REPUBLIC OF TURKEY
SAKARYA UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES

ASSESSMENT OF THE IMPACT OF BUSINESS ENVIRONMENT ON SMALL AND MEDIUM ENTERPRISES (SMEs) PERFORMANCE

IN SUDAN

MASTER'S THESIS

Mohammed El-Amin Elsanoosi AHMED

Department : Econometrics
Subfield   : Financial Economics

Supervisor : Assist. Prof. Avni Önder HANEDAR

AUGUST – 2020

REPUBLIC OF TURKEY
SAKARYA UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES

ASSESSMENT OF THE IMPACT OF BUSINESS ENVIRONMENT ON SMALL AND MEDIUM ENTERPRISES (SMEs) PERFORMANCE IN SUDAN

MASTER'S THESIS

Mohammed El-Amin Elsanoosi AHMED

Department :   Econometrics
Subfield   :   Financial Economics

"The examination was held online on 25/08/2020 and approved unanimously by the following committee members"

COMMITTEE MEMBERS	ASSESSMENT
Assist. Prof. Avni Önder HANEDAR	Successful
Assist. Prof. Gökhan Baral	Successful
Assoc. Prof. Emrah ÖZSOY	Successful

		T.C. SAKARYA ÜNİVERSİTESİ SOSYAL BILIMLER ENSTİTÜSÜ TEZ SAVUNULABİLİRLİK VE ORJİNALLİK BEYAN FORMU	Sayfa : 1/1

Öğrencinin

Adı Soyadı	:	Mohammed El-Amin Elsanoosi AHMED
Öğrenci Numarası	:	1660Y63020
Enstitü Anabilim Dalı	:	Ekonometri
Enstitü Bilim Dalı	:	Finans Ekonomisi
Programı	:	☑YÜKSEK LİSANS ☐DOKTORA
Tezin Başlığı	:	ASSESSMENT OF THE IMPACT OF BUSINESS ENVIRONMENT ON SMALL AND MEDIUM ENTERPRISES(SMEs)PERFORMANCE IN SUDAN
Benzerlik Oranı	:	%13

SOSYAL BILIMLER ENSTİTÜSÜ MÜDÜRLÜĞÜNE,

☑ Sakarya Üniversitesi Sosyal Bilimleri Enstitüsü Enstitüsü Lisansüstü Tez Çalışması Benzerlik Raporu Uygulama Esaslarını inceledim. Enstitünüz tarafından Uygulalma Esasları çerçevesinde alınan Benzerlik Raporuna göre yukarıda bilgileri verilen tez çalışmasının benzerlik oranının herhangi bir intihal içermediğini; aksinin tespit edileceği muhtemel durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi beyan ederim.

31/08/2020
İmza

☑karya Üniversitesi Sosyal Bilimleri. Enstitüsü Lisansüstü Tez Çalışması Benzerlik Raporu Uygulama Esaslarını inceledim. Enstitünüz tarafından Uygulalma Esasları çerçevesinde alınan Benzerlik Raporuna göre yukarıda bilgileri verilen öğrenciye ait tez çalışması ile ilgili gerekli düzenleme tarafımca yapılmış olup, yeniden değerlendirlilmek üzere sbetezler@sakarya.edu.tr adresine yüklenmiştir.

Bilgilerinize arz ederim.

31/08/2020
İmza

Uygundur

Danışman
Unvanı / Adı-Soyadı: Dr.Öğr.Üyesi Avni Önder HANEDAR
Tarih: 31/08/2020
İmza:

☐KABUL EDİLMİŞTİR ☐REDDEDİLMİŞTİR EYK Tarih ve No:	Enstitü Birim Sorumlusu Onayı

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

ANOVA : Analysis of Variance

BERF : Business Environment Reform Facility

CBS : Central Bank of Sudan

COVID-19 : Coronavirus disease 2019

DFIs : Development Finance Institutions

EUR : European Union

FDI : Foreign Direct Investment

GNP : Gross National Product

HR : Human resource

IMF : International Monetary Fund

LED : Local Economic Development

OECD : Organization for Economic Co-operation and Development

OLS : Ordinary Lest Squares

SDG : Sustainable Development Goal

SMEs : Small and Medium Enterprises

SPLM : Sudan People's Liberation Movement

UNICEF : United Nations Children's fund

UNIDO : United Nations Industrial Development Organization

USAID : US Agency for International Development

LIST OF TABLES

LIST OF FIGUERS

Sakarya University
Institute of Sciences Abstract of Thesis

This study aims to assess the effect of the business environment on the performance of small and medium enterprises (SMEs) in Sudan. According to the World Bank, Sudan is considered one of the most difficult regions in the world to do business, which clearly indicates that there is a problem in the business environment. The study used data from the World Bank's Enterprise Surveys database of 2014 for 607 SMEs in Sudan. Multiple linear regression was adopted to test the effects of business environment on SMEs' performance.

The results of the study show that external financing sources are statistically significant and negatively affect the performance of SMEs in Sudan. The variables regarding internal financing sources are found to be statistically significant and indicate that the use of internal financing sources have a positive effect on the performance of SMEs. The results also display a statistically significant and positive impact of power outages on SMEs' performance. However, loss of sales due to electrical outages and products value losses due to breakage or damage while in transit to the domestic market show a statistically significant and negative effect on the performance of SMEs in Sudan. Moreover, bureaucracy and the number of visits and inspections by tax officials are statistically significant, demonstrating a negative influence on SMEs' performance. Corruption-related variables are found to be statistically significant and to have a positive effect on SMEs' performance. On the contrary, crime on account of losses due to theft reveals an adverse impact on the performance of the SMEs in Sudan.

The results would provide knowledge to entrepreneurs and business owners/managers on how to start and run their businesses by being aware of the factors that affect their business performance. Other stakeholders such as financial institutions and foreign investors could use the obtained results to evaluate the nature of business in Sudan. However, the study did not include all regions of Sudan, which requires further and more comprehensive studies in this area in Sudan.

Keywords: Business Environment, Performance, Small and Medium Enterprises (SMEs), Sudan.

Sakarya Üniversitesi
Sosyal Bilimler Enstitüsü Tez Özeti

Yüksek Lisans	X	Doktora	

Tezin Başlığı: İş Çevresinin Sudan'daki Küçük Ve Orta Ölçekli İşletmelerin (KOBİ'ler) Performansı Üzerindeki Etkisinin Değerlendirilmesi

Tezin Yazarı: Mohammed El-Amin Elsanoosi AHMED	**Danışman:** Dr. Öğr. Üyesi Avni Önder HANEDAR
Kabul Tarihi: 10.09.2020	**Sayfa Sayısı:** vi (ön kısım) + 51 (tez)
Anabilim Dalı: Ekonometri	**Bilim Dalı:** Finans Ekonomisi

Bu tezin amacı Sudan'daki iş ortamının küçük ve orta ölçekli işletmelerin (KOBİ'ler) performansı üzerindeki etkisini değerlendirmektir. Dünya bankasına göre, Sudan iş yapma konusunda dünyanın en riskli ve sorunlu bölgelerinden biridir. Bu durum tezin temel motivasyon kaynağını oluşturmaktadır. Tez, Sudan'daki 607 küçük ve orta ölçekli işletme için Dünya Bankası'nın 2014 yılı İşletme Anketi veritabanını kullanmaktadır. Tezde, iş yaşamından kaynaklı çevresel faktörlerin, KOBİ'lerin performansı üzerindeki etkilerini test etmek için çoklu doğrusal regresyon modelinin kesit verisine uygulaması kullanılmaktadır.

Tezin sonuçları, dış finansman kaynaklarının istatistiksel olarak anlamlı olduğunu ve KOBİ'lerin performansı üzerinde olumsuz bir etkiye sahip olduğunu göstermektedir. İç finansman kaynaklarına dair değişkenler istatistiki olarak anlamlı olarak bulunmuştur. Bu değişkenlere dair sonuçlar daha çok iç finansman kullanımının KOBİ'lerin performansı üzerinde olumlu bir etkiye sahip olduğunu işaret etmektedir.Sonuç olarak, elektrik kesintilerinin KOBİ'lerin performansı üzerinde anlamlı ve olumlu bir etkiye de işaret etti. Ancak elektrik kesintilerinden kaynaklanan satış kayıpları ve iç piyasaya geçişte kırılma veya hasar nedeniyle kaybedilen ürünler, Sudan'daki KOBİ'lerin performansı üzerinde önemli ve olumsuz bir etki göstermektedir.Ayrıca, bürokrasi ve vergi memurları tarafından yapılan ziyaret ve teftişlerin sayısı istatistiksel olarak anlamlıdır. İlgili değişkenler KOBİ'lerin performansı üzerinde olumsuz bir etki göstermektedir.Yolsuzlukla ilgili değişkenler anlamlı olarak bulunmuş ve KOBİ'lerin performansı üzerinde olumlu bir etkiye sahiptir. Aksine suç, hırsızlıktan kaynaklanan kayıplar, Sudan'daki KOBİ'lerin performansı üzerinde olumsuz bir etki ortaya koymaktadır.

Sonuçlar, girişimcilere ve işletme sahiplerine/yöneticilerine, iş performanslarını etkileyen banka finansmanının yıpratıcı etkisi gibi faktörlerin farkında olarak işlerini nasıl başlatacakları ve yürütecekleri konusunda bilgi sağlamaktadır. Finansal kurumlar ve yabancı yatırımcılar gibi diğer paydaşlar, elde edilen sonuçları Sudan'daki işin yapısını değerlendirmek için kullanabilirler. Fakat bu çalışma, Sudan'ın tüm bölgelerini kapsamadığı için Sudan ekonomisi üzerine daha detay içeren çalışmaların yapılması gerekmektedir.

Anahtar Kelimeler: İş çevresi, Performans, Küçük ve Orta Ölçekli İşletmeler (KOBİ'ler), Sudan.

INTRODUCTION

In the literature, there are various definitions of SMEs. The definitions vary based on the countries' capabilities with respect to their socioeconomic structures. Even though there is no international agreement on the definition of SMEs, there are criteria for determining the size or for developing a definition for different institutions. The most common criteria are the size of employees, annual turnover, and annual balance sheet total. Accordingly, micro-enterprises and SMEs are defined as those enterprises that hire below 250 workers and annual revenue of no more than EUR 43 million (Prenaj & Ismajli, 2018). The definition that will be adapted in our thesis is the definition of the World Bank. It considers that micro-enterprise is the ones that employ less than 50 employees, and small enterprise employs 50 employees. Medium-sized enterprise has 50-200 employees (Keskin, Gentürk & Sungur, 2010).

The general objective of this study is to examine the impact of the Sudanese business environment represented in access to finance, infrastructure, corruption and crime rates, regulation, and taxes on the performance of SMEs in Sudan. The significance of studying the business environment and its impact on SMEs' performance comes at a time when many developed and developing countries are moving towards developing policies to foster private sector growth and self-employment. Many countries have recognized the remarkable contribution of SMEs to the economic and social development of countries as a springboard for sustainable development (Kuntchev & Yang, 2012).

However, the performance and contribution of these SMEs are affected by several environmental factors. Studies considered that improving access to finance boosts SMEs' performance by increasing capital intensity and benefiting from the technical progress. However, large transaction costs and high loan interest rates hamper SMEs' access to finance. Also, corruption improves SMEs' performance through two mechanisms. First, enterprises can avoid delays. Moreover, rigid administrative and tax procedures negatively affect business formations, discourage potential investors, and undermine SMEs' ability to improve their performance. The poor public services provided by the basic infrastructure components, which are represented in electricity, water, transportation, and communications, have a direct impact on the performance of small

and medium-sized companies. This is because they contribute to reducing the output of both public and private, and they also increase costs.

The SMEs in Sudan can play a major role in the economy due to the availability of different types of inputs in the country. Nevertheless, International Finance Corporation (2013) Doing Business 2014 report for the World Bank revealed that over 20% of the enterprises surveyed in Sudan indicated that they suffer from major constraints of business environment. Some empirical studies were conducted in developing countries and Africa to evaluate the effect of the business environment on the SMEs' performance, but the lack of empirical studies in Sudan on this field was the main driver behind carrying out this study by using the Enterprise Survey for 607 SMEs in Sudan and OLS technique to test the effects of business environment represented in access to finance, infrastructure, regulation and taxes, and corruption and crime on SMEs' performance.

Research Subject

SMEs have a significant role in developing the local economies in many counties, especially in developing countries. This role often appears in promoting growth by increasing employment, generating wealth, and making good use of available resources. Sudan is considered one of the developing countries in which SMEs need a conducive business environment to grow and achieve their goals. Therefore, the subject of this study could be summarized in the assessment of the Sudanese business environment and its impact on the performance of SMEs.

Significance of the Study

This is the first study that uses World Bank enterprise survey data to assess the Sudanese business environment and its impact on the performance of SMEs, as one of the biggest unstable environments. However, the results of this study will contribute a tremendous amount of valuable information to policy and decision-makers, managers/owners of enterprises as well as entrepreneurs to understand the business environment. Furthermore, the study will contribute to knowledge and boost practices in managing SMEs in Sudan.

Research Purpose

This study aims to assess the effect of the business environment on SMEs' performance in Sudan, through access to finance, infrastructure, regulation and taxes, and corruption and crime as factor indicators. SMEs' performance was measured by the annual employment growth and productivity of the SMEs. Moreover, the developed recommendations, based on the study findings, to help decision-makers to work on improving the business environment so that Sudan's SMEs operate with high efficiency are provided at the end of the study.

Research Methodology

To assess the impact of the business environment on the performance of SMEs, data from the World Bank Enterprise Surveys in 2014 for 607 SMEs in Sudan were used. The empirical methodology for measuring the variables embodied in access to finance, infrastructure, regulation and taxes, and corruption and crime was relied on multiple linear regression by estimating the Ordinary Least Squares (OLS), based on a cross section of random selected firms.

The study was organized into four key chapters. In the next chapter, empirical and theoretical studies that discuss the effect of the business environment on SMEs' performance were examined. In the second chapter, a discussion of the business environment and SMEs' performance in Sudan was provided. In the third chapter, information of the data and the method was given. In the final chapter, the model was analysed, and a general evaluation was made by interpreting the results obtained and the aggregate implications of the study results in addition to the recommendations for further research.

CHAPER 1: LITERATURE REVIEW

In this part, the thesis reviews the contribution of empirical and theoretical studies on SMEs, respectively.

1.1.Theoretical Literature Review

Many countries seek to benefit from growth and development processes to improve the living standards of their citizens through improving policies related to investment, production, and the establishment and growth of economic institutions (Ackah & Vuvor, 2011). SMEs have always played important roles in the global economy, and thus attracted the attention of many countries to work on developing and strengthening them because they are the driving force behind economic growth and development by influencing economic activities. Employment research was conducted in most European countries in 1985, and the results of these studies indicated that three out of twenty-five people were without business. This necessitated further research on how to achieve an increase in the employment rate in Europe. One of the most important solutions reached by these studies was the establishment of SMEs, which shows the importance of the role that this sector plays in solving the unemployment problem.

OECD pays great attention to SMEs, since this sector represents more than 95% of enterprises operating in most of these countries. This sector also contributes to employing a greater share of the labour force working in the non-public sector. Furthermore, the governments in these countries encourage entrepreneurship and develop the SME sector by developing and implementing many policies and programs that encourage the establishment of SMEs and overcome obstacles that may constrain their growth and development. Among them is Korea, which has designed and implemented many measures such as tax exemptions and concessional loans to facilitate the start-up of new businesses in the countryside.

SMEs are central to Asian's pulsating private sectors by contributing to the growth and economic development, generating employment opportunities, promoting investment, active participation in value chains, and supporting innovation. In Japan, for example, projects make up 81% of employment, with the average employing nine employees,

compared to four in the European Union (Vandenberg, Chantapacdepong & Yoshino, 2016).

In African countries, SMEs are considered one of the most significant industrial sectors, as they play an important role in eradicating poverty. SMEs contribute about 90% of African economies. The role of SMEs in African growth is evidenced by providing sustainable employment opportunities and providing a source of income for more than three-quarters of workers on the continent, mostly youth and women. Thus, SMEs serve as great impetus for growth and economic development across most countries of the African continent (Sudantribune, n.d.).

The concept of the environment which is often used in economic literature describes all the factors outside the enterprise boundaries that affect or may affect its goals, structure, and efficiency (Janković, Mihajlović, & Cvetković, 2016). According to Munir, Perera and Baird (2011), the expression environment means the economic, socio-political, cultural, and technical factors that influence the performance level in excess of which the enterprise has minimal control. However, these factors do vary with respect to the sector, activity, markets involved, and the enterprise's geographical location.

The literature contains numerous elements for estimating the enterprise's environment (Okeyo, Gathungu, & Peter, 2014). These literatures show the environment as the main dimension to study enterprises' performances at large and SMEs. Furthermore, several studies have concluded that the enterprise's environment affects its capacity to perform well (Fayzollahi, Shirmohammadi, & Latifian, 2013).

According to Kefalas (1981)'s research, the enterprise's business environments are occurrences that have a direct or indirect influence on the enterprises' operations which cannot be controlled. Other studies such as Ranjan (2009) and Britton and Worthington (2009) considered that the business environment consists of a few factors such as social, administrative procedures, economic, geo-demographic issues, legal framework, competition, means of communication, the possibilities for obtaining financial and human resources, and other factors.

According to the literature, studies that examined the SME's performance determinants focused on three perspectives related to the business environment. The first perspective

was focused on external groups of SMEs that influence their activities. The second perspective was focused on the characteristics of external forces, as the third was concerned with the administrative perceptions of environmental characteristics (Dut, 2015). These environmental characteristics are access to finance, infrastructure, regulation and taxation, and corruption and crime in addition to the main components of the business environment.

There are many ways of financing SMEs, the most important of which are retained earnings, overdraft, leasing factoring, owning shares, and bank loans. SMEs may rely on self-financing or resort to loan facilities instead of overdrafts, and some of them use bank credit or lease capital from financial institutions (Sinfecha, 1997). Improving access to finance enhances SMEs' performance by increasing capital intensity and benefiting from the technical progress enshrined in acquiring new equipment and high technological specialization, as well as the availability of funding sources that enable the SMEs to reduce risks by diversification of funding sources (Galasso, Gerotto, Infantino, Nucci, & Ricchi, 2018).However, many banks in developing countries lack the appropriate financing services, along with huge transaction costs, processing, and high-interest rates on loans, which leads to difficulty in borrowing or inaccessible to SMEs, thereby granting undue advantage to larger firms over SMEs (USAID, 2019).

The establishment of any SME requires infrastructure assist. Obokoh and Goldman (2016) reported that the public services provided by the basic infrastructure components, which are electricity, water, transportation, and communications, directly impact SMEs' performance as they contribute to the production of the public and private sector. They also remarked that infrastructure is significant in several perspectives and the degree of significance of infrastructure has not been appreciated enough by many governments in developing countries, and because of corruption and inadequate commitment in some countries, great resources have been spent on improving infrastructure, but it has achieved only marginal achievements.

The regulation includes the means through which the government regulates the economic activities of individuals and enterprises. There are also systems and regulations for SMEs, which are represented in the regulations for starting a business or business practices, workforce, taxes, and foreign trade (Quartey, 2001). Bouazza, Ardjouman and Abada

(2015) considered bureaucratic procedures such as registration of business and permits issuance together with tax regulations, legal and regulatory structures that might undermine SMEs' growth. Theoretical studies have shown that bureaucracy, also so-called red tape, is also a very complex managerial process, and if the government administrative system becomes complex, this will constitute a regulatory obstacle to the growth of SMEs. Klapper et al. (2006) argued that rigid administrative and tax obstacles negatively affect business formations, discourage possible newcomers into the sector, and undermines the ability to exist SMEs to rapidly progress and develop.

Corruption means fraudulent behaviour by those in positions of authority by abusing their power to achieve personal gains (Osoba, 1996). Corruption includes giving or accepting inappropriate gifts or informal payments. Corruption may lead to improving the performance of the company, which results in an increase in investment through two mechanisms. First, enterprises that practice corruption might initially be able to avoid delays in addition to facilitating procedures. Secondly, employees who take bribes would perform better, especially when the bribe acts as a piece rate, But Toole and Tarp (2014) said the opposite, as they argued that corruption would increase investment costs and lowers the marginal output of investment, which reduces economic growth and thus leads to lower performance of enterprises.

Olawale and Garwe (2010) found that due to crime, SMEs do not aggressively seek ways to grow their market shares and stay ahead of competitors. Instead, the focus is on operational issues. Furthermore, SMEs that pay huge sums to obtain insurance policies to protect their assets, all these represent costs to these enterprises which affects their growth.

1.2. Empirical Literature Review

Despite the important role played by SMEs in absorbing unemployment and creating wealth, they may not be able to operate effectively to achieve these goals. In a study conducted by Benzazoua (2015) in Algeria, to investigate the current developments of SMEs and their role in economic development and job creation. The study used data from the Algerian national statistical offices to analyse the efficiency of SMEs with respect to increasing wealth and creating jobs. The results exposed that the performance of these enterprises is very fragile and does not contribute efficiently to creating job opportunities.

Salihu (2015)'s research attempted to discover the reasons for that fragility and slowdown in the growth of these enterprises through the results of a survey to examine the impact of environmental factors on the small-scale businesses' performance in the Kanu and Soko regions. A questionnaire was used to collect the data. Multi-class discriminatory analysis and multiple regression techniques used to analyse the data. The results showed that small businesses recorded a low performance during the studied period and business environment factors had a significant impact on the performance of these businesses.

Recently, quite several studies attempted to study the influence of the business environment on the growth of SMEs in developing countries using the Enterprise Surveys. The literature analysing the data from these surveys confirmed that an appropriate environment supports growth through promoting investment, increasing productivity, and creating job opportunities. It has also been established by examining these literature that finance, infrastructure, regulation and security (absence of crime and corruption) have a key effect on the performance of the enterprise (Dethier, Hirn & Straub, 2011).

Each of these environmental factors includes many variables, however, for the purpose of our study, under each environmental factor, a specific number of variables were chosen to be more specific and easier to answer the research questions. Each of the four factors identified above will be discussed in the following literature.

1.2.1. Access to Finance

Many studies examined the effect of access to finance on the performance of SMEs and they found that access to finance is absolutely necessary for SMEs' performance (Hodud Essmui et al., 2014) .Studies that observed the impact of access to finance on enterprises performance worldwide can be grouped into three groups.

The first group is early studies that collected data of the firm-level with wide macroeconomic indicators for the financial development cross-countries to investigate the relationship between the most developed financial sectors and the performance of the enterprises. Examples of these types of studies are Rajan & Zingales (1995), Abdelrahman, Abdullah & Abas (2017). The second group is studies that combined enterprise data of financial development and access to finance at the country-level. These

studies include (Hicks, Mohan & Ray (1969), Becker (2007), Butler and Cornaggia (2007)). The common denominator among all these studies is the significance of access to finance for SMEs. Besides, a well-developed financial system improves the growth of these enterprises. The third group is the set of studies that include recent data on enterprise surveys, especially the World Bank data, which depends on the responses of enterprise managers and owners regarding several constraints on conducting their business and access to financial markets. This has led to the emergence of new studies that use strict data to investigate the effect of access to finance and other obstacles on the performance of SMEs.

Wang (2016) examined the biggest obstacles to the growth of SMEs in developing countries. Data of the Enterprise Survey from the World Bank covering 119 developing countries was used. The study relied on cross-sectional data to determine the constraints of SMEs' growth in developing countries as a group. The findings of probity regression analysis showed that access to finance is the main obstacle hindering the growth of SMEs. The study also investigates the external causes of the financing problem. It shows that high interest on loans and lack of consultancy support are the main obstacles to external financing for SMEs.

Fowowe (2017) empirically tried to explore the impact of access to finance on the performance of enterprises in African countries. The study used data for 10,888 enterprises in 30 African countries drawn from the World Bank Enterprise Surveys. The study used subjective and objective measures. To perform econometric estimations, cross-sectional regressions were used. The results of the subjective measure showed that access to finance obstacles have a significant negative impact on enterprise growth in African countries. Moreover, the results of the objective measure showed that unrestricted credit enterprises are growing faster than credit-constrained enterprises. The results of this study lend credibility to the fact that financing is extremely important to enterprises' growth.

Eltahir, Ali, and Eltahir (2018) studied factors affecting business performance and the SMEs' success in Omdurman, Sudan. Eight hypotheses have been developed to assess the influence of environmental factors on the performance of these businesses. One of the

most important hypotheses of this study is that financial resources have a significant positive effect on business success for SMEs in Omdurman - Sudan.

The study designed a questionnaire to gather the study data and used correlation and multiple regression Analyses to analyse the collected data. The results showed that financial resources have a significant positive impact on the performance of SMEs in Sudan. The study also indicated that targeted main income has a significant impact on the SMEs' success, which requires attention to financial resources to increase success and improve the performance of these enterprises.

1.2.2. Infrastructure

The accessibility or deficiency of infrastructure has a major influence on the performance of SMEs, especially the rural or regional infrastructure which is underdeveloped from which many developing countries suffer, which necessitates examining the infrastructure needs and vulnerabilities and providing suggestions that help in improving them. Studies that have examined the impact of infrastructure on the performance of SMEs will be discussed.

An entrepreneurial study conducted by Musa (2012). The study focused on the suitability of the business environment for businesswomen in Sudan about supporting infrastructure services and the availability of financing. The study adopted the questionnaire as the main tool for collecting data related to women entrepreneurs' dimensions in addition to the survey method to collect data in a larger amount so that the results of the study can be generalized. The data were analysed by a simple quantitative analysis method to display the general trend of women entrepreneurs' ideas on business environment issues. The study also used percentages and frequency distributions in tabular and graphic to present the results. The results showed that 58% of the industrial companies either closed temporarily or permanently or even completely changed their activities. Also, the results displayed that women's entrepreneurs face major problems in many infrastuctural and public services, for instance water, electricity, communications, courts, and customs.

Gangi and Timan (2013) examined the entrepreneurial environment in Sudan by investigating the perception of potential entrepreneurs. The study evaluated the economic, cultural, social, political, legal, and educational environment in addition to infrastructure

and their impact on entrepreneurship development in Sudan. Data were collected from 236 enterprises using the questionnaire from potential national entrepreneurs. The study also used descriptive statistics to analyse the data. The study found that the entrepreneurial environment was somewhat weak. Moreover, the perception of entrepreneurs on the quality of infrastructure and public support factors was slightly closer than the average, with an average of 2.96 indexes. This indicates that the environment in relation to infrastructure does not look conducive to the development of entrepreneurship and small enterprises in Sudan.

Ndiaye, Razak, and Nagayev (2018) conducted a study on demystifying the performance of SMEs in emerging and developing economies. The study used the World Bank Enterprise Survey data for 266 developing countries. The General-to-Specific based on OLS was applied to five indicators of the performance based on 80 factors drawn from the characteristics of SMEs, infrastructure, finance, regulation, taxation, trade, and manpower in relation to SMEs. The study found, through examination, that there are factors associated with the high annual growth rate of employment for small enterprises, including the percentage of enterprises that own or share a generator and the number of water shortages in a typical month.

Hansen, Ishengoma, and Upadhyaya (2018) examined the factors that constitute successful African SMEs and variations in performance and what causes these variations, based on World Bank Enterprise survey set of 210 food processing enterprises in Tanzania, Kenya and Zambia. The study reviewed the extant literature on the performance of African enterprises, a model for analysing performance variations was adapted. The performance was determined in the interaction between capability, strategy, and business environment factors and over an OLS regression. In-efficient transport infrastructures increase costs of transport, undermines reliability of delivery, force enterprises to have large inventories, and add to costs of exports. Furthermore, unstable energy suppliers and power outages cause large losses in productivity and undermined the reliability of production.

1.2.3. **Regulation and taxes**

SMEs are considered one of the most important engines for achieving the development targets of countries, especially developing countries, as they work to decrease poverty,

generate jobs, and contribute to promoting the industry. However, the contribution of these enterprises in achieving economic and social goals relies on a regulatory and political environment that regulates wherever they are (Allal & Finnegan, 1999; Quartey, 2001) These regulations may have a beneficial or harmful effect on SMEs' performance and this will be discussed in the following literature.

Adebisi and Gbegi (2013) claimed that among the most important factors responsible for the high mortality of SMEs in West Africa is taxation, which ranges from multiple taxes to tremendous tax loads. The data used in this study was gathered from a field survey from West African Ceramics Limited, Ajaokuta, and Kogi regions. A survey was designed with a population of 91, and the researchers concluded their sample size to reach 74. The study used statistical tools such as frequency tables and percentages to display and analyse data. The data collected was analysed quantitatively, and ANOVA was used to test the research hypotheses. The study concluded that the imposition of multiple taxes has a negative impact on the survival and growth of SMEs, according to several respondents. Therefore, the government should desist from the disproportionate taxes that impose on SMEs for these enterprises to survive and grow.

Khattab and Ahmed (2017)'s research sought to examine the determinants that affect the success of entrepreneurship in Sudan. The study used a questionnaire to collect data from 62 businessmen and exploratory analysis to analyse the data collected. The results showed that access to finance, management abilities, in addition to government policies are main determinants involved in the success of entrepreneurship in Sudan through serious efforts made to support small business actives, and taking various initiatives, some of focused on building individual capacities, while others have focused on institutional , whereby government agencies participate in drawing up the necessary policies and regulations to support entrepreneurship and small business.

Chauvet and Ferry (2020) collected firm-level data drawn from World Bank surveys to study the impact of taxation and infrastructure on enterprises' performance in developing countries, covering over 50 countries during the period 2006–2015. The study cross-sectional data were analysed using an ordinary least square estimator (OLS). Taxation has a positive effect on firms operating in industries that tend to rely more on public utilities, transportation, and construction.

1.2.4. Corruption and Crime

The corruption and security problems could be important determinants of SMEs' performance, particularly in developing countries.

Williams, Martinez, and Kedir (2016) were interested in studying corruption in developing countries where their study assessed whether bribery negatively affects enterprise performance. For doing so, the study used Enterprise Surveys which provided firm-level data over 125,000 enterprises in 132 developing countries. The data is cross-national, and the study applied an analytical method, random intercept addition to random slopes and multilevel models to analyse the data. The results of the study concluded that giving informal payments or gifts to public officials with a view to getting some things done enhances the performance of the enterprises. Finally, the study found no evidence at the firm level that supported that bribery was harmful to the performance of the enterprises.

Abudu (2017)'s study focused on exposing the influence of corruption on enterprises' performance, particularly SMEs in Africa. The firm-level data of the study was collected from 15 African countries from the World Bank between 2006-2015 to examine the impact of bureaucratic corruption on the performance of enterprises operating in Africa, and performance was measured by sales, labour productivity, and annual employment growth. To measure the effect of corruption on SMEs' performance, OLS model was used. The study found that corruption in Africa not only has a negative impact on the size, efficiency, and sales of enterprises, but also has an impact on the growth of these enterprises. It also found that corruption harms the performance of large and old enterprises more than young and SMEs in Africa.

CHAPER 2: BACKGROUND ON SMEs AND BUSINESS ENVIRONMENT IN SUDAN

For Sudan, our thesis uses the SMEs' definition in the Enterprise Survey (World Bank, 2014) (See Table 1 for its explanation). According to the Bank of Khartoum (n.d.), such firms are considered as vital engine of economic growth for the Sudanese market, and will ensure a bright and sustainable future for the country. This sector will also stimulate and foster innovation and build a knowledge-based economy. Sudanese government supports the SME sector because it is aware of the important role that this sector plays in expanding the base of the national economy. The government has also provided all facilities through the institutions and bodies that finance entrepreneurial projects and investment in general and SMEs. SMEs also provide a viable solution to employment problems in peripheral regions in times of recession. Ali and Eltahir (2018) clarified that SMEs have a major impact on the Sudanese economy, as they play a critical role in Local Economic Development (LED) and achieve wellbeing. The results of the industrial survey and the investment map in Sudan, as well as many other surveys, indicate that small enterprises represent about 90% of all economic activities (Omer, 2011).

Table 1: SMEs' definition in Sudan

Enterprise Category	Headcount
Micro-enterprise	Less than 5
Small enterprise	At least 5 and at most 19
Medium enterprise	At least 20 and at most 99

Source: https://datacatalog.worldbank.org/dataset/sudan-enterprise-survey-2014

According to Abdelrahman et al. (2017), based on the availability of various types of inputs in Sudan, the SME sector is playing a significant function in the economics of the country. They are considered as the main employment provider in Sudan, as they provide over 70% of job opportunities, and they also help in building capital. This is particularly the case after the separation of South Sudan from Sudan. Ali and Elsayed (2009) argued that small enterprises account for 40% of total employment in the industrial establishments of Sudan. But, the contribution of SMEs decreased recently. In 2012 the contribution of SMEs to the GDP of Sudan reached 62.1%, while declined in 2013, 2014, and 2015 to 50.48%, 46.54%, and 38.09%, respectively, according to (Economist & Unit,

2016). This deterioration negatively affected the economic situation of Sudan as the inflation rate increased (18.15 as per August 2016). Mirgjani (2016), and Gangi and Timan (2013) considered that the poor performance of the Sudanese SME sector was responsible for the gloomy and depressing performance of the natural economy.

SMEs in Sudan faced several problems that resulted in a low contribution to the Sudanese GDP. These problems are represented in a lack of a supportive legislative framework for the SME sector, rely upon small producers on self-financing, a lack of training and traditional means used in production, and small producers' lack of familiarity with marketing skills. Therefore, the lack of a legislative framework leads to its lack of development and regulation, the reliance on self-financing limits the expansion and modernization of this sector, and the lack of training leads to weak scientific skills and knowledge, as well as poor marketing skills of small producers, leading to the lack of competitiveness.

In the middle of this decade, Sudan seemed to emerge from two challenges that had plagued it since before its independence in 1956. First, the Comprehensive Peace Agreement between the Sudanese government and the Sudan People's Liberation Movement (SPLM). Second, the government began to implement reforms to overcome the legacy of chronic poor economic performance in Sudan. Investors have responded to the prospects for peace and growth. Sudan has become the fourth most important investment destination in Africa, reaching $ 3.3 billion in Foreign Direct Investment (FDI) in 2006, and it was one of the fastest growing economies in the world.

On the economic front, Sudan's leaders have expressed a vision that supports broad-based private sector growth. The core of a vision for private sector-led growth is for individual enterprises to make choices in the competition processes that increase their productivity and, consequently, promote the welfare of the country.

Sudan's poor economic performance was attributed to a mixture of the absence of public goods such as infrastructure and an effective banking system, and macroeconomic and regulatory instability. Therefore, national governments should make progress in creating macroeconomic stability, allow more competition in some sectors, and address infrastructure deficiencies. Because evidence indicates the progress made on

implementing the microeconomic reforms that enable the private sector to grow and develop was limited.

In April 2019, Omar al-Bashir's 30-year regime ended. A civilian-led transitional government took power in September of the same year. Economic problems are the main drivers of these protests, and these problems have persisted partly, because of deficiencies in infrastructure and transportation, as well as decades of mismanagement and corruption in addition to the wrong economic practices of former regimes. Even though attempts to lift US economic sanctions in late 2017 and allow international banks to provide services were restricted for years by the embargo, financial institutions have maintained a cautious approach in dealing with Sudan.

Before the novel Coronavirus (COVID-19) pandemic caused a significant slowdown in economic and commercial activity worldwide, foreign companies, including the United States companies, inquired, and visited Sudan with the aim of direct investment and promoting products. There was a strong desire to exchange goods, services, technology, and training programs, especially in the fields of agriculture and energy.

Here, the question is whether the opportunity to match the political reform with the necessary economic reforms has been missed. Reports indicate that it is not too late. However, this requires a strategy based on reforming the business environment to raise productivity, reduce unemployment, and broadening the economic base. This study focuses on some factors that shape the business environment in Sudan. These factors can be accommodating or constraining for SMEs and play a significant role in whether the state will prosper or not. Below is a snapshot of the most important factors in the business environment as perceived by SMEs.

In the Doing Business report, the World Bank provides objective measures of business regulations and their enforcement across 190 economies and selected cities at the sub-national and regional level. The report looks at domestic SMEs and measures the regulations applying to them throughout their life cycle. Doing Business report captures several important dimensions of the regulatory environment as it applies to local enterprises. It provides several quantitative indicators. 190 economies are ranked according to the value of the ease of doing business. We utilise this dataset in this part of

our study to explore the business environment in Sudan in the report on ten topics as shown in Table 2.

Table 2 : Sudan's ranking on Doing Business Indicators (2014-2019)

Indicators	Ranking in 2014	Ranking in 2019	Change in Ranking
Starting a business	131	156	-25
Dealing with Construction Permits	167	105	62
Getting electricity	113	120	-7
Registering property	41	93	-52
Getting credit	170	161	9
Protecting minority investors	157	168	-11
Paying taxes	108	163	-55
Trading a Cross-borders	155	185	-30
Enforcing contracts	154	144	10
Resolving Insolvency	89	118	-29

Source: World Bank, Doing Business Report (2014, 2019).

During a period of five years, Sudan failed to improve or maintain its position on seven out of ten indicators. In two of the nine indicators in the ranking, Sudan has significantly dropped by more than fifty places. In areas where Sudan's performance has worsened, the biggest drop was under the payment of taxes, from 108 in 2014 to 163 in 2019. The areas in which Sudan has succeeded in improving its ranking are; dealing with Construction Permits, getting credit, and enforcing contracts. However, as for the ease of doing business scores on doing business indicators, Sudan has significantly dropped. The rank of Sudan deteriorated to 171 in 2019 from 149 in 2014. The historical chart of the Ease of Doing Business ranking in Sudan from 2008 to 2019 can be represented in Figure 1.These indicators are behind our main motivation and main thesis question, which indicates the extent to which the challenging business environment associated with the performance of SMEs in Sudan.
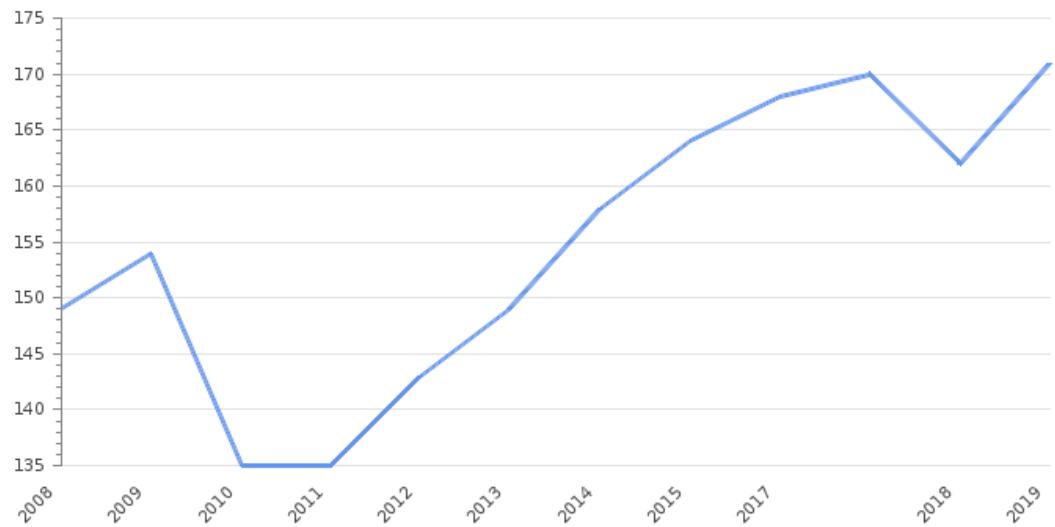
Figure 1 : The Historical Ranking of the Ease of Doing Business in Sudan

Source: (Take-profit.org, 2020)

CHAPTER 3: DATA AND RESEARCH METHODOLOGY

3.1. Data

Our thesis uses secondary data which comes from the World Bank's Enterprise Survey[1] which covers over 130.000 enterprises in 135 countries. This Enterprise Survey focuses on several factors that represent the business environment. These factors may cause the failure or success of operating enterprises, and they also play an important role in the prosperity or contraction of countries' economies. The World Bank conducts project surveys across wide geographical areas and covers different enterprise categories. The data was collected in two phases. In the first phase, the screener questionnaires were used. In the second phase, one of two models of the questionnaire were distributed for service or manufacturing institution according to the type of enterprise.

As for the Sudanese survey, the screener was applied face-to-face with the managers and owners of the enterprises. The enumerators managed the screeners personally when some of the phone numbers within the sample frame were not available to them. The variables that represent size, industry, and type of enterprises, in addition to additional information, were collected in the screening stage. Although the targeted interviewers were the top manager and the owners of the enterprises, in some cases, the questions related to sales and workers were answered by the accountants and the managers of the human resources.

A stratified random sampling technique was used to select the survey samples. It was classified into two stratifications: region level and industry level. Regarding the industry level, it divided the universe into a manufacturing industry and service sectors. As for the regional stratification, it was in three regions which are Khartoum, Bahri, and Omdurman in addition to other unknown regions. A sampling frame was generated by using the data obtained from UNIDO and documents of import and export in addition to the regional commercial records. Measures to ensure a representative sample, indeterminate size institutions, and institutions of the indeterminate location were included as a part of the sample frame.

---

[1] See. https://microdata.worldbank.org/index.php/catalog/2354

By creating a sampling frame, the goal of the survey is to obtain interviews from 720 institutions. However, the actual number obtained is 662, as the study suffered from non-response to the survey and non-response to the item by refusing to participate in the survey completely or refusing to respond to some specific questions. The data include all sizes of micro, small, medium, and large enterprises in our study, as the thesis focused just on SMEs to accomplish the main purpose of the study (See Table 3).

Table 3 : Response Outcomes of Enterprise Survey

Sample	Number
Sample Target	**720**
Complete interviews **(Total)**	662
Incomplete interviews	80
Eligible in process	56
Refusals	12
Out of target	258
Impossible to contact	730
Ineligible - coop.	116
Refusal to the Screener	625
Total	**2539**

Source: https://microdata.worldbank.org/index.php/catalog/2354

The survey used two tools to collect data, i.e., the services questionnaires and the manufacturing questionnaire.[2]Even though there are numerous questions that overlap with each other, some questions only apply to one of them, as some questions are applicable only to the manufacturing enterprises and vice versa. The standard survey topics contain enterprise characteristics, gender, a few environmental factors, and performance measures. More than 90% of the questions of the survey objectively discover the features of the business environment in the country. The rest of the questions are the perceptions of respondents on the constraints that hinder the growth and performance of their enterprises. Data collected on face to face interviews.

---

[2] https://microdata.worldbank.org/index.php/catalog/2354/pdf-documentation

After discussing the questionnaire, we provided some basic descriptive information for the data of the thesis on Sudan's SMEs, such as the size of SMEs. Table 4 provides information on SMEs' demographic characteristics. The information related to the size of the establishments is one of the control informations, determining in the screening questionnaire.Respondents were asked about the sizes of their enterprises. Out of 607 SMEs examined,252 of them were medium-sized enterprises,with 41.52%while small-sized enterprises were 355, with 58.48 %.

Table 4 : Size-wise distribution of SMEs

Size of Enterprise	Frequency	percentages
Medium > =20 and <=99	252	41.52
Small > =5 and <=19	355	58.48
Total	**607**	**100**

One of the important control informations collected is the actual location of the enterprise. The Sudanese data were collected from different regions to become more diversified. Participating samplings were distributed based on regions that represent the largest production and business enterprise centers. The main response came from the Khartoum region with 73.97%, followed by Omdurman with 20.1%.

Table 5 : Geographical location

Location	Frequency	percentages
Bahri	36	5.93
Khartoum	449	73.97
Om Durman	122	20.1
Total	**607**	**100**

Respondents were asked about the current legal status of their enterprises to determine the extent of liability that determines the level of the rights and responsibilities the owners of the enterprises possess. Most of the enterprises surveyed were sole proprietors 69.69 % followed by participation 17.96 %. The results of these statistics are similar to the result of a study reached by the World Bank (2009) in assessing the investment climate in

Sudan. The result showed that the legal status of most Sudanese enterprises is either sole ownership or private limited enterprises, and the percentage of sole proprietorships touched 32.48 % of the total samples studied (See Figure 2).
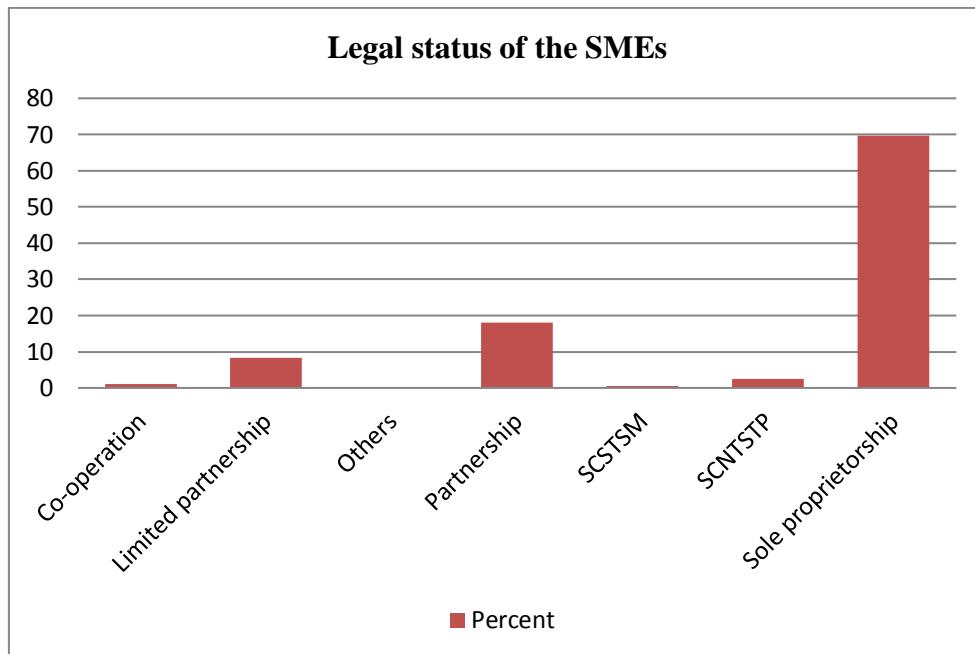
Figure 2 : Legal Status of the SMEs

Respondents were asked if there were any females among the SME owners. It was found that the percentage of females was very low, which did not exceed 8.07%, while the proportions of men were very high, reaching 91.93% as in Table 6.

Table 6 : Women Business Owners

Amongst the owners of the enterprise, are there any females?	Frequency	percentages
No	558	91.93
Yes	49	8.07
Total	**607**	**100**

As for the top manager gender, Table 7 indicates that the sample showed that females were negligible, standing at no higher than 3.62%, while the percentage of men was

96.38%. The reason was explained in UNICEF's Annual Report (2017) that women and girls are not involved in decision-making in Sudan, and the number of male employees exceeds females at all levels. This result is similar to Ritter-Hayashi, Vermeulen, & Knoben (2019).It found that in some developing countries, including Sudan, almost 91.49% of the owners of the enterprises are men and the representation of females among top managers is no more than 8.70%.

Table 7 : Females among Top Managers

Is the Top Manager female?	Frequency	percentages
No	585	96.38
Yes	22	3.62
Total	**607**	**100**

Under this examination of the data, Table 8 shows the variables used in the research model which were determined through literature reading and provides explanatory information to describe these variables.

Table 8 : Description of Variables Used in the Model

Variables Names	Description
SMEs'Performance	
A_emp_growth	Annual growth of employment (%).
A_pty_growth	Annual labour productivity growth (%).
Access to Finance	
Cre_loan_bank	Enterprise with bank loans or line credit (yes-no).
Wcap_inter	The proportion of internally funded working capital.
Wcap_banks	The proportion of working capital funded by banks.
Wcap_Nbanks	The proportion of working capital financed by non-bank financial institutions.
Wcap-Pcredit	The proportion of working capital financed from credit purchases.
A2F_ obs	Access to finance is the main obstacle to SMEs, (rank 0-4).
Infrastructure	
Pow_outages	Power outages experienced over the last year (yes-no).
Apow_outages	Average number of power outages per month over the last year.

loss_sales_Poutages	The percentage of annual sales lost as a result of power out stage from last year.
Own_generator	Enterprise own or share a generator (yes-no).
Loss_pro_ breakage	The percentage of products lost as a result of breakage or spoilage while in transit.
Telecom_obs	Telecommunications are an enterprise's major constraint (rank 0-4).
Regulation and Taxes	
Mngt_time	Time spent by management dealing with government regulations.
Visits_taxO	Visits and meetings required with tax officials (yes-no).
Days_opr_license	Wait-in days-to get an operating license.
Days_imp_license	Wait-in days-to get an import license.
Political_ins_obs	Political is an enterprise's major constraint (rank 0-4).
Courts_obs	Courts are an enterprise's major constraint (rank 0-4).
Crruption and Crime	
Bribe_ govmt_contract	Percentage of government contract value paid as a bribe.
Bribe_imp-license	Enterprise expected to offer a bribe to obtain an import license (yes-no).
Bribe_meet_taxO	Enterprise expected to offer a bribe during meetings with tax officials (yes-no).
Pay_security	Enterprise paying for security (yes-no).
losses_sales_theft	Losses as a part of total annual sales due to crime.
Losst_pro_transit	Percentage of the value of losses of products, due to crime, while in transit.
Courts_obs	Courts are an enterprise's major constraint (rank 0-4).

Table 9 details the overall performance of Sudanese SMEs, which generally experienced negligible average growth in employment and productivity of 6% and 9%, respectively. Access to finance observed that 78.3% of the enterprises depended on internal funds or retained earnings to finance their working capital and 18.29% of the enterprises finance their working capital from purchases on credit (suppliers and advances from customers) sources. Regarding regulation, on average, senior management spent 4.8% of their time dealing with the requirements of government regulation during the year preceding the survey. Moreover, 3.1% and 3.6% to obtain an operating license and an import license, respectively. The extent of the prevalence of corruption was measured by expected to pay informal payments or gifts when requesting an import license or during meetings with tax officials were 0.042 and 0.08%, in order. On the other hand, an average of 0.35% of SMEs paid for security, such as specialized security services and pieces of equipment.

Table 9 : Summary SMEs' Performance and Business Environment Factors

Variable	Mean	Std. Dev.
SMEs performance		
A_Emp_growth	0.062969	0.71812
A_Pty_growth	0.0953428	24.7363
Access to Finance		
Cre_loan_bank	0.0494234	0.21693
Wcap_banks	0.9390445	5.76846
Wcap_Nbanks	0.7578254	4.88336
Wcap-Pcredit	18.29489	14.5425
Wcap_inter	78.35255	19.1465
A2F_ obs	1.184514	1.1282
Infrastructure		
Pow_outages	0.9390445	0.23945
Apow_outages	3.568369	1.74104
loss_sales_Poutages	1.553542	4.84002
Own_generator	0.538715	0.49891
Loss_pro_ breakage	2.988468	5.56108
Telecom_Obs	0.5749588	0.90865
Regulation and Taxes		
Mngt_time	4.777595	6.00371
Visits_taxO	3.126853	3.22819
Days_opr_license	3.652389	5.47476
Days_imp_license	4.14827	7.75136
Political_ins_obs	2.663921	0.80984
Corruption and Crime		
Bribe_ govmt_contract	0.1746293	0.37996
Bribe_imp-license	0.0428336	0.20265
Bribe_meeting_taxO	0.07743	0.26749
pay_security	0.3525535	0.47816

losses_sales_theft	0.1021417	0.30308
Losst_pro_transit	0.7792422	4.08055
Courts_obs	0.8484349	1.01966

As for determining the extent of infrastructure bottlenecks, it was gauged by the number of power outages, in addition to the average share of goods lost during transit due to breakage or damage in the fiscal year before the survey. The survey showed that almost half of the enterprises experienced frequent power outages by 0.93%. Therefore, 0.5 % of the enterprises own or share generators. The percentage of sales lost due to power outages and goods lost during transit due to breakage or damage was negligible, with an average of 1.5 of sales lost caused by power outages and 2.988 of goods lost while in transit.

There is part of the survey related to the degree to which respondents think that some factors represent an obstacle to their institution's operations. It is a Likert scale question consisting of five points, extending from 0, i.e., no obstacle to 5, i.e., a very severe obstacle. The study showed that the environmental factors covered in the study represent an obstacle to the operations of enterprises in Sudan, albeit to varying degrees. Given the relative rankings of constraints, there are many factors that constrain SMEs more than others. Political instability approached 3 %. In this case, the answer is that respondents tended to be (major obstacle), and access to finance was tended to be a moderate obstacle with 0.2 %. The obstacle generated by the courts was less than 0.1%, i.e., a minor obstacle.

3.2. Model

This study used multiple regression analyses to test the effect of independent variables, which is the factors of the business environment on the dependent variable, which is SMEs' performance. Models were fitted to examine the variation and the impact of business environment variables, which are different sets of questions that measure a particular trait against the performance of Sudanese enterprises. The empirical methodology for measuring the variables of this study was based on multiple linear regression by OLS. The study used a model borrowed from Lema, Submitted and

Fulfillment (2013) with some modifications. This model was used in their study to evaluate the factors influencing the performance of SMEs in KILIMANJARO.

The baseline model will be shown as follows:

$$PERF_i = \alpha + \beta_1 A2F_i + \beta_2\ INFRA_i + \beta_3 RT_i + \beta_4\ CC_i + \varepsilon_i$$

Where i indices the firms in the data. **PERF** indicates variables on performance, **A2F** shows the variables related to access to finance, **INFRA** displays the variables measuring infrastructure, **RT** contains variables that describe regulations and taxes, and **CC** equals ones about corruption and crime (See Table 8). Finally, ε_i is the random error.

Performance is defined as the level of achievement or what the enterprises attain during a particular period of time in their desired goals and objectives efficiently and effectively using the resources available (Westover, 2008). The performance of SMEs can be observed through the level of production, productivity, employment, and level of sales, profits, market share, and other achievements that benefit the SMEs (Rizal, Suhadak, & Kholid, 2017). Business performance indicators have been categorized into objective and subjective measures. Some studies argue that financial performance indicators are best suited to measure performance.

Others propose growth as an indicator of performance based on their specific objectives (Westover, 2008). Moreover, Galbreath and Galvin (2008) distinguished between objectives and subjective measures. Even though objective performance data were preferred, it has been proven that performance based on subjective measures is a sensible alternative to performance based on objective measures, and both are significantly correlated. For our study, performance would be looked at in relation to the annual employment growth and yearly productivity growth of SMEs. This is the approach followed by many studies that used World Bank data (Dethier, Hirn, & Straub, 2011; Dollar, Hallward & Mengistae, 2005).

In this thesis due to data constraints, we use the annual employment and annual labour productivity growth rate as an indicator of SMEs' performance (**PERF**). According to the World Bank Group (2017) the annual employment growth rate was calculated by the following equation:

$$\left(\frac{1}{t}\right) * \frac{l1 - l2}{\frac{l1 + l2}{2}} * (100)$$

Where $l1$ is permanent, full-time labourers at the end of the last economic year, $l2$ shows permanent, full-time labourers 3 economic years ago, t is the number of years (difference between the current and previous times).

Annual labour productivity growth rate equation is measured as follows:

$$\left(\frac{1}{t}\right) * \frac{\left(\frac{d2'}{l1}\right) - \left(\frac{n3'}{l2}\right)}{\left[\left(\frac{d2'}{l1}\right) + \left(\frac{n3'}{l2}\right)\right]/2} * (100)$$

Where $l1$ is permanent, full-time labourers at the end of the last economic year, $l2$ shows permanent, full-time labourers 3 economic years ago, t is number of years (difference between the current and past times), $d2$ indicates the complete economic year's turnover, and $n3$ shows the total annual turnover 3 years ago.[3]

The four variables of interest to measure business environmental factors that affect SMEs' performance were identified from a literature review. The study used these factors as variables for the analysis, and these variables were measured by the answers to the questions in the Enterprises Survey. These environmental factors (variables) are briefly explained below:

Access to finance (**A2F**)*:* Relate to the percentage of bank loans or line credit, the proportion of internally funded working capital, the proportion of working capital funded by banks, the proportion of working capital financed by non-bank financial institutions, and the proportion of working capital financed from credit purchases. In addition, access to finance represents the main obstacle.

Infrastructure (**INFRA**)*:* Measured by Power outages experience, the average number of power outages per month, the percentage of annual sales lost as a result of power outages, enterprise's own or share a generator and the percentage of products lost as a result of

---

[3] d2' and n3' are normalised values of d2 and n3 variables. The deflation factor is weighted according to the closing month of each SMEs' fiscal year.

breakage or spoilage while in transit. Moreover, telecommunications are a major constraint.

Regulation and taxes (**RT**)*:* Measured by time spent by management dealing with government regulations, visits, and meetings required with tax officials, wait-in days-to get an operating license and wait-in days-to get an import license, and political as a major constraint.

Corruption and crime (**CC**)*:* Measured by the percentage of government contract value paid as a bribe, expect a bribe offer to obtain an import license, expect offer a bribe offer during meetings with tax officials, paying for security, losses as a part of total annual sales due to crime, and the percentage of the value of losses of products, due to crime, while in transit ,addition to courts as a major constraint.

Based on the theoretical review developed above, the theoretical framework of this study used the variables of business environment factors and SMEs' performance, which is presented in Figure 3.
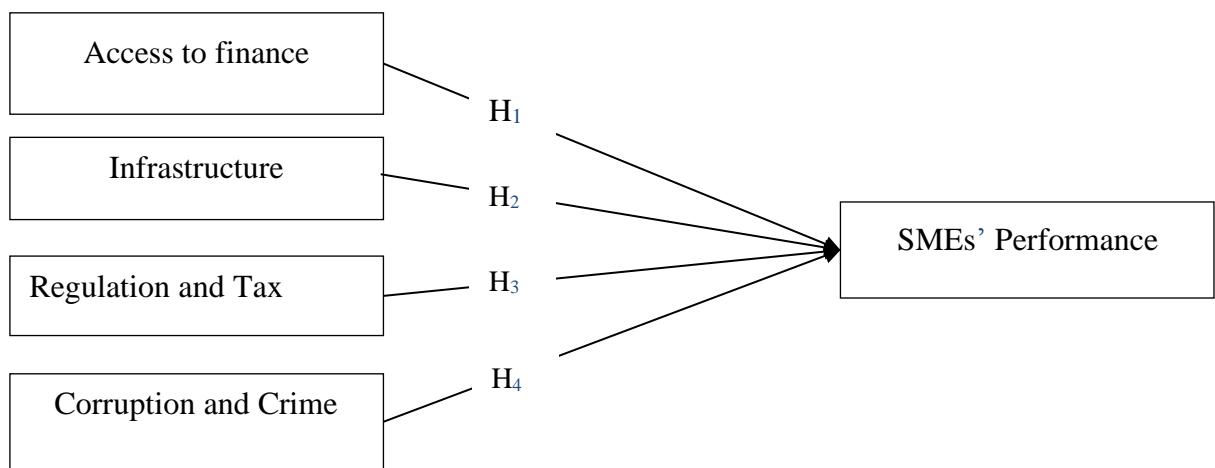

Figure 3 : Theoretical Framework for the Effect of Business Environment in SMEs in Sudan**.**

Business environment factors have a significant impact on the performance of Small and Medium Enterprises (SMEs) in Sudan. They could be, therefore, hypothesized that:

H₁: Adequate access to finance has a statistically significant and positive impact on SMEs' performance in Sudan.

H2: Reliable infrastructure has a statistically significant impact on SMEs' performance in Sudan.

H3: Increasing number of regulations and high taxes have a statistically significant and negative impact on SMEs' performance in Sudan.

H4: High level of corruption and crime rates have a statistically significant and negative impact on SMEs' performance in Sudan.

CHAPTER 4: RESULTS

Table 10 shows the coefficient estimates for the baseline model of our thesis. The dependent variables are annual employment and productivity growth. Several important factors are statistically related to the dependent variables, for instance, obtaining loan from bank Cre_loan_bank.

Table 10 : Liner Regression Results

Independent Variables	Dependent Variables	
	A_Emp_growth	_Pty_growth
Cre_loan_bank	-0.294*	-0.337**
	(-2.33)	(-0.59)
Wcap_banks	-0.00568*	-0.0785*
	(-2.40)	(-1.31)
Wcap_Nbanks	0.00948	0.000928
	(1.66)	(0.05)
Wcap-Pcredit	-0.00660*	-0.000760
	(-2.29)	(-0.83)
Wcap_inter	0.0108*	0.02368**
	(2.15)	(1.67)
A2F_ obs	-0.000556	-0.00296
	(-0.02)	(-0.34)
Pow_outages	0.0387*	0.0369
	(0.31)	(0.92)
Apow_outages	0.0140	0.00571
	(0.79)	(1.02)
loss_sales_Poutages	-0.0483***	0.00337
	(-6.85)	(1.50)
Own_generator	-0.0659	0.0333
	(-1.18)	(1.88)
Loss_pro_ breakage	-0.0348***	-0.00336

	(-6.12)	(-1.86)
	0.0293	0.0102
Telecom_obs	(0.79)	(0.87)
	-0.0852*	0.000752
Mngt_time	(-1.88)	(0.52)
	-0.000403	-0.0153***
Visits_taxO	(-0.05)	(-5.98)
	0.00641	0.000600
Days_opr_license	(1.35)	(0.40)
	0.000594	-0.000316
Days_imp_license	(0.17)	(-0.29)
	0.0123	0.00406
Political_ins_obs	(0.38)	(0.40)
	-0.0302	0.0356
Bribe_ govmt_contract	(-0.44)	(1.62)
	0.304*	0.0653*
Bribe_imp-license	(2.41)	(1.63)
	0.134	0.335***
Bribe_meet_taxO	(1.37)	(10.74)
	0.00500	-0.0414*
Pay_security	(0.08)	(-2.12)
	-0.226*	-0.0331
losses_sales_theft	(-2.48)	(-1.14)
	0.00360	0.000365
Losst_pro_transit	(0.55)	(0.17)
	-0.00749	-0.00462
Courts_obs	(-0.24)	(-0.46)
	0.646*	0.948***
Constant	(2.39)	(11.04)
N	607	607

Observations	607	607
R-Squared	0.42	0.53

For the access to finance, the coefficient of the bank loans or line credit variable was found to be negative and statistically significant in all models. This means that a unit increase in the line of credit or a loan from a financial institution is associated with 29 units and 33 units (i.e., percentage change) decrease in annual employment growth and annual labour productivity growth of SMEs, respectively. This result is consistent with the results of other studies such as Essien (2014), who also found a negative effect of credit or a loan on SMEs' performance. This is due to higher interest rates that SMEs pay to lenders, as well as higher costs that enterprises incur when processing loans (See Wang, 2016).

Moreover, the coefficient for working capital funded by banks was found to be a negative and statistically significant in all two models, implying that a unit increase in the proportion of working capital funded by banks leads to 0.6 units decrease in annual employment growth in SMEs in Sudan, and an 8 % decrease in productivity as well. This finding is in line with Padachi (2012)'s study which claimed that many commercial banks and investors are reluctant to finance SMEs because they consider SMEs as a high risk borrower and it is difficult to assess the creditworthiness of potential proposals for SMEs, which makes borrowing costs high. Administrative costs and high transactions for lending or investing in small amounts do not make the working capital borrowing from banks a profitable business for SMEs, which devastatingly affects their performance.

Another source of financing is working capital financed from credit, which is statistically significant, whereas it was found to have a negative coefficient. It means that; a unit increase in the proportion of working capital financed from credit purchases is a decrease in annual employment growth by 0.6 units in SMEs in Sudan.

SMEs that depend on working capital financed internally show positive and statistically significant results, which means that an increase in the proportion of working capital financed from internal finance by 1 unit increases the proportion of employment in SMEs by 11 units, as well as an increase in productivity of up to 24 units. Similarly, the results obtained from the Tshabalala, (2017) study established the positive impact of internal

finance on firms' performance. This is because of the internal financing features, the most important of which are lowering the total cost and improving the overall value of the enterprises (Gaille, 2018).

To sum, the selected access to finance variables (bank loans or line of credit, the percentage of working capital financed internally, percentage of working capital financed by banks and the percentage of working capital financed by Purchases on credit) have a significant impact on SMEs' performance. This is because the significance values of the dependent variable are less than 5% in each case. Therefore, we accept the alternative hypothesis. These results support our first hypothesis, indicating that adequate access to finance has a statistically significant and positive impact on SMEs' performance in Sudan. While (the proportion of working capital funded by banks and access to finance as a major obstacle) are statistically insignificant, and they do not support our first hypothesis.

As for the infrastructure, many variables showed a statistically significant impact on annual employment growth on Sudanese SMEs. It was found that the number of electrical outages coefficient is positive and statistically significant, which means that a unit increase in the number of electrical outages leads to an increase of 4.7 units in annual employment growth in SMEs in Sudan. These results seem interesting; it would have expected that power outages would hinder SMEs' growth. Evidence of this result suggests that the increased frequency of power outages increases the tendency of the enterprise to employ non-skilled employment (Mensah 2018), substitute workers for capital, and move to more labour-intensive practices, all of which is reflected in the increase in the number of new recruits (Aterido, Hallwarda & Driemeier, 2010).

On the contrary, the coefficient for the percentage of annual sales lost as a result of power outage variable was found to be negative and statistically significant, which means that a unit increase in the percentage of annual sales lost as a result of power outages lead to an increase of 4.8 units in annual employment growth in SMEs in Sudan, and this makes sense, because loss of sales caused by the continuous shortage of electricity supplies lead to high production costs and uncertainty in the business environment and thus, reduce the incentive of potential entrepreneurs to create new businesses. Moreover, existing

enterprises may resort to either reducing production lines or stop production completely to avert losses (Mensah, 2018).

The estimation result also shows that, the coefficient for the percentage of products lost as a result of breakage is negative and statistically significant implying that for a unit increase in the percentage of products lost as a result of breakage or spoilage while in transit, results in an increase of in annual employment growth in SMEs in Sudan by 3.5 units, In the event of an increase in the loss of shipped products, SMEs may be forced to stop or reduce freight transportation to local markets, and thus the decrease in annual employment growth is driven by the lack of need for logistical services in transporting goods. This result is similar to Tuong, Binh, and Hoa (2019) who concluded that loss of shipped products due to breakage or damage negatively affects the growth of enterprises.

Therefore, the variables that measure the infrastructure factor such as (the number of electrical outages, the percentage of annual sales lost as a result of a power outage and the percentage of products lost as a result of a breakage) have a significant impact on SMEs' performance. This is because the significance values of the dependent variable are less than 5% in each case. Therefore, we reject the null hypothesis and accept the alternative hypothesis that infrastructure has a significant impact on SMEs' performance in Sudan. These results support our second hypothesis that a reliable infrastructure has a statistically significant impact on SMEs' performance in Sudan. On the contrary, (the average number of power outages, the average number of generators, and telecommunications as a major constraint) are statistically insignificant. Therefore, this result does not support our second hypothesis.

Some regulations and taxes show a significant impact on the performance of SMEs (See Table 10). The sign of the coefficient estimates is supporting our third hypothesis. The coefficient of the time spent by management dealing with government regulations variable is statistically significant. The negative coefficient indicates that the increase in the time spent by management dealing with government regulations by a unit reduces annual employment growth by 8 units in SMEs. Quartey (2001) supported this result. The time that the senior management of SMEs spends dealing with regulatory bodies is more costly in terms of production costs per unit, so the increase in actual costs that include transaction costs would make these enterprises less competitive, which adversely affects

their performance. However, it does not show a significant impact on productivity, perhaps SMEs increase their productivity to reduce the cost caused by bureaucracy.

Another variable measuring the regulation and taxes factors is visits or meetings required with tax officials. It is statistically significant and effects the productivity growth of SMEs negatively. The coefficient of this factor indicates that a unit increase in visits or inspections of tax officials reduces the productivity growth of SMEs by about 10.5 units. Tadjibaeva & Komilova (2009a) explains this result as they found that the increase in the number of visits by tax inspectors makes it difficult for enterprises to operate without breaking the rules. Also, some enterprises may resort to recording less level of production in their accounting records with the intent to evade taxes because growing and profitable enterprises are more likely to be harassed by tax inspectors. Low performance is sometimes associated with corruption because they often involve payments to inspectors visiting the enterprise (Aterido & Hallward-Driemeier, 2010).

Political instability is insignificant and nevertheless positive. Even though this result may seem surprising, the International Monetary Fund (IMF, 2014) report, which addressed the experts' report, press releases, and the statement of the executive director representing Sudan in the year 2014, confirmed that since the beginning of September 2013, the Sudanese government has started to develop a program to achieve economic stability by improving the local and regional political environment. The political environment has improved somewhat with the advancement of the national dialogue between political parties, and the authorities have begun implementing a discussions strategy with South Sudan under the auspices of the African Union to mobilize the necessary support for debt relief. The authority's policies since the end of 2013 are largely in line with the recommendations of the IMF. Which reflected positively on economic stability.

Under regulation and taxes (time spent by management dealing with government regulations and visits or required meetings with tax officials) have significant impacts on SMEs' performance. Therefore, we reject the null hypothesis and accept the alternative hypothesis. These results support our hypothesis number three that, increasing number of regulations and high taxes have a statistically significant and negative impact on SMEs' performance in Sudan. While (wait-in days-to get an operating license, wait-in days-to

get an import license and political as a major obstacle) variables are statistically insignificant, and they do not support our third hypothesis.

Finally, the empirical results of corruption and crime show that the coefficient of a bribe offer to obtain an import license variable is seen to be positive and statistically significant in two models. In this case, the annual employment growth is increase by 30 units and annual productivity growth by 163 units when the percentage of bribe paid to obtain an import license increases by a unit (See Table 10). And that actually makes sense, especially in developing countries, like Williams, Martinez and Kedir (2016b) who explained that 25.3% of SMEs in developing counties believe that they need to pay informal payments or bribe to public officials to get things done. These results are in line with Jiang and Nie (2014) who claimed that bribes are positively affect enterprises' growth by enabling these enterprises to circumvent unfavourable regulations or withstand competitive pressures in the marketplaces.

The coefficient of the offer of a bribe during meetings with tax officials' variable is positive and statistically significant. The coefficient interpretation in the current model; the increase in the proportion of the bribes paid during meetings with tax officials by a unit, increase the productivity of SMEs in Sudan by 33 units, contrary to expectations. This result is similar to (Profatilov, Bykova, & Olkhovskaya, 2015) who concluded that SMEs offer bribes to officials showed more productive than others. These two findings related to corruption confirm the "effective grease" hypothesis which states that corruption could improve the economic efficiency of enterprises (Méon & Weill, 2010).

The study also focused on the impact of the crime on the performance of SMEs. The results showed that the coefficient of the paying for security variable is negative and statistically significant. This coefficient's interpretation is that the increase of the percentage of security payment by a unit decreases the productivity of SMEs in Sudan by 4 units. The result is in alignment to Sohnen, (2012) who considered that the percentages paid by enterprises for security divert money away from salaries and capital investments which increase costs of operating and marketplace-entry, discourage business development and expansion, and lead to lower productivity and competitiveness.

Furthermore, the losses as a percentage of total annual sales due to crime are statistically significant and have a negative impact on annual employment growth, mean that; Annual

employment growth decreases by 23 units when losses due to theft, robbery, vandalism, or arson increase by 1 unit. (Hodud Essmui et al., 2014) confirmed this result, they claimed that crime is the main obstacle to annual employment growth in enterprises.

The variables (a bribe offer to obtain an import license, offer a bribe during meetings with tax officials, paying for security and losses as a percentage of total annual sales due to crime) measure the corruption and crime factors and showed a significant impact on SMEs' performance. Therefore, we reject the null hypothesis and accept the alternative hypothesis. These results support our hypothesis number four that, high level of corruption and crime rates have a statistically significant and negative impact on SMEs' performance in Sudan. While the percentage of government contract value paid as a bribe, percentage of the value of losses of products due to crime while in transit and courts as a major constraint are statistically insignificant. Hence, these results do not support our fourth hypothesis.

The R value describes the extent to which the chosen independent variables determined the dependent variable used in our model. Therefore, the R^2 of the annual employment growth and annual labour productivity growth of 0.42, 0.53 indicate that 42%, 53% of the variations in the annual employment growth and annual labour productivity growth of SMEs in Sudan, respectively, are explained by the variation in access to finance, infrastructure, regulation and taxes and corruption and crime.

CONCLUSION

The main purpose of our study is to evaluate the impact of the business environment on the performance of SMEs in Sudan. We used secondary data of the World Bank's Enterprises Survey database and obtained data for 607 SMEs collected in 2014 in Sudan. Multiple linear regression was adopted to test our model. The importance of this study is summarized in the lack of studies conducted to examine the impact of the business environment on the performance of SMEs in Sudan. Also, entrepreneurs, business owners/managers and other stakeholders can use the results of these to understand the factors that affect the performance of their business and assess the Sudanese business environment.

Our empirical results showed new evidence on the role of the business environment in the performance of SMEs. The results presented two significant perspectives on financing SMEs in Sudan. First, the results evidenced that inappropriate financing has a constraining impact on the performance of SMEs. This was clear from the estimates that showed a significant negative impact of external financing sources due to the high cost. Second, the results disclosed that internal sources of finance enhance the performance of SMEs, as we found a significant positive relationship between internal sources of finance and the performance of SMEs, which means that internal sources represent a haven if access to external finance is unavailable or inaccessible.

In terms of infrastructure, the study showed a positive effect of power outages on SMEs' performance. However, the loss of sales due to power outages and products lost due to breakage or damage while in transit to the domestic market displayed a negative impact on the performance of SMEs in Sudan. Moreover, the results of regulation and taxes indicated that bureaucracy and the number of visits and inspections by tax officials are a barrier to the performance of SMEs.

Finally, the discussed the role of corruption and crimes in the performance of Sudanese SMEs, and it was found that corruption has a positive effect on the performance of SMEs. Moreover, the study suggested that corruption is an option that benefits the enterprises at the individual level, but it harms the economics at the macro level, and the causes of the spread of corruption are due to defects and conflicts of interest in governmental and non-

governmental organizations, and thus involvement in corruption explains the official institutions' shortcomings, corrupt practices of SMEs are indicative of the flaws of public institutions. As for the crime, it has a negative role in the performance of SMEs due to the losses that result from theft, robbery, and vandalism at the establishment or during transit operations.

It is evident from the above that the business environment has a significant role in the performance of SMEs in Sudan, and thus, the Sudanese economy as a whole. Therefore, assessing the impact of the business environment on SMEs' performance for the above objects is critical research content. The results implied that:

- Providing finance enhances the performance of SMEs. However, this step alone is not enough, decision-makers in the country should bridge the financial gap in this sector through comprehensive financing programs.
- Improving the reliability of electricity and the quality of the road connecting production areas with the main consumption centres would reduce large sales losses and cost recovery.
- Reducing the time that managers spend dealing with government regulations saves SMEs' time and thus money. This can be achieved by simplifying procedures.
- Sudanese government is required to take serious steps to curb crime and corruption in SMEs so that these sectors can effectively contribute to the economic and social development of Sudan.

The recommendations of this study are based on the empirical results of the study to assist in improving the performance of SMEs in Sudan. The following part discusses the recommendations derived from the results of the study.

- Access to finance should be facilitated by encouraging banks and other financial institutions to lend to SMEs. Also, the demand for collateral impedes the performance of SMEs. Therefore, the study recommends policymakers to create organizations that function as a non-conventional financial intermediary and provide government-backed guarantees to SMEs to get loans.

- Crowdfunding such as rewards and pre-selling could provide a complement or substitute for seed financing for entrepreneurial ventures and start-ups that have difficulties in raising capital. These sectors should also promote alternative financing techniques such as increasing the retained earnings ratio.

- The production level of the national grid is insufficient to meet the demand. Hence, the study recommends that alternative energy options such as solar, wind energy, biogas, and other low-cost renewable energy sources should be sought.

- The need to create an interlink between every nook and cranny of the country necessitates the rehabilitation of the existing road network and the construction of more qualitative ones.

- Promote coordination and harmonization between government departments to improve the business environment. Lack of coordination leads to an increase in the financial and administrative burden on SMEs through many requirements and confusion of owners and managers of SMEs.

- Efforts should be made to simplify procedures for taxes, fees, and import and operation licenses by providing SMEs with appropriate notice of new regulations that could affect their business planning and thus save time and boost profits.

- Development of long-term national strategies and frameworks to combat corruption and safeguard integrity by taking severe disciplinary action against public officers caught red-handed in corruption practices.

- The government should develop comprehensive measures to address the institutional deficiencies that lead to widespread bribery in the country.

This study assessed the factors that affect the performance of SMEs in Sudan. However, it is not without some limitations. The following highlights the limitations of this study and provides guidance for further research.

- The survey samples were mainly focused on the three cities: Khartoum, Bahri, and Omdurman. The empirical may not apply to SMEs in other cities because the characteristics are likely to differ from one city to another (Tu, 2012).

- The study includes manufacturing and service industries in Sudan and did not focus on a specific type of business industry.

- Some business environment indicators are based on a subjective measure about the relative weights of the variable components and the deficiency of direct input on real conditions.
- Because of the above-stated limitations, the author recommends that once the data becomes available, more in-depth research should be conducted to further clarify the role of the business environment in accommodating or constraining performance drivers of SMEs in Sudan.

REFERENCES

Abdelrahman, O.Abdullah,B., & Abas, Z. (2017). Conceptual Model of Predictors of SMEs' Performance in the Context of Sudan. *Journal of Business and Social Review in Emerging Economies*, 3(2), 263–276.

Ackah, J., & Vuvor, S. (2011). The Challenges faced by Small & Medium Enterprises (SMEs) in Obtaining Credit in Ghana.

Ali. A., & Hafiz, M. (2009). Impact Of Entrepreneurship Capabilities On The Performance Of Small And Medium-Sized Enterprises. *In SUST Repository*. Retrieved from http://repository.sustech.edu/handle/123456789/7253.

Allal, M., & Finnegan, G. (1999). Micro and small enterprises in Thailand: definitions and contributions. *International Labour Organization*.

Aterido, R., & Hallward, M. (2010). The Impact of the Investment Climate on Employment Growth Does Sub-Saharan Africa Mirror Other Low-Income Regions? *The World Bank Policy Research Working Paper*, (February), 1–42.

Bank of Khartoum. (n.d.). SME Banking. Retrieved from https://bankofkhartoum.com/sudan/sme-banking/

Bank, T. W. (n.d.). Small And Medium Enterprises (SMES) Finance. *Mediterranean Journal of Social Sciences*, 4(6), 323.

Becker, B. (2007). Geographical segmentation of US capital markets. *Journal of Financial Economics,* 85(1), 151–178.

Benzazoua, A. (2015). Small And Medium Enterprises As An Effective Sector For Economic Development And Employment Creation In Algeria. *International Journal of Economics, commerce and management*, 3(2), 1-16.

Bouazza, A. B., Ardjouman, D., & Abada, O. (2015). Establishing the factors affecting the growth of small and medium-sized enterprises in Algeria. *American International Journal of Social Science*, 4(2), 101–115.

Britton, C., & Worthington, I. (2009). The business environment. Financial Times/Prentice Hall.

Business, O. S. (2019). Job Creation and Growth: Facts, Obstacles and Best Practices. *OECD report*, undated.

Butler, A. W., & Cornaggia, J. (2007). Does access to finance improve productivity? Evidence from a natural experiment. *Dallas School of Management*.

Chauvet, L., & Ferry, M. (2020). Taxation, infrastructure, and firm performance in developing countries. *Public Choice*, 1–26.

Dethier,J. Hirn, M., & Straub, S. (2011). Explaining enterprise performance in developing countries with business climate survey data. *The World Bank Research Observer*, 26(2), 258–309.

Dollar, D., Hallward, M., & Mengistae, T. (2005). Investment climate and firm performance in developing economies. *Economic Development and Cultural Change*, 54(1), 1–31.

Dut, V., & Van (2015). The Effects Of Local Business Environments On Smes' Performance: Empirical Evidence From The Mekong Delta. Asian Academy of Management Journal, 20(1).

Economist, T., & Unit, I. (2016). Worldwide Cost of Living 2014: A special report from the Economist Intelligence Unit. *The Economist*. 67(1), 14.

Eltahir, O., Ali, O., & Eltahir, B. (2018). Factors-Affecting-the-Performance-Business-Success-of-Small-Medium-Enterprises-in-Sudan. *In International Journal of Small Business and Entrepreneurship Research* (Vol. 6).

Fayzollahi, S., Shirmohammadi, A., & Latifian, B. (2013). The impact of environmental factors on total quality management and firm performance: Evidence from industrial enterprises in Iran. *International Research Journal of Applied and Basic Sciences,* 4(10), 3237–3245.

Fowowe, B. (2017). Access to finance and firm performance: Evidence from African countries. *Review of Development Finance*, 7(1), 6–17.

Gaille, B. (2018). 15 Internal Sources of Finance Advantages and Disadvantages - BrandonGaille.com. Retrieved July 28, 2020, from https://brandongaille.com/15-internal-sources-of-finance-advantages-and-disadvantages.

Galasso, A., Gerotto, F., Infantino, G., Nucci, F., & Ricchi, O. (2018). Does Access to Finance Improve Productivity? The Case of Italian Manufacturing. *In Getting Globalization Right* (pp. 197–208).

Galbreath, J., & Galvin, P. (2008). Firm factors, industry structure and performance variation: New empirical evidence to a classic debate. *Journal of Business Research*, 61(2), 109–117.

Gangi, Y. A., & Timan, E. (2013). An empirical investigation of entrepreneurial environment in Sudan. World Journal of Entrepreneurship, *Management and Sustainable Development*, 9(2/3), 168–177.

Hansen, M. W., Ishengoma, E. K., & Upadhyaya, R. (2018). What constitutes successful African enterprises? A survey of performance variations in 210 African food processors. *International Journal of Emerging Markets*.

Hicks, J., Mohan, A. & Ray, W. H. (1969). The optimal control of polymerisation reactors. *The Canadian Journal of Chemical Engineering*, 47(6), 590–597.

Hodud Essmui, B., Berma, M., Bt Shahadan, F., Bt Ramlee, S., Fauzi Bin Mohd, M., Essmui , H., & Ramlee , S. (2014). The Impact of Business Environment on of Firm's Employment Growth. *In journalofbusiness.org*.

International Finance Corporation. (2013). Doing business 2014: Understanding regulations for small and medium-size enterprises (Vol. 11). *World Bank Publications.*

Janković, M., Mihajlović, M., & Cvetković, T. (2016). Influence of external factors on business of companies in Serbia. *Ekonomika*, 62(4), 31–38.

Jiang, T., & Nie, H. (2014). The stained China miracle: Corruption, regulation, and firm performance. *Economics Letters*, 123(3), 366–369.

Kefalas, A. G. (1981). Analyzing changes in the external business environment. *Planning Review.*

Keskġn, H., Ġentürk, C., Sungur, O., & Kġrġġ, H. M. (2010). The importance of SMEs in developing economies. *2nd International Symposium on Sustainable Development*, 183–192.

Khattab, I., Ahmed, S. S., & Ahmed, A. M. (2017). Determinants of Business Entrepreneurship Success in Sudan. *J Entrepren Organiz Manag*, 6(218), 2.

Klapper, L., Laeven, L., Rajan, R., Berger, A., Boot, A., Cetorelli, N., & Woodruff, C. (2006). Entry regulation as a barrier to entrepreneurship $ We thank William Schwert, an anonymous referee. *Journal of Financial Economics*, 82, 591–629.

Kuntchev, V., Ramalho, R., Rodríguez-Meza, J., & Yang, J. S. (2012). What have we learned from the Enterprise Surveys regarding access to finance by SMEs. Enterprise Analysis Unit of the Finance and Private Sector Development, *The World Bank Group.*

Lema, B., Submitted, D., & Fulfillment, P. (2013). Assessment Of The Factors Affecting Perfomance Of Small And Medium Enterprises (Smes) The Case Of Kilimanjaro Region. *Scholar.Mzumbe.Ac.Tz.*

Mensah, J. T. (2018). Jobs! Electricity shortages and unemployment in Africa. *The World Bank.*

Méon, P.-G., & Weill, L. (2010). Is corruption an efficient grease? *World Development*, 38(3), 244–259.

Mirgjani, Y. I. (2016). *Industrial Development in the Sudan* (Doctoral dissertation, University of Khartuom).

Munir, R., Perera, S., & Baird, K. (2011). An analytical framework to examine changes

in performance measurement systems within the banking sector. *Australasian Accounting, Business and Finance Journal,* 5(1), 93–115.

Musa, E. A. (2012). Emerging Women Entrepreneurs in Sudan: Individual Characteristics, *Obstacles and Empowerment. In 2012*. Retrieved from www.trustafrica.org/icbeDakar.

Ndiaye, N., Abdul Razak, L., & Nagayev, R. (2018). Demystifying small and medium enterprises' (SMEs) performance in emerging and developing economies. *Borsa Istanbul Review*, 18(4), 269–281.

O'Toole, C. M., & Tarp, F. (2014). Corruption and the efficiency of capital investment in developing countries. *Journal of International Development*, 26(5), 567–597.

Obokoh, L. O., & Goldman, G. (2016). Infrastructure deficiency and the performance of small- and medium-sized enterprises in Nigeria's Liberalised Economy. *Acta Commercii*, 16(1).

Okeyo, W. O., Gathungu, J., & Peter, K. (2014). The effect of business development services on performance of small and medium manufacturing enterprises in Kenya. *International Journal For Business And Social Research* 4(6).

Olawale, F., & Garwe, D. (2010). Obstacles to the growth of new SMEs in South Africa: A principal component analysis approach. *African Journal of Business Management*, 4(5), 729–738.

Omer,O., & Omer, A. (2011). Small Enterprises in Sudan. Retrieved from http://kenanaonline.com/users/wadi/posts/297903.

Osoba, S. O. (1996). Corruption in Nigeria: Historical perspectives. *Review of African Political Economy*, pp. 371–386.

Padachi, K. (2012). Factors Affecting the Adoption of Formal Accounting Systems by SMEs. *Business and Economics Journal*, 3(1).

Prenaj, V., & Ismajli, H. (2018). Definition of Enterprises in the European Union,

Western Balkans and Kosovo. *Baltic Journal of Real Estate Economics and Construction Management*, 6(1), 62–73.

Profatilov, D. A., Bykova, O. N., & Olkhovskaya, M. O. (2015). Crowdfunding: Online charity or a modern tool for innovative projects implementation? *Asian Social Science*, 11(3), 146.

Programme, C., African, S., & Union, C. (2020). UNICEF Annual Report 2017. 1, 2020, 1–39. https://doi.org/978-92-806-4967-3.

Quartey, P. (2001). Regulation, Competition And Small And Medium Enterprises In Developing Countries. Centre on Regulation and Competition. *Working Paper Series.* Paper NO. 10.

Rajan, R. G., & Zingales, L. (1995). What Do We Know about Capital Structure? Some Evidence from International Data. *The Journal of Finance*, 50(5), 1421–1460.

Ranjan, J. (2009). Business intelligence: Concepts, components, techniques and benefits. *Journal of Theoretical and Applied Information Technology*, 9(1), 60–70.

Ritter-Hayashi, D., Vermeulen, P., & Knoben, J. (2019). Is this a man's world? The effect of gender diversity and gender equality on firm innovativeness. *Plos ONE*, 14(9).

Rizal, O., Suhadak, M., & Kholid, M. (2017). Analysis of the influence of external and internal environmental factors on business performance: A study on micro small and medium enterprises (MSMES) of food and beverage. *Russian Journal of Agricultural and Socio-Economic Sciences*, 66(6).

Salihu, A. (2015). Effect of Environmental Factors on Small Scale Businesses Performance in Kano and Sokoto State. *Unpublished Msc Thesis of Ahmadu Bello University, Zaria, Kaduna.*

Sohnen, E. (2012). Paying for Crime. A Review of the Relationships between Insecurity and Development in Mexico and Central America. *Woodrow Wilson International Center for Scholars.* Washington DC.

Sudantribune. (n.d.). Are SMEs the drive chain moving African Economy? Retrieved from https://sudantribune.com/spip.php?article69136: Are SMEs the drive chain moving African Economy?

Tadjibaeva, D., & Komilova, I. (2009). The influence of tax reforms on the prosperity of micro-firms and small businesses in Uzbekistan. *Asia-Pacific Development Journal,* 16(2), 31–64.

Take-profit.org. (2020). Ease of doing business in Sudan. Retrieved from https://take-profit.org/en/statistics/ease-of-doing-business/sudan/.

Teal, F., & Mcarthur, J. (2004). Corruption and Firm Performance in Africa Corruption and Firm Performance in Africa. *Pdfs.Semanticscholar.Org,* (October 2004).

Tshabalala, F. B. (2017). *Impact of internal finance on firm growth: a case sudy on South African SMEs* (Doctoral dissertation).

Tuong, P. V., Binh, D. T., & Hoa, N. D. (2019). Impact of transport infrastructure on firm performance: Case study of Cuu long delta area, Vietnam. *Problems and Perspectives in Management*, Vol. 17, pp. 51–62.

USAID. (2019). Theories Of Change: High-Growth Small And Medium Enterprise Development.Retrieved.from.https://www.marketlinks.org/sites/marketlinks.org/files/.

Vandenberg, P., Chantapacdepong, P., & Yoshino, N. (2016). SMEs in developing Asia: New approaches to overcoming market failures. *Asian Development Bank Institute.*

Wang, Y. (2016). What are the biggest obstacles to growth of SMEs in developing countries?–An empirical evidence from an enterprise survey. *Borsa Istanbul Review,* 16(3), 167–176.

Westover, J. (2008). The record of microfinance: The effectiveness/ineffectiveness of microfinance programs as a means of alleviating poverty. *Electronic Journal of Sociology*, 12(1), 1–8.

Williams, CC., Martinez-Perez, Kedir, & Am. (2016). Does bribery have a negative impact on firm performance? a firm-level analysis across 132 developing countries. *Emerald.Com*415–398 ,(3)22.

World Bank. (2014). Sudan - Enterprise Survey 2014. Retrieved from https://microdata.worldbank.org/index.php/catalog/2354.

world Bank. (2009). Sudan-The Road Toward Sustainable and Broad Based Growth. Retrieved from https://ideas.repec.org/p/wbk/wboper/3183.html.

World Bank Group. (2017). Enterprise surveys indicators descriptions. Retrieved from https://www.enterprisesurveys.org/en/data.

CURRICULUM VITAE

Mohammad EL-Amin Elsanoosi AHMED was born in 1989 in Wadi Salih, Sudan. Completed his primary school in Wadi Salih, high school in Khartoum, then joined the Faculty of Administrative Sciences at Khartoum University, from which he graduated in 2015. He also received a master's degree in Financial Econometrics from the Econometrics Department, the Institute of Social Sciences at Sakarya University in 2020.

E-mail: mohammedelsanoosi@gmail.com