and clothing industry in particular (Bhorat & Rooney, 2017:6). Therefore, to boost the South African economic growth, the secondary sector industries (especially textile and clothing) need to be taken care of by both government and private sectors.

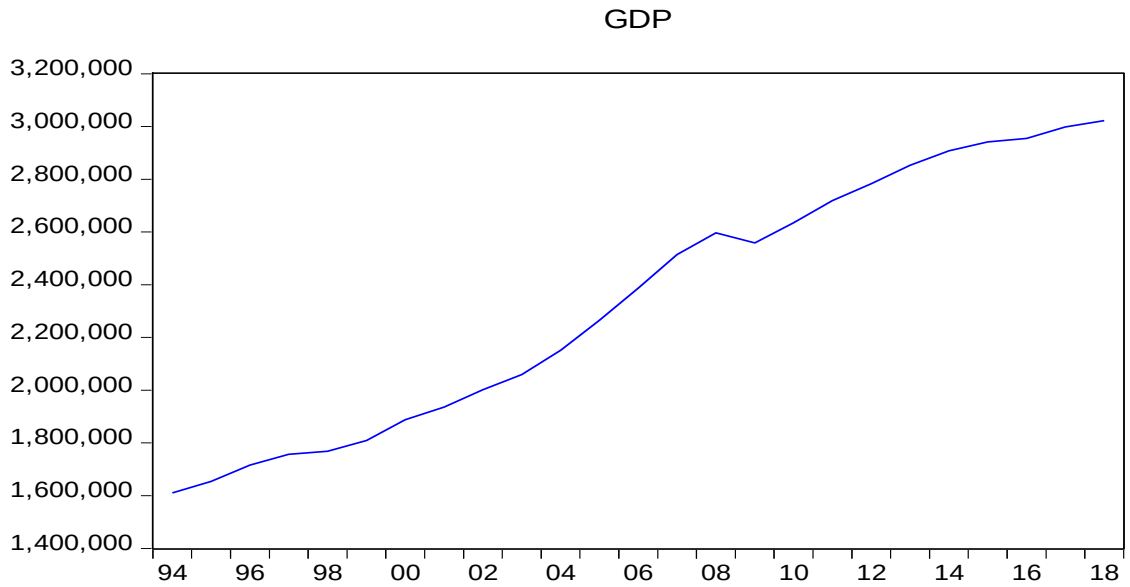

Figure 5.1: South African gross domestic product (1994 – 2018)

Source: Author's own compilation from the study sample

5.2.2 Employment in the textile and clothing industry

Contrary to the positive, yet small, trends experienced from the South African economic growth, employment from the textile and clothing industry has been declining since 1995. This industry experienced positive employment growth only between 1994 and 1995; since then, a negative trend was observed up to 2018. Some of the cause of this decline might be the fluctuating economic growth (as depicted in Figure 5.1), the reliability of textile and clothing industry on capital production, import penetration (especially from China), a mismatch between labour demand and labour supply, repercussion of the 2008 worldwide recession on textile and clothing industry, less interested entrepreneurs in textile and clothing production and low industry's capacity to compete within the global market poor education (Burger & Von Fintel, 2009:2; Cichello *et al.,* 2014:26). As shown in Figure 5.2, employment growth in the textile and clothing industry has been facing a downward trend since 1995.

Figure 5.2: South African textile and clothing industry employment figures (1994 – 2018)

Source: Author's own compilation from the study sample

5.2.3 GVA in the textile and clothing industry

Gross value added (GVA) is another variable included in the study. The GVA movement represented by Figure 5.3 and Table 5.1 suggests a somewhat volatile performance during the observed period. On average, between 1994 and 2001, South Africa experienced a decline in gross value added. From 2002, it started increasing yet with upwards and downward movement

until 2013, where it started declining and continued up to 2018. The GVA represents the output level and the performance of the industry. The textile and clothing industry's performance in South Africa has been volatile due to the poor performance of the general economy (Moodley, 2003:78). Competing on the basis of lower wages is no longer effective for the South African textile and clothing industry to cope with global competition. Therefore, strategies such as unit cost reduction, infrastructure development, and government subsidies need to be implemented to increase the industry's productivity and global competition (Truett & Truett, 2010:87)

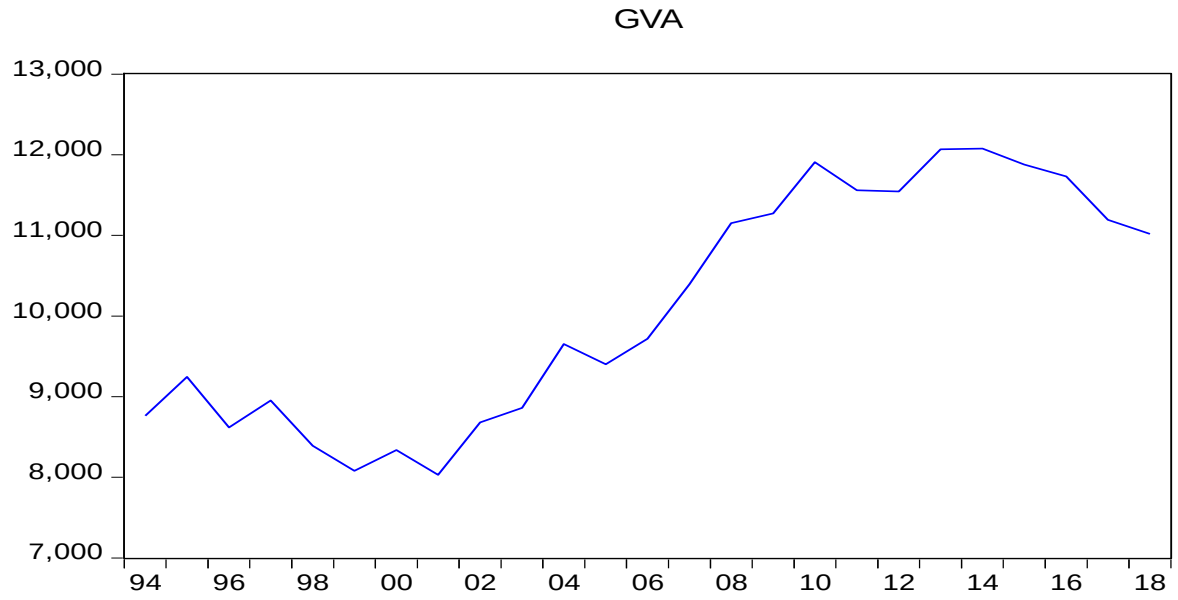

Figure 5.3: South African textile and clothing industry gross value added in rand thousand (1994 – 2018)

Source: Author's own compilation from the study sample

5.2.4 Exports in the textile and clothing industry

Figure 5.4 represents the movement of exports from the textile and clothing industry. Looking at this figure, one can understand how close the relationship is between gross value-added and export level. Improvement in gross value added is an indicator of the export level. The low level of the industry's output and exports suggests that the South African consumer demand more products from other country's than the South African products (Morris & Einhorn, 2008:370). Both of these economic indicators (Exports and GVA) experienced challenges during the period under consideration. However, contrary to the GVA that experienced a decline since 1994, the exports from the textile and clothing industry experience a positive growth between 1994 and 1998, and then it declined in 1999.

Between 2000 and 2002 it has also increased, yet this growth has not lasted as between 2002 and 2004 it has experienced a sharp decline. Exports in the textile and clothing industry were not spared from the negative effect of the global recession in 2008. Additionally, the fluctuation of the South Africa currency worsened the export level (Morris *et al.*, 2004:23). Between 2009 and 2014, the textile and clothing industry experienced significant growth. This might be the result of the 2010 world cup event that positively impacted on the country's economy and exchange rate. However, from 2015 to 2018, this industry underwent a serious decline (shown in Figure 5.4).

Figure 5.4: South African textile and clothing industry export value in rand thousand (1994 – 2018)

Source: Author's own compilation from the study sample

5.2.5 Real effective exchange rate

Figure 5.5 depicted trends of the real effective exchange rate, and it shows that the South African currency did not perform well over time. As displayed by the figure, the Rand has been losing its value against foreign currencies since 1994. The worse scenario was experienced in 2012, where the South African currency reached its lowest value. Despite the growth experience since 2014, the South African currency (Rand) remains weak, and this may have a direct negative effect on economic growth and indirect impact on the textile and clothing industry's performance. The volatility of the exchange rate causes uncertainty in investing in the textile and clothing industry. With the low investment, the production of exports declines,

as a result, few workers are employed, and economic growth suffers (Fowkes *et al*., 2016:27; Mpofu, 2013:12; Ngondo & Khobai, 2018:19).

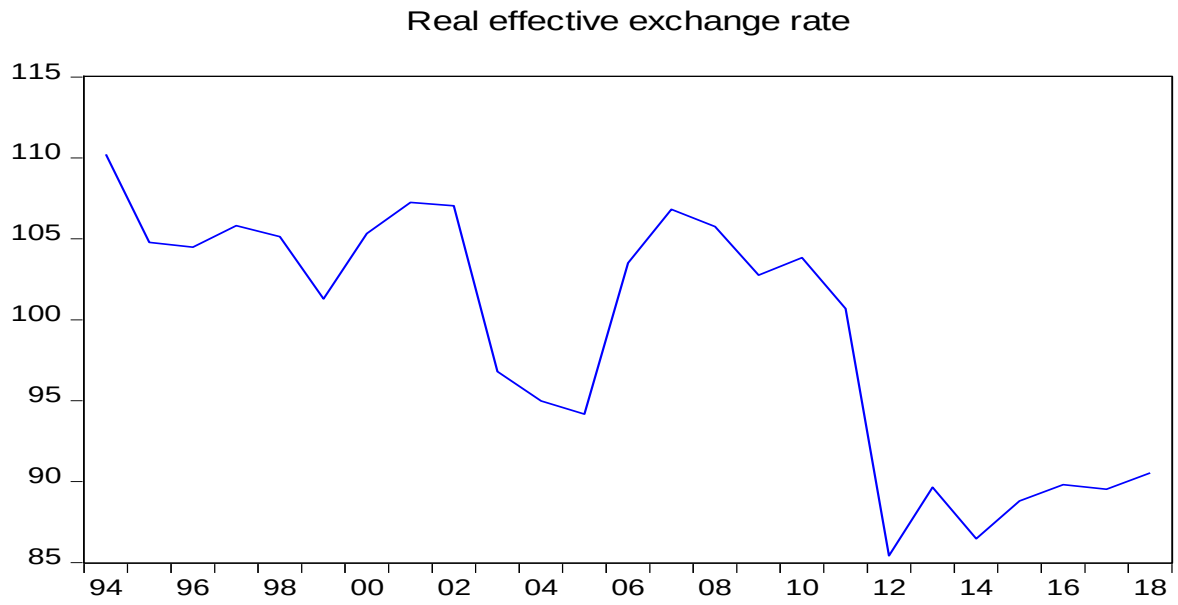

Figure 5.5: South African real effective exchange rate (1994 – 2018)

Source: Author's own compilation from the study sample

In line with the graphical representations discussed above, it is significant to represent the percentage growth of the South African gross domestic product. Table 5.1 reports the trend (in percentage growth) experienced by the South African GDP between 1994 and 2018. The figures in the table denote that the South African economic growth is more elastic towards changes in the textile and clothing industry's employment and exports compared to other considered variables.

Table 5.1: Numerical growth estimates of the study variables (1994 – 2018)

Date	GDP growth	Employment growth	GVA growth	Exports growth	Exchange rate growth
1994	2.674	2.539	5.500	27.205	-4.936
1995 -1996	3.766	9.042	-6.800	2.194	-0.286
1996 -1997	2.391	-4.760	3.900	20.967	1.283
1997 -1998	0.623	-13.094	-6.300	-6.752	-0.643
1998 - 1999	2.348	0.616	-3.700	-3.099	-3.662
1999 -2000	4.335	-1.399	3.200	17.560	3.989
2000 -2001	2.514	-5.239	-3.700	2.133	1.823
2001 - 2002	3.393	-0.668	8.100	-12.714	-0.196

Date	GDP growth	Employment growth	GVA growth	Exports growth	Exchange rate growth
2002 - 2003	2.918	-4.018	2.084	-17.307	-9.567
2003 - 2004	4.446	-3.108	8.942	-5.692	-1.880
2004 - 2005	5.276	-2.944	-2.614	9.809	-0.853
2005 - 2006	5.404	-2.261	3.370	4.733	9.918
2006 - 2007	5.310	-1.237	6.973	-6.097	3.198
2007 - 2008	3.294	-4.690	7.281	-4.937	-0.992
2008 - 2009	-1.479	-10.820	1.090	-12.879	-2.846
2009 - 2010	2.977	-6.574	5.628	70.709	1.061
2010 - 2011	3.223	-6.675	-2.920	4.402	-3.034
2011 -2012	2.327	-7.345	-0.137	5.046	-15.165
2012 -2013	2.537	-1.823	4.533	11.492	4.952
2013 - 2014	1.923	-0.664	0.075	7.786	-3.547
2014 - 2015	1.146	3.980	-1.644	0.900	2.695
2015 - 2016	0.449	-3.295	-1.237	-5.580	1.137
2016 - 2017	1.493	-3.224	-4.584	-5.711	-0.312
2017 - 2018	0.788	-4.522	-1.554	-5.947	1.128

Source: Author's own calculations from the study sample

5.3 CORRELATION ANALYSIS

In the statistics, financial and economic fields, the extent to which one variable (x) is related to the other (y) can be expressed through correlation (r) analysis (Habanabakize & Muzindutsi, 2015:652). The value of this statistical relationship lies between the value of – 1 and +1. That is, the highest positive correlation that may exist between the two variables is + 1, whilst the lowest cannot be more than -1. Therefore, the closer that the value of r is towards +1, the higher is the positive correlation between variables, and if this value is closer to – 1, these two variables have a high negative correlation (Simon & Goes, 2011:1. In other words, the position of r from zero to x value determines how positive or negative two variables under analysis are positively or negatively correlated (Asuero *et al.,* 2006:47).

Table 5.2 exhibits the result from the correlation analysis between the underpinned explanatory variables from the textile industry and the South African economic growth. Results suggest that all explanatory variables are statistically significant at one percent level of significance. A negative and strong correlation exists between economic growth and the textiles and clothes'

employment level. Similar to the correlation between employment and economic growth, the exchange rate also is negatively correlated to the level of economic growth. Nonetheless, both GVA and exports are positively correlated with economic growth; and the correlation between these variables is strong and statistically significant.

Table 5.2: Correlation coefficients results

Variable	LGDP	LEMP	LEXP	LEXR	LGVA
LGDP	1.000000 -----				
LEMP	(-0.9658) {0.0000}*	(1.0000) -----			
LEXP	(0.62075) {0.0009}*	(-0.7052) {0.0001}*	(1.0000) -----		
LEXR	(-0.7197) {0.0000}*	(0.78607) {0.0000}*	(-0.6815) {0.0002)*	(1.0000) -----	
LGVA	(0.9090) {0.0000}*	(-0.8931) {0.0000}*	(0.5309) {0.0063)*	(-0.6401) {0.0006}*	(1.0000) -----

Note: the value in ( ) denotes correlation coefficient, the value in { } denotes the probability values and * denote significant at 1 percent level of significant.

Source: Author's own calculations from the study sample

Besides the correlation relationship that exists between independent or explanatory variables and the dependent variable, a statistically significant relationship also exists among the explanatory variables. The effective real exchange rate possesses a negative association with both GDP and exports, whilst it is positively associated with employment in the textile and clothing industry. These results are in line with Kim (2005) and Momodu (2015) that confirm a positive correlation between exchange rate, employment, and output.

However, these studies contradict the studies by Bernanke *et al.* (2008) and Gala and Libanio (2010) that found a positive correlation between exchange rate and economic growth. Additionally, the gross value added (GVA) is also negatively correlated to both effective real exchange rates and employment. This implies that South Africa relies more on trade with other countries. Furthermore, the correlation analysis results suggest a positive association between real effective exchange rate and employment; and between GVA and exports. Lastly and surprisingly, exports from the textile and clothing industry are negatively correlated with employment within the same industry.

5.4 DESCRIPTIVE STATISTICS

Descriptive statistics is another preliminary test that assists in uncovering some of the time series properties associated with variables under the study. Table 5.3 represents the descriptive statistics of all variables under consideration (GDP, employment, exports, real effective exchange, and GVA). As it appears on the table, there exists a slight gap or difference between the minimum and maximum values of gross domestic product (GDP) during the study period (1994 to 2018). This result suggests a consistent and low fluctuation in the South African GDP (though it does not grow at a satisfactory pace). Compared to other variables under the study, a large gap exists between the minimum and maximum of employment within the textile and clothing industry. This implies that during the study period, employment has been being created in the South African textile and clothing industry. Nonetheless, the standard deviation indicates also that employment in this industry underwent a large variation compared to other variables of the study. The Jarque-Bera statistics and its probability value show that all variables under the study are normally distributed as none of them have a probability value, which is less than five percent.

The normality is not assessed through the Jarque-Bera test only because other statistic values such as Skewness and Kurtosis are more useful to determine time-series distributions (Coakes & Steed, 2007:485). The perfect distribution is achieved if the value of Skewness and Kurtosis equates to zero (Hair *et al.*, 2010:25; Pallant, 2016:30). However, since no clear and final explanation can provide the best measurement of the distance away from the normal distribution, Hair *et al.*, (2010:68) proposed that the skewness values should fall between the range of – 1 and + 1, while the kurtosis values could not be below – 3 and exceed + 3. Looking at the value of the kurtosis and skewness in Table 5.3, none of the skewness value is below – 1 and above + 1. On the other side, the value of Kurtosis also falls within the range of – 3 and + 3. Therefore, the Kurtosis and skewness values support the results, and the conclusion is made based on the Jarque-Bera normality test results. In other words, the series under consideration is normally distributed.

Table 5.3: Descriptive statistic results

Statistic / Variable	LGDP	LEMP	LEXP	LEXR	LGVA
Mean	14.64362	11.99927	9.048001	4.594486	9.210325
Maximum	14.92153	12.43979	9.464913	4.702478	9.398971

Statistic / Variable	LGDP	LEMP	LEXP	LEXR	LGVA
Minimum	14.29224	11.56992	8.607126	4.447580	8.990804
Std. Dev.	0.215311	0.281988	0.258165	0.079763	0.144915
Skewness	-0.206072	-0.128160	0.103582	-0.520670	-0.067161
Kurtosis	1.547484	1.596769	1.839867	1.754713	1.425356
Jarque-Bera	2.374651	2.119537	1.446694	2.744926	2.601610
Probability	0.305036	0.346536	0.485126	0.253482	0.272313

Source: Author's own calculations from the study sample

5.5 UNIT ROOT AND STATIONARITY TESTS

5.5.1 ADF and PP unit root tests

The graphical analysis undertaken in section 5.2 revealed that the series under the study had no stable variance. In order words, it can be assumed that the series of the study contains a unit root. However, it is illogical to perform a regression analysis based only on the graphical representation. Henceforth, it is important to conduct tests that can reveal the stability state of variables. Besides, the unit root tests assist in determining the order of integration and subsequently in selecting the appropriate model for long and short-run relationship analysis. Table 5.3 exhibits the result from both the Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests for all the study variables. These two tests were conducted to establish whether variables are integrated of order zero I(0), order one I(1), a mixture of I(0) and I(1) or beyond. As illustrated in Table 5.4, all variables have a unit root at levels; that is, they are not stationary at level. However, the presence of unit root within variables is taken away after the first difference. This infers that, based on the ADF and PP unit root tests, all variables are integrated of order one: I(1).

Table 5.4: Results of ADF and PP unit root test

Variable	Model specification	Levels		1st difference		Integration order
		ADF	PP	ADF	PP	
LGDP	Intercept	0.8591	0.8642	0.0432*	0.0403*	I(1)
	Intercept & trend	0.7319	0.8067	0.1437	0.0150*	I(1)
LGVA	Intercept	0.7767	0.7602	0.0008**	0.0008**	I(1)
	Intercept & trend	0.8729	0.8125	0.0051**	0.0047**	I(1)

Variable	Model specification	Levels		1st difference		Integration order
		ADF	PP	ADF	PP	
LEMP	Intercept	0.8216	0.9397	0.0041*	0.0000*	I(1)
	Intercept & trend	0.1014	0.1740	0.0222**	0.0002*	I(1)
LEXR	Intercept	0.4091	0.4091	0.0009*	0.0009*	I(1)
	Intercept & trend	0.3215	0.3215	0.0057*	0.0057*	I(1)
LEXPO	Intercept	0.4967	0.4675	0.0028*	0.0028*	I(1)
	Intercept &trend	0.1208	0.6410	0.0153**	0.0157**	I(1)

Note: * denote significant p-value at 1 percent, and ** denotes significant at 5 percent level respectively.

Source: Author's own calculations from the study sample

5.5.2 KPSS stationarity test

Since the ADF and PP test are applied to detect whether variables contains a unit root or not, it is also imperative to conduct the KPSS test to test for stationarity. In the literature, the KPSS test is considered to provide robust results compared to those from both ADF and PP, and it is used as a confirmatory test (Brooks, 2014:362). Contrary to the ADF and PP results, the KPSS results, as depicted in Table 5.5 (critical values are shown), suggest that when deterministic trends are considered, variables under the study consist of a mixture of stationarity order. That is, they are integrated of both order zero I(0) and order one and I(1). Based on this result and also bearing in mind that the data sample of the study is small, the appropriate econometric model for regression analysis is ARDL (Meyer & Habanabakize, 2018:781). The KPSS uses the LM test, and contrary to ADF and PP unit root tests where the null hypothesis suggests that the variables contain a unit root, the KPSS null hypothesis suggests that the variable is stationary (has no unit root). Therefore, failing to reject the null hypothesis means that the variable is stationary (Habanabakize, 2020:232).

Table 5.5: Results of the KPSS stationarity test

Variable	Model specification	Levels	1st difference	Integration order
LGDP	Intercept	0.721480	0.169066*	I(1)
	Intercept and trend	0.102350*	0.155656	I(0)
LGVA	Intercept	0.604594*	0.169103*	I(0)
	Intercept and trend	0.103586*	0.163769	I(0)

Variable	Model specification	Levels	1st difference	Integration order
LEMP	Intercept	0.707123	0.170090*	I(1)
	Intercept and trend	0.084261*	0.146481	I(0)
LEXR	Intercept	0.545974	0.053335*	I(1)
	Intercept and trend	0.082464*	0.054306	I(0)
LEXPO	Intercept	0.456468	0.097056*	I(1)
	Intercept and trend	0.118156*	0.102231*	I(0)

Note: * denote stationary at 5 % level of significant**,** critical values are 0.463000 with intercept (constant) and 0.146000 with intercept and trend

Source: Author's own calculations from the study sample

Since these important steps of time series analysis (unit root and stationarity) are performed; thus, the appropriate model for cointegration can be selected. The subsequent section is dedicated to the assessment of both long and short-run relationships among variables. The process starts with lag selection followed by the bounds test for cointegration.

5.6 OPTIMAL LAG SELECTION AND MODEL SPECIFICATION

Lag selection plays an indispensable role in time series. These steps of lag selection need to be performed with caution as a large or low number of lags have a significant impact on potential results. The lag oversight may lead to bias results, while too many lags may also lead to forecasting error (Torres-Reyna, 2013). Irrespective, there are several criteria (AIC, SIC, HQC, FPE and BIC) that are useful for lag selection. It is important to select the method that favours the data sample under consideration. The suitable criterion for the current study was the SIC due to its rigorousness and suitability on a small data sample (Brooks, 2014). Using ARDL modelling through Eviews 9.0 software, the analysis can select different models using a combination of a different number of lags and range them starting from the best ones. Figure 5.6 represents the top 20 models, and the best among these were: ARDL (1, 1, 2, 0, 1).

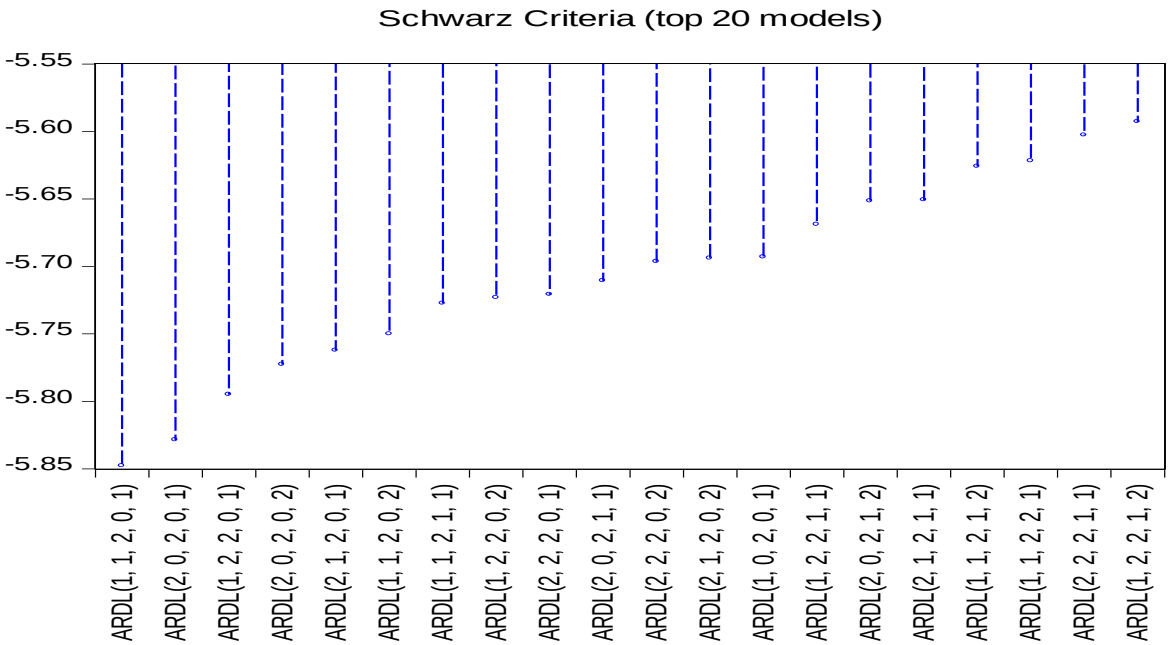

Figure 5.6: Lag selection

Source: Author's own calculations from the study sample

5.7 BOUNDS TEST FOR COINTEGRATION

The bound test to cointegration is used to determine whether the series employed by the study are jointly cointegrating. In other words, this test is useful to determine if variables have a joint long-run relationship. In order to assess this relationship, the bounds test provides a computed F-statistic, which is compared to both lower and upper bound acquired from the Pesaran *et al.* (2001:300) table. Before comparing tabulated F-statistics to the computed F-statistics, the following null hypothesis was formulated as guidelines:

H_0: No long-run relationship amongst variables (No co-integration)

H_1: Long-run relationship exists amongst variables (presence of co-integration)

According to Pesaran *et al.* (2001:300), when making a comparison between computed F-statistic and tabulated F-statistics based on critical values, the test and result have considered the following five cases: the first case does not consider intercept nor a linear trend, the second case considers restricted intercept only, the third case considers unrestricted intercept only, the fourth case considers intercept with restricted linear trend whilst the last case considers intercept together with an unrestricted linear trend. The current study has considered the fifth case with intercept and unrestricted linear trend. Consequently, the employed critical values are from the table of Pesaran *et al.* (2001:300).

The obtained computed F-statistic is greater than all the upper bound critical values. Correspondingly, it is possible to infer that a long-run relationship exists among variables under consideration, even with a 99 percent level of confidence. It is also important to note that if the computed F-statistic was below the lower bound critical values, the conclusion might be that the underpinned variables do not integrate. The worst-case appears when the calculated F-statistic lies between both upper and lower bounds critical values. In this case, neither the null hypothesis nor the alternative is rejected. In other words, without further information, the regression results are inconclusive. As mentioned in the previous paragraph, the computed F-value is 16.68768 (as shown in Table 5.6), which is far greater than the upper bound value of 3.49 at 5 percent significance level and 4.37 at 1 percent significance level respectively.

Table 5.6: Results from the ARDL bounds test

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	16.68768	4
Critical value bounds*		
Significance	**I(0) Bound**	**I(1) Bound**
10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Note: * Critical values bounds from Pesaran *et al.* (2001) Table CI (V)

Source: Author's own calculations from the study sample

5.8 LONG-RUN ANALYSIS RESULTS

The presence of integration among variables implies that the independent variables possess a significant impact on the dependent variable. However, the bounds test does not provide the extent to which changes in each explanatory variable affect the dependent variables. Using the ARDL model formulated in the Equation 4.13, a test was conducted to determine coefficients that determine the responsiveness of the dependent variable (economic growth) towards changes from independent variables (textile and clothing employment, exchange rate, textile and clothing exports and the gross value added in the textile and clothing industry).

The estimated long-run coefficients are represented in Table 5.7. As shown in Table 5.7 below, economic growth responds positively to positive changes in all explanatory variables without any exception. Comparing each variable towards changes in economic growth (which is the dependent variable), the gross value added has a notable impact on the South African growth as its increase of one percent results in a 1.19 percent increase in economic growth. Secondary, the South African currency plays an important role in improving economic growth. If the exchange rate increases by one percent (the Rand appreciation), economic growth increases by 0.92 percent. This means the strength of the South African currency reads to economic improvements. The exports from the textile and clothing industry also impact positively on economic growth. A one percent increase in the export revels leads to 0.27 increases in economic growth. Additionally, the textile and clothing industry's employment growth has a positive linear relationship with economic growth as one percent increase in the employment level leads to approximately 0.30 rise in the level of the economy.

Table 5.7: Long-run coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEMP	0.298809	0.184276	-1.621529	0.1289
LEXP	0.270114	0.145582	1.855410	0.0863***
LEXR	0.920393	0.306067	3.007160	0.0101**
LGVA	1.184377	0.352327	3.361582	0.0051*
C	0.525159	7.515203	0.069880	0.9454

Note: * denotes significance at 1% level; ** 5% level and *** 10% level

Source: Author's own calculations from the study sample

5.9 ERROR CORRECTION MODEL (ECM) AND SHORT-RUN RELATIONSHIPS

When variables cointegrate, it is possible that they may also have a short-run relationship. Besides, the presence of long-run relationships enforces the estimation for error correction model (ECM), the reason being to determine how long it takes short term model errors or shocks to adjust towards the long-run equilibrium. This speed of adjustment is established through the estimation of the error correction model, which provides the coefficients of the error correction term (Asteriou & Hall, 2007:310-311; Brooks, 2014:376). Nonetheless, the error correction model results are trustworthy – meaning the materialisation of long-run

equilibrium – only if the coefficient of the error term is negative and statistically significant (Mukhtar & Rasheed, 2010:54). The error term from the error correction model is used as the "equilibrating" of errors that rectify shocks or deviations from the model's equilibrium value (Gujarati, 2011:231-232).

Table 5.8 represents the error correction term and short term coefficients. The error correction model was employed to determine the short term effect of the textile and clothing industry's employment, exports, real effective exchange rate, and the textile and clothing industry's gross value added on the South African gross domestic product (GDP). The obtained results suggest an error term of -0.217. This error term has met the prerequisites as it is negative and highly statistically significant at one percent level, with a t-value of 15.489 and a p-value of 0.000. In other words, a null hypothesis suggesting that the model is explosive and insignificant is rejected at one percent level of significance. The significant high level of the error term approves a steady long-run relationship (Bannerjee *et al.,* 1998:250). The ECM result obtained in this study implies that the model will come back to long-run equilibrium after those short term deviations. The error term of 0.217437 infers that approximately 22 percent of shocks in the model are fixed every year. The same error correction term indicates that it will take almost four and a half years (1/0.217437) for the changes in the textile and clothing industry to revert the economy to its full long-run equilibrium.

Hence, considering the short-run dynamics, three regressors, namely the textile and clothing industry's employment, exports, and the real effective exchange rates are statistically significant to affect the South African gross domestic product in the short run. Both employment and exports have a positive short term impact on the South African GDP whilst the real effective exchange rate negatively impacts the economic short term improvement. In other words, one percent in both employment and export revels leads to 0.18 percent and 0.045 percent increase in the South African gross domestic product respectively while a one percent increase (appreciation) in the real effective exchange rate causes the South African gross domestic product to decline by 0.21 percent. Despite its long run significant impact on economic growth, the gross value added (GVA) is not statistically significant to influence the gross domestic product in the short run. The error correction term and short term coefficients are displayed in Table 5.8 below.

Table 5.8: Error correction term and the short-run coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LEMP)	0.183415	0.036464	5.030070	0.0002*
D(LEXP)	0.044527	0.011429	3.895903	0.0018*
D(LEXP(-1))	0.095246	0.011913	7.995183	0.0000*
D(LEXR)	-0.214316	0.037043	-5.785670	0.0001*
D(LGVA)	0.034514	0.043181	0.799287	0.4385
CointEq(-1)	-0.217437	0.014038	15.488644	0.0002*

Note: * denotes significance at 1% level of significance

Source: Author's own calculations from the study sample

5.10 DIAGNOSTIC AND RESIDUAL TESTS

Before going further in the interpretation of findings, it is important to ensure that the model employed to determine the long and short-run relationship amongst the variables are accurate. This is accomplished through several diagnostic tests. The residual diagnostic tests are used to determine if the model included in the study avoided conventional econometric issues. In other words, it important to ensure that the model meets the prerequisite of the stochastic properties. The stochastic properties of the model comprise of autocorrelation, heteroscedasticity, normal distribution, and parameter stability (Takaendesa, 2006:100). It can be noted that the underlined model (ARDL (1, 1, 2, 0, 1)) has passed the autocorrelation, heteroscedasticity, and normality tests and indicated by their p-values based on the results in Table 5.9. All of these diagnostic tests have a p-value that is greater than a 5 percent significance level. These p-values suggest a failure of rejecting all set null hypotheses. Additionally, the Ramsey test was used to determine the model specification. As shown in Tables 5.9, the null hypothesis, which suggests that the study model was correctly specified, is not rejected at a 5 percent level of significance. Thus the ARDL (1, 1, 2, 0, 1) model was correctly specified.

Table 5.9: Diagnostic test results

Test	H_0	P-value	Conclusion
Jarque-Bera	Residuals are normally distributed	0.546	H_0 is not rejected.
Breusch-Pagan-Godfrey	No serial correlation	0.097	H_0 is not rejected.
LM	No heteroscedasticity	0.105	H_0 is not rejected.
Ramsey	The model is correctly specified	0.2459	H_0 is not rejected.

Source: Author's own calculations from the study sample

Additionally, to the diagnostic test performed and represented in Table 5.9 above, it was also considered important to conduct the stability test to detect if there are no other misrepresentations that might be associated with the model (Zanini *et al.*, 2000). Lee and Strazicich (2004:132) suggest that the Cumulative sum of Recursive Residuals (CUSUM) test should be performed as a means or measurement of the model parameter's stability. For this reason, the CUSUM test was performed in this study, and the results are plotted in Figure 5.7 below. As represented by the figure, the blue line that indicated the model's movement lies within the red lines (the critical region). Thus the model is significant at 5 percent level, and subsequently, the model is stable. This implies that the parameters included in this study remain stable over time, and thereafter, the long run and short-run model estimates are accurate and robust.

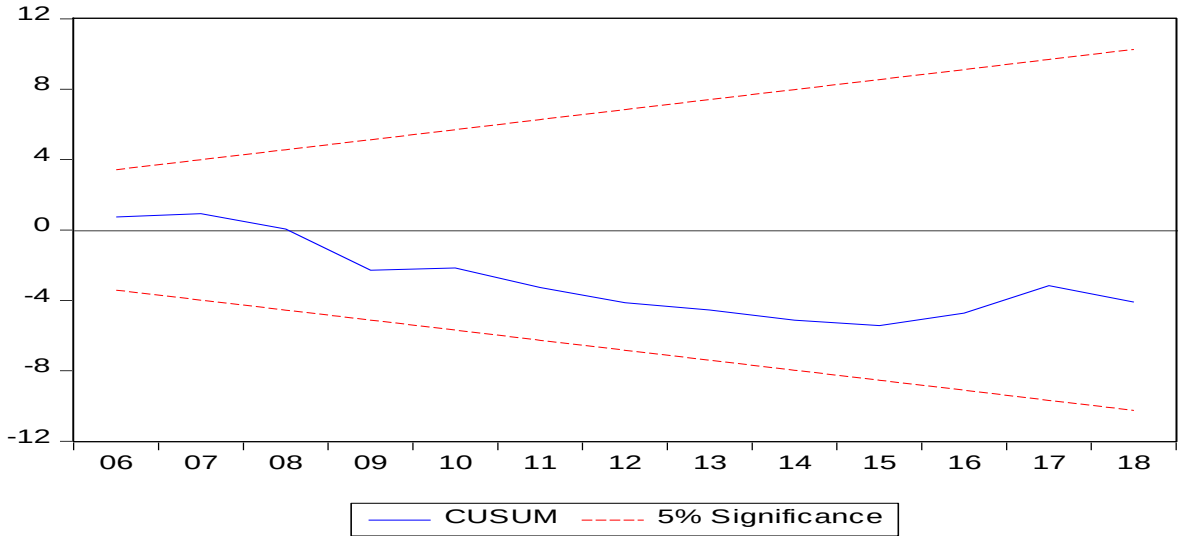

Figure 5.7: CUSUM test results

Source: Author's own calculations from the study sample

5.11 TODA-YAMAMOTO CAUSALITY TEST

The Autoregressive Distributed lag (ARDL) model is an appropriate tool to determine the existence or absence of cointegration amongst variables, especially when variables under the study are a mixture of I(0) and I(1). Although the ARDL approach also provides the short-run dynamics, it does not show the causality relationship between variables. For this reason, the study applied the Toda-Yamamoto causality test to examine the causal relationship between the study's variables, namely the gross domestic product, employment, and the exports from the textile and clothing industry, real effective exchange rate and the gross value added in the textile and clothing industry. In the Toda-Yamamoto approach, the null hypothesis suggests

the absence of a causal relationship between two variables against the alternative suggesting the presence of causation between the underlined variables. Table 5.10 exhibits the outcome from the performed Toda-Yamamoto Granger non-causality test.

Based on Table 5.10, the results indicate that a bidirectional causal relationship exists between employment and gross domestic product, between exports and gross domestic product and between employment and real effective exchange rate. This suggests that effort to improving the South African economic condition will bear fruit if the issue of unemployment is also dealt with. In this process, the stabilisation of the South African currency also has to play a significant role. This finding is backed by the study by Balchin and Calabrese (2019), Karami *et al.* (2019).

Additionally, the Toda-Yamamoto results suggest a unidirectional causality between real effective exchange rate and the gross domestic product; and between gross value added and the real effective exchange rate. In other words, there is a causal effect from the real effective exchange rate towards the gross domestic product, and from gross value added towards real effective exchange, not the other way around. Furthermore, the causality test indicated the absence of a causal relationship between gross domestic product and the gross value added. This might be owing to the struggle faced by this industry. Generally, the Toda-Yamamoto Granger Non-Causality estimation confirms that besides the presence of short-run and long-run relationships among variables of the study, these variables can also serve as predictors between one another.

Table 5.10: T-Y Granger causality test results (chi-square and p-values)

Excluded variable	**Dependent variable**				
	LGDP	**LEMP**	**LEXP**	**LEXR**	**LGVA**
LGDP	……..	7.872716	6.740085	16.12296	3.355955
		(0.0195)**	(0.0344)**	(0.0003)*	(0.1868)
LEMP	9.429863	……..	11.38799	11.38799	1.315483
	(0.0090)*		(0.0034)*	(0.0034)*	(1.315483)
LEXP	17.04238	22.82056	……..	22.82056	2.696918
	(0.0002)*	(0.0000)*		(0.0000)*	(0.2596)
LEXR	1.789416	1.077745	0.502918	……..	2.645698
	(0.4087)	(0.5834)	(0.7777)		(0.2664)

Excluded variable	Dependent variable				
	LGDP	LEMP	LEXP	LEXR	LGVA
LGVA	3.695952	0.011788	(2.494960)	16.74347	……..
	(0.1576)	(0.9941)	(0.2872)	(0.0002)*	

Note: () denotes probability values; *, ** denotes significant at 1% and 5% respectively

Source: Author's own calculations from the study sample

5.12 DISCUSSION OF FINDINGS

5.12.1 Textile and clothing industry 's exports and economic growth (GDP)

An empirical analysis of this study suggests a positive long-run relationship exists between the textile and clothing industry's total exports and the South African economic growth. It was revealed that if the total exports from the textile and clothing industry were to increase by one percent, the economic growth would respond by increasing by almost 0.27 percent. The textile and clothing exports are not only effective in the long as it also impacts on the South African economy in the short run. The results from the short-run effect of the total exports from the textile and clothing industry on the South African economy revealed that a positive and significant short-run relationship exists between total exports from the textile and clothing industry and the South African economic growth. That is a one percent increase in the textile and clothing short term export results in 0.05 percent increase in the South African economic level. These short-run and long-run estimated results indicate the significant role played by the textile and clothing industry import in the South African economy. If more of textile and clothing products are produced and exported, the country's economy will experience an improvement. Similar results were found by Keane and te Velde (2008).

The positive effect of textile and clothing's exports on economic growth is not an isolated case that is experienced only in South Africa. As discussed in Chapter 3, in both developing and developed countries, the textile and clothing industry plays a significant role in economic growth. The findings of Shah *et al*. (2014) revealed that the textile and clothing industry's contribution to the country's economy surpluses 60 percent of the total exports from the manufacturing sector. In other words, challenges that may be experienced by the textile and clothing industry, in terms of production and exports, possess a paramount effect on the whole country's economy. In the same line, the study of Keane and te Velde (2008) revealed that besides the contribution of this industry towards employment creation, its capability of export

diversification assists in growing the country's economy and improving social and people's standard of living. In the South African context, increasing the capacity of the textile and clothing industry would assist in reducing the high rate of unemployment that the country is experiencing. Additionally, enhancing the textile and clothing export through improvement of innovation, skills development and application of modern technology, would play an important role in strengthening the South African currency, which is currently very weak and volatile. These results are in line with Thuy and Thuy's (2019) findings.

5.12.2 Textile and clothing industry's gross value added and economic growth (GDP)

The results from the ARDL regression analysis, as represented in Table 5.7, revealed that the gross value added from the textile industry possesses the highest impact on the South African economic growth when compared to other variables examined in the study. Positive growth in the GVA level leads to an improvement of South African economic growth. The long-run relationship that exists between the gross value added within the textile and clothing industry and economic growth shows that a small growth of the GVA in the textile and clothing industry results in a high enhancement of economic growth. In other words, a one percent increase in the level of gross value added causes economic growth to rise by 1.18 percent. This result shows how it seems difficult to expect economic growth if the textile and clothing industry is not improving. Some other studies also analysed how the textile and clothing industry can contribute to the economic growth through the gross value-added, and they found that the higher the industry's value-added is, the more it contributes to the country's economic growth.

Among a multitude of studies that examined the relationship between gross value added in textile and clothing industry and economic growth, those of Balchin and Calabrese (2019), Karami *et al.* (2019), and Keane and te Velde (2008) revealed that a positive gross value added generates economic growth enhancement. Without completely leaving its labour intensive production, the South African textile and clothing industry should also include technology (advanced machineries) in its factors of production to improve its GVA. In this regards, policymakers should focus growing productivity and competitiveness of textile and clothing industry.

5.12.3 Textile and clothing industry's employment and economic growth (GDP)

The general theory or literature suggests a linear and positive relationship between employment and economic growth (Keynes, 1936; Manh *et al.*, 2014:48; Seyfried, 2011: 13-22). This is because when the country's economy is doing well public and private sectors can create new job opportunities and on the other side people who are already employed in both formal and informal or even self-employed people can contribute to the economic activity that can enhance the country's economy. When the human capital is exploited at its full capacity, the country enjoys economic growth and both economic and social development (Bhorat *et al.*, 2016:24). In line with the general theory of the relationship between employment and economic growth, the study's result revealed that a positive relationship exists between economic growth and employment growth within the South African textile and clothing industry. Creating more jobs for low skilled workers within this industry would assist South Africa in reducing the current high level of unemployment. As depicted in Table 5.7, when employment from the textile and clothing industry increases by one percent, the level of economy responds by increasing 0.23 percent. Unfortunately, some issues, such as labour law, are not in favour of this relationship in South Africa. Fight for high wages results in low labour demand.

In consideration of economic theories, this result appears to meet the prior expectation. Additionally, a good number of studies on the relationship between economic growth and employment within different industries including textile and clothing industry, suggested that a positive interaction exists between these two economic variables (employment and economic growth) (Akçoraoğlu, 2010; Aksoy, 2013; Seyfried, 2011), and this the positive relationship between economic growth and employment is based on the fact that where the economy is doing well, it is not difficult to employ the job creation policies. Besides, even if people might not look for formal employment, it is easy to find informal or self-employment. Furthermore, employment growth allows people to perform many other activities that contribute to the enhancement of economic growth. The textile and clothing industry is naturally a provider of jobs, especially in developing countries (Keane & te Velde, 2008:1). Consequently, since South Africa is facing the issue of high rates of unemployment and the textile and clothing industry provides more jobs to low skilled labour, this industry can assist in alleviating and curbing unemployment if, of course, it is supported by the government to become more productive and competitive.

5.12.4 The real effective exchange rate and economic growth (GDP)

Besides the assessment of the impact of the textile and clothing industry's exports on economic growth, the study also analysed what should happen to the contribution of the textile and clothing industry towards the country's economic growth as a result of changes from the real effective exchange rate. The results from analysis suggests that the contribution of the textile industry in the South African context remains positive.

The assessment of the long-run relationship suggested that a one percent appreciation in the Rand leads to a 0.92 percent increase in economic growth. This implies that the rand appreciation can assist in lowering the production cost (labour and raw material become less expensive) and enhancing output in the textile and clothing industry. The strength of the rand might be an issue for exportable textile and clothing products, but since the high quantity of this industry is domestically consumed, the strength of the currency can serve as an advantage to the industry as well as the country's economic growth. The effect of the real effective exchange rate on economic growth is expressed through its impact on investment and capital accumulation, which are directly interconnected with economic growth (Cakrani, 2014:19). The positive relationship between real effective exchange rate and economic growth was also found by the study of Huong (2019); Koirala 2018) and Tarawalie (2010). All these mentioned studies highlighted that the value of a country's currency in the global market determines the real situation of that country's economy. Consequently, the appreciation of the South Africa currency (Rand) infers a better economic outcome as South Africa is largely a net importing country.

5.13 CHAPTER SYNOPSIS

This chapter assessed and established the empirical findings that aimed at determining both long-run and short-run relationships and causality association between the textile and clothing industry's employment, exports, and gross value added (output), exchange rate, and the South African economic growth (GDP). This chapter began with a concise introduction, followed by graphical and growth trend analysis. The graphical and growth trend analysis indicated that all variables under consideration experience large volatility between 1994 and 2018. It also suggested the economic growth fluctuation was highly influenced by exchange rate volatility and textile and clothing export variation. After the graphical representation, another type of preliminary analysis, namely pairwise correlation, was performed. The correlation results suggest a positive correlation between exchange rate, gross value added (GVA), and gross

domestic product (GDP) while employment and exchange rate negatively correlated with GDP. Different unit roots and stationarity tests, namely ADF, PP, and KPSS, were applied to the underlined variables to determine the order of integration. These tests confirmed the existence of a mixture of series, that is, some were integrated at the level I(0) where others were integrated of order one I(1) after being differenced once.

Having I(0) and I(1) series, the ARDL model was the appropriate approach to test for cointegration among variables. The results from the cointegration test exhibited the presence of long-run relationships among variables. The coefficient from the long-run result suggests that the textile and clothing output (gross value added) impacts more on economic growth compared to other explanatory variables. The error correction model was used for a short-run relationship, and the findings revealed that not only the explanatory variables influence the level of economic growth in the long run but also the short run. The main implications regarding the discussion of the findings surrounding the variables were that the textile and clothing industry plays an important role in improving the South African economy, henceforth this sector needs to be prioritised.

The test also indicated that the short term shocks in the model are adjusted for the long-run equilibrium. Using the Toda Yamamoto test, it was found that a causal relationship exists not only between the dependent and independent variables but also amongst the independent variables themselves. In order to ensure that these findings were genuine, a different diagnostic test was conducted, and all of them confirmed the accuracy of the findings. The overall findings suggested a significant impact of independent variables over the dependent variable. The next chapter, Chapter 6, seeks to provide the summary of the study, highlight how the study objectives were achieved, provide policy implications, study limitations, and proposition for future research.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

Given the important role the manufacturing sector plays in the economic growth path in developing countries and the contribution of the textile and clothing industry, it was judged significant to conduct research that focusses on the South African textile and clothing industry. This study assessed the effect of the textile's employment, exports, and gross value added on South African economic growth levels. The estimation and other forms of analysis carried out by the study were driven by both primary and secondary objectives, as underlined within the theoretical and empirical objectives set out in Chapter 1, and due to the limitation of the data, the regression analysis employed 25 annual observations from 1994 to 2018. The study employed various econometric and statistical methods and approaches to achieve the formulated objectives. These included graphical representations and descriptive analysis, descriptive statistics and correlation analysis, bounds test for cointegration, standard ARDL, Toda-Yamamoto Granger non-causality test, and diagnostic tests. The analysed data comprised of three regressors from the textile and clothing industry (employment, exports and gross value added) plus the real effective exchange rate used as a significant component of international trade. Economic growth or rather, the gross domestic product per capita (GDP) was used as the dependent variable. This chapter provides the study summary, achievement of objectives, significance, and limitation of the study, recommendations, and concluding remarks.

6.2 THE STUDY SUMMARY

The study commenced with a representation of the background of the textile and clothing industry from a global perspective. Different objectives were formulated concerning the problem statement of the study to produce a scientific and academic dissertation. In addition to the main objective, which was "to assess the role of the textile and clothing industry in the South African economy,"; there were two groups of objectives, namely empirical objectives and theoretical objectives. The core empirical objectives comprise of: (i) analyse the share of the South African textile and clothing industry towards economic growth and national income; (ii) analyse the long-run relationships between employment, exports, and output of the textile and clothing industry on South African economic growth; (iii) determine the short-run relationships between exports, employment and output in the textile and clothing on South

African economic growth; (iv) investigate the causal relationships between employment, exports, and output in the South African textile and clothing industry and economic growth in the country. Given that, in most cases, the empirical analysis is conducted to confirm or to refute theoretical assumptions or hypotheses, different theoretical objectives were also formulated. These objectives include (i) defining key concepts and elucidate different aspects of the sectoral composition of the economy, specifically addressing the role of primary, secondary and tertiary sectors; (iii) provision of an overview and discussion of the different theories relating to economic growth and specifically the role of sectoral contribution; (iii) explanation of the theoretical aspects of the textile and clothing industry towards employment, exports and economic growth; (iv) elucidating the contribution of the textile and clothing industry on economic performance within both developing and developed countries; (v) review the empirical literature on the role of the textile and clothing industry towards the economic performance of developed and developing countries and, more specifically, the South African perspective.

The first chapter (Chapter 1) provided an overview and background on the study topic under consideration. After the provision of background, a research question or problem statement was discussed, followed by the identification of the empirical and theoretical objectives. Before the research layout and conclusion, a concise summary of the methodology followed. Chapter 2 focussed on the provision of conceptual definitions and discussion of the existing literature related to the role played by the textile and clothing industry within different economies. In this chapter, different theories in relation to the role of the textile and clothing industry were discussed. These theories indicated that trade and competitive advantage play an important role in the sustainability of the clothing and textile industry. Chapter 3 discussed trends associated with dynamic changes within the textile and clothing industries from both developed and developing countries, with a specific focus on the South African textile industry. In developed countries, the textile and clothing industry assists in economic growth through the income generated by the use of capital and advanced technology. In a developing country, the textile and clothing industry assists in growing the economy and creating jobs, especially for low skilled workers.

Chapter 4 presented and discussed approaches (descriptive statistics, unit root test, Granger causality, and diagnostic tests) as well as the methodological framework which has enlightened and justified the application of the Autoregressive Distributed Lag (ARDL) model as the

appropriate model in the assessment of cointegration among variables following the guidelines proposed by Pesaran *et al.* (2001). Additionally, other econometric and statistical techniques were used in line with the achievement of the study's primary and secondary objectives. Chapter 4 also represented a series subjected to empirical analysis. This data (series) commences in 1994 to avoid the distortion that might have been caused by the sanctions against the apartheid government. Thus, the focus was put on the post-apartheid time series. Due to the availability of data, the closing date was 2018. Chapter 5 presented the regression results and the discussion of findings. After its introduction, Chapter 5 started by providing the graphical representation and analysis of the underpinned variables. Unit root and stationarity tests were performed and discussed. The results from these tests justified the use of the ARDL model. Subsequently, the long run, short-run, and causal relationships among the study variables were analysed, and their results were discussed in this chapter. Furthermore, Chapter 5 provided results and discussion of residuals diagnostic tests. The main findings in this chapter were that a positive relationship exists between economic growth, employment, and value-added. It was also found that the exchange rate volatility negatively impacts economic growth. Lastly, Chapter 6 provides a holistic summary of the study, including the study limitations and recommendations. In this chapter, the achievement of each objective, be it theoretical and empirical, is discussed

6.3 ACHIEVEMENT OF THE STUDY OBJECTIVES

It is important to note that all the study's objectives, being primary and secondary, have been attained. This section provides a summary of how those objectives set in chapter one were achieved.

6.3.1 Primary objective

The primary objective of the study was to analyse the impact of the textile and clothing industry on South Africa's economic growth. From this objective, which was achieved throughout the study analysis (more particularly this was achieved in Chapter 5), other theoretical and empirical objectives were set. It was found that the textile and clothing industry remains significant to the South African economy. As it assists in creating employment for unskilled workers, export diversification and increase economic growth. Additionally, value-added from this sector assist in creating jobs while the industry's exports may assist in strengthening the

country's currency. The summary of how secondary objectives, both theoretical and empirical, were achieved is provided below.

6.3.2 Theoretical objectives

A useful background and theoretical literature were employed to provide better knowledge and understanding of the keys concepts highlighted in the problem statement and the study's primary objective. To achieve the primary objective of the study, theoretical objectives, in relation to the main objective, were firstly achieved. The following are the outlined theoretical objectives and how they were achieved.

- ***To define key concepts and elucidate different aspects of the sectoral composition of the economy***

In order to achieve this objective, the study primarily set out the key concepts of the study. In Chapter 2, Section 2.2.4, a thorough explanation of the textile and clothing industry's features were established and discussed. In the same context, based on the role of the textile and clothing industry in creating jobs, the concept of employment was elucidated in Chapter 2, Section 2.2.5. Chapter 2 also denoted that employment may be classified as formal and/or informal. Both types of employment are available in the textile and clothing industry. Different measurements of employment were also discussed to enhance knowledge about the concept of employment. An additional key concept that was highlighted and discussed in Chapter 2 was economic growth. In Section 2.2.1 and 2.3.1 of the second chapter, the definition and significance of economic growth were established.

- ***To discuss and provide an overview of the different theories relating to economic growth and international trade which have relevance to the contribution of textile and clothing industries;***

The theoretical literature on economic growth was provided and elucidated. The theoretical literature focussed mostly on theories that provide the divergence between economic growth and economic development in order to shed light on why the current study has mostly focused on economic growth. It was elucidated that economic growth precedes economic development, though economic development also has its contribution to boosting economic growth. Thus, economic growth theories such as Solow's neoclassical growth theory and new growth theory or endogenous growth theory were discussed (Section 2.3.1 to 2.3.4). Given the role played by

the textile and clothing industry regarding the countries' import and export, this study also discussed several trade theories. These theories include the classical trade theory or static model, the comparative advantage theory of David Ricardo, and the new trade theories (Section 2.3.4.1 to 2.3.4.7). These theories are important in selecting the major focus and goals of the industry's production.

- ***To review the empirical literature on the contribution of the textile and clothing industry towards the economic performance of developed and developing countries and more specifically, South Africa***

In Chapter 2, the empirical literature on the contribution of the textile and clothing industry towards economic performance was discussed. Firstly, Section 2.4.1, and 2.4.2 reviewed the role of the textile and clothing industry towards economic performances in both developed and developing countries. The scrutiny indicated that textile and clothing industry remain important in both developed and developing countries. In developed countries, the large economic contribution of this sector comes mostly on export growth whilst in developing countries it contributes more on job creation for low and unskilled labour. Furthermore, the significance of the textile and clothing industry in some of the sub-Saharan countries and particularly in South Africa, was also provided and elucidated on (Section 2.4.3). In South Africa, various studies have suggested that the textile industry, despite its competition from international competitors contributes to the manufacturing outputs, provides employment especially to low skilled labourers and thus acts as a key driver of economic growth.

- ***To review and discuss the nature and role of the textile and clothing industry's performance from the perspective of various countries***

The study analysed the industry's performance trends from selected countries to provide the generic or universal situation of the textile and clothing industry across the globe. The selection of countries was based on both the role and location of industries. Thus, trend analysis, provided in Chapter 3 in Section 3.2 focussed on some industries from developed, developing countries, and sub- Saharan Africa in a specific way. It was found that the textile and clothing industry is significant in both developed and developing counties. In a developed country, the textile industry is export-oriented while in developing countries, with the exception of some countries such as China and India, textile and clothing products are mostly sold in the domestic market. Additionally, this industry contributes more to job creation in developing countries.

Thereafter, in Section 3.3, the study presented an in-depth historical development of the textile and clothing industry in the South African context. In this section, the chronological development of the industry was provided. Additionally, the industry structure was discussed based on size, ownership, employment capacity, and the number of firms within the industry.

6.3.3 Empirical objectives

Besides the abovementioned theoretical objectives, the study also set empirical objectives that assisted in achieving the primary objective. The following section presents the study's empirical objectives and their accomplishment.

- ***To analyse the role of the South African textile and clothing industry towards economic growth and national income***

Since the main focus of the study was to analyse how the textile and clothing industry impacts on economic growth, the study in Chapter 5 revealed that through the analysis of the underlined variables, the textiles industry influences South African economic conditions through employment creation, an increase of gross value added and the exports levels (Section 2.4.3, Section 3.3, Section 5.8 and Section 5.9). Additionally, the value-added from this specific industry contributes to South Africa's economic growth and assists in creating more jobs. The study findings revealed that the textile and clothing industry possess potential to improve qualitative aspects such as social wellbeing and development given the role it plays in adding job opportunities and the important role human capital levels play in the industry's performance.

- ***To analyse the long-run relationships between employments, exports, real effective exchange rate and output of the textile and clothing industry on South African economic growth***

To accomplish this objective, Section 5.7 to 5.8 of Chapter 5 established the analysis finding of employment, exports, the textile and clothing industry gross value-added, and the South African economic growth. The study employed the standard autoregressive distributed lag (ARDL) model to cointegration that provided the result of the long-run relationship between the dependent and the explanatory variables. These results suggested that the explanatory variables (employment, export, exchange rate, and gross value added) influence South African economic growth in the long-run. These results were thoroughly represented and discussed in

the foregoing sections and were also compared to the relevant literature exhibited in both Chapters 2 and 3. A further elucidation on these results was provided in Section 5.12 of the fifth chapter. It was found that all the independent (explanatory) variables possess a positive impact on the level of economic growth. The textile and clothing industry's output or rather, the gross value added, was found to have a strong positive influence on economic growth compared to other explanatory variables. Therefore, supporting this industry adequately will ensure the promotion of much needed economic growth for the country.

- ***To determine the short-run relationships between exports, employment, real effective exchange rate and output in the textile and clothing on South African economic growth***

This objective was achieved in Section 5.9 of Chapter 5 and further discussed in Section 5.12. The study suggested that a positive short-run relationship exists between the textile and clothing industry's employment, gross value added, export, and South African economic growth using the unrestricted error correction model. Contrary to the long-run results, the short-run findings indicated that the real effective exchange rate negatively impacts the level of economic growth in the short term. This is because it takes time for changes in the exchange rate to be adjusted to economic activities. The analysis of short term results also suggested that the short term models shock to return to the equilibrium (they are adjusted towards the equilibrium) in the long run.

- ***To investigate the causal relationships between employment, exports, real effective exchange rate and output in the South African textile and clothing industry and economic growth in the country***

The study employed the Toda-Yamamoto Granger non-causality test to accomplish this objective (Section 5.11). The result from the test suggested three types of findings. Firstly, it was found that a bidirectional causal relationship exists between employment and economic growth, between textile and clothing exports and economic growth, and between employment and exchange rate. Secondary, a unidirectional causal relationship was displayed between the real effective exchange rate and economic growth, and between gross value added (the textile and clothing output) and the real effective exchange rate. Lastly, no causal relationship was found between the gross value added (the textile and clothing output) and economic growth.

- ***To provide strategies and policy recommendations that can possibly assist the textile and clothing industry's revitalization process***

In Chapter 5, the long run, short run and causal relationship were analysed and interpreted. It was found that the employed explanatory variables need to be improved in order to enhance the south African economy. Based on these findings various strategies and policies that can possibly assist the textile and clothing industry's revitalization process were suggested in Section 6.6 of the current chapter.

6.4 SIGNIFICANCE OF THE STUDY

The present study focussed on establishing the relationship between employment, exports, real effective exchange rate, the output of the South African textile and clothing industry, and economic growth in South Africa. The study findings and discussion of results are vital in scrutinising and monitoring the country's textile and clothing industry. The result of this study can assist in finding alternative strategies to improve the South African employment situation, currency fluctuation, and export shocks within the global market. Grounded on the study findings, the textile and clothing output, exports and the real effective exchange rate appear to be key factors that can assist in improving the South African economy and creating more jobs not only within the textile industry but also in other industries and economic sectors such as manufacturing, agricultural, and transport sectors. In this regard, government authorities and policymakers (for both monetary and fiscal policies) can ensure that the convenient decisions that are in favour of the country's economic growth and job creation are established.

For instance, policies that relate to export and import tariffs, government spending, exchange, and interest rates regulation will assist in overcoming the current economic challenges (Aron & Muellbauer, 2007; Chatterjee & Mursagulov, 2016; Kearns & Manners, 2006). With reference to the study literature in Chapter 2 and 3 and findings and discussion in Chapter 5, the study revealed that the textile and clothing industry remains very significant, especially in developing countries as it is the source of employment and exports. If South Africa, as well as other developing countries, put enough resources and support towards these processes, the issue of unemployment, especially for unskilled labour, can be improved. The major contribution of this study was to indicate how the textile and clothing industry can be a channel of economic improvement and a call to both political and economic authorities to rethink the position of this industry within their countries.

6.5 LIMITATIONS OF THE STUDY AND FUTURE RESEARCH SUGGESTIONS

Limitations of this study may arise from the data sample employed for cointegration analysis. Although it is important, when conducting a time series analysis, to include a large number of observations, the study could neither acquire monthly nor quarterly data. Thus, the annual observation was used owing to the lack of monthly and quarterly observations. The second limitation encounter during this study was a time constraint. The performance of the textile and clothing industry depends on many factors and numerous economic indicators. However, due to the time constraint, only four economic indicators from the textile industry, namely employment, exchange rate, export levels, and gross value added, were considered in this study. The third limitation of the study is that it merely focused on the impact of the textile and clothing industry's impact on economic growth, which is purely quantitative. This suggests that future studies can try and assess its impact on economic development with the purpose of providing a more qualitative aspect.

Further studies should take into account the subsequent suggestions to address these mentioned limitations:

- Include all economic factors from the textile and clothing industry that may influence the country’s economic performance;
- Utilise either quarterly or monthly data in assessing the impact of the textile and clothing industry on the South African economic growth;
- Application of the alternative approach that, instead of testing the asymmetric effect of the textile and clothing industry on economic growth, the study uses asymmetric assessment.
- In addition to these suggestions, as was mentioned in Chapter 3 and Chapter 5, these industries show a significant amount of potential to improve not only quantitative aspects of growth but likewise qualitative dimensions of economic activity. Henceforth, future studies should also attempt to capture the dynamics between the performance of the textile and clothing industry in the country and economic development levels.

6.6 RECOMMENDATIONS

Owing to the impact of textile and clothing industry towards economic performances as revealed by the theoretical and empirical analysis of the study, it was seen significant and imperative to propose some strategies that can assist not only in improving the textile and clothing industry but also in creating more jobs, strengthening the country's currency, enhancing the competitiveness of the industry and better economic performance.

- ***Promotion of both domestic and foreign direct investment policies***

Investments being domestic or foreign are the key component in creating jobs and improving economic performance (Habanabakize & Muzindutsi, 2016; Tshepo, 2014). The South African government should support local investors and facilitate foreign investors to increase and support the number of textile and clothing firms. Not only will this assist in curbing the current issue of unemployment, but it will also play an important role in growing the country's economy, which unfortunately is declining at the moment. This investment should mainly be directed towards the support of local industries to allow better competitiveness.

- ***Promotion of local firms and the domestic market***

Although international trade or openness plays a significant role in the South African economy, it would be important for the government to set some boundaries with the aim of local firms' protection. For instance, the cheap import of Chinese clothes in South African markets puts pressure on local firms to sell their product at an international price instead of the local one. Those firms that are not fit to compete with the foreign advanced industries are forced out of the market. Consequently, a number of jobs are destroyed due to import penetration. This can be achieved by imposing tariffs on imported products.

- ***Labour skills empowerment, innovation, and technology promotion***

Any firm or industry needs to be updated to be competitive in both the local and global markets. This implies the use of innovation and advanced technology. The South African textile and clothing industry needs to be innovative to compete with those imported products on both quality and price. This is possible if the technology is one of the modes of production. Since the South African textile and clothing industry employs more unskilled and less-skilled workers than other industries, it is imperative to first prepare the labour force. While the labour outside of the workforce needs to learn how to use the new technology, the existing workers

need to attend workshops and training that will allow them to cope with changes in their working environment.

- ***Promotion of textile and clothing production models aiming at high-value markets and export-orientated products***

The literature review of the current study indicated that countries that are excelling in their textile and clothing industry and in which this industry plays an important role in improving their economy are those that focus on the export-oriented product. Therefore, to become a more effective industry, the South African textile and clothing industry need to increase its export level and enhance its competitiveness by improving its information and communications technology, speed to market, efficiency in productivity, and lower the cost of production.

- ***Introduction and implementation of a textile-clothing recycling model***

The world is now suffering the issue of landfill capacity reduction, and the duping cost increments. Besides, the cost of raw material increases from time to time. To avoid these environmental challenges and the high cost of production, the South African textile, and clothing industry should introduce and implement the recycling method. Not only will it assist in cost reduction and environmental pollution, but it will also allow the creation of more jobs and profit maximization.

6.7 FINAL CONCLUDING REMARKS

Conclusively, the current study has established that the underlined economic factors from the textile and clothing industry impact on the South African economic performance. Using the standard Autoregressive Distributed Lag (ARDL), the study finding suggests the existence of a long-run relationship between the explained and explanatory variables. In order words, by improving exports, employment, and gross value added from the textile industry and by strengthening the South African currency, the economic growth will positively respond to these mentioned changes. The power of the textile industry on the South African economic performance is a lot limited in the long-run relationship. The analysis of the short-run movement from the textile and clothing industry suggested that a positive change that occurs in the south African textile and clothing industry results in short term positive changes in the economic performances. The study findings support the economic theory suggesting that positive changes in the output and employment levels lead to economic improvements.

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ANNEXURE A: LETTER FROM THE LANGUAGE EDITOR

REGCOR
ENTERPRISES PTY LTD
(2015/375453/07)

Date: 23/07/2020

Dear Sir/Madam

This letter is to certify that I, Sarah Louise Cornelius, of Regcor Enterprises Pty Ltd, have completed the initial editing of the dissertation titled *An assessment of the role of the textile and clothing industry in the South African economy* by Lerato Boitumelo Mabeleng.

I have ten years of experience in the field, having worked on multiple doctorates. Currently, I am a member of the Professional Editor's Guild (PEG).
This has been an initial (first-time) edit and all recommendations and errors have been noted in the comments. Any changes or lack of corrections done to the document after editing is not a reflection of the editing services provided. Students are welcome to send the document for a further proof read before the final submission.

Kind Regards

Sarah Louise Cornelius

Professional Editor's Guild
Associate Member Membership number: COR003 **Regcor Enterprises Pty Ltd**

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