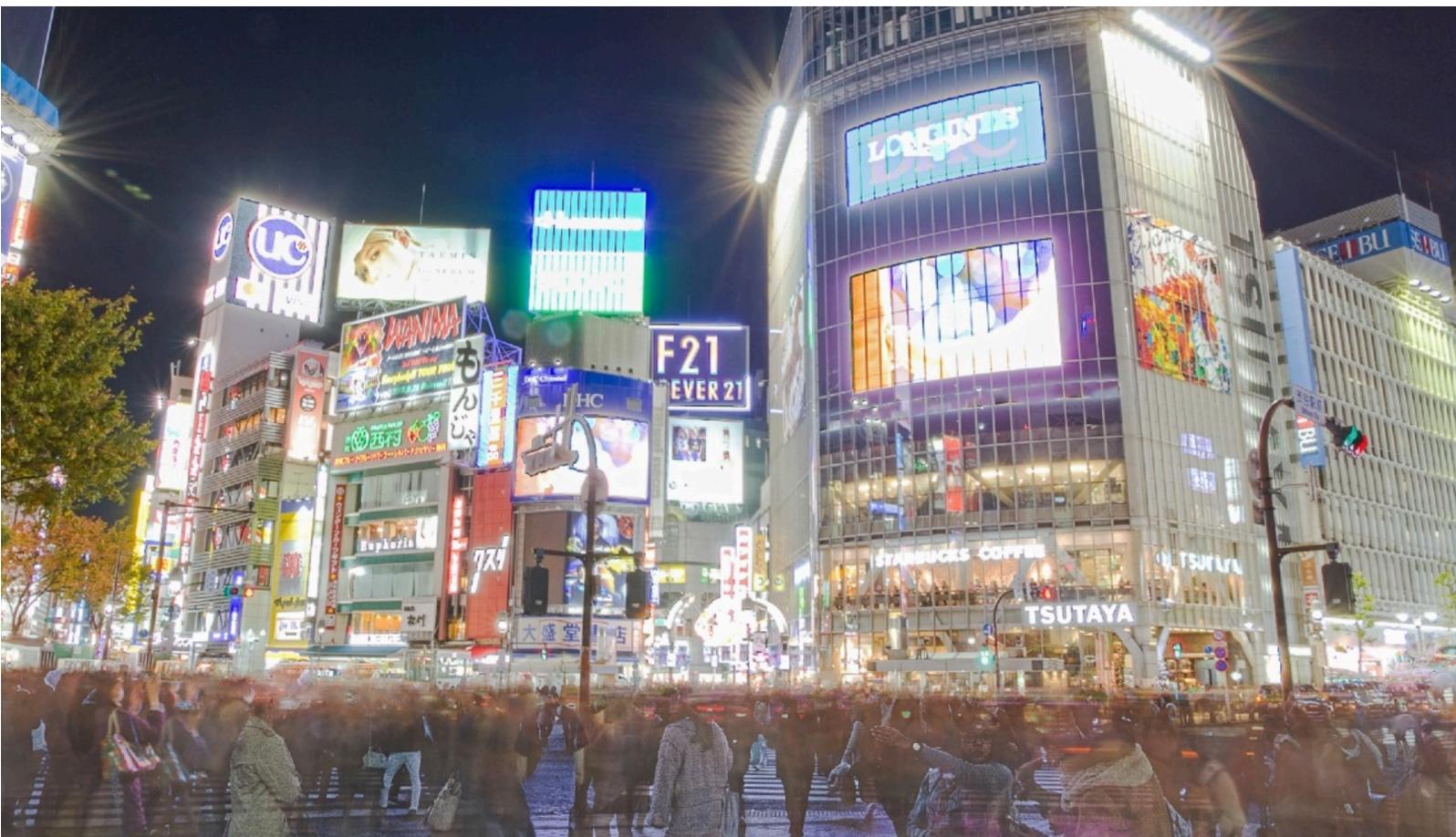


ISSN 2615-3726 (Online)  
ISSN 2621-5667 (Print)

*Asian Institute of Research*  
**Journal of Economics and Business**  
Vol. 3, No.3 September 2020



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Asian Institute of Research  
**Journal of Economics and Business**  
Vol.3, No.3 September 2020

<b>Table of Contents</b>	i
<b>Journal of Economics and Business Editorial Board</b>	iii
<b>Examination of Potentialities of Vietnam as FDI Destination</b> Manuel Fernandez, Alya Majid Al Shubaisi, Robinson Joseph	980
<b>Agriculture, Manufacturing and Economic Growth in India: A Co-integration Analysis</b> Imran Ali Baig, Md. Safdar Ali, Abdus Salam, Shah Mohd. Khan	995
<b>Corporate Sustainability Reporting: Empirical Evidence From Ghana</b> Mavis Pobbi, Emmanuel Atta Anaman, Richmond Sam Quarm	1005
<b>Renewable Energy (Solar) and its Impact on Rural Households' Welfare (Case Study of Badakhshan Province, Afghanistan)</b> Ajmal Haidari	1014
<b>Organizational Attractiveness Dimensions and Workplace Authenticity Relationship</b> Türker Baş, Ece Ertan	1021
<b>The Entrepreneurial Ecosystem in the Caribbean</b> Inshan Meahjohn	1032
<b>How Brand Awareness Does Not Have a Significant Effect on Customer Loyalty in a Public Company</b> Umbas Krisnanto, Darwin Yulian	1038
<b>The Effect of WHO COVID-19 Announcement on Asian Stock Markets Returns: An Event Study Analysis</b> Musaed Sulaiman AlAli	1051
<b>Dividend Policy and Corporate Financial Performance: Evidence from Selected Listed Consumer Goods Firms in Nigeria</b> Chukwuma C. Ugwu, Virginia N. Onyeka, Iyana E. Okwa	1055
<b>The Effects of Service Quality on Customer Satisfaction: A Case Study of AWCC in Balkhab District of Sar-E-Pol Province</b> Abdul Qayum Shafaq, Hameedullah Shuaa	1066

<b>Corporate Social Responsibility and Financial Performance Amongst Rural and Community Banks in Ghana</b>	1073
Michael Amoh Asiedu, Emma Yalley, Kwame Owusu Boakye, Richard Oduro, Isaac Nyarko Adu	
<b>Public Debt Dynamics and Fiscal Sustainability in Namibia: An Intertemporal Budget Constraint Analysis</b>	1095
Jacob M. Nyambe, Teresa Kaulihowa	
<b>R&amp;D Investments and Idiosyncratic Volatility</b>	1105
Md. Tanvir Hamim	
<b>Measuring Hospital Accountability</b>	1114
Indrianty Sudirman	
<b>The Effect of Government Incentives on the Performance of Micro and Small Enterprises (MSE's) in Eastern Ethiopia: Evidence from Harar, Dire Dawa city Administration and Haramaya Town</b>	1125
Wondmagegn Biru Mamo	
<b>Firm Specific and Macroeconomic Determinants of Financial Institutions' Profitability: Evidence from Banks and Insurances in Ethiopia</b>	1136
Yonas Nigusie Isayas, Mekonnen Kumlachew Yitayaw	
<b>Reduction of Income Inequality in Sub-Saharan Africa: Which Fiscal Instrument Matters?</b>	1148
Ambassa Messy Martin	
<b>Agency Theory, Accounting Based Performance Evaluation Systems and IFRS: A Brief Relational Overview</b>	1158
Bruce Geddes	
<b>The Impact of COVID-19 on Entrepreneurship Globally</b>	1165
Inshan Meahjohn, Prakash Persad	
<b>Combined Effects of Institutional Quality and Financial Development on Macroeconomic Performance in Sub-Saharan African Countries</b>	1174
Moussa Sigue, Moussa Coulibaly, Ollo Dah	
<b>Entrepreneurial Success for Women through Microfinance and Effect of Education: Evidence from Sri Lankan</b>	1187
D. T. Kingsley Bernard	

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# Examination of Potentialities of Vietnam as FDI Destination

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## Abstract

Globalization has made worldwide mobility of money extremely easy. The investors prefer to invest in places that offer attractive returns and are relatively less risky. The inflow of FDI gives developing countries access to capital that would otherwise be not available. FDI also provides much needed foreign exchange and therefore helps to adjust some of the macroeconomic imbalances in developing countries. Vietnam is in the growth mode, trying to boost the growth rate from all corners, but the resources available is limited and very often insufficient, hence the country is competing against others to make the investment climate more investor-friendly and project itself as an investor-friendly destination for the FDI. The main objectives of this study are to find out the status of Vietnam as a destination for FDI, the factors that attracts FDI into Vietnam and how these can be enhanced, and the factors that hinder the flow of FDI into Vietnam and how these can be reduced. This study is based on secondary data and covers a period of five years. The study analysis various determinants of FDI like market size, economic growth, infrastructure, political risk, corruption, labor market, raw materials, technological readiness, innovation, financial system, taxation, cost of capital, ease of doing business and government policies. The study reveals that Vietnam has the potential, decent growth, political stability, organized financial system and acceptable policy that makes it attractive to foreign investors and suggests measures to enhance the attractiveness, similarly highlights the hindrances to the inflow of FDI into Vietnam and suggests measure to reduce them.

**Keywords:** Foreign Direct Investment, Investor-Friendly Environment, Multinational Corporations

## 1. Introduction

Foreign Direct Investment (FDI) is playing the role of cornerstone for both government and private organisations. FDI enables the corporations to quickly acquire new products, technologies and new markets for their existing products. It is observed that companies investing overseas experience higher growth rates and is able to diversify their sources of income. A sustainable flow of FDI can generate sustainable development in the host economy. FDI is directly associated with higher level of production, therefore, it provides the country an opportunity to reduce unemployment and stabilise its political condition. In the developing economies, FDI is responsible for technological advancement. But, with such economic advantages, FDI inflows also bear certain disadvantages (Fernandez & Joseph, 2016). For example, if the FDI becomes successful and profitable then the capital essentially flows out from the host country to the investor's country. It may also cause industrial disruption in the domestic country.

World Economy has seen a rapid rise in foreign direct investment for more than three and half decades. World Investment Report (2018) stated that there has been a decline in global FDI by 23%, i.e. \$1.43 trillion. Even with this decline the FDI to developing economies remained stable at \$671 billion in 2017. Asia was the largest recipient of FDI in the World with a total of \$476 billion inflows in 2017 (Singh, 2019). The inflow of FDI gives developing countries access to capital that would otherwise be not available, as Transnational Corporations (TNCs) often have privileged access to capital from the international banking sector. Similarly, FDI provides much needed foreign exchange and therefore helps to adjust some of the macroeconomic imbalances in developing countries. Many countries in Asia, Africa and in the Middle East are in the growth mode but the resources available for development with them are limited and insufficient, hence all these nations are competing against each other to make the investment climate better and project itself as the best FDI-friendly destination.

Vietnam, officially the Socialist Republic of Vietnam, is a Southeast Asian country. it is the 16th most populous country in the world, with an estimated population of more than 95 million. Table 1 gives the data on the inflow of FDI into Vietnam during the period 2013 to 2018.

Table 1. Foreign direct investment in Vietnam: net inflows (US\$ in Million)

	2013	2014	2015	2016	2017	2018
Net inflows	8,900	9,200	11,800	12,600	14,100	15,500
Increase		300	2,600	800	1,500	1,400
Y-O-Y Growth		3.37%	28.26%	6.78%	11.90%	9.93%

*Source: compiled from World bank database*

The inflow of FDI during the last five years has increased by US\$ 6,600 million, from US\$ 8,900 million in 2013 to US\$ 15,500 million in 2018, an increase of approximately 74%. The net inflow of FDI into Vietnam had a growth of only 3.37% in 2014, but in 2015 there was a remarkable growth of 28.26%, thereafter the annual growth rate has declined.

The main objectives of this study are to find out the potentialities of Vietnam to attract FDI. The study also purports to highlight the factors hindering the inflow of FDI and potential incentives to attract FDI into the country. The findings of the study would help the investors to arrive at a better decision regarding FDI into Vietnam, and similarly help the regulators and other stakeholders to formulate appropriate policies and take necessary steps to enhance the FDI attractiveness of Vietnam. This paper is organized as follows: Section 2 presents a literature review on FDI. Section 3 states the methodology. Section 4 focusses on analysis and discussions, and Section 5 concludes the paper.

## 2. Literature Review

Foreign direct investment is widely perceived as a powerful development engine for many receiving (host) countries. The study by Osunkwo (2020) attempted to estimate the impact of Foreign Direct Investment on Economic Growth of Nigeria for the period 1980-2018, it was found that FDI has a positive and significant impact on GDP. Virtually all countries are actively seeking to attract FDI, because of its expected favorable effect on income generation from capital inflows, advanced technology, management skills and market know-how (Cho, 2003). The motivational factors such as natural resources, market resources, strategic resources, efficiency resources, locational advantages, etc., influenced Multinational Enterprises (MNEs) to perform various activities in the host countries. Initially MNEs search for the customers in host countries and conclude by encompassing productive activities when foreign market confers higher value to the firm (Bhattacharyay, 2018).

Numerous studies have been conducted in different parts of the world and majority of the studies have inspected the effects of determinants of FDI inflow and found that relevant determinants include the size and growth potential of the host market, economic stability, economic growth, infrastructure, geographical location, human capital, interest rate, per capita income, exchange rate, wage rate, quality of institutions, etc.,

The presentation of the literature review is sequenced in such a manner that the literature relating to market size is presented first, followed by political stability and then all literature relating to all other factors are arranged chronologically.

Market size is expected to have a positive relationship with FDI. Market-oriented FDI aims to set up enterprises to supply goods and services to the local market. The general implication is that host countries with larger market size, faster economic growth and a higher degree of economic development will provide more and better opportunities for these industries to exploit their ownership advantages and therefore, will attract more market-oriented FDI (OECD, 2000). The study by Resmini (2000), looking into manufacturing FDI, finds that countries in Central and Eastern Europe with larger populations tend to attract more FDI. The studies by Kravis & Lipsey, (1982), and Na & Lightfoot, (2006) revealed that FDI inflow has been largely attracted by the market size and market potential. Xaypanya, Rangkakulnuwat & Paweenawat (2015) investigated the significant factors determining foreign direct in Cambodia, Laos, and Vietnam (ASEAN3) and Indonesia, Malaysia, the Philippines, Thailand, and Singapore (ASEAN5), and found that market size and infrastructure facility are significant factors to attract FDI. Dunning (1973) studied econometric models using a statistical analysis of surveys on the determinants of FDI and found that market force such as market size, growth and per capita income in the host country, and cost factors like labor cost and inflation as factors attracting FDI. Casi & Resmini (2010) inspected the determinants of FDI in the EU region and found that the main determinants are GDP growth rate, labor costs, and market potential. The study by Makki, Somwaru & Bolling (2004) on US food processing industry found that market size, per-capita income, and openness significantly affected US food processing firms' decisions to invest abroad. Thus one may presume that large host countries with high growth rate and higher per capita income attract higher foreign direct investment due to larger potential demand.

Khachoo & Khan (2012) conducted a study to examine the determinants of FDI in 32 developing countries from 1982 to 2008 using an econometric model. Their empirical results showed that market size, total reserve, and infrastructure were positively related to FDI inflows.

Political stability and reliability determine the FDI inflows. TNCs prefer stable government so that their investment is protected. Political instability may be in the form of the negative attitude of the government towards TNCs, non-allowance of fund transfer, currency convertibility, war, bureaucracy and corruption. Political stability can also be measured by the number of changes of democratically elected governments (Gedam, 1996). The study by Root & Ahmed (1979), and Schneider & Frey (1985), looking at aggregate investment flows into developing economies found that political instability significantly affects FDI inflows.

Tax policies including corporate and personal tax rates influence inward FDI. Other things being equal a country with lower tax rates should stand a greater chance of attracting FDI projects than a country with higher rates (Chandal, 2003).

According to Neumayer & Indra (2005), availability of raw materials provides investors with an added advantage with regards to producing efficiently.

The study of Uwubanmwen & Ajao (2012) shows that trade openness, interest rate, government size, and GDP exerted a positive control on cross-border investments in Nigeria and a negative relationship was found between FDI and exchange rates.

According to Milner (2013), the presence of a productive labor force is one of the determinants that influence the scope of FDI in a country.

A glance at the literature on advantages of inflow of FDI shows that the foremost advantage of FDI is increased revenues that can be used for expanding growth opportunities in the investment destination. According to Almutawa & Maniruzzaman (2014), investments by foreigners refers to additional revenue that supports various economic projects of a country. According to Muysken & Samia (2006), unemployment rates are reduced as a result of capital injections and job opportunities from foreign-based companies. FDI also increases the competitive

advantage of a country by developing financial and business hubs that boost economic growth. Mina (2007) points out that FDI promotes the economic growth of a nation by stimulating various sectors of the economy such as manufacturing and tourism.

In brief, the trend in FDI flows differs by region and country. Although FDI has innumerable effects on the economy of host countries and most countries are trying hard to attract FDI, the inflow of FDI continues to be uneven, with some countries getting the lion's share and others barely getting any.

### 3. Methodology

The main objectives of this study are to find out the status of Vietnam as a destination for FDI; the factors that attract FDI into Vietnam and how these can be enhanced, and the factors that hinder the flow of FDI into Vietnam and how these can be reduced. The study is solely based on secondary data collected from local, regional and international agencies like Government of Vietnam, State Bank of Vietnam, World Economic Forum, International Monetary Fund, Transparency International, World Bank group, United Nations and various publications of the statistical departments, governments, and the press. The study covers a period of five years from 2014-2015 to 2018-2019. The collected data are tabulated and analyzed using appropriate analytical tools.

### 4. Analysis and Discussions

#### Determinants

The Global Competitiveness Report 2019 published by the World Economic Forum assesses the competitiveness landscape of 141 economies, providing insight into the drivers of their productivity and prosperity. These 141 economies account for 99% of the world's GDP. The competitiveness ranking is based on indicators organized into 12 'pillars': Institutions; Infrastructure; ICT adoption; Macroeconomic stability; Health; Skills; Product market; Labor market; Financial system; Market size; Business dynamism; and Innovation capability. Each indicator, or 'pillar' uses a scale from 0 to 100, to show how close an economy is to the ideal state or 'frontier' of competitiveness in that area (Global Competitiveness Report, 2019). The Report series remains the most comprehensive assessment of national competitiveness worldwide. Table 2 presents the year-wise ranking of Vietnam by global competitiveness index for the year 2014 to 2019.

Table 2. Global Competitiveness Index: Ranking of Vietnam - 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
Global Rank	68	56	60	55	77	67

Source: Compiled from Global competitiveness reports 2013- 2014 to 2019

The data in Table 2 shows that the relative ranking of Vietnam has declined from rank 55 in the year 2017 to rank 67 in the year 2019, which could be either Vietnam is going back in competitiveness or other countries are enhancing their competitiveness at an accelerated pace and leaping forward which is pushing Vietnam back in the relative ranking. This calls for an analysis of various determinants of FDI beginning with market size.

#### 4.1. Market Size

Market size, growth in market size and market efficiency are important determinants of FDI. The market size and the growth prospects of the market of the host country are important pull factors and are positively related to the level of FDI flows (Dunning, 1993; Chandalert, 2000). A huge market size allows the attainment of economies of scale, and transaction costs are lower in countries with higher levels of economic development (Caves, 1971; Zhao & Zhu, 2000).

Vietnam is the third largest market in Southeast Asia, and one of the fastest-growing economies in the world. The population of Vietnam is more than 95 million, the GDP is US\$770.23 billion and GDP per capita income is US\$ 2,739.82 according to the International Monetary Fund, World Economic Outlook Database (October, 2019). The

market size can be measured by the population and the growth of population of the country. Vietnam is the 16th most populous country in the world, with a constant population growth rate. By 2030, the population will grow to 105 million, as forecasted by Worldometers. A larger population means a better domestic market that can consume goods and services provided by investors. The growing population, brings plenty of opportunities for the investors both domestic and international. This definitely will attract more FDI. Table 3 gives the global ranking for Vietnam on market size for the period 2014 to 2019.

Table 3. Market size: Global Competitiveness Index Ranking of Vietnam – 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
Global Rank	34	33	32	31	29	26
GDP PPP (Billion \$)	359.8	510.7	552.3	595.5	590	631

Source: Compiled from Global competitiveness reports 2013- 2014 to 2019

Throughout the period of study Vietnam's position had been improving quite gradually from rank 34 in 2014 to an appreciable level of 26 in the year 2019. Together with a growing population, the middle class of Vietnam is increasing faster than of any other Southeast Asian nation. The market research firm Nielsen estimates the middle class in Vietnam to grow to 44 million residents by 2020 and to 95 million by 2030. This will support consumerism making Vietnam a profitable target for foreign investors.

#### 4.2. Economic Growth

Over the past decade, growth in advanced economies has been very weak. Many emerging economies - including Argentina, Brazil, Russia, India and China - are experiencing some slowdown or stagnation. In least-developed economies, growth remains well below potential and highly volatile. Productivity growth started slowing down well before the financial crisis of 2008. Between 2000 and 2007, total factor productivity (TFP) annual growth averaged just 1% in advanced economies and 2.8% in emerging and developing economies. TFP then plummeted during the crisis. Between 2011 and 2016, TFP grew by 0.3% in advanced economies and 1.3% in emerging and developing economies (Obstfeld & Duval, 2018). Corporates do not operate in vacuum, they are highly influenced and attracted by the environmental factors and economic growth of the economy in which they do business. Corporates in high growth economies can envisage to growth at a higher rate than those in the low growth countries as the environment highly influences the entity. For emerging economies like Vietnam FDI is often referred to as the most effective way to transfer capital and technology from other economies especially the developed ones. Table 4 shows the annual percentage growth rate of GDP at market prices based on constant local currency, for Vietnam during the period 2014 to 2018.

Table 4. Economic growth of Vietnam - 2014 to 2018

Year	2014	2015	2016	2017	2018	Average
Growth rate	5.98%	6.68%	6.21%	6.81%	7.08%	6.55%
Global Rank	37	20	23	18	10	

Source: Compiled from TheGlobalEconomy.com, reports 2014 to 2018

The global average growth rate for 2018 was 3.31%. In 2018 Vietnam had the 10<sup>th</sup> highest growth rate of 7.08%. During the last five years Vietnam was growing at an annual average rate of 6.55%, which is one of the highest in the world. Currently the global growth is slowing amid sluggish investment and weakening trade. Like many countries, Vietnam's economy is facing challenges, with consumption softening and investment slowing, which calls for immediate action from all stakeholders to retain the progressive growth of the economy for a better future.

#### 4.3. Infrastructure

Infrastructure is a major determinant of FDI. Excellent infrastructure plays a major role in the productivity and profitability of Multinational Corporations (MNCs), and thus, their decision about FDI location. Table 5 gives the global ranking of Vietnam for the period 2014 to 2019 based on road connectivity, quality of road infrastructure,

railroad density, efficiency of train services, airport connectivity, efficiency of air transport services, liner shipping connectivity, efficiency of seaport services, utility infrastructure, electricity access, electricity supply quality, exposure to unsafe drinking water and reliability of water supply.

Table 5. Infrastructure: Global Competitiveness Index Ranking of Vietnam - 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
Global Rank	81	76	79	79	75	77

Source: Compiled from Global competitiveness reports 2013- 2014 to 2019

Infrastructure sector is a key driver for the economy. The sector is highly responsible for propelling Vietnam's overall development and the Government is continuously investing in infrastructure projects and is keen on initiating policies encouraging the private sector players to heavily invest in the infrastructure projects, that would ensure time-bound creation of world class infrastructure in the country. In spite of all this, the infrastructure still seems to be insufficient and Vietnam is ranked 77 in the Global competitiveness report, 2019. For getting a clearer picture a probe is made into the Logistics Performance Index.

#### 4.3.1. Logistics Performance Index

Logistics is the backbone of trade, and good logistics can reduce trade cost and make countries compete globally. Getting logistics right, means improving infrastructure, skills, customs and regulations, policies and governance at the right proportion. The Logistics Performance Index (LPI) is reported by the World Bank once in every two years, based on qualitative and quantitative data on six core performance components: (1) The efficiency of customs and border clearance, (2) The quality of trade and transport infrastructure, (3) The ease of arranging competitively priced shipments, (4) The competence and quality of logistics services, (5) The ability to track and trace consignments, (6) The frequency with which shipments reach consignees within scheduled or expected delivery times. Table 6 gives the ranking of Vietnam 2014 to 2018.

Table 6. Logistics Performance Index: Ranking of Vietnam - 2014 to 2018

Year	LPI	Parameter-wise Global ranks					
	Global Rank	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
2014	48	61	44	42	49	48	56
2016	64	64	70	50	62	75	56
2018	39	41	47	49	33	34	40

Source: Logistics Performance Index, 2014 - 2018, the World Bank

Vietnam's ranking in the Logistics Performance Index has improved from 48 in 2014 to 39 in 2018, in spite of a decline in 2016. The improvement is appreciable in all the six pillars but the national has to take more serious steps to improve on this in order to enhance its competitive advantage. The position of Vietnam among the emerging markets is at rank 11 according to the Agility Emerging Markets Logistics Index, 2019

#### 4.4. Productive Labor Market

The vibrant diversified labor force in Vietnam attracts foreign direct investments. When international investors look for an investment destination, considerations about the skilled nature of the labor force is a matter of priority that determines their scope of success in a country (Brakman & Garretsen, 2008). Table 7 gives the data for the labor force which comprises people with ages 15 and older who supply labor for the production of goods and services during the period of study. It includes people who are currently employed and people who are unemployed but seeking work as well as first-time job-seekers.

Table 7. Labor Force in Vietnam - 2014 to 2018

Year	2014	2015	2016	2017	2018	2019
Labor Force (million)	54.92	55.53	55.77	56.38	56.83	57.25
Global Rank	10	11	11	11	11	12

Source: Compiled from *TheGlobalEconomy.com* reports 2014 to 2018

In 2019 the labor force in Vietnam was 57.25 million. Throughout the period of study Vietnam had been retaining positions 10 to 12, and the demographics of Vietnam is young. According to Worldometers, the median age in Vietnam is 30.8 years, and Nielsen has estimated that 60% of Vietnamese are under the age of 35.

Now let us look at the labor market efficiency, Table 8 gives the ranking for Vietnam on labor market efficiency during 2014 to 2019 based on cooperation in labor-employer relations, flexibility of wage determination, hiring and firing practices, redundancy costs, active labor market policies, workers' rights, ease of hiring foreign labor, internal labor mobility, effect of taxation on incentives to work, pay and productivity, reliance on professional management, and the ratio of women in labor force.

Table 8. Labor Market Efficiency: Global Competitiveness Index Ranking of Vietnam - 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
Global Rank	49	52	63	57	90	83

Source: Compiled from *Global competitiveness reports 2013- 2014 to 2019*

An efficient labor market, easy availability of skilled labor, the ready availability of training facility and capacity to attract and retain right talent from within the country and other parts of the globe are the most important factors that attract international investors. Vietnam is ranked 83 out of 141 nations ranked which is appreciable. The country also invests more money in education than other developing countries, but there is still lots of room for improvements if Vietnam wants to boost its FDI attractiveness. To improve this Vietnam may have to look into its education and training system and ensure that the students graduating out of their higher education institutions have the knowledge and skills matching their peers graduating out of globally high ranked universities, and that the training institutions in Vietnam are providing trainings that are globally the best. As far as the investors are concerned they can be assured of the ready supply of skilled manpower, but they have to select the most suitable candidates and give them the right orientation.

Vietnam is still a country with low labor costs, the minimum wages in Vietnam remain less than half of what the wages are in China. Vietnam with its low minimum wage and growing economy is a great low-cost alternative to China and more and more investors are setting up their manufacturing companies in Vietnam.

#### 4.5. Political Risk

TNCs usually assess political risk before investing in any country. There are many forms of political risks, but the extreme form is the possibility that the host country will take over a subsidiary. However, this form of political risk is an extreme case and not very common in today's global world. The more common forms of political risk include the negative attitude of the host government to TNCs, blockage of fund transfer, currency inconvertibility, war, bureaucracy, and corruption. Credendo Group provides business and economic data for 200 countries and have classified country risk under different indicators like political risk short term, political risk medium/long term, special transactions risk, transfer risk, expropriation risk and political violence risk; under each of these indicators countries are classified into seven categories: from 1 (low risk) to 7 (high risk); among them the last three are related to direct investments, and let us probe into that a little bite.

##### 4.5.1. Transfer Risk

The currency inconvertibility and transfer restriction risk refers to the inability to convert and transfer out of the host country any funds related to the investment. The average value for Vietnam during the period of study is 4

for each year from 2014 to 2019. Which indicates that currency inconvertibility and transfer restriction risk is average for Vietnam.

#### 4.5.2. Expropriation Risk

The risk of expropriation encompasses all discriminatory measures taken by a host government which deprive the investor of its investment without any adequate compensation; and also includes events of embargo, change of (legal) regime and denial of justice, and the probability of a negative change in attitude towards foreign investments. The average value for Vietnam during the period of study is 3 for each year from 2014 to 2019. Which indicates that expropriation risk is low in Vietnam.

#### 4.5.3. Political Violence Risk

Political violence includes all violent act(s) undertaken with a political objective; and includes: terrorism (political, religious and ideological objectives) and political violence damage (damage to material assets as a result of political violence); business interruption as a result of political violence damage. In order to assess the political violence risk, the index looks at the actual levels of internal violence in and external conflict with a country, but also at the conflict potential that arises from (lingering) internal and external tensions, frustration and dissatisfaction. The average value for Vietnam during the period of study is 3, which indicates that the political violence risk is low for Vietnam. Table 9 gives the consolidated ranking for the period 2014 to 2019.

Table 9. Country Risk: Credendo Group Index Ranking of Vietnam - 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
Transfer risk	4	4	4	4	4	4
Expropriation risk	3	3	3	3	3	3
Political violence risk	3	3	3	3	3	3

Source: Compiled from Credendo Group index reports 2014 to 2019

The international investors can be sure that they will get a warm welcome in Vietnam, their funds will not be blocked, enjoy easy convertibility, and less bureaucracy bottlenecks. Now let us go deeper look into the levels of corruption in Vietnam.

#### 4.5.4. Corruption

Corruption distorts competition and investment and hinders free and fair trade. The study by Mauro (1995) found that corruption lowers investment and thereby economic growth. The study by Tanzi & Davoodi (1997) shows that corruption increases public investment while reducing its productivity. In regard to foreign direct investment, studies have shown that there exist economic consequences of corruption, the study by Smarzynska & Wei (2001) revealed that foreign investor's choice of entry mode may be affected by the extent of corruption in a host country. Corruption makes dealing with government officials, for example, to obtain local licenses and permits, less transparent and costlier, particularly for foreign investors. In this case, having a local partner lowers the transaction cost, such as the cost of securing local permits. At the same time sharing ownership may lead to technology leakage. Both costs of local permits and losses from technology leakage are positively related to the extent of corruption in a host country.

When corruption level is sufficiently high no investment will take place. Transparency International (TI) has published the Corruption Perceptions Index (CPI) since 1995, annually ranking countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys. The CPI generally defines corruption as 'the misuse of public power for private benefit.' Table 10 displays the ranks assigned to Vietnam during the last six years.

Table 10. Corruption: Global Ranking of Vietnam - 2014 to 2018

Year	2014	2015	2016	2017	2018	2019
Global Rank	119	111	113	107	117	96

Source: Compiled from the Corruption Perceptions Index 2014 to 2018 by Transparency International

The ranking by the Corruption Perceptions Index shows that the nation has to improve a lot in containing and controlling corruption, the data in the table shows that there is appreciable improvement, but not sufficient to sit back and relax. Hope the government takes necessary steps to wipe out corruption.

#### 4.6. Interest Rates

High interest rates tend to slow the growth of an economy and reduce the demand for the TNC's products and thus can negatively impact the flow of FDI. High loan interests translate into cost burden of a company and have been evidenced by the companies that decide to halt operations and move to other regions with low interest rates. From the perspective of an investor, low interest rates are better as compared to high rates because returns are high when the interest charges are low. Reduction of interest on loans is being introduced by the government of many countries for the purpose of creating an ideal environment for both domestic and international investments. Destinations with such incentives are bound to attract more investors than destinations with high interest rates. Lending rate is the bank rate that usually meets the short- and medium-term financing needs of the private sector. This rate is normally differentiated according to creditworthiness of borrowers and objectives of financing. Table 11 gives the lending interest rates in Vietnam during the period 2014 to 2018

Table 11. Lending interest rates in Vietnam - 2014 to 2018

	2014	2015	2016	2017	2018
Interest Rate	8.66%	7.12%	6.96%	7.07%	7.40%
Global Rank	77	86	87	81	71

Source: Compiled from TheGlobalEconomy.com reports 2014 to 2018

The global average lending interest rates for 2018 was 11.41%. The lending rate in Vietnam is lower than the global average and is decreasing year after year, which is a good sign as the lenders can avail loans at a lower cost, as the cost of capital impacts the corporate decisions and return on investment measuring parameters. Furthermore, Vietnam's central bank, the State Bank of Vietnam, has cut interest rates from February 2020 and has asked commercial banks in the country to lower their interest rates.

#### 4.6.1. Developed Financial System

The presence of financial institutions with sufficient liquidity and transparency to grant quick loans at competitive rates is an important determinant. As of end-2018, the credit institution system in Vietnam included one totally state-owned bank, three banks with state holdings of above 50%, three compulsorily acquired commercial banks, 28 joint-stock commercial banks, two policy banks, one Cooperative Bank, nine banks with 100% foreign-owned, two joint-ventured banks, 49 foreign bank branches, 26 finance companies and finance leasing companies, four microfinance institutions and 1,183 people's credit funds (State Bank of Vietnam). Table 12 gives the ranking for Financial System of Vietnam 2014 to 2019 based on the availability of domestic credit to private sector, financing of SMEs, venture capital availability, market capitalization, insurance premium, soundness of banks, non-performing loans as percentage of loan portfolio value, credit gap and banks' regulatory capital ratio

Table 12. Financial System: Global Competitiveness Index Ranking of Vietnam - 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
Global Rank	90	84	78	71	59	60

Source: Compiled from Global competitiveness reports 2013- 2014 to 2019

The rank of Vietnam had been improving throughout the period of study, from 90 in 2014 to 60 in 2019, but has to do more to strengthen the financial system.

#### 4.7. Tax Rates and Clarity of Taxation Policies

Lower tax will give corporates and individuals more after-tax income that could enhance the wealth of the corporates, and individuals could use for buying more goods and services, or for saving. Investors prefer lower-tax locations to locate or relocate their businesses.

##### 4.7.1. Corporate Tax

Table 13 gives the corporate tax rates for few selected Southeast Asian Countries, and the averages.

Table 13. Corporate Tax Rates (in %) for select Southeast Asian Countries - 2014 to 2019

	2014	2015	2016	2017	2018	2019
Indonesia	25	25	25	25	25	25
Malaysia	25	24	24	24	24	24
Philippines	30	30	30	30	30	30
Singapore	17	17	17	17	17	17
Thailand	20	20	20	20	20	20
Vietnam	22	22	22	20	20	20
Asia average	22	21.98	21.41	21.08	21.21	21.09
Global average	23.88	23.77	23.62	24.06	24.02	23.79

Source: Compiled from KPMG data

The corporate tax rates are quite reasonable in Vietnam. During the period of study, the corporate tax rates in Vietnam is at the lower end among the Southeast Asian countries; the tax was reduced to 20% since 2017, which has made it lower than the Asian and the global averages. The policy makers may reduce the tax rates little bite more to make Vietnam friendlier to the corporates operating in Vietnam and to attract MNCs from around the globe to invest in Vietnam.

##### 4.7.2. Income Tax

Table 14 gives the individual income tax rates for few selected Southeast Asian Countries, and the averages.

Table 14. Income Tax Rates (in %) for select Southeast Asian Countries - 2014 to 2019

	2014	2015	2016	2017	2018	2019
Indonesia	30	30	30	30	30	30
Malaysia	26	25	28	28	28	28
Philippines	32	32	32	32	35	35
Singapore	20	20	22	22	22	22
Thailand	35	35	35	35	35	35
Vietnam	35	35	35	35	35	35
Asia average	27.2	27.09	27.35	27.65	27.67	27.99
Global average	31.08	30.8	30.97	31.41	31.39	31.23

Source: Compiled from KPMG data

The individual income tax rates are quite high in Vietnam. All the years during the period of study the individual income tax rates in Vietnam is the highest among the Southeast Asian countries, it is also higher than the Asian and global averages. The policy makers will have to give a proper thought as have to reduce it without heavily impacting the revenue of the nation. Lower income tax reduces the cost of running a business, because at the time of salary negotiations the prospective employee looks at the after-tax annual pay package offered. The country

will have to carry out reforms in the taxation policy to attract highly talented and skilled workforce needed for the domestic and MNCs operating in the country.

#### 4.8. Strategic Location / Global Connectivity

Vietnam has a strategic location as it is located in the center of ASEAN. It is close to other major markets in Asia, the most notable neighbor of them being China. Its long coastline, direct access to the South China Sea and proximity to the world's main shipping routes give perfect conditions for trading and foreign direct investments. The number of trade partners are also increasing due to the improved global competitiveness and ease of doing business.

#### 4.9. Availability / Easiness to Import of Raw Materials

Availability of raw materials means that international investors can do business in the country without having concerns for the supply of production materials. Vietnam is reasonably endowed with mineral resources like coal, phosphates, rare earth elements, bauxite, chromate, copper, gold, iron, manganese, silver, zinc, offshore oil and gas deposits, and timber. These wide range of raw materials that can be used for manufacturing processes has motivated many foreign investors to invest in the country. The import export policy is quite friendly and liberal, which permits manufacturers to import those raw materials that are not readily available in the country. But, the government will have to still improve the policies to attract more FDI into the country

#### 4.10. Technology Adoption and Innovation

Technology is an important consideration made by foreign investors because it determines the scope of operational efficiency. From an investment perspective, the lack of efficient technology systems implies that operations would be slow and costly, and, thus, there will be a need for choosing destinations with a higher level of technology. Table 15 gives the ranking for Vietnam on ICT adoption during 2014 to 2019 based on mobile-cellular telephone subscriptions, mobile-broadband subscriptions, fixed broadband internet subscriptions, fiber internet subscriptions and internet users.

Table 15. ICT Adoption: Global Competitiveness Index Ranking of Vietnam - 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
Global Rank	99	92	92	79	95	41

Source: Compiled from Global competitiveness reports 2013- 2014 to 2019

In ICT adoption Vietnam has improved quite gradually at appreciable rate and has reached rank 41 in 2019 from a very low rank of 99 in 2014. But it still has room for improvement, hence it is suggested that the policy makers take more initiatives to encourage faster adoption of ICT. Table 16 gives the ranking for Vietnam on innovation friendliness during 2014 to 2019 based on diversity of workforce, state of cluster development, international co-inventions, multi-stakeholder collaboration, scientific publications, patent applications, R&D expenditures, prominence of research institutions, buyer sophistication and applications made for trademark.

Table 16. Innovation Capacity: Global Competitiveness Index Ranking of Vietnam - 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
Global Rank	87	73	73	71	82	76

Source: Compiled from Global competitiveness reports 2013- 2014 to 2019

In innovation friendliness Vietnam is having a lower rank of 76, which calls for immediate intervention from the part of the policy makers. Now let us look at the ranking of by Global Innovation Index (GII), which ranks on criteria that includes institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs. Table 17 gives the ranking of Vietnam in the Global Innovation Index during 2014 to 2019.

Table 17. Global Innovation Index: Vietnam's Ranking - 2014 to 2019

Year	2014	2015	2016	2017	2018	2019
GII	71	52	59	47	45	42
Innovation Inputs	100	78	79	71	65	63
Innovation Outputs	47	39	42	38	41	37

Source: Compiled from the Global Innovation Index 2014 to 2019

Over the last six years, Vietnam's ranking has improved quite appreciably from a low rank of 71 in 2014 to rank 42 in 2019. Its ranking in innovation inputs has improved from 100 in 2014 to 63 in 2019. Similarly, the innovation outputs have also increased from 47 in the year 2014 to 37 in the year 2019. The above data shows that Vietnam requires more investments and more friendly policies to enhance technology adoption and innovations. This is a huge opportunity for both domestic and international investors to invest and reap high returns and at the same time make Vietnam a better place to live and do business.

#### 4.11. Ease of Doing Business

The World Bank Group's Doing Business Report ranks economies based on their ease of doing business. A high ease of doing business ranking means the regulatory environment is more conducive to the starting and operation of a local firm. Table 18 gives the ranking for Vietnam from 2015 to 2020.

Table 18. Ease of Doing Business: Vietnam's Ranking - 2015 - 2020

Year	2015	2016	2017	2018	2019	2020
Global Rank	78	90	82	68	69	70

Source: Compiled from the Doing Business Report 2015 to 2020, World Bank Group

Doing Business data for the past six years show that the position of Vietnam has improved from 78<sup>th</sup> position in 2015 to 70<sup>th</sup> position in 2020, it is easier to file for a new business, get a construction permit and trade goods across the border. Still more has to be done to make Vietnam more investment-friendly and attractive to FDIs.

#### 4.12. Impact of Current Economic Scenario and Government Initiatives in making Vietnam Investment-Friendly

We are facing a crisis the world has never seen the likes of in modern history, a crisis marked by uncertainty. The planet-wide pandemic has caused untold misery to humankind. People everywhere have been robbed of those they love, parents, grandparents, spouses, children and friends.

The high-temperature argument over blame for the coronavirus is rapidly pushing the United States and China into a potentially dangerous Cold War. Many governments from the US to Europe, Japan and Australia move to cut dependence on China exposed by the pandemic. Even before the outbreak of coronavirus pandemic, many companies had their plans to relocate as the costs in China were already trending up for some time, and because of the trade and economic frictions between China and the United States of America. A study by Japanese investment bank Nomura found that 56 companies relocated production from China between April 2018 and August 2019. Out of which, three companies went to India, two to Indonesia, eight to Thailand, eleven to Taiwan and twenty-six to Vietnam. Thus, Vietnam has a great opportunity to emerge as a global manufacturing hub as foreign companies reassess their production bases in China, especially, when the pandemic and attempts to contain it have sharply cut the world's appetite for China's goods and services.

Almost every element of the way business operate has been drastically altered since the start of the virus crisis. The pandemic has revealed the fragility of the modern supply chain, and companies want to ensure that their supply chain is fit for purpose whilst reducing the similar vulnerability in the future. Along with its location, Vietnam's political and social stability, and the consistency of its legislation regarding trade, make it a natural base for manufacturers feeding into global supply chains, where reliability of supply is a prerequisite. There has been an exodus of manufacturing from China, and Vietnam is the obvious choice for relocation.

Rising labor costs in China increase the prices of products, this has forced manufacturers to look for a market with lower labor costs. Vietnam with its low minimum wage and growing economy has a good opportunity to become the next hub for producing labor-intensive goods. Industries that used to flourish in China are now moving to Vietnam. Thus Vietnam is becoming the hotspot of manufacturing instead of China. In addition to top manufacturing sectors such as textile and clothing, Vietnam's manufacturing is also taking a more high-tech direction.

FDI is a critical driver of economic growth, and is a major source of non-debt financial resource for the economic development of Vietnam. Foreign companies invest in Vietnam to take advantage of relatively lower wages, special investment privileges such as tax exemptions, etc. For Vietnam it is a means of achieving technical know-how and generating employment. Vietnam government's favorable policy regime and robust business environment have ensured that foreign capital keeps flowing into the country. Over the years, Vietnam has implemented many tax incentive policies to attract investment, promote economic development, and ensure development among regions. Recently, the country has announced tax exemption for 4 years and 50% tax reduction for the next 9 years or tax exemption for 2 years and 50% tax reduction for the next 4 years (depending on the project by sector or locality, including extended investment). Prioritized invested projects are entitled to incentive tax rates of 10%, 15% or 17% in 10 years or 15 years. Thus for investors seeking alternative destinations to diversify their manufacturing and supply chains, Vietnam is emerging as an alternative hub for global manufacturing, with low labor costs, incentives and regulatory relaxations for manufacturing, and a reduced corporate tax rate, investor friendly laws.

## 5. Conclusion

Vietnam is emerging as an attractive hub for businessmen from all corners of the world and a magnet for foreign direct investment. With its quality investment climate and diverse and enormous investment opportunities, Vietnam continues to attract FDI.

A number of global business indexes and global ranking agencies have recognized the advantages offered by Vietnam and has duly ranked Vietnam as an attractive FDI destination. The parameters making Vietnam an attractive destination is the huge market, expanding infrastructure, strategic location, low political risk, decreasing level of corruption, young growing labor force with diversified skills, competitive labor cost, well-organized financial system, technological readiness and innovation, friendly import-export policies, relatively lower corporate taxes, reform-friendly government and a currency, that is not very volatile. Recently, the government has taken many initiatives, and is in the process of announcing a number of reforms, which includes: reduction of the effective corporate tax rates and extended tax holidays based on the quantum of initial investments. Moreover, the current global economic outlook is precarious due to the U.S.-China trade war and the Novel Coronavirus COVID-19. Vietnam is an attractive option for manufacturers fleeing China.

Vietnam must invest heavily in educational and training in order to produce skilled labor and to upskill the existing labor force with skills needed for the modern high-tech manufacturing industry. It should further liberalize its trade policies in order to benefit from the international relations. At the same, the Government has to bring in policies which would curtail the environmental pollution and overexploitation of resources by the FDI projects.

Limitations of this study is that the impact of current Novel Coronavirus COVID-19 is not fully factored into the study, as it is still an ongoing pandemic, hence the investors are requested to factor in that while making the investment decisions.

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Exchange Rate: VND 1 = USD 0.00004 as on June 19, 2020.



# Agriculture, Manufacturing and Economic Growth in India: A Co-integration Analysis

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## Abstract

This study examined the most debatable question of the last three-decade, i.e., "Does the agriculture growth affect economic growth? "And also assess the long-run relationship between the variables, namely agriculture, manufacturing and economic growth in India with the use of annually data from 1966-to 2016. The study employed unit root and causality test suggested by the Dicky fuller, Phillips-Perron and Granger, respectively. Besides, ARDL techniques used to analyze the relationship among the variables, i.e., agriculture, manufacturing and economic growth for the short as well as a long period. As per outcome, the result shows that uni-directional causality running from manufacturing and economic growth to agricultural growth. Furthermore, uni-directional causality running from economic growth to manufacturing growth in India. Results also showed that bidirectional causal relationship between economic and agriculture growth. It can be concluded that this study support of a very famous statement "agriculture is the engine of economic growth" this statement is valid for the short period of time, but manufacturing contributed more than agriculture sector to the economic growth in the long run in India.

**Keywords:** Agriculture Growth, ARDL Model, Economic Growth, Granger Causality, Manufacturing Growth, Stationarity

**JEL Code:** O10, O11

## I. Introduction

This study examines the most debatable and confusing issue "Does the agriculture sector matters in the economic growth in the case of India." Gardner raised the question on the causal relationship between the two most important variables of the economy, i.e. agriculture and economic growth in his "Elmhirst" lecture in 2003. Gardner (2005) proved that there is a significant positive relationship between agriculture and economic growth. However, the

main question on the directional causality among the variables needs to be discussed. His conclusion was that "an investigation of lags... does not show agriculture as the leading sector." Many studies contradict each other to answer this question which as mentioned above. Some of the scholars argue that transfer of the excess resources (Labors) from agriculture sector always leads to the agriculture driving economic growth and development. While other scholars believe that increasing wages in the non-agriculture sector leads to the increases productivity of agriculture. Thereby implies that one-way causality was running from economic growth to agriculture growth (Lewis, 1954). Some well-known developmental economist emphasized on the non-agriculture sector (Industrial sector) and explain industrial sector is the foundation of the development of the economy, and they biased against of agriculture sector (Schiff, Valdés, & Bank, 1998). But in the 1970s, which low-income countries challenged this view and explain the necessity of agriculture development became part of the conventional wisdom (World Bank, 1982). The classical economist Clark (1940) and Kuznet (1966) clarify the essential facts concerning the agriculture sector in economic growth and development. Lewis (1954) emphasized on the double sector economy based on abundant labour in the agriculture sector and thus transferred from farming to industrial development. Hardly, after few years, Ranis and Fei (1961) extended the two-sector model, which had been adopted by numerous scholars (Matsuyama 1992; Steger 2000; Vollrath 2009) while another scholar Humphries and Knowles (2010) argues that transfer of labour is directly associated with the economy (Economic growth) of the nation.

Most of the classical economist thought that agriculture sector plays the utmost role through production and consumption linkages in the economic growth. Johnston & Mellor, (1961) explain agriculture sector contributes mainly through five interlinkages in the economy for the developing nations, which are the transfer of excess labour to the non-agriculture sector, providing the foods for the domestics consumption, provision of the market for industrial production; savings uses for the investment in the non-agriculture sector; and use of earnings obtained from agriculture export to the finance the import of goods. Apart from, singer (1979) emphasized on agriculture demand led industrialization (ADLI). Adelman et al. (1984) propose that the ADLI appropriate for middle-income nations which are not yet export-driven. Notwithstanding, Gollin, (2009) thinks about that extensive offer of agriculture sector in developing countries does not straightforwardly suggest that economic development must be founded on an ADLI-type. The recently theoretical and pragmatic research on this subject shows the intensity of debate has been increased (Gardner, 2005; Gemmell, Lloyd, & Mathew, 2000; Tiffin and Irz, 2006). Research on this subject is essential because it supports to formulate the appropriate policy (domestic and international) in favour of decision making regarding the allocation of limited resources to different sectors of the economy (especially agriculture and non-agriculture sector).

The main objectives of this article to find out the answer of the most debatable and confusing question "Does the agriculture growth matter in economic growth in the developing countries"? We examine short and long-run causality relationship among the variables, i.e., agriculture, manufacturing and economic growth. This research article divided into five distinct sections; the first part deal with the introduction and underlying problems of study and the second part explains the previous literature which illustrates different views of the researchers regarding this question. Third section deal with data, methodology and analysis and the fourth section primarily deals with empirical results and discussions, and finally, the fifth section explains the conclusion and policy implication based on significant studied variables.

## 2. Previous Studies

Previous studies show the confusing result and remain a dearth of unanimity on the role of the agriculture sector in economic growth and development. Some economist believes that agriculture growth is a precondition to industrial development and economic growth, but ideas of other economist disagree and argue for a different path. Several researchers argued that economic growth depends on the development of the agricultural sector (Schultz, 1964; Gollin, Parente, and Rogerson, 2002). Researchers believe that growth in the agricultural sector could be a catalyst for national growth through its effect on rural income and allocation of resources for transformation into an industrialized economy (Datt & Ravallion, 2002). A prior effort by several developing nations to industrialize their economy without previous agricultural development resulted in depressing economic growth rate and very much skewed income distribution (Bhagwati & Srinivasan, 1975). Timmer (1988) explain agriculture is the secondary sector that indirectly pays to the economic growth and development through its food price stability and

availability of food and poverty reduction. In a hypothetical analysis, Matsuyama (1992) and Baig & Salam (2019) explained agricultural development is the foundation of economic growth for the developing nation while many studies have outlined the theoretical relationship between agriculture and economic growth.

Researcher's findings contradict each other and have not reached on any consensus on this issue. Izuchukwu (2011) found the significant causal relationship between agriculture and economic growth and also argue that there is a significant positive impact of the agriculture sector on the economic growth in Nigeria. On the other side, the result of Dim & Ezenekwe (2013) shows the evidence against this result. While other studies showed that positive causal relationship between agriculture and economic growth by the use of different methodology (Oluwatoyese, 2013; Srikanth & Sathyanarayana, 2011). Recently, in the context of Bangladesh, one of the studies shows that one-way causality exists among agriculture and economic growth (Rahman & Hossain, 2014). Whereas, others found a negative relationship between the variables (Aggrey, 2009). Awokuse & Xie (2015) explained the positive long-run impact of agriculture on economic growth. He considered the agriculture sector as a foundation for developing economies. The relationship between agriculture and economic growth is an empirical question for further investigation. Specifically, earlier research employed the correlation, and ordinary least square techniques may have problems due to spurious regression. However, findings explain only the association among the variables, but it failed to capture the directional causality between agriculture and economic growth. Tiffin & Irz (2006) applied a bivariate Granger's causality model to analyze the causal relationship among the variables and result indicated the strong support in favour of causality running from agriculture to economic growth for the developing countries while the result is inconclusive in the case of a developed nation. Both of them have improved their study on the cross-sectional analysis, as they applied the modern time series in the modeling (i.e., co-integration and ECM) to examine the bi-directional causal relationships between agricultural value-added and economic growth. They show strong indication in support of causality running from agriculture to economic growth in the case of developing countries, but the causality results for developed nations were inconclusive. Another study by Storkey et al. (2013) investigated the causality relationship between agriculture and economic growth and saw a significant causal relationship among the variables. Matahir (2012) employed Johansen co-integration techniques to examine the non-causality relationship between agriculture and another economic sector. He suggests that researchers should stress on the agriculture sector as a vital tool in the analysis of inter-sectoral growth policies. Recently Siami-namini (2017) investigated the impact of service and agriculture sector on the economic growth of sixty-two developing nations. She explains the service sector is directly associated with economic growth while inversely relationship between agriculture and economic growth. Thus, the multivariate causality framework employed to explore the causal relationship between agriculture and economic growth in India. The present study tries to fill the gap in the pragmatic works on the vibrant interaction between agriculture and economic growth. The primary objective of this study is to investigate the short and long-run causal relationship among agriculture, manufacturing and economic growth by the use of autoregressive distributed lag (ARDL) error correction mechanism and Granger's causality approach.

### 3. Data and Methodology

#### 3.1 Data

On the availability of annual times series data obtained from National Account Statistics (NAS) and Reserve Bank of India (RBI) from the period of 1966-2016 of the three variables viz. agriculture, manufacturing, and economic growth to explore the causality relationship for the short as well as a long period of time among the variables.

#### 3.1 Model

This study based on the three crucial variables namely agriculture growth (Gross Value Added), Manufacturing (Gross Value Added) and Economic growth (Gross Domestic Product) denoted by the X, Y, and Z respectively and also take the natural logarithm of each variable. In this model which is given below. Economic growth takes as a dependent variable, whereas agriculture and manufacturing growth are independent variables.

$$\ln(Z) = \alpha_0 + \alpha_1 \ln(X) + \alpha_2 \ln(Y) + U_t \quad (1)$$

**3.1.1 Unit Root Test:** Prior to run the regression, to check the stationarity to evade the spurious regression that misleads the result in the model. Augmented Dicky-fuller (ADF) and Phillips-perron (PP) test employ to detect the stationarity at all the levels (Dickey, & Fuller, 1961).

$$\Delta x_t = \theta_1 + \theta_2 t + \theta_3 x_{t-1} + u_t \dots \dots \dots \quad (2)$$

The null hypothesis implies that unit root in the series and alternate hypothesis means time series as stationary. If the null hypothesis is rejected, times series is stationary. Primarily, we check time series are balanced or not. If balanced (all the variables are stationarity at the same level either integrated order 0 or 1), so at what level time series is stationary. If time series stationary at integrated at order 0. When the variables are trend stationary in the long-run relation, the common practice has been to de-trend the series and to model the de-trended series as stationary distributed lag or autoregressive distributed lag (ARDL) models (Pesaran & shin, 1999). However, we proceed towards the Auto Regressive Distributed Lag Bound Model (ARDL Bound).

### 3.1.2 ARDL Bound Test for Co-integration

This study employed recently developed the ARDL bound testing method to investigate the short and long relationship among the agriculture, manufacturing and economic growth in India. We use the ARDL co-integration techniques (Pesaran & shin, 1999) and (Pesaran et al., 2001), which is basically overcome that problem that arises in the other co-integration models. There are several advantages of ARDL Model comparing to other co-integration models such as Engel and Granger (Engel and Granger, 1987), Johansen and Johansen and Juselius methods. ARDL model is applicable at any situation either variable is integrated order at '0' or '1' level and also at fractionally integrated. And other advantages in the long-run model is that it gives the unbiased and efficient result if the sample size is small and finite (Harris & Sollis, 2003). ARDL model is insufficient for investigation the direction of the causality between the variables. To explore the direction of causality among the variables employed the Granger's causality test. The ARDL equation used in this given as follows.

$$\begin{aligned} \Delta \ln Z_t = C_{01} + \sum_{j=0}^p \alpha_{j1} \Delta \ln X_{t-1} + \sum_{j=0}^p \beta_{j1} \Delta \ln Y_{t-1} + \sum_{j=1}^p \gamma_{j1} \Delta \ln Z_{t-1} + \delta_{11} \ln X_{t-1} + \delta_{21} \ln Y_{t-1} \\ + \delta_{31} \ln Z_{t-1} + \varepsilon_{j1} \end{aligned} \quad (3)$$

$$\begin{aligned} \Delta \ln Y_t = C_{02} + \sum_{j=0}^p \alpha_{j2} \Delta \ln X_{t-1} + \sum_{j=1}^p \beta_{j2} \Delta \ln Y_{t-1} + \sum_{j=0}^p \gamma_{j2} \Delta \ln Z_{t-1} + \delta_{12} \ln X_{t-1} + \delta_{22} \ln Y_{t-1} \\ + \delta_{32} \ln Z_{t-1} + \varepsilon_{j2} \end{aligned} \quad (4)$$

$$\begin{aligned} \Delta \ln X_t = C_{03} + \sum_{j=1}^p \alpha_{j3} \Delta \ln X_{t-1} + \sum_{j=0}^p \beta_{j3} \Delta \ln Y_{t-1} + \sum_{j=0}^p \gamma_{j3} \Delta \ln Z_{t-1} + \delta_{13} \ln X_{t-1} + \delta_{23} \ln Y_{t-1} \\ + \delta_{33} \ln Z_{t-1} + \varepsilon_{j3} \end{aligned} \quad (5)$$

In the above equation, 'X' denotes the agriculture growth, 'Y' denotes manufacturing growth, and 'Z' represents economic growth. Where  $C_{0i}$  are constant terms,  $\delta_{ij}$  are the long term coefficients, and  $\varepsilon_{ji}$  are the white noises error terms. The null hypothesis of no co-integration between the variables is  $H_0: \delta_{11} = \delta_{21} = \delta_{31} = 0$  while its alternatives  $H_1: \delta_{11} \neq \delta_{21} \neq \delta_{31} \neq 0$  in equation 3. In the equations (4) and (5) the null hypothesis is  $H_0: \delta_{12} = \delta_{22} = \delta_{32} = 0$  and  $H_0: \delta_{13} = \delta_{23} = \delta_{33} = 0$  against the alternate hypothesis is that  $H_1: \delta_{12} \neq \delta_{22} \neq \delta_{32} \neq 0$  and  $H_1: \delta_{13} \neq \delta_{23} \neq \delta_{33} \neq 0$  respectively. The optimal lag length determined by the Akaike and Schwarz information criteria. Null hypotheses has been verified by computing the general F-statistics or Wald test and comparing them with two critical bound values (Lower and upper bound), that provide a band covering all possible classifications of the regressors into purely I(0), I(1) or mutually co-integrated. If the estimated value of F statistics is outside to the critical bound values, so the result is conclusive, and if F statistic lies inside critical bound values, in these conditions, the result is inconclusive. When F-statistics is greater than upper bound values, the null hypothesis will be rejected. While F-statistics is below than lower bound value, we can't reject the null hypothesis (Pesaran, 1997 & Pesaran et al., 2001).

### 3.1.3 Granger causality Test

To investigate the direction of causality among the variables. Thus, we use the causality test suggested by the Granger to analysis the causal relationship among agriculture, manufacturing and economic growth (Equation 6, 7 and 8).

$$\Delta \ln Z_t = C_{01} + \sum_{j=0}^p \alpha_{j1} \Delta \ln X_{t-1} + \sum_{j=0}^p \beta_{j1} \Delta \ln Y_{t-1} + \sum_{j=1}^p \gamma_{j1} \Delta \ln Z_{t-1} + u_{j1} \quad (6)$$

$$\Delta \ln Y_t = C_{02} + \sum_{j=0}^p \alpha_{j2} \Delta \ln X_{t-1} + \sum_{j=1}^p \beta_{j2} \Delta \ln Y_{t-1} + \sum_{j=0}^p \gamma_{j1} \Delta \ln Z_{t-1} + u_{j2} \quad (7)$$

$$\Delta \ln X_t = C_{03} + \sum_{j=1}^p \alpha_{j3} \Delta \ln X_{t-1} + \sum_{j=0}^p \beta_{j3} \Delta \ln Y_{t-1} + \sum_{j=0}^p \gamma_{j3} \Delta \ln Z_{t-1} + u_{j3} \quad (8)$$

In equation (6) the coefficients of variables of Agriculture growth and Manufacturing growth statistical different from zero. This shows uni-directional causality running from Agriculture and manufacturing growth to Economic growth. Similarly, in the equation (7), if all the coefficients of agriculture and economic growth are statistically significantly different from zero. This implies that one-way causality running from agriculture and economic growth to manufacturing growth. In equation (8), all the coefficients of manufacturing and economic growth are statistically significantly different from zero. This indicates the uni-direction causality is running from manufacturing and economic growth to agriculture growth. If none of them is statistically significantly different from zero, in this condition no causal relationship between the variables. The adequacy and stability of the specified models were also analysis with various diagnostic tests for coefficients of determination (R-Square), Adjusted R-Square, J-Bera (Normality Test) test, Serial correlation (LM test), heteroscedasticity (White's test) and Structural stability (CUSUM tests and CUSUM Square).

#### 4. Results and Discussion

Descriptive statistics have shown the value of skewness of all variables are moderately greater than zero that indicated all the variables are slightly positively skewed. Economic growth is more skewed than agriculture and manufacturing growth. Moreover, the probability of Jarque-Bera test is higher than 5 per cent we accept the null hypothesis, i.e. "Data is normal" (Table,1).

Table: 1 Descriptive Statistics

Statistics	lnX	lnY	lnZ
Mean	3.9	3.58	4.41
Median	3.89	3.52	4.36
Maximum	4.22	4.3	5.08
Minimum	3.57	3.01	3.9
Standard Dev.	00.18	00.38	00.34
Skew.	00.08	00.28	00.32
Kurto.	1.81	1.89	1.87
J-B Test	3.05	3.29	3.58
Probability	0.21	0.19	0.16

Sources: Computed by the Author

Table 2, presented the results of unit root test (Augmented Dicky fuller and Phillips-perron Test) implies agriculture growth is the stationary at the 1 per cent level of significance at the with or without trend. At the same time, the other two variables are also stationary at the 1 per cent level of significance at the without trend level. The marks of asterisk \*, \*\*, \*\*\* shows 1, 5, and 10 per cent level of significance, respectively.

Table: 2 Unit Root Test

Variables	A.D. Fuller Test			PP Test		
	$T_n$	$T_c$	$T_{ct}$	$T_n$	$T_c$	$T_{ct}$
Agriculture Growth (LnX)	5.53*	0.04	-5.74*	7.46*	-0.49	-5.93*
Manufacturing Growth(lnY)	11.83*	2.40	-1.11	15.82*	7.20*	-0.65
Economic growth (lnZ)	14.46*	3.10**	-0.65	14.66*	4.13*	-0.38

Sources: Computed by the Author. Notes:  $T_c$ , indicated constant,  $T_{ct}$  represent constant and linear trend &  $T_n$  represent neither

After analyzing the stationarity, all the variables are stationary at the integrated order 0. We proceed towards the ARDL model. Prior to run the regression to find out optimal lag with the help of Akaike and schraz information criteria. Table 3, shows the agriculture and manufacturing growth, which contribute the economic growth and development. Thus, comparatively agriculture growth is highly affected by economic growth in the short-run (Table 3). The long-run coefficients of manufacturing growth showed a significant positive relationship between manufacturing and economic growth at the 10 per cent level of significance. Moreover, the coefficient of agriculture growth shows a positive impact on economic growth, but it is insignificant.

Table: 3, Estimating ARDL (1, 1, 1) Model. Long and short run coefficients with ECT (-1). Economic Growth as Dependent Variable:

Variables	Coefficient	Std. Error	t-Ratio [Prob.]
<b>Section (A): Long run coefficients [Estimated]</b>			
Agriculture Growth (lnX)	0.028	0.028	1.00 [0.32]
Manufacturing Growth (lnY)	0.062	0.034	1.79 [0.07***]
Economic Growth (lnZ)	-0.072	0.052	-1.38 [0.17]
<b>Section (B): Short Run Coefficient</b>			
Agriculture Growth ( $\Delta$ lnX)	0.34	0.03	9.64 [0.00*]
Manufacturing Sector ( $\Delta$ lnY)	0.30	0.05	5.60 [0.00*]
ECT (-1)	-0.07	0.00	-8.00 [0.00*]

Sources: Computed by the Author

In table 4, F-statistics, i.e. 20.45 is greater than the critical upper bound value, which shows there is long-run relationship exist among variables at the 1 per cent level of significance. The value of the coefficient of error correction term is small and negative implies to adjust the disturbance in the long-run equilibrium in the slow process.

Table: 4 ARDL co-integration bound testing approach result.

ARDL Model	Optimum Lag Length		F-Statistic
Variables X, Y and Z	(1,1,1)		20.45
Significance level	Critical Bound F-Values		
	Lower	Upper	
1 per cent	3.88	5.3	
2.5 per cent	3.22	4.5	
5 per cent	2.72	3.83	
10 per cent	2.17	3.19	

Sources: Computed by the Author

The specific ARDL Model (1, 1, 1), passes of all the diagnostic tests such as series auto-correlation, heteroscedasticity and normality (Table 5). We accept all the null hypotheses “There is no serial correlation and heteroscedasticity by the LM and white test respectively while in the Jarque-Bera test the null hypothesis are “Data is normal” as p-value are greater than 0.05 level of significance.

Table: 5 Result of Residual Test

Residual Test	F-Stat [Prob.]
Serial Correlation LM Test	0.7
Heteroscedasticity Test	0.8
Jarque-Bera Test	0.19

Sources: Computed by the Author

To check the stability of specific ARDL model, i.e. ARDL (1, 1, 1), we used cumulative sum of recursive residuals and cumulative sum square of recursive residuals suggested by the Brown in his research paper published in 1975.

Figure: 1 Result of Stability of the Model [CUSUM-TEST]

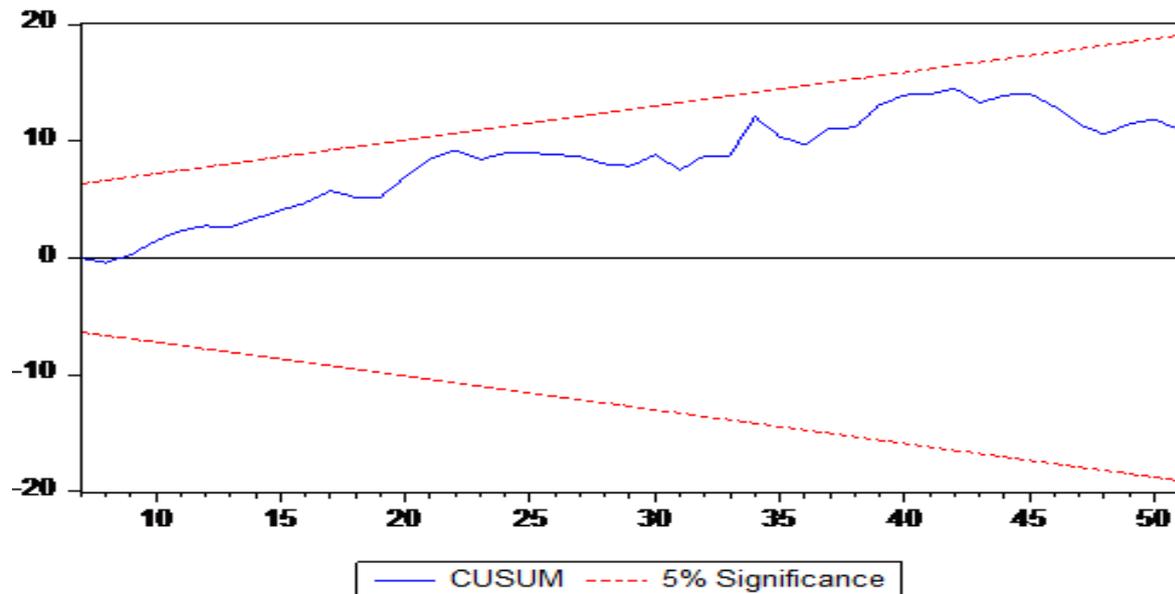


Figure: 2 Result of Stability of the Model (CUSUMQ-Test)

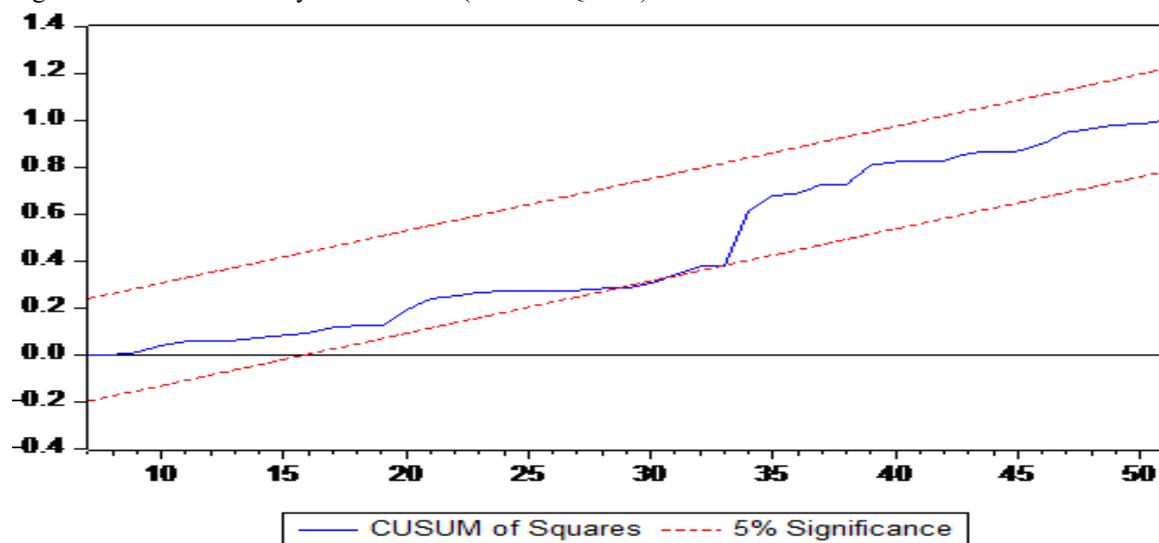


Fig. - 1 and fig.-2 are the plots of CUSUM and CUSUMSQ respectively remains within the 5 per cent critical bounds and confirmed that model stable and policy prescriptions could be reliably derived from the coefficients of the model at the 5 per cent level of critical bound values.

The ARDL Model explores the only short and long-run relationship among the variables. To analysis, the causality among the variables, the Granger's causality test had been used. Result of Granger's causality shown in table 6 indicated that one-way causality running from manufacturing and economic growth to agriculture growth. Moreover, uni-directional causality running from economic growth to manufacturing growth. However, the result also explores the bi-directional causality relation between agriculture and economic growth. Agriculture causes economic growth; viz.a.viz economic growth causes agriculture growth. This result supported various previous studies such as Tiffin & Irz (2006), Sri kanth & Sathayanarayan (2011), Izuchukwu (2011), Oluwatoyese (2013), Storkey et al. (2013) and Rahman and Hossain (2014) in which explored the long-run causality relationship. They found causality running from agriculture sector to economic growth. Apart from, some studies contradict this result, namely Aggrey (2009) and Dim & Ezenekwe (2013) they found no significant positive impact of agriculture on economic growth. Result of this study showed the agriculture sector is primary sector that directly contributes to the economic growth and development though providing food to people of the country and raw materials to the non-agriculture areas.

Table: 6 Causality Relationship (Granger causality Test)

Null Hypothesis	Observation	F-statistics	p-value
lnX does not Granger cause lnZ	50	04.35	00.04
lnZ does not Granger cause lnX	50	17.3	00.002
lnY does not granger cause lnZ	50	0.12	00.72
lnZ does not granger cause lnY	50	8.4	0.005
lnX does not granger cause lnY	50	01.42	0.23
lnY does not granger cause lnX	50	23.7	0.0001

Sources: Computed by the Author

## 5. Conclusion and Policy Implication

To find out the answer of the most important question "Does the agricultural affects the economic growth?" in India from 1966 to 2016 achieved. The researcher employed the ARDL and Granger's causality Model to investigate causality relationship among, i.e. Agriculture, manufacturing and economic growth for the short as well as a long period. In the first step, we used the ARDL co-integration approach to investigate the short and long-run relationship among the variables. In the second step, we applied the Granger's causality model to check the causality among the variables.

The result indicated that one-way causality running from manufacturing and economic growth to agriculture growth. Nevertheless, uni-directional causality running from economic growth to manufacturing growth. However, the result also explored the two-way directional causality between economic and agriculture growth. Agriculture causes economic growth; viz-a-viz economic growth causes agriculture growth. This study supported a very famous statement "agriculture is the engine of economic growth" this statement is valid for the short period of time but in the long run non-agriculture sector contributed more than agriculture sector to the economic growth in the context of India. In India, agriculture is the primary sector of the Indian economy since the 1950s. But from the 1990s, non-agriculture area leads to economic growth and development due to huge public investment. Policymakers ought to emphasize on agriculture as well as the non-agriculture sector for formulating appropriate policy to improve overall economic condition and development in the country. However, empirical results of this study provide to the policymakers a better and clear empathetic of agriculture and economic growth nexus for framing appropriate policy for the short as well as a long period of time that plays an important role to enhance

and upgrade the standard of living of the people of India as a particular and for the low-income countries as a general. Government increase the per cent of investment to GDP in the agriculture sector through the better irrigation facility, improved seeds technology and also open agricultural universities in each state to improve the overall performance of the economy as well as the standard of living of the farmers.

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# Corporate Sustainability Reporting: Empirical Evidence From Ghana

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## Abstract

Global concerns have over the years, been raised over the impact that business operations have on the environment. In response to these growing concerns, companies have begun to provide comprehensive disclosures on the environmental and social impact of their business operations. In this study, we sought to review the trends in disclosure practices as well as examine the extent to which companies are complying with the sustainability reporting guidelines in Ghana. The contextual data from the Akoben special audit on industrial operations supplemented with face-to-face interviews with important stakeholder groups served as the main data source for the study. The findings of this study showed that, even though the general trend in the environmental disclosures has increased over-time, the overall performance ratings of business operations did not meet the standards required for environmental disclosures. Based on the findings, we recommend that in the design and implementation of the rating programme, a broad consultation and active participation of all stakeholder groups must be encouraged to ensure the effectiveness of the programme. Additionally, the regulatory institutions need to be adequately resource by the government in order to strengthen their enforcement and monitoring roles.

**Keywords:** Akoben Rating Programme, Brundtland Commission, Non-Financial Information, Sustainable Development, Sustainability Reporting

## 1. Introduction

The economy of the world is currently faced with a complex range of economic, social and environmental issues including, ozone depletion, climate change, water shortage, labour rights, poverty, forest loss, biodiversity destruction and continued human population growth (Kang et al., 2016). The life-threatening implications of these challenges have drawn criticisms of the traditional capitalist paradigm, prompting calls for a “new accounting system” that recognize the social and environmental impact of organizational and business operations (Gray, 2010). The reporting on sustainability issues is received significance attention from the business community as most corporations are currently integrating the environmental and social impact of their operations into their corporate annual reporting framework.

The term ‘sustainability reporting’ has been defined to “mean the practice of measuring, disclosing and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development’ (GRI, 2014). The concept also refers to “a variety of approaches that organisations can take to communicate their environmental, social and economic priorities, policies, programs and performance” (Willis et al., 2015). The corporate disclosures on sustainability issues has an objective to instil discipline and help an organisation think about and define its long-term vision as well as raise awareness of sustainable practices in the whole organisation (ACCA, 2014). Additionally, sustainability reporting enables an organisation to identify and manage sustainability risks, improve governance, enhance reputation, and build trust (Wokeck, 2019).

The increasing awareness of sustainability issues has generated considerable interest from the research community. A number of studies including, Cho et al. (2015) have examined the trends in academic research to determine the extent to which recent empirical studies differ significantly from those of the 1970s. The results from the empirical studies suggest that, the general focus of early studies were on the discussion of the definitions of sustainability, the significances and the drivers for companies to disclose sustainability information. In more recent studies however, the emphasis has been on investigating factors influencing sustainability reporting and the relationship between sustainability disclosures and corporate performance.

Despite the changing focus of research, most of these studies have mainly been on the approaches to sustainability reporting in developed rather than emerging and developing nations (Masud et al., 2018). According to IMF (2012), developing nations are the most rapidly expanding and lucrative growth markets for business and are therefore more likely to have the most dramatic environmental impacts as globalization, investment, economic growth and business activities significantly increases. Due to the limited attention given to the subject in emerging and developing nations, the study aims at reviewing the trends in disclosure practices and further examines the extent to which mining operations are complying with the sustainability reporting guidelines in Ghana. This current study is important as its findings may contribute to enhancing the corporate reporting practices of organisations as well as ensuring the development of a more robust and efficient framework for protecting and conserving the environment, especially as mining activities have recently been linked with very serious levels of pollution of water bodies and the general degradation of the ecosystem.

The remaining sections of the paper are organized as follows. A review of related literature on the concept of sustainability reporting and sustainable development is first presented. The next section outlines the research method employed for the study. Discussion on the empirical results of firm sustainability reporting level is presented next. The final section provides the conclusions to the study.

## **2. Literature Review: Sustainability Reporting and Sustainable Development**

In 1987, the Brundtland Commission drew the world’s attention to the fact that economic development often leads to deterioration, not improvement in the lives of people. Businesses are most often implicated in sustainable development as their industrial activities have critical effects on society and the environment (Azapagic, 2004). The Brundtland Commission calls for a form of sustainable development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987). To work towards sustainability, businesses need to develop an accounting system that collects analyses and communicates information about sustainability issues based on the integration of environmental, social and economic performance (Elkington, 1998).

Currently, organisations are producing voluntary “stand-alone” sustainability reports that are separate from required financial reporting (Gray & Herremans, 2012). At the same time, governments and stock exchanges have started to require the inclusion of sustainability disclosures, such as environmental liabilities, corporate governance structures and employees’ demographics within existing financial structures (Thistlethwaite & Menzies, 2016). Finally, the integrated reporting movement led by the International Integrated Reporting Council (IIRC) proposed the idea of “integrated reporting” in 2010 (IIRC, 2013). Integrated reporting aims to incorporate material financial and non-financial information - collective mind of those charged with governance and management performance in terms of economic and social well-being in annual reports (Deloitte, 2012).

## 2.2 Benefits of Sustainability Reporting

The literature has well-documented the importance of corporations adhering to the non-financial reporting expectations of the communities in which they operate. Empirical evidence have shown that, sustainability reporting is the most effective way to enhancing investors and stakeholders confidence towards a company during periods of financial crisis and uneven situation. For example, Lee & Yeo (2016) investigating the link between integrated reporting and firm valuation found that, integrated reporting has a positive association with firm valuation. Additionally, high integrated reporting outperforms low content integrated reporting with regard to both stock market performances and accounting performances.

The above argument is supported by the findings of Zhou et al (2016), who studied the benefits of integrated reporting to capital markets. The result showed a high level of alignment with integrated reporting and reduction in cost of capital. This confirms that, integrated reporting enhances the information quality and organization's reporting environment. A similar study by Dhaliwal et al. (2014), using a sample of 31 countries also echoed the same results after controlling for country level determinants such as country legal environment and public awareness. In the study, it was revealed that non-financial disclosures such as social and environmental disclosures are negatively and significantly associated with the cost of capital.

## 2.3 International Reporting Framework

Over the years, several globally accepted sustainability frameworks and metrics have been developed to offer corporations tools, guidance and inspiration to assist with developing their non-financial strategy and reporting. Presented below are some of the international initiatives and frameworks that are shaping sustainability reporting in the world:

### 2.3.1 Global Reporting Initiative (GRI)

Global Reporting Initiative (GRI) is an independent organisation that has pioneered corporate sustainability reporting since 1997. GRI helps businesses, governments and other organizations understand and communicate the impact of business on critical sustainability issues such as climate change, human rights, corruption and many others. With thousands of reporters in over 90 countries, GRI provides the world's most trusted and widely used standards on sustainability reporting, enabling organizations and their stakeholders to make better decisions based on information that matters (GRI, 2018).

### 2.3.2 OECD Guidelines for Multi-National Organisations

The OECD Guidelines is another voluntary initiative consisting of principles of business conduct in areas such as employment and industrial relations, human rights, environment, information disclosure, combating bribery, consumer interests, science and technology, competition, and taxation. Over 40 adhering governments, representing both OECD and non-OECD member countries from all regions of the world, encourage enterprises in their countries to observe the guidelines wherever they operate (OECD, 2013).

### 2.3.3 ISO 26000

ISO is the world's largest developer of voluntary international standards and since it was founded in 1947, has published more than 21,000 international standards and related documents covering almost all aspects of technology and business, from food safety to computers, to agriculture and healthcare. ISO 26000 helps to define social responsibility and translate principles and issues into effective actions based on international norms of behaviour. The reporting standard is designed to assist organizations in contributing to sustainable development, encouraging them to go beyond basic legal compliance, and to promote a common understanding in the field of social responsibility, complementing other instruments and initiatives for social responsibility (ISO 26000).

### 2.3.4 The International Integrated Reporting Council (IIRC)

The International Integrated Reporting Council (IIRC) is a global coalition of regulators, investors, companies, standard setters, the accounting profession and NGOs. The purpose of the integrated reporting framework is to establish guiding principles and content elements that govern the overall content of an integrated report, and

explain the fundamental concepts that underpin them. The framework is a principles-based approach and intends to strike an appropriate balance between flexibility and prescription that recognizes the wide variation in individual circumstances of different organizations while enabling a sufficient degree of comparability across organizations to meet relevant information needs (IIRC, 2013).

## 2.4 Theoretical Framework

The stakeholder theory and legitimacy theory form the theoretical basis for this study. These two theories are the most dominant theories which have been used to explain many perspectives of corporate sustainability reporting.

### 2.4.1 Stakeholder Theory

The idea of stakeholder theory begun to receive significant attention in organizational and management research, after the publication of *Strategic Management: a Stakeholder Approach* by Edward Freeman in 1984. The theory refers to how business works at its best, and how it could work. It is about value creation, trade and how to manage the business effectively. The stakeholder theory argues that firms have a moral obligation to consider and appropriately balance the interest of all stakeholders (Freeman, 1984). Successful firms protect the interest of different stakeholder groups such as: shareholders, creditors, employees, suppliers, customers, communities and the general public (Hill & Jones, 2012).

The theory of stakeholder has fundamentally become a basis of knowledge for companies to secure their relationship with stakeholders through social and environmental reporting. Sustainability reporting is considered as a strategic approach by which organisations denotes stakeholder's participation and reduces information asymmetry. It has been recognised that, organizations taking into account stakeholders' requirements tend to show better performance than those which do not (Masud et al. 2017).

### 2.4.2 Legitimacy Theory

Legitimacy theory is crucial in explaining organization's behaviour in developing and implementing corporate sustainability reporting. The theory is defined as "a generalized perception or assumption that actions of an entity are desirable, proper, or appropriate with some socially constructed systems of norms, values, beliefs and definitions" (Suchman, 1995). The theory views firm's interactions with society as a legitimization process through which organisations continually seek to ensure that their actions are congruent with the norms and value systems of their respective societies (Siddique, 2015). Legitimacy theory is premised on the belief that, there is a social contract between the society and the organisation. As society provides the firm with the authority to own and use natural resources, the firm also has a contract with and a responsibility towards the society to be accountable on how it operates and what it does with the resources (Deegan, 2009).

## 2.4 Empirical Studies on Sustainability Reporting

The literature studying the sustainability reporting practices of businesses has grown significantly over the past three decades. Prior studies including, Deegan & Rankin (2000) employed a sample of annual reports to determine whether there was any difference in the disclosure patterns of firms which had been prosecuted by the EPA. The results of the study showed that, in the absence of strict regulations or requirements businesses willingly provide information favourable to their image, even after prosecution. Wycherley (1997) in a related study conducted an interview of environmental managers to solicit their views on the level of assistance provided by the accountants within their organisations. The study concluded that, organisations benefit if accountants became more involved in the quantification of cost savings associated with improved environmental performance.

De Villiers & Van Staden (2006) employed a content analysis of more than 140 corporate annual reports over a period of nine-years to examine the trends in environmental disclosure by South African companies. The results of the study revealed a reduction in environmental reporting after an initial period of increase, for both mining companies and the top 100 industrial companies. Further, Simionescu & Dumitrescu (2018) used a principal component analysis to examine the relation between corporate social responsibility (CSR) practices and

company financial performance (CFP) for firms listed on the Bucharest Stock Exchange. The empirical findings provided support for a positive association between CSR and CFP, when companies implement CSR policies regarding employees, environmental protection, and ethics as social practices.

Marfo et al. (2015) conducted a comparative examination of the corporate social responsibilities (CSR) reporting among listed companies in Ghana. The study relied on secondary data obtained from the annual corporate reports and found that, the CSR reporting of firms were not stable, all-purpose and more of altruistic in nature. Lastly, Gnanaweera & Kunori (2018) evaluated the determinants of corporate sustainability disclosure practices among Japanese companies listed on Tokyo Stock Exchange (TSE) between the periods, 2008-2014. The study found that, the sustainability disclosure level and sustainability performance indicators have no strong association as there was a weak positive significant linkage among CSDF rate and water consumption, firm's size, and environmental conservation effort.

### 3. Research Methods

To examine the sustainable practices of mining operations, the study adopted a comparative case study of three well-known mining companies (Kinross, Newmont and Gold Fields). Our choice of case institutions was mainly informed by the status of the firms in relation to best environmental practices. The study draws extensively on publicly available data from the Akoben special audits of mining operations for the years, 2009, 2010, 2011 and 2012. The Akoben rating programme is an initiative of the Environmental Protection Agency (EPA) developed to measure the socio-environmental performances of industrial and mining operations. The rating system employs a five-colour scheme of Gold, Green, Blue, Orange and Red, with the colours corresponding to "excellent", "very good", "good", "unsatisfactory" and "poor" environmental performance respectively (see Table 1 for further explanation).

For further insight, we complemented the data from the Akoben with face-to-face interviews with officers of the three mining companies, officials of the EPA as well as key stakeholder groups within the case communities. The study examined also relevant literature, including published articles, books, annual reports and other internal company documents. In analyzing and presenting the data from the interviews and the secondary reports, we employed a qualitative research methodology using a thematic content analysis. Thematic analysis is a method used for systematically identifying, organizing and offering insights into patterns of meaning (themes) across a dataset (Braun & Clarke, 2012). This method is mostly recommended for working with qualitative data as it enables a researcher to actively enter the worlds of native people and render those worlds understandable from the standpoint of a theory that is grounded in the behaviours, languages, definitions, attitudes and feelings of those studied (Denzin, 2017).

Table 1: AKOBEN Rating System

Rating Level	Performance	Implication
Red	Poor	Serious risks
Orange	Unsatisfactory	Not in compliance
Blue	Good	In compliance
Green	Very good	Applies best practices
Gold	Excellent	Committed to social performance

Source: <http://epaghanaakoben.org>

### 4. Results and Discussion

We draw on the data made available in the Akoben longitudinal survey which measures the performance of mining operations along a five-point scale as illustrated in the diagram above from poor to excellent and against

seven aspects (indicators) of the operations of the companies as already indicated. In the survey, the performance of each company was assessed in respect of each indicator and a composite score was derived from these individual ratings as the overall performance for every company.

Table 2: Akoben's Sustainability Performance Ratings

	Legal Issues	Hazard Waste Mgt.	Toxic Releases	Non Toxic Releases	Monitoring Reporting	Environmental Best Practices	Community Complaint Mgt.	CSR	Final Ratings
2009									
Kinross	Blue	Blue	N/A	Blue	Orange	Blue	Green	Gold	Orange
Gold Fields	Blue	Blue	Blue	Blue	Orange	Orange	Green	Gold	Orange
Newmont	Blue	Red	Blue	Orange	Orange	Blue	N/A	Gold	Red
2010									
Kinross	Blue	Blue	Blue	Blue	Orange	Blue	Green	Gold	Orange
Gold Fields	Blue	Blue	Blue	Blue	Blue	Blue	Green	Gold	Blue
Newmont	Blue	Blue	Blue	Blue	Blue	Blue	N/A	Gold	Blue
2011									
Kinross	Blue	Blue	Blue	Orange	Orange	Blue	N/A	Gold	Orange
Gold Fields	Blue	Red	Red	Orange	Blue	Blue	Green	N/A	Red
Newmont	Blue	Blue	Blue	Blue	Blue	Blue	N/A	Gold	Orange
2012									
Kinross	Blue	Blue	Blue	Blue	Blue	Blue	Green	Gold	Green
Gold Fields	Blue	Blue	Blue	Orange	Blue	Blue	Green	Gold	Orange
Newmont	Blue	Blue	Blue	Blue	Blue	Blue	N/A	Gold	Blue

Source: Authors' amalgamation of the EPA Ratings (2009-2012)

In the first year of the Akoben ratings, eleven mining companies were rated with no company receiving a BLUE or better rating, suggesting that all the companies had at least one or more compliance violations. The table above shows that, the three case companies received a significant number of BLUE ratings in the variety of categories with Newmont receiving a RED rating in the hazard waste management category. The composite ratings for Kinross, Newmont and Gold Fields showed ORANGE, RED and ORANGE ratings respectively. These findings suggest that, prior to the institution of Akoben initiative; most firms were operating at variance with Ghana's environmental regulations and standards.

For 2010, the Akoben reported a slight improvement in the final performance ratings of the companies covered under the system. Regarding the disclosure ratings on hazard waste management, non-toxic releases and monitoring reporting, the three case companies managed to obtain a better performance rating than the previous year. The statistics for the period indicated that, Kinross, Newmont and Gold Fields mining companies received an overall composite rating of Orange, Blue and Blue Rating respectively. Additionally, Newmont and Gold Fields were considered to be the only mining companies to have received a Blue rating for the period.

In 2011, the number of reporting firms increased significantly from eleven to fourteen, the disclosure system also reported its first GREEN (very good) rating with five other companies obtaining ORANGE rating and the remaining eight companies received RED (poor) rating. The results as presented in table 1 above shows that, despite the good performance rating of Gold Fields in the previous years, the ratings for 2011 suggested a different situation as the company's overall rating was RED (poor) and its individual component ratings on hazard waste management, toxic releases and non-toxic releases showed a poor and unsatisfactorily performance for the period.

In the ratings for 2012, seven out of the sixteen mining companies received RED rating; two others were rated BLUE, five firms attained ORANGE and the remaining two companies were scored GREEN. The trend in

reporting over the four year period indicated a greater improvement on the composite ratings for all the three companies under investigation. Even though, the final performance rating for Gold Fields was ORANGE, it was an improvement over the previous year's results. Finally, Kinross and Newmont saw a significant improvement in their overall rating performance as none of the individual rating components showed a lower than BLUE result.

#### **4.1 Summary of Interview Responses**

The general feedback from interviews conducted shows that, the integration of sustainability into all aspect of business practices is a key priority to the long-term success of mining operations in Ghana. The interview data shows that, mining companies are currently appreciating the significance of promoting responsible and sustainable mining practices. In 2018 for example, Newmont was named the mining sector leader in the Dow Jones Sustainability Index and their assessment grade in CDP (formerly known as Climate Disclosure Project) improved from a rating of B in 2017 to A- in 2018. Aside the adherences to disclosure requirement, mining companies are contributing voluntarily to the development in their host communities. Gold Fields for instance, has been constructing bore holes for the local communities that fall under its catchment area. The action of Gold Fields has seen a significant improvement in the lives of the people as they now have access to portable drinking water. On the part of Kinross, the company was recognised as the best in partnership for community development as well as the best in stakeholder engagement, in the 2018 sustainability and social investments awards organized in the country.

Despite the significant social and economic gains which have been generated from the activities of the mining sector, the country continues to suffer from the negative impact of mining operations on the physical and human environment. Efforts at addressing these challenges, has seen the implementation of various legislative and regulatory measures, including the Mineral and Mining Act, 2006 (Act 703) as amended, which was enacted to replace the Minerals and Mining Law, 1986 (PNDCL, 153). The Mineral and Mining Act, 2006 (Act 703) has the objective of consolidating the disparate mining laws that had earlier on existed as well as ensuring that, the mining operations are conducted in a sustainable manner that protects environment and humans. The details of the interviews with officials of government showed that, the current legislation on mining has succeeded in strengthening and enhancing the level of compliance by mining operations in the country. There were however, few concerns raised in relation to the lack of institutional capacity, especially in the form of human resources, logistics and legal mandate to prosecute offenders as some of challenges confronting state institutions in the enforcement and implementation of the mining laws in the country.

#### **5. Conclusions**

There have been increased global concerns about the impact that business activities have on the society. Most corporations are currently responding to these concerns by adopting a strategic system of reporting which integrates the environmental and social impact of their business operations. The inclusion of sustainability issues into corporate annual reports denotes a firm's commitment towards the achievement of sustainable development. In this paper, we sought to review the current trends in sustainability reporting and assess the extent to which mining operations are complying with reporting guidelines in Ghana. To investigate this, the data obtained from the Akoben audit programme was supplemented with an in-depth interview of government officials as well as sampled representatives of the participating industries.

The results of the study provide strong evidence on the effectiveness of using the environmental performance ratings as a tool in bringing industries into compliance with environmental performance standards. Although, the general trend in the environmental disclosures levels had increased over the study period, the overall performance ratings of both the industrial and mining operations did not meet the standards required for environmental disclosures. The findings suggest an increase in the level of disclosure on pollution from industrial activities; however, the non-toxic discharge noise and vibration compliance level remained relatively low over the period.

On the basis of the findings, the study provides that in the designing and implementation of the rating programme, there should be a broad consultation and an active participation of all stakeholder groups to ensure the effectiveness of the programme. To further promote the level of compliance, a comprehensive environmental programme needs to be designed to educate the different stakeholder groups on the need to effectively and accurately report on all aspects of their operations. Additionally, a regime of incentives such as the public acknowledgement and a scheme of awards should be instituted for good performing companies in order to encourage them to improve on their environmental performance while the poor performing industries are subjected to punitive measures, such as high enforcement as well as increased compliance cost and monetary penalties. Finally, to ensure that companies take sustainability reporting very seriously and put them on their feet, it is recommended for the government to adequately resource the regulatory institutions in order to strengthen their enforcement and monitoring roles.

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# Renewable Energy (Solar) and its Impact on Rural Households' Welfare (Case Study of Badakhshan Province, Afghanistan)

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## Abstract

Energy is a pre-requisite for economic development of a nation. Particularly least developed countries that are not financially able to electrify densely populated rural areas tend to solve this problem through solar energy. Due to CO<sub>2</sub> emissive and cost effectiveness characteristic of renewable energy, it attracted the global climate change debates attention. This study analysed the impact of solar energy on rural households' welfare. The primary data gathered through questionnaire from 200 households in Fayzabad city of Badakhshan province, Afghanistan using random sampling approach. Regression analyses measured welfare through education, health, income and environment. The results showed, that studying hour as an indicator of education remained the same as before at night shift like the nights they used bulbs, local generator electricity or kerosene for lightening purposes, furthermore it was found, households' health status somehow bettered in terms of less hospital visits in a month and their saving increased while using solar power than before paid higher amount for per kilowatt local generator electricity. Energy production via solar panels are not that much full accessible in high capacity to avoid families from destroying environment by collecting wood and fuel for cooking and heating purposes. The research recommends, government should pay more attention to support rural households through further investment on SHS (Solar Household System). And this could easily provide at least primary need of demanders like lightening, heating and cooling purposes.

**Keywords:** Renewable Energy, Afghanistan, Rural Development, Regression Analysis

## Introduction

Energy is a key component of international accepted living standard. Increasing demand for electricity is in line with global and regional economic development. According to the recent evaluation of the World Bank, renewable energy mass production including hydropower reached to 2,195 GW, of which 402 GW is solar PV capacity in 2018 (Zervos, 2018).

Afghanistan is one of the least developed countries of central Asia that drastically suffers from lack of energy. Despite of having abundant natural water basins in central and north eastern regions, sunny days, gas and unexcavated oil mines, it still pays millions US dollar for importing energy from neighbouring countries annually (Rahmatullah Safi, 2019). World Bank recent energy figures shows 97.7 % of Afghan urban citizens have access to electricity, while there is not an accurate data about energy access in most populated rural areas (economy, 2020). But what we exactly know, the only partially accessible energy in suburbs are small-scale diesel generator or off-grid renewable solar electricity. According to the Ministry of Energy and Water, Afghanistan has 300 sunny days throughout its regions and its solar energy production capacity is 222 GW (Sharafmal, 2016). Beside weak education, agriculture, governance, health services and so on, the most significant challenge of citizens who live in suburbs areas are energy shortage. Therefore the only cheap and accessible energy for rural regions are solar, that at least replaced traditional lightening and heating facilities since 2001.

Globally, many published research papers focusing on multi-dimensional impact of solar energy utilization in rural development. A research conducted in Thailand evaluated the efficiency of government's SHS (Solar Household System) project in rural regions, shows that 78% of beneficiaries are providing their electricity need via solar, which distributed by government, furthermore their finding indicates the cause for broken and non-functioning solar facilities in households are misuse and lack of knowledge in utilizing solar energy component including converter, battery and panel (Jitiwat Yaungket, 2013). In the same vein, another research in Malaysia introduced this country as solar energy rich because of its sunny day in a year and clean environment policies. Their result shows that, beside other electricity production factors solar energy can definitely electrified rural households and this in turn helped the country to reduce greenhouse gases (Farhad Hossain, 2015). One of the key problems in electrifying rural areas is the geographical inaccessibility and high cost connection of those areas with national electricity extension system. Considering this, government of India planned solar distribution as an alternative to electrify rural areas. Buragohain 2012 researched the functionality of the program and found, electrifying remote states improved living condition specially schooling (Buragohain, 2012). Internationally, scholars have assessed effects of solar energy on poor and destitute population. As a research in Bangladesh indicates, access to clean solar energy impact beneficiaries' health, through omitting fuelwood and kerosene from their lightening tools basket that produce indoor pollution, consequently this helps households to decrease hospital visits who complained from eye and respiratory disease (Sabbir Ahmed Khan, 2014). Research papers also reported decreasing cost effectiveness of SHS (solar household system), such as Byrne with colleagues evaluated the cost efficiency of off-grid solar energy in autonomous Mongolia state of China. The result shows solar energy is financial cheap rather than gasoline and wind energy. Of course this helps households to save more many instead of payment for expensive per kW gasoline and wind energy.

After establishing new government in 2001 and inception of country's reconstruction program, many projects planned to invest, which one of them was electrify rural regions with solar energy. Since then reports and few research papers written about capacity analysis, efficiency and applicability of the projects. For instance, Fahim and Upham assessed the policies and potential of Afghanistan renewable energy. They explored, Afghanistan has high solar energy potential that will exceed its basic need for decades. In spite of complex institutional energy management, there is more chance to use the resources for development of the sector (Fahimi, 2017). In addition, Afghanistan renewable energy union (AREU) evaluated the role of climate and geography situation of Afghanistan for renewable energy, stating investment on renewable energy going to be more profitable due to its favourability and still 5000 solar projects are implemented in hydropower and solar energy production (Fattahi, 2016). Raheleh with colleagues, assessed the cost efficiency of Afghanistan energy sector. Their findings indicate, in a situation that investment on energy sector for instance, hydropower plant is not affordable for some more coming years, they suggested, solar energy as a reasonable alternative to meet the current market demand both in urban and rural areas (Raheleh Rostami, 2016). Moreover Shohib and Ariaratnam studied the improvement impacts of solar projects on two towns of Parwan province. They found solar projects improved the socioeconomic condition of the households in general, but do not particularly effected the career and income generating activities (Ahmad Shoaib, 2016).

Consequently, given all literature in Afghanistan, there is still a gap on welfare evaluation of solar energy, furthermore lack of literature in assessment of SHS (Solar Household System) in rural areas of Afghanistan and its efficiency on households' living condition seems to be quite weak. Thus, this research through quantitative method considers to explore exclusively welfare impact evaluation of solar energy through education, health, saving and environment. The target population situated in most remote province of Afghanistan that called Badakhshan which is 750 km far from capital Kabul. Badakhshan has 1.1 million population, of which 10% has access to the local diesel generator electricity from 5 to 10 PM. This provinces is known as one of the major natural water basin, but unfortunately highly suffers from lack of electricity.

## Methodology

This study is quantitative and relying on primary data from Fayzabad city of Badakhshan Province, Afghanistan. For this purpose a questionnaire designed based on literature review and used to collect first hand data. The reason behind gathering first data was lack of literature source and empirical evidence from latest renewable energy development since inception in 2001. The questionnaire items were measured using a set of Likert-scale, binary and coding. A group of 200 households observed from target population using random sampling, a method in which, all target population has equally likely chance to include in interview. Although welfare is a broad concept and describes by many internationally accepted factors, but this research merely used education, saving, health and environment as dependent variable to explain households welfare. Education measured by grades the student member of target households got in last semester during solar energy usage and saving was the amount of money a household do not obliged to pay for local diesel generator electricity monthly. Health measured using binary YES/No if a household member recently got sick, while environment asked respondents to what extend they care about their living compass cleanness and greenness. In order to reach to a realistic result based on household status, each mentioned dependent variable formed in to a liner regression models as below,

$$\text{Education} = \beta_0 + \beta_1 \text{age} + \beta_2 \text{gender} + \beta_3 \text{marital status} + \beta_4 \text{number of educated children} + \beta_5 \text{family income} + \beta_6 \text{study hours} + \varepsilon \dots \dots \dots (1)$$

$$\text{Saving} = \beta_0 + \beta_1 \text{family income} + \beta_2 \text{power expenses} + \varepsilon \dots \dots \dots (2)$$

$$\text{Health} = \beta_0 + \beta_1 \text{family income} + \beta_2 \text{sickness} + \beta_3 \text{number hospital visits} + \varepsilon \dots \dots \dots (3)$$

$$\text{Environment} = \beta_0 + \beta_1 \text{family income} + \beta_2 \text{wood purchase} + \beta_3 \text{coal} + \beta_4 \text{oil} + \beta_5 \text{gas} + \varepsilon \dots \dots \dots (4)$$

For further investigating the topic, some hypothesis developed based on above linear regression model as follows,

**H01:** Solar energy increases study hours at night.

**H02:** Solar energy decreases health problem through decreasing indoor pollution.

**H03:** Solar energy has positive impact on households' monthly saving.

**H04:** Solar energy is environmental friendly.

The developed hypothesis will be tested at 95% level of confidence in each linear regression.

## Result

The main target behind this research was to figure out how the solar energy effected the deprived rural household welfare, concentrating on education, income, health and environment. A set of independent variables used to assess their impact on dependent variables. Multiple regression analysis was the econometrics model to conduct the analysis and test the developed hypothesis. Since current research used linear regression, therefore it was important to test each linear model by ANOVA at 95% level.

Table 1: Model test by ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	468.291	6	78.049	14.138	.000b
Residual	927.446	168	5.521		
Total	1395.737	174			

a. Dependent Variable: Education

b. Predictors: (Constant), Oil, Income, Wood, M.Status, Gender, Expense, Coal, Age

The education model tested via ANOVA and the result indicates that it is statistically significant at  $p$  value  $< 0.05$ . Meanwhile linear regression model of education assessed the effectiveness of independent variables on dependent and tested the research hypothesis, which illustrated in table 2.

Table 2: Regression analysis of education.

Model	Coefficient Std.error	Standardized Coefficient Beta	t	Sig.
Constant	.933		.734	.464
Age	.020	.117	1.737	.084
Gender	.381	-.006	-.099	.921
M/Status	.183	-.028	-.421	.674
Family/No	.043	.474	7.338	.000
Income	.000	.236	3.706	.000
Study hour	.037	.007	.115	.909

Dependent variable: Education

As table 2 shows age as demographic variable has 0.117 coefficient. Furthermore gender coefficient is .381, while marital status is 0.183. Family member has also a positive coefficient of 0.043. The two key explanatory variables are income and study hour. Income with .236 coefficient has statistically accepted, that shows one year more education as result of using solar energy increases income 0.236. Study hour with 0.007 coefficient almost indicates near to zero effect and statistically rejected as well, because student member of families invest their night shifts for watching entertaining TV programs rather than studying.

In current research saving used to measures whether utilizing solar helped families to positively alter their financial status. Consequently model tested and linear regression assessed.

Table 3: Saving regression model ANOVA test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2328026680.97	5	465605336.195	18.729	.000b
Residual	4201450804.738	169	24860655.649		
Total	6529477485.71	174			

a. Dependent Variable: Saving

b. Predictors: (Constant), Expense, Age, Gender, Income, M.Status

Saving regression model is statistically significant and shows that model fit in explaining relation between dependent and independent variable.

Table 4: Regression analysis of saving

Model	Coefficient Std.error	Standardized Coefficient Beta	t	Sig.
Constant	.933		-.396	.000b
Income	.000	.571	9.152	.000
Electricity/kw fees	.037	.063	1.009	.314

a. Dependent Variable: Saving

Income as key analysing of above model shows, it has .571 coefficient and is statistically significant as well. In means one thousand investment on solar panel, battery and other appliance could increase saving through local

electricity reduction in cost by 571 AFN, while expenses has 0.063 coefficient, stating investing on solar energy per 1000 Afn could increase 6.3 Afn which is indeed a reduction comparing the time families fully applied local electricity for daily activities.

Table 3: Health regression model ANOVA test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.259	7	.751	.467	.000b
Residual	268.878	167	1.610		
Total	274.137	174			

a. Dependent Variable: Health

b. Predictors: (Constant), Info, Gender, M.Status, Appliance, Income, Expense, Age

ANOVA test for health regression model indicates that, this model is statistically significant

Table 4: Regression analysis of health

Model	Coefficient Std.error	Standardized Coefficient Beta	t	Sig.
Constant	.496		5.183	.000
Expense	.000	.055	.695	.488
Income	.000	-.011	-.135	.892
Sickness	.008	.038	.495	.621
N/hospital visits	.004	-.088	-1.086	.279

a. Dependent Variable: Health

The indoor pollution due to burning wood fuel for lightening and heating purposes may cause eye and respiratory problems. Health measured if respondents visited hospital complaining from aforementioned health problems. The sickness coefficient shows that 3.8 percent relates to the health status of respondents. Furthermore number of hospital visits in a month 8.8 per cent decreased as result of using solar energy.

Table 3: Environment regression model ANOVA test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5745648.192	8	718206.024	46.620	.000 <sup>b</sup>
Residual	2557315.488	166	15405.515		
Total	8302963.680	174			

a. Dependent Variable: Environment

b. Predictors: (Constant), Oil, Income, Wood, M.Status, Gender, Expense, Coal, Age

Environment ANOVA test shows this model is statistically significant and dependent and independent variables positively has relation with each other.

Table 6: Regression analysis of environment

Model	Coefficient Std.error	Standardized Coefficient Beta	t	Sig.
Constant	44.973		-2.977	.003
Wood purchase	.000	-.039	-.900	.370
Coal	.059	.824	18.880	.000

Oil	.192	.149	3.244	.001
Gas	.623	-.031	-.694	.488

Dependent Variable: Environment

Predictors: (Constant), Oil, Income, Wood, Expense, Coal,

The environment regression model postulates that, one percent investment in solar energy decreased pollution by 3.0% by less wood purchasing but is statistically insignificant. Coal has 82.4% effect on increasing pollution and fuel coefficient shows less polluting effect with coefficient of 14.9%. Gas as CO<sub>2</sub> emission factor has negative coefficient, stating one kW solar panel energy decrease gas usage 3.1 Kg.

## Discussion

For obtaining an accurate result from analysed data, some hypotheses developed at  $p\text{-value} < 0.05$  to study the impact of solar energy on considered explanatory variables. Based on findings, education null hypothesis rejected at  $p\text{-value} < 0.05$ . It implies rural schooling system is not that systematic and in line with recent updated of primary education regulation. Second, hourly TV entertainment programs till mid-nights disordered student's learning schedule and made them to do not pay attention to school homework. In case they plan to study till late night, early night TV programs cause fatigue and then are hardly able to cover study hour and eventually feel asleep. Installing solar panel and using for primary task like, mobile charging, lightening, and water boiling has reduced diesel generator electricity usage in a month which is 0.039\$ cent per kW. The hypothesis for saving is statistically approved. Each Afghanis families pay for diesel generator electricity is reduced in term of solar power utilization. This finding is in line with current living situation of the target population, who benefits from local diesel generator only from 5 to 10 PM. This saving effect of off-grid solar energy supports by Byrne and Shen, who conduct a research to evaluate the cost effectiveness of solar in Mongolia and autonomous region of china (Jones Byrne, 1998). Since the research conducted in a province, which residence are socio-economic poor and are not connect to local electricity, therefore lightening and heating tools are traditional relying on wood and kerosene. The target pollution was already using wood for heating water, meanwhile for families who are not connect to the local electricity, kerosene is the only tool for lighting purposes. Both wood and kerosene are producing indoor pollution that results at least respiration and eye problems. In this research health problem assessed by number of hospital visits and type of sickness. The null hypothesis is rejected and alternative proves that solar energy did not decrease indoor health problems, even though a tiny decrease in number of hospital visit has seen in the model. It means solar could only ease the lightening objective of beneficiaries in case study area and the wood usage for cooking and heating still remains as the merely tool that is highly CO<sub>2</sub> emissive. The findings in case of kerosene is in line with Stojanovski et al (2016).

Among many solar energy definition, one of them is described as environmental friendly, thus this research evaluated to find to which extend solar energy usage pattern protected environment. Wood, gas, fuel and coal purchase were the sub-variables to explore the environmental impact of renewable energy. Normally rural residences in case study area provide wood at the cost of forest destruction. The current research result shows, applying solar panel as electricity production source could not avoid households from wood, fuel, coal and gas utilization for routine needs and the null hypothesis rejected and indicates that target population still uses wood and coal for routine heating and cooking purposes. In some ways it is through, because total installed solar panel capacity in each household is between 50-500 W and due to low income in households level it seems impossible to buy high voltage panel and batteries to run cooking stove or heating water for entire house system, therefore they still rely on wood, coal and gas that definitely emit carbon. Despite of all mentioned environmental assessment, solar energy could reduce coal and gas as burning factor for heating water inside kitchen. The finding is supported by Zakaria Zoundi, who have assessed the role renewable energy in CO<sub>2</sub> emission between 1980-2012 (Zoundi, 2017).

## Conclusion

Nowadays, the issue of rural electrification turned in to a big challenge for lease developed countries. Electrifying rural areas through hydropower, coal and fuel electricity is quite expensive and the only cheap and

accessible alternative for suburbs electrification is solar energy. Evidences from Southeast Asian countries shows, access to solar power eased the governments' rural electrification program and almost fundamentally changed living condition for poor portion of societies. Afghan government took some serious step to reduce electricity shortage through establishing small-scale hydropower, solar and wind power projects Since 2001. Meanwhile, due to cheap and accessible solar panels in rural areas, households increasingly replacing the traditional facilities to solar appliance. Fayzabad city of Badakhshan province, Afghanistan constituted the target population, where 200 household randomly selected for interview. The research is quantitative relying on primary data gathered using questionnaire. Considering the willingness for solar energy utilization, this research study conducted to evaluate rural household welfare after solar energy application for their heating and lightening purposes. The welfare concept here analysed using education, health, saving and environment. Furthermore some hypothesis developed regarding welfare explaining variables. In order to explore a concur result the four mentioned variables explaining welfare were formed in two four linear regression model. The result shows, that one hour solar energy usage at night will increase 7% which is 4.5 minutes, but this relation is statistically rejected at p-values>0.05 level. In addition saving regression model result indicates that replacing local diesel generator electricity with solar energy decreased the expenses by 57%, meanwhile this relation were not statistically accepted. In traditional manner focusing on fuel, wood and coal for heating purposes will cause indoor pollution, considering the important of pollution on households health, it was found number of hospital visits because of respiratory and eye problems as result of indoor pollution reduced 8.8% after solar energy usage, while the findings is not statistically accepted. Environmental model expressed wood purchase, coal and fuel usage, where wood purchase assessed as habitat degradation. The result shows, since solar energy usage, wood consumption for heating purpose decreased 3.9%, whereas coal and fuel still remains substantially, but gas consumption decreased as well, because wood and gas are the element that normally uses for daily water heating purposes.

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# Organizational Attractiveness Dimensions and Workplace Authenticity Relationship

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## Abstract

Organizational attractiveness is an important subject of employer branding and has five main factors that listed social, market, application, brand and economic value. These are mainly common factors about that which criteria can be more effective on employees. Authenticity at work can be generally defined that being your true self and acting like that. Authenticity is also an important issue for people's physiological needs at work. Therefore, workplace authenticity and organizational attractiveness dimensions could be related with each other and may authenticity could be a new factor of attractiveness. Because, workplace authenticity affects work engagement and satisfaction in a positive way. In Turkey, there has been no study in this area to provide any empirical evidence about that authenticity is one of the effective factors of organizational attractiveness. This research has focused on to investigate authenticity with its importance level of employees' perspective. The relevant studies and literature review on organizational attractiveness and workplace authenticity are critically reviewed and analyzed. 235 professionals participated in an online survey from top three big cities which are Istanbul, Ankara and Izmir in Turkey. From the age of 22 to 55, in many different sectors and hierarchical level of professionals were participated in this survey. The results showed that authenticity could be an effective dimension of organizational attractiveness as perceived by professionals. Therefore, authenticity may be a beneficial factor and can be used in employer branding strategies.

**Keywords:** Employer Branding, Organizational Attractiveness, Turkish Business Environment, Workplace Authenticity

## 1. Introduction

The meaning of authenticity can be related with acting with real self in the literature. Authenticity can be a significant indicator for the fully-functioning people (Rogers, 1965). In another definition, authenticity can be a psychological need, which is a people's necessity to fulfill themselves before self-actualized process (Maslow, 2013). According to Erickson's words (1994): "It is an individual's own perception that leads to the experience of

authenticity, rather than others' perception of that individual". Recently, a more comprehensive conceptualization of authenticity term has emerged.

Brand equity is one of the differential effect of products and services with the brand name on customer side. It's a measure of each brand's ability for catching up consumer preference and loyalty (Kotler & Armstrong, 2011). Employer branding is like a synonymous of brand equity subject with the one significant difference: internal customers. Internal customers could be defined by employees of organization. Employer branding has been identified as the total efforts of the company to create a desirable place to work for their internal customers and future talents (Llyod, 2002). To occur a desirable place, companies must attract their potential employees in the business environment. Therefore, organizational attractiveness term comes to the agenda. Organizational attractiveness can be explained as the main degree of people's perception about organization and related with employer branding strategies. In another words, it's an individual's general desire of work in a specific organization (Williams, 2013).

There are several reasons to study these two subjects' relationship. Firstly, there is no research about workplace authenticity and its consequences of organizational attractiveness measurement in Turkish business environment. In addition, there are very few studies about this field in the literature. Secondly, interest in authenticity and organizational attractiveness relationship have been existed for years but recently had significant studies demonstrated their connection. In addition, the concept of workplace authenticity had more attention rather than organizational attractiveness factors from the business media (Rosh & Offermann, 2013). The purpose of this research is to make a broader contribution of the relation between organizational attractiveness dimensions and workplace authenticity from perspective of the professionals.

As a result, most of the empirical studies have been done for investigate the relationship between authenticity and organizational culture, also business professionals' perspective of authenticity at work. Many arguments show that workplace authenticity as a significant dimension to consider new business opportunity. There are a few scales and study outputs in this area however workplace authenticity and organizational attractiveness relation was not searched enough in the literature. As already mentioned above, there are no research about this relationship in our country. Therefore, the following hypothesis could be searched:

- H1. Workplace authenticity can be effect on organizational attractiveness in a positive way.
- H2. Workplace authenticity can be measured as a new organizational attractiveness dimension.

For analyzing this hypothesis, an online questionnaire was conducted with a sample of 235 employees living in top three big cities of Turkey. The research examines organizational attractiveness dimensions with different attributes and studied on workplace authenticity.

## **2. Literature Review**

### *2.1 Organizational Attractiveness*

Organizational attractiveness is one of the most important section of employer branding strategies. This section has been argued in many different areas such as management, human resources, marketing, psychology and communication. For explaining the organizational attractiveness, firstly employer branding term must be understood. Employer branding term can be identified as a long-term company strategy for managing the recognition level of employees and creating awareness of potential ones in terms of a specific organization (Sullivan, 2004). It makes an organization to a better and desirable workplace for all employees. Organization culture and identity are affected by employer branding strategies and these also creates either employer brand value in general or organizational attractiveness in specific. An employer brand value shapes the image of organization that in turn affects organizational attractiveness (Backhaus & Tikoo, 2004).

Organizational attractiveness can be explained as "the degree to which a respondent would personally seek a company as an employer and would recommend the company as an employer" (Villamil, 2007). In another study, organizational attractiveness term is defined as intangible and invisible benefits of organization for future

employees (Berthon et al., 2005). Organizational attractiveness also refers to the strategy of employers that indicate their company strengths in order to attract talents. It can be an impressive factor for career choices and job decisions of individuals (Gomes & Neves, 2011). In addition, organizational attractiveness impresses decision of future talents to gather more information about this organization (Cable & Turban, 2001).

An organizational attractiveness depends on professionals' beliefs and thoughts about brand image and employer branding strategies. The more positive beliefs of people's idea of the organization, the more likely they can be affected by these organizations and want to apply for job vacancies in there (Reis et al., 2017). To specify the attractiveness factors and their relative influence on employees are so important to create appropriate employer branding strategies (Berthon et al., 2005; Edwards & Edwards, 2013; Pingle & Sharma, 2013). Successful employer branding strategies helps that to increase reputation and exposure of an organization. Thanks to it, organizational attractiveness can heighten for potential talents (Sullivan, 2004). To occur a sustainable business, organizations have to employ right talents with the high potential. In the 21st century business world, a great number of companies have been present so talented professionals have been looking for the best employers. The best way to hire the most talented people in their own company is to increase the organizational attractiveness.

## *2.2 Workplace Authenticity*

Authenticity is a psychological term and relates being one real self in general. It is defined "as a matter of being true to one's 'inner self' and acting in accordance with existential values rather than instrumental concerns" (Gay & Morgan, 2013). It is also the unimpeded operation of real self in daily work (Goldman & Kernis, 2002). According to Ryan and Deci (2001), authenticity is one of the personality traits that contain meaningful feelings to become true self, self-esteem and self-endorsement. These are comprehensive conceptualization of authenticity and this conceptualization creates a turning point of authenticity term in the workplace studies.

Workplace authenticity can be identified as acting in accordance with one person's own beliefs, rights and values at work that requires a self-awareness. Recently, this term has become more powerful element in the management and human resources area. Authenticity is a significant dimension for the business people to develop their career path (Craddock, 2004). Researches show that professionals look meaningful things in their jobs, they could not be satisfied with financial rewards (Judge & Robert D. Bretz, 1992). For doing this, people have to add something about their instincts and true self to work. Authenticity has also been related with professionals' performance of work and occurring productive teams (Reis et al., 2016). Because, workplace authenticity affects work engagement and satisfaction positively (Metin et al., 2016). To reflect real self while at work makes people feel more comfortable and adopt that workplace more.

Workplace authenticity researches have been focused more on from employees' perspective like relation between authenticity and organizational culture (Reis et al., 2016), work engagement and job satisfaction (Metin et al., 2016), employees' well-being (Ménard & Brunet, 2011). From the different perspective, some studies have been done about leadership that make authentic decisions of leaders and act in an authentic moral manner (May et al., 2003; Leroy et al., 2015). In addition, authenticity measure scales have been currently available in different studies.

An important authenticity measure can be captured by the theory-based concept of authenticity (Wood et al., 2008). This measure is occurred in three dimensions. The first dimension is explained with one person's conscious awareness and actual experiences harmony (self-alienation), second dimension is explained with conscious awareness and actual behavior relation (authentic living), and the last aspect of authenticity is about acceptance of the influences from other people (acceptance of external influence).

However, few of instruments focus on authenticity despite its very clear relevance to the work condition such as work relations, leadership and well-being (Bosch & Taris, 2014). Firstly, Wood et al. (2008) had created an authentic living scale model for analyzing people's authenticity in regular. Based on this study, a new authenticity scale model is created by Reis et al. (2017) for measuring workplace authenticity dimension.

This study has taken the view of authenticity perspective as the driving force behind the development of employer branding strategies in the workplace (Wood et al., 2008). Thanks to it, the relationship between authenticity and

organizational attractiveness was clearly established. So, it can be addressed that authenticity would be a significant factor of future workplace.

### 3. Method

#### 3.1 Research Goal

This study aims to identify that workplace authenticity and organizational attractiveness factors can be related with each other and authenticity can be measured as a new element of attractiveness dimensions. To find out organizational attractiveness factors, a sample of Turkish professionals who have different age, gender, and hierarchical level was measured.

The analysis contains the following steps: authenticity importance level was examined according to responses with different age, gender and hierarchical level. Also, it was compared with the other organizational attractiveness factors.

#### 3.2 Sample and Data Collection Process

Research was implemented with a sample of Turkish professionals. The questionnaire contained Employer Attractiveness Scale (Alniacik & Alniacik, 2012) and Authentic Living Scale (Wood et al., 2008) mix. It was occurred and used by Reis et. al (2017) in another study about measuring employer attractiveness factors. Demographic questions (age, gender, company name and hierarchical level) was also added the questionnaire. The questionnaire was translated into Turkish by the author for doing survey in local language and reaching more respondents, after that translated back into original language. The respondents evaluated importance level of all criteria to apply a new job opportunity with using the five-point Likert scale with a single-question: "How important are the following factors to you in the process of evaluating a new business opportunity?"

This study has obtained data from 235 professionals with diverse profiles and different career stages at top three big cities of Turkey. The sample included 126 men (53.6 percent) and 109 women (46.4 percent). Individuals' ages ranging from 22 to 55 and the majority of respondents' age was between 22 and 35. Another demographic ranking about hierarchical levels, professionals worked as specialists (51.9 percent), after that, executives (19.1 percent), entry levels (13.6 percent), managers (9.4 percent), directors (3 percent) and top management professionals (3 percent).

#### 3.3 Instrument Development

The employer attractiveness scale (Berthon et al., 2005) was used to measure each factors importance about components of organizational attractiveness. This scale was implemented because it has already been used in many international researches thanks to its good reliability (Alniacik & Alniacik, 2012; Reis et al., 2017). The original version contains twenty-five items and five dimensions that are interest value, social value, economic value and application value. Principal component analysis (PCA) was conducted to specify these factors according to our sample and some analyses for the questionnaire was done in SPSS. This was the first part of the analysis. Reliability of the scale was assessed by internal consistency using Cronbach's Alpha coefficient that value 0.901 is highly acceptable (Cortina, 1993). Research data was appropriate for factor analysis according to descriptive statistics that KMO value (0.871) and Bartlett's test of sphericity ( $p < 0.001$ ). Because of the showing weak loadings, seven items were excluded in this test. Although factor loadings could be equal or higher than 0.700, loadings from 0.500 to 0.700 were still acceptable (Hulland, 1999; Hair et al., 2011).

According to analysis, five factors were suggested for the organizational attractiveness with the 69.54% extraction sums of squared loadings. Details were shown in Table 1.

Table 1. Organizational Attractiveness Scale

<i>Dimensions</i>	<i>Factor loadings</i>
<b><i>Market value</i></b>	
“Innovative employer – novel work practices/forward-thinking”	0.717
“The organization produces innovative products and services”	0.720
“The organization both values and uses your creativity”	0.673
“The organization produces high-quality products and services”	0.655
“Working in an exciting environment”	0.753
“Opportunity to teach others what you have learned”	0.629
<b><i>Brand value</i></b>	
“Feeling good about yourself as a result of working for a particular organization”	0.856
“Feeling more self-confident as a result of working for a particular organization”	0.841
“Acceptance and belonging”	0.622
“Gaining career-enhancing experience”	0.621
<b><i>Economic value</i></b>	
“An attractive overall compensation package”	0.713
“An above-average basic salary”	0.742
“Good promotion opportunities within the organization”	0.591
<b><i>Social value</i></b>	
“Supportive and encouraging colleagues”	0.694
“Having a good relationship with your colleagues”	0.679
“Having a good relationship with your superiors”	0.625
<b><i>Application value</i></b>	
“Humanitarian organization – gives back to society”	0.742
“Happy work environment”	0.647

In this study, organizational attractiveness scale contains eighteen items and five factors. Social value: good working environment and relationship styles of employees. Market value: supplying high-quality products and services to customer, with innovative employer, using employee’s creativity in an exciting working environment. Brand value: feeling professional’s more confident and good about themselves because of workplace, gaining career-enhancing experience in customer-oriented organization. Economic value: working employees with good promotion opportunities, above-average salary and compensation packages. Application value: happy work environment in humanitarian organization. These dimensions showed some differences from the original employer attractiveness scale structure (Berthon et al., 2005) because of the Turkish business environment culture.

The four original items of Authentic Living scale (Wood et al., 2008) was used to measure workplace authenticity because of their easiness and reliability (White & Tracey, 2011). These items were modified from the daily-life routine to workplace dynamics by Reis et al. (2017). Organizational attractiveness factors and developing authenticity items were mixed, and the questionnaire contains both scales.

In the first part, only Employer Attractiveness Scale items were analyzed for specified attractiveness factor. After that, authenticity items were added and the new PCA was done for the specified all dimensions. Scale reliability that Cronbach’s Alpha coefficient was 0.919 and KMO value was 0.883 with the significance level ( $p < 0.001$ ).

According to analysis, the new organizational attractiveness dimension was specified with the 71.06% extraction sums of squared loadings in Table 2.

Table 2. Organizational Attractiveness Scale with Authenticity

<i>Dimensions</i>	<i>Factor loadings</i>
<b><i>Market value (MAV)</i></b>	
“Innovative employer – novel work practices/forward-thinking”	0.720
“The organization produces innovative products and services”	0.711
“The organization both values and uses your creativity”	0.656
“The organization produces high-quality products and services”	0.637
“Working in an exciting environment”	0.717
“Opportunity to teach others what you have learned”	0.629
<b><i>Brand value (BRV)</i></b>	
“Feeling good about yourself as a result of working for a particular organization”	0.852
“Feeling more self-confident as a result of working for a particular organization”	0.840
“Acceptance and belonging”	0.615
“Gaining career-enhancing experience”	0.599
<b><i>Economic value (ECV)</i></b>	
“An attractive overall compensation package”	0.706
“An above-average basic salary”	0.699
“Good promotion opportunities within the organization”	0.586
<b><i>Social value (SOV)</i></b>	
“Supportive and encouraging colleagues”	0.706
“Having a good relationship with your colleagues”	0.623
“Having a good relationship with your superiors”	0.631
<b><i>Application value (APV)</i></b>	
“Humanitarian organization – gives back to society”	0.532
“Happy work environment”	0.505
<b><i>Authenticity value (AV)</i></b>	
“To be able to behave in my job in accordance with my values and beliefs”	0.699
“To always feel free to stand by what I really believe in”	0.773
“To be able to be yourself rather than having to please others”	0.651
“To be able to be true to myself in most situations within the firm”	0.757

#### 4. Results

According to Kolmogorov-Smirnov test result, distribution of the data was not normal. Therefore, for analyzing factor relations Spearman correlation method and Wilcoxon signed-rank tests were used in SPSS. Authenticity and organizational attractiveness factors correlations are shown in Table 3. Wilcoxon test outcomes (Z) also the effect sizes (re) for each dimension and descriptive statistics which are mean and standard deviation (SD) were shown in Table 4. To sum up, any differences between authenticity and other organizational attractiveness dimensions were assessed in statistically.

Table 3. Authenticity and Organizational Attractiveness Factors Correlations

	<i>AV</i>	<i>SOV</i>	<i>MAV</i>	<i>APV</i>	<i>BRV</i>	<i>ECV</i>	<i>A</i>	<i>G</i>	<i>HL</i>
<i>AV</i>	-								
<i>SOV</i>	0.440 **	-							
<i>MAV</i>	0.494 **	0.570 **	-						
<i>APV</i>	0.489 **	0.445 **	0.500 **	-					
<i>BRV</i>	0.361 **	0.435 **	0.541 **	0.388**	-				
<i>ECV</i>	0.331 **	0.237 **	0.338 **	0.239**	0.363 **	-			
<i>A</i>	0.031	-	0.014	0.039	0.063	0.041	-		
<i>G</i>	-	0.067	0.145	0.048	-	0.152	0.035	-	-
<i>HL</i>	0.172 *	0.004	-	-0.021	-	-	0.193	-	-
	0.022	0.023	0.051	0.071	**	0.374**			

Notes. AV: Authenticity value, SOV: Social value, MAV: Market value, APV: Application value, BRV: Brand value, ECV: Economic value, G: Gender, HL: hierarchical level. Correlation is significant at \* $p < 0.01$ , \*\* $p < 0.05$  (two-tailed).

Table 4. Wilcoxon Signed Rank Test Output

	<i>A</i>	<i>AV</i>	<i>SOV</i>	<i>MAV</i>	<i>APV</i>	<i>BRV</i>	<i>ECV</i>
<i>Mean</i>	29.59	4.51	4.45	4.37	4.53	4.22	4.18
<i>SD</i>	5.18	0.65	0.63	0.67	0.67	0.77	0.83
<i>Z</i>	-	-	-1.35 <sup>c</sup>	-3.38 <sup>c</sup>	-0.60 <sup>b</sup>	-5.38 <sup>c</sup>	-6.06 <sup>c</sup>
<i>r<sub>e</sub></i>	-	-	-0.08	-0.35	-0.04	-0.22	-0.39

Notes. SD: Standard deviation, Z: Wilcoxon test output, r<sub>e</sub>: effect size. Z<sup>b</sup>: positive ranks, Z<sup>c</sup>: negative ranks.

#### 4.1 Authenticity and Organizational Attractiveness Dimensions Relation

The Wilcoxon signed-rank test was used to analyze data because the data was not normally distributed (Woolson, 2007). The results showed that there were any statistically significant differences between authenticity and other dimensions of organizational attractiveness.

Market value (Z: -3.38\*; r<sub>e</sub>: -0.35), brand value (Z: -5.38\*; r<sub>e</sub>: -0.22) and economic value (Z: -6.06\*, r<sub>e</sub>: 0.39) mean differences were significant ( $p < 0.01$ ).

For analyzing effect sizes, the following criterion was considered: value of 0.1 represents a small effect, value of 0.3 is considered a medium effect, and value of 0.5 is seemed large (Fritz et al., 2012). So, authenticity had medium effect scores for market value, brand value and economic value. Social value (Z: 1.35, p: 0.17, r<sub>e</sub>: 0.08) and application value (Z: -0.60, p: 0.54, r<sub>e</sub>: -0.39) were considered not significant.

#### 4.2 Authenticity: New Organizational Attractiveness Dimension

According to the respondents' demographic variable, authenticity was examined as a new dimension of attractiveness scale. There were collected information from different age, gender and hierarchical level participants in this survey. According to gender, women professionals gave more importance to authenticity variable when making use of an opportunity. Authenticity score mean for 109 Turkish female employees that is 4.63 (SD: 0.52); while 126 male professionals that is 4.41 (SD: 0.73). Mann-Whitney test was used in this study to analyze independent samples which were non-parametric (Siegel & Castellan, 1988). So, there was significant difference between two mean scores (U: 5 566,  $p < 0.05$ , re: -0.17); and the effect size was small.

While a comparison based on hierarchical levels has been made, The Mann-Whitney test was considered. Important score differences were identified in between top managers and directors (U: 6 000,  $p < 0.05$ , re: -0.16), top managers and executives (U: 80 500,  $p < 0.01$ , re: -0.14) also directors and managers (U: 37 000,  $p < 0.01$ , re: -0.13). Effect sizes slightly decreased from top management to middle management, and the other levels considered not significant. Therefore, this result showed that top management professionals gave more importance to the authenticity more than middle management and entry level employees.

Lastly, the third demographic variable was age. As shown in the Table 3, authenticity and age relation considered not significant ( $p$ : -0.058). Therefore, no any statistical tests could not analyze this relation.

### 5. Discussion and Conclusion

This study emphasizes that authenticity can be a measure as a new factor of organizational attractiveness attribute. The results represent that respondents gave more importance to authenticity rather than market value, economic value, brand value and social value. According to Reis et al. (2017), possibility of being one true self in any circumstances and making some decisions with one's own values at work weighed more valuable when making use of a new job opportunity. Other organizational attractiveness factors rather than authenticity could less attract new talents. Mean score of authenticity was higher than most of the attractiveness factors but mean score of application value was also higher than authenticity. The significance level of authenticity mean score was always higher than market value, brand value and economic value. According to respondents, this study approved that authenticity variable had more value than the following: 1) supplying high-quality products and services to customer, with innovative employer, using employee's creativity in an exciting working environment; 2) feeling professional's more confident and good about themselves because of workplace, gaining career-enhancing experience in customer-oriented organization, 3) promotion opportunities, above-average salary and compensation packages. Although authenticity is a new dimension of attractiveness, social value and authenticity relation can be found statistically not significant.

Results also showed that female professionals gave more importance on authenticity rather than males. It can be related with the gender roles. According to Konrad et al. (2000) study, men and women learn their gender roles at an early age stage to interiorize gender concepts that fit with the society's norms. Another study indicates that women more value authenticity rather than men at workplace. Because female professionals generally want to listen their inner voice and working in a good environment with high-value of enjoyment, personal growth opportunities, also good colleagues and superiors (Peterson, 2004). In terms of cultural differences about gender roles, the study of Alniacik & Alniacik (2012) can be a guideline for the local environment. They found that women professionals pay more attention to authenticity factor rather than men, too. In addition, they have observed important differences between men and women in four attractiveness dimensions.

According to hierarchical level, top management professionals value authenticity more than middle management and entry level professionals. This result is in keeping with any other studies. Professionals who have more power and high rank in hierarchical level act like their own values and convictions (Reis et al., 2017). Leaders take up authenticity factor as one of the necessities for a great workplace environment and achieving success (Kerfoot, 2006).

In this study, authenticity and age relation considered not significant. Therefore, age cannot be an effective demographic characteristic in this relationship. Results also showed that many different age groups either generation Y and Z or generation X gave importance in authenticity.

Being yourself at work gain importance day by day in a manner of social aspects. It is not about act like whatever you want but about showing real yourself. According to this study, authenticity can be measured as a relevant dimension of the organizational attractiveness. The results show that all the factors including authenticity have high importance on attractiveness such as market, economic, social, application and brand value. Therefore, authenticity may be beneficial and can be used for the attracting new talents for the companies. Companies can create their employer branding strategies according to organizational attractiveness dimensions and any other differential effects. For a long time, strategies were contained employer attractiveness factors. This study states that a new dimension can be added to related factors, so firms become more competitive in attracting their future talents. If the authenticity would be positioned as a psychological benefit in the company's employer branding strategy, the interest of professionals will increase significantly to its company.

### 5.1 The Limitations of the Research

This study does not examine the organizational attractiveness dimensions in time. How can authenticity and other attractiveness dimensions affect potential employees in their job searching duration? Do these attributes change over time and help people to find jobs? In future studies, researchers can study authenticity dimension effect in time.

Results show that authenticity may be one of the important organizational attractiveness dimensions. Demographic segmentation was limited with the age, gender and hierarchical level. Also, sample size was occurred by only professionals; neither students nor unemployed people can count. In order to conduct a more comprehensive study on this subject, it would be searched on a wider population.

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# The Entrepreneurial Ecosystem in the Caribbean

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## Abstract

The research study was conducted to analyse the entrepreneurial ecosystem in the Caribbean. The aim of this research study was to investigate the impact of education, industry and government on the entrepreneurial ecosystem's development. The research study utilised a secondary research method as well as a critical review of the literature. The research method proved to be helpful in investigating the research issue, and I critically analysed the findings of prior authors. This study found that educational institutions, as well as strategies followed by the government, play a key role in developing the entrepreneurial ecosystem within a country. The ecosystem of entrepreneurship can be viewed as a combination of monetary, educational, and social environments that can either promote entrepreneurship or influence the way entrepreneurship evolves in the area. The evaluation of different educational institutions based on environmental structure, internal key capabilities, research, growing reputation, entrepreneurial activities, and teaching methods, along with the availability of financial resources, showed that the educational institutions in the region are on the right path. However, the lack of quality entrepreneurial education, internationalisation, and exposure to worldwide export markets are some of the factors that are deterrents in achieving a quality entrepreneurial ecosystem.

**Keywords:** Entrepreneurship, Entrepreneurial Ecosystem, Education, Government, Entrepreneurial Activities

## Introduction

In cities and countries around the world, the promotion of entrepreneurship has become a core component of economic development. The "entrepreneurial ecosystem" is the prevailing term for promoting entrepreneurship as an economic growth tool. Nonetheless, myths and misinformation are always attached to the popularity of any revolutionary idea. The Caribbean is gaining attention in this respect due to the increase in entrepreneurial activity over the last few years. Institutions strongly funded by international development bodies such as the World Bank, help in boosting sustainable development activities and collaborations with civic members who understand the local situational factors. Initiatives such as Digital Jam and Start-Up Jamaica were launched in Jamaica in 2012 and the IDB and UNESCO are now joining their programs.

Some of the recent startups in the Caribbean include Agrocentral, Antullial, Auto Data, CamsFormer, CaribWatch, CrimeBot, CropGuard, ComeSeeTv, Edufocal, EZ Learner, eVisa, M-Survey, Node420, Smart Passant, Startup Robot, 10PoundPledge, and Calypso. Looking at this influx of new startups and the boom of entrepreneurship in the region, this article has reviewed the concept of the entrepreneurial ecosystem in detail, and the analysis of

major systems that are present across the world was conducted. This study includes analysis of research regarding the possible market variants which are directly affected by the effectiveness of the ecosystem in which the businesses are developing. Moreover, the research study looks at the triple helix rule and the relation of education, industry, and government, in the development of an entrepreneurial ecosystem.

The research focuses on the necessary factors which can affect every entrepreneurial ecosystem. The existing literature has been reviewed, including case studies to assess the effect of the necessary factors of an entrepreneurial support system on the development of a business. Furthermore, the research includes a review of several pieces of literature on the effect of education in promoting an entrepreneurial ecosystem and identifies the major universities that are striving to become more focused on entrepreneurship. To achieve this goal, these universities have introduced several programs and targeted specific business niches. Additionally, the focus of research has shifted towards analysing the potential hindrances in achieving an entrepreneurial ecosystem similar to the major ones established in the world.

### **Research Aim**

The aim of this study is to investigate the entrepreneurial ecosystem in the Caribbean and to identify key factors linked with the development of the entrepreneurial ecosystem.

### **Research Objectives**

- To understand the concept of the entrepreneurial ecosystem.
- To analyse the impact of education on the development of the entrepreneurial ecosystem.
- To identify key factors influencing the development of the entrepreneurial ecosystem.

### **Literature Review**

The entrepreneurial ecosystem can be defined as a combination of the economic, educational and social environment which can help in promoting a mindset of creating entrepreneurs or affecting the way entrepreneurship in the region develops (Sussan and ACS). The ecosystem of entrepreneurship is an environment that promotes, innovation, creativity, and allows new businesses to develop. For example, in the USA these ecosystems were located in Silicon Valley and Boston, where some of the major tech companies in the world such as Yahoo, Facebook, Apple, and Google are located. Recently a similar trend of establishing such entrepreneurial ecosystems across the world is on the rise. Apart from Boston and Silicon Valley, New York, Seattle, Austin, and Chicago have also seen growth in technology-related organisations, while in other parts of the world similar ecosystems have been established in areas such as Berlin, Singapore, Tel Aviv, and London. An entrepreneurial ecosystem can also be defined as a cluster or a group of companies including startups that are working towards achieving a similar goal by forming a network, achieving flexibility with an exploration of economies of scale.

An entrepreneurial ecosystem can help with finance, market communication, legal support, market analysis, infrastructure, research and development, sales, account management, and marketing communication of a company through the availability of better resources and the creation of a better talent pool. Etzkowitz and Leydesdorff (1995) presented a concept of the triple helix which collectively makes an entrepreneurial ecosystem through certain government policies that are a result of a combination between industry, university, and government (Etzkowitz and Leydesdorff). However, researchers like Learner (2013) believed that an ecosystem is created as a result of industry and university integration and governments have little to no say in either its progress or development (Lerner). However, the entrepreneurial ecosystem is necessary to create an environment where essential gaps can be plugged by the introduction of collective and reformed policies.

Isenberg (2010) published an article in Harvard Business Review with the title, "How to start an entrepreneurial revolution" in which he defined several key conditions that are necessary for the development of any health entrepreneurial ecosystem. Every ecosystem according to Isenberg (2010) should be altered around its unique style instead of adopting something that it is not and it should promote success stories that can further attract new

ventures and business ideas (Isenberg). One other characteristic of an entrepreneurial ecosystem should be its ability to bypass governmental obstacles, and the policies should be built in such a way that it promotes new ideas. Even if those ideas fail to achieve their promises, the system should be built in such a way that they still have the backing of government (Isenberg). Even though access to new monetary investment is not without barriers, it still means that the environment is built in such a way that new investments are encouraged and there is always a lesser chance of failure than success (Isenberg). Furthermore, according to Isenberg (2010), the system should always be reinforced i.e. there was already an effective entrepreneurial system placed that just required government or academic organisations support to uplift the already established cluster of developing industries in the region and is extensively supported by the different entrepreneurial stakeholders that are already operating in the region (Isenberg).

The Entrepreneurial ecosystem of a country or an area has a significant impact on the success of entrepreneurs and the business they develop. Suresh and Ramraj (2012), assessed the importance of the entrepreneurial ecosystem on the success of businesses by evaluating separate case studies. Suresh and Ramraj (2012), stated that until 1985 people believed that only cognitive abilities of individuals and their personality traits define their decisions to become an entrepreneur; however, later it became evident that environmental stability and other factors play a significant role in helping individuals to establish entrepreneurial ventures (Suresh and Ramraj). Suresh and Ramraj (2012), discussed the success story of the Landmark, which is a book retail company and has over 1100 members in its team despite starting with only 18 employees (Suresh and Ramraj).

From just an ordinary bookselling store to one retailing in music, furnishings, books, and toys across the country, the venture is a success story in aspects of its geographical spread, growth, team, revenue, and range of products. Ramaiah the owner of the company obtained the start-up capital from her brother because at that time banks did not provide any loans to retail customers. Apart from providing the initial investment, her family also provided moral support which contributed to Landmark's success. The majority of the retailers were working manually which led towards errors and late deliveries, however, she introduced a computerised system that placed the stock online, with bar codes (Suresh and Ramraj).

Suresh and Ramraj (2012) stated that the case study proved that apart from possessing individual qualities, it is important to have the necessary environmental support which was provided to Ramaiah in the form of financial and moral support from her family (Suresh and Ramraj). Even though a formal entrepreneurial ecosystem for Landmark did not exist, a support system was provided by her family, and without them, it would have been difficult to succeed in that environment.

Currently, the Caribbean countries along with the Dominican Republic, as well as the African and Eastern European ecosystems, are gaining the attention of the world. One of the main reasons is the development of technology-related entrepreneurial activities that are growing at a rapid rate. It is important to study the three basic factors that contribute to the development of creating an entrepreneurial ecosystem. The first factor is the design of universities' curriculum in such a way that it helps in creating talent that is tailored to meet the requirement of the industry. For that purpose, Allahar and Sookram (2019), examines the progress of two universities located in Trinidad and Tobago that are aiming to become leading Entrepreneurial Universities (EU) in the region. The purpose of these universities is to transform into the EU to build a positive relationship between industry, university, and government (Allahar and Sookram).

The two universities studied by Allahar and Sookram (2019), were the University of the West Indies and the University of Trinidad and Tobago. The basic purpose of the research was to evaluate the developments made by the institutions to become compatible with the models of the EU. For this purpose, Allahar and Sookram (2019), conducted qualitative research that was based on two sources and a combination of different secondary resources. Business incubators were considered as one of the major evaluating criteria because they can promote social development and enhance entrepreneurship through cohesion of the three mentioned sectors. The evaluation was based on environmental structure, internal key capabilities, research, growing reputation, entrepreneurial activities, and teaching methods along with the availability of financial resources, growth in publications, new patents filed

and new venture outputs. Based on these factors the conclusion was made that the universities are on the path to becoming fully EU (Allahar and Sookram).

UTT initiated uSTART which is a physical incubator that provides workspaces to students and staff working internally, while the University of the West Indies introduced BizBooster programs which are virtual incubators that are working to target external and internal clients (Allahar and Sookram). These two programs collectively include businesses such as film making, 3-D manufacturing, ICT services, hand-crafted jewellery, cybersecurity systems, technological interaction, digital animation, household and personal services, video games software development, fashion design, clothing manufacture, agriculture-based activities, mobile applications, clean energy development, graphic designing, beauty products manufacturing based on local raw material, and development of an e-commerce facility (Allahar and Sookram). To reap the maximum value of the Triple Helix interrelationships the universities have already formed strong links with industry and market.

### **Business Incubators Introduction**

Around 50 years ago the practice of business incubation originated in various advanced and well-developed countries along with the development of a complex incubation ecosystem including a vast range of incubator types and mechanisms for funding (Allahar and Brathwaite). The trend of incubation reached the Caribbean, as there was a requirement of producing the latest and innovative businesses that would trigger the development of technology and job creation. The experience of business incubation as an innovative establishing instrument in the Caribbean is under-researched and limited. This section addresses various relevant themes such as the definition of incubators, the sponsors, types of incubators and generational development, the processes of incubation, the services provided, and the innovation and promotion within the incubators (Allahar and Brathwaite).

### **Definition of Incubators**

Business incubators are seen by many research scholars as the institutions concerned with the acceleration of growth and operational and economic stability of the entrepreneurial start-ups, by proposing support and targeted services to them (Allahar and Brathwaite). Business incubators have a strong capacity for competitiveness and knowledge agglomeration, innovativeness, and resource sharing as they can create an appropriate environment for dealing with the challenges of the entrepreneurial pursuit.

### **Categories of Incubators**

Categorically, incubators have been divided into two main types i.e. virtual incubators (VI) and physical incubators (PI) (Allahar and Brathwaite). Initially, most incubators were physical locations in which space and workstations were provided in buildings. They were made available and accessible to corporations and cities, either at zero cost or extremely subsidised rates, along with all services provided within the boundaries of the incubator facility. On the other hand, virtual incubators are more advanced as they are derived from the internet and digital technology (Allahar and Brathwaite). The services provided by virtual incubators can be delivered to clients through various online portals, digital communication facilities, and simple emails. This system is similar to the online learning method used in the world that is revolutionising the learning and education system of many countries.

### **The Evolutionary Process of Incubator Development**

The establishment of incubators and this evolutionary process is a credit that a single model can fit various economic conditions, business environments, and cultural contexts, as mentioned in the study of Catapan (2015), related to the impact of the incubators on the cultural, social, and economic conditions in Brazil. It has been suggested that the performance and functioning of any business incubator rely on the quality of service and support provided by the relevant staff members (Allahar and Brathwaite).

## **The Developmental Stages and Services of Business Incubators**

The incubation process encompassed three main stages i.e. the start-up firm, the early stage, and the expansion stage. The establishment of the business incubator was initially considered as an example of the generational evolution; however, later it showed that this development was a complete path followed by three stages (Allahar and Brathwaite). At the first stage i.e. the start-up firm, the business incubators mainly provide pre-incubation assistance such as the assessment of innovation, the planning of business, the business modelling and training. The second stage is the early stage that includes access to finance, mentoring, hosting, training, commercialising, advancing business, and planning. The last stage is the expansion in which the business incubator provides innovation diagnosis, internationalisation support, technology commercialisation, and the development of business (Allahar and Brathwaite). These three stages can also be referred to as pre-incubation, incubation, and post-incubation.

### **Role of Universities in Incubation**

There has been a major role played by the universities in business incubation, as they have adopted it as a way of encouraging the start-up of businesses and the promotion of innovation in the teaching curriculums (Allahar and Brathwaite). Business Incubation (BI) has been a support mechanism for financial institutions, as well as the transfer of innovation and technology in universities.

### **Business Incubation Sponsors**

The funding and sponsorship of BI mainly originated from governments and universities, however various private sector firms and organisations also showed interest and contributed towards the financial progress of the BI (Allahar and Brathwaite). Research has shown that private banks were not among the major contributors, therefore there was no hope for bank loans or financing for the business incubation organisations. The role of government in this matter was crucial, as it supported the business incubation along with interacting with the industry and the universities to fulfil the needs of social and technological development (Allahar and Brathwaite). The role of government is highly visible as it acts as a catalyst for the promotion of entrepreneurship and innovation through new financing programs, and through providing facilities and connectivity of the industry and the entrepreneurs.

Acs and Correa (2014), developed a case-study based research of companies in Latin America and the Caribbean to identify the barriers to their development and creation of an entrepreneurial ecosystem system in the region. The regional entrepreneurial performance was evaluated based on the Global Entrepreneurship and Development Index (GEDI) as this index can measure the capacity of the region in terms of entrepreneurship as a part of the ecosystem (Acs and Correa). Acs and Correa (2014), developed six main criteria to determine the success of highly entrepreneurial ventures in the region. These factors included access to finance, access to global markets, networking, product or service innovation, access to human capital and cultural support (Acs and Correa). The development of these six factors according to Acs and Correa (2014) can result in producing high impact innovators in the region.

The case studies showed that all of the companies had prestigious records with international awards, critical leaps in business development, and training programs. These major themes in those case studies gave them prestige at a local and international level thus gaining trust and credibility (Acs and Correa). However, despite these successful models, the ecosystem of the region is still not developed enough due to certain factors. One of these main factors is the lack of quality education and access to it, as most of the entrepreneurs listed in the case studies have studied abroad, mainly in the United States. Therefore innovation in their businesses is a result of that quality educational system which was tailored specifically for entrepreneurship (Acs and Correa).

Internationalisation and exposure to worldwide export markets are other significant factors in the success of high-impact businesses. The businessmen were effective in many of the cases posed because they were able to direct their expanding operations towards clients abroad (Acs and Correa). The area faces severe structural challenges

that restrict its wider growth and especially lacks entrepreneurial ambition, as evidenced by its low levels of process development, the high expectation for production and risk capital (Acs and Correa).

## Conclusion

There is much work to be done to develop the Caribbean Startup Ecosystem, where it provides not only the technological equivalent of the success that Usain Bolt had in sport, but also the broader influx of small to medium startups which are competitive and generate employment in their nations. Globalisation, driven by the rise of transnational educational institutions of higher business education, is now a characteristic of the developing countries from the region of the Caribbean. Characteristics such as willingness to act, creativity, business expertise, the confidence of investing in different ventures, and teamwork are some individual abilities that help a person to become an entrepreneur. Apart from the general ability of anyone to act according to their intuition and cognitive ability, environmental factors such as those provided by the entrepreneurial ecosystem are also necessary. The overall environment of the region is evolving to become one of the new and leading entrepreneurial hubs of the world in terms of digital innovation and investment. The local institutes are shaping their programs accordingly, to provide a talent pool ready to invest in a more secure environment through cooperative policies. However, the lack of quality entrepreneurial education, internationalisation, and exposure to worldwide export markets are some of the deterrents to achieving a quality entrepreneurial ecosystem.

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# How Brand Awareness Does Not Have a Significant Effect on Customer Loyalty in a Public Company

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## Abstract

This article aims to analyze the impact of Brand Exposure, Customer Engagement, Electronic Word of Mouth, Brand Awareness to Customer Satisfaction and Customer Loyalty. The research design used in this study is descriptive and verification methods with quantitative approaches. Primary data collected using questionnaires distributed to respondents the form of a statement filled based on Likert scale. Quantitative analysis using structural equation modelling. First, Brand Exposure is included in the good category which means that the strategies prepared for the products sold in order to build brand awareness have been rated well by consumers. In addition, Customer Engagement is included in both categories so that the process of the product to provide opportunities for consumers to engage and interact in two-way communication so as to create an interactive dialogue and provide a personal experience that will be remembered by the customer is said to be good. Second, Electronic Word of Mouth is also included in good categories, which means that product reviews distributed to others by using electronic media according to respondents are considered good. Third, Digital marketing strategies measured by Brand Exposure, Customer Engagement, Electronic Word of Mouth variables each have a significant positive effect on Customer Satisfaction, where the better the marketing strategy, the Customer Satisfaction on the product will also increase as well as it should. Fourth, Brand Exposure, Customer Engagement, Electronic Word of Mouth each does not have a significant effect on Customer Loyalty. Social Media Marketing Strategy to Customer Loyalty, the response to the evaluation of a product has been said to be good. Customer Loyalty is included in the category of good means the customer remains to re-subscribe or re-buy selected products or services as a consistent attitude in the future has been said to be good. Fifth, Brand Awareness is included in the good category so that the understanding possessed by consumers has the potential to accept the brand and embed it in their minds every time using the product has been said to be good Customer Satisfaction. Sixth, Based on the results of testing the Brand Awareness hypothesis does not have a significant effect on Customer Loyalty, while Customer satisfaction gives a significant positive effect on Customer Loyalty, so the better the Customer Satisfaction, the Customer Loyalty on the product will also increase as well as it should.

**Keywords:** Brand Exposure, Customer Engagement, Electronic Word of Mouth, Brand Awareness, Customer Satisfaction, Customer Loyalty

## 1. Introduction

Social media has now become a trend in marketing communication. According to Kaplan and Haenlein (2010), social media is a group of internet-based applications that are built on the ideological and technological framework of Web 2.0 and allow the creation of and content exchange of information from internet users. Web 2.0 is the basis for the formation of social media. Social media is a medium for socializing. Social media uses web-based technology to quickly disseminate large amounts of knowledge and information to internet users. Examples of social media that are developing now are: Twitter, Facebook, MySpace, YouTube, etc.

Media communication has traditionally used the "one to many" model, changing to modern media using the internet (communication on social media) with the "many to many" model. Interactivity can be considered as a co-interaction with "many to many" interactions making social media used by companies to create electronic word of mouth (eWOM). Word of mouth (WOM) is the process of conveying information from person to person and has a major role in making purchasing decisions from consumers (Richins & Root-Shaffer, 1988). In commercial conditions, WOM involves the attitude of consumers in sharing the brand, opinion, or reaction about the business, products, or services of others. Positive WOM is a powerful marketing medium for companies to influence consumers. Along with technological developments, word of mouth is now developing also in social media called the central concept in understanding new media. Electronic word of mouth (eWOM). Although it has the same form as the form of word of mouth, eWOM offers various means of exchanging information, anonymously or in secret. Seeing the rapid development of social media, many companies see this as their opportunity to show their products to the public. So companies must have a superior marketing strategy to be able to attract the attention of the users of social media, especially strategies in the company's marketing communications division. Where the results of previous studies indicate that the role of a company's social media marketing communication influences brand awareness / brand awareness of a company's products by those social media users. Every company has an interest in having good Brand Awareness in front of its customers, strong Brand Awareness indicates that the products of a company are well known to the public and of course this will result in the consistency of consumers to remain loyal to the company's products, in the long run, can be maintained well.

As'ad, Abu Rumman and Alhadid (2014), found that there is a strong relationship between marketing strategies carried out through social media on brand equity, this reflects that social media marketing is very important for a company, especially in telephone provider companies. Research conducted by Bruhn, et.al (2012) divides social media into 2 different types, namely firm-created and user generated. Therefore, in the future there is a possibility that the growth of social media in society will have a stronger influence on functional brand image and hedonic brand image. In the information, it was found that social media negatively influences brand awareness, even though the amount is small. Based on the various explanations above, the researcher is interested in doing research entitled "Analysis of the Effect of Digital Marketing through Social Media on Increasing Brand Awareness, Satisfaction, and Customer Loyalty."

The purpose of this study is as follows: To determine the effect of Social Media Marketing Strategies on Brand Awareness. To determine the effect of Social Media Marketing Strategies on Customer Satisfaction. To determine the effect of Social Media Marketing Strategies on Customer Loyalty. To determine the effect of Brand Awareness on Customer Satisfaction. To determine the effect of Brand Awareness and Customer Satisfaction on Customer Loyalty.

## 2. Literature Review

Several studies linking the Analysis of the Effect of Digital Marketing through Social Media on Increasing Brand Awareness, Satisfaction, and Customer Loyalty have been conducted by previous researchers and show the findings of various results. Santoso (2012) found that there is an influence between social media on Customer Retention and the dimensions of social media that affect customer retention are media richness and self presentation. This study suggests that increasing customer loyalty leads to increased customer retention, giving rewards, responding to customer complaints quickly, and using traditional media to support

communication between consumers and producers. Sanusi (2015) draw conclusions as follows: Twitter has a number of advantages and uniqueness compared to other social networks, so that with these advantages can be used by companies to maintain and maintain customer loyalty. Admin Twitter Diva Press strives for customer loyalty, by trying to meet the factors that cause customer loyalty. And the factors that cause customer loyalty can be done through Twitter. Good communication by Diva Press delivered via Twitter can have a positive effect on customers. So the company has a great opportunity to continue to maintain customer loyalty as long as it is able to continue to use Twitter and maximize its role. Senjaya et al (2013) found B2C Perspective Growth which is followed by many players in the industry, forces every coffee shop to always try to present the best for its customers. At present the attention is not only focused on the type of food and drink, but also the atmosphere of the coffee shop which is deliberately set as a suitable place for various situations, for example as a place to gather with friends and family, or as a meeting point for business people, even the most important thing right now is the existence of electric sockets because the digital era is unnoticed, making people dependent on electricity, whenever and wherever. Amalina (2016) the results of data analysis have several limitations in this study, so it can be suggested to subsequent researchers as follows: (1) Conducting research outside the independent variable (Social Media Marketing) that affects brand loyalty, considering there is an effect of 76.8% of other variables outside the independent variable (Social Media Marketing) in this study. Such as conducting research to see the effect of product quality, satisfaction, commitment and other factors that can affect brand loyalty. (2) It is difficult to get responses from Mizone followers in answering interviews conducted before providing an online questionnaire link so that it becomes a consideration for future researchers so that questions in the interview can be entered into an online questionnaire as well as to make it easier for researchers to get responses from online questionnaires without going through interviews first first.

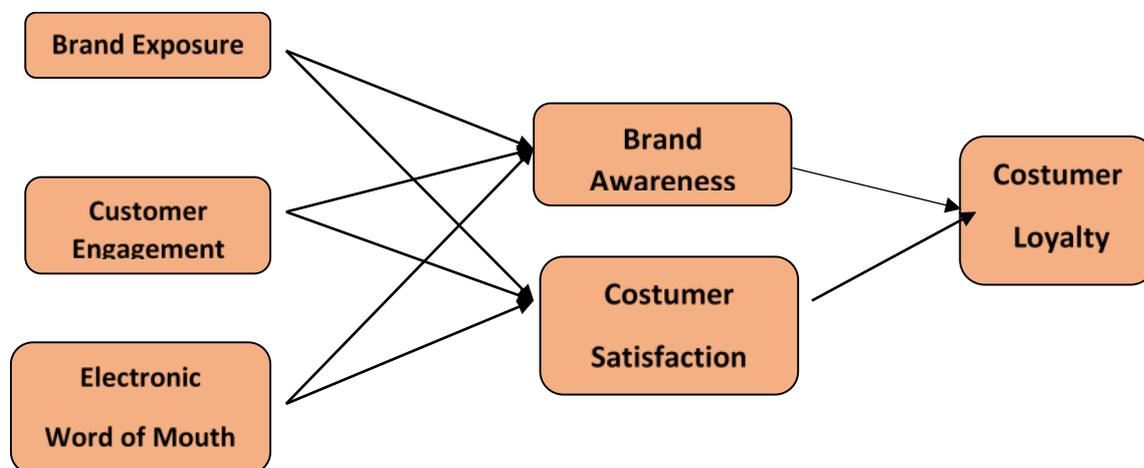


Figure 1. Thinking framework

Source: researcher

### 3. Hypothesis

In Shojae and Azman (2013) explained that brand exposure is a strategy prepared by the company for brands sold in order to build brand awareness. Based on the concept of advertising exposure, consumers who are exposed to advertising, will feel certain feelings and attitudes towards the brand which will then move consumers to buy products. One effect of advertising exposure based on the concept of advertising exposure is that advertising exposure can create brand awareness in the minds of consumers, in addition to that consumers will also know the benefits and the nature of the brand. This study shows that there is a relationship between tagline exposure to brand awareness where the higher exposure to tagline has an impact on the higher brand awareness (Amalina, 2016).

**Hypothesis1:** Brand Exposure has a significant influence on Product Brand Awareness.

The right brand exposure determined by a company will encourage the formation of good brand awareness as well, the better the brand awareness owned by a company will increase the consumption of consumers / goods or

services produced by the company concerned when the consumer decides to re-repurchase, things this indicates that customer satisfaction has been achieved significantly. In other words the right brand exposure will increase customer satisfaction pretty well too (Senjaya et.al, 2013).

**Hypothesis 2:** Brand Exposure has a significant effect on Customer Satisfaction Products.

Customer engagement has a significant role in shaping the brand awareness or brand awareness of a product in the community, the interactive customer of a product marketed by a company will increase the involvement of the company concerned on the product and ultimately brand awareness will also increase (Santoso, 2012).

**Hypothesis 3:** Customer Engagement has a significant influence on Product Brand Awareness

Customer involvement is also very important in increasing the level of customer satisfaction of a product, customer involvement will cause a feeling of belonging to the product concerned and will certainly increase the awareness of customers for further product development, where consumers can provide advice, especially if the product can provide satisfaction real for Santoso consumers (2012).

**Hypothesis 4:** Customer Engagement has a significant effect on Customer Satisfaction Products.

The Electronic Word of Mouth process takes place efficiently in cyberspace and social media, people who give positive reactions to a product in social media will be quickly seen and responded to by other social media users, this will certainly make a product easily remembered by the public, which at the end of the brand awareness of the product in question will also increase (Santoso, 2012).

**Hypothesis 5:** Electronic Word of Mouth has a significant influence on Product Brand Awareness.

The right Electronic Word of Mouth process through social media will help in providing the right information related to the product being marketed, so that every satisfaction or complaint handling of a product will be very easy to share information with users of social media, so that customer satisfaction can be maintained consistently (Senjaya, et.al 2013).

**Hypothesis 6:** Electronic Word of Mouth gives a significant effect on Customer Satisfaction Products.

Brand awareness consists of brand recognition and brand recall performance. Brand recognition is the competence of customers who identify the brand as one, which was previously exposed. Product promotion through brand awareness is one of the easiest and most effective ways to promote commodity related products because they have relatively few differences, which makes it increasingly difficult for their companies to differentiate their brands as long as they do not have strong brands. Customers tend to make decisions quickly about a product if they know or recognize the brand. The better the consumer can identify, remember and remember the company's brand. Because of the trust they have in their brand, it contributes to the level of customer satisfaction (Senjaya et.al, 2013).

**Hypothesis 7:** Brand Awareness has a significant effect on Customer Satisfaction Products.

Brand awareness shows the ability of prospective buyers to recognize or recall that a brand is part of a particular brand category. The role of brand awareness in overall brand equity depends on the level of awareness achieved by a brand. Brand awareness will encourage customer loyalty to the products produced by a company. The role of brand awareness in overall brand equity depends on the level of awareness achieved by a brand. Brand awareness is built by giving a good name and in that name contains a very high meaning and value, where awareness of the brand is built so well continuously throughout the life cycle of the product. Brand awareness is celebrated and heightened through the recognition of a deep brand, the culmination of results when consumers have deep experience of the brand. Consumers who have enough experience of a brand through what they see, hear or even know, the brand will be directly in the memory. Thus, consumers who have brand awareness of the product will tend to choose the product and are loyal so that it can be said that brand awareness is related to customer loyalty (Amalina, 2016).

**Hypothesis 8:** Brand Awareness has a significant effect on Customer Loyalty Products.

In the research conducted, it was found that customer satisfaction has a positive effect on customer loyalty. (Senjaya et.al, 2013).

**Hypothesis 9:** Customer Satisfaction has a significant influence on Customer Loyalty Products.

#### 4. Research Methods

Thus, the subject in this study is, with the unit of analysis which is interpreted as something related to the focus / component under study, namely consumers. Descriptive method in this research is used to describe the research objects used, among others, is to find out the description of marketing strategies through social media consisting of Brand Exposure, Customer Engagement, and Electronic Word of Mouth, Brand Awareness, Customer satisfaction and Customer Loyalty. In this verification method research is used in accordance with research objectives relating to the Social Media Marketing Strategy for Brand Awareness, Customer Satisfaction, and Customer Loyalty, the effect of Brand Awareness on Customer Satisfaction in as well as the influence of Brand Awareness and Customer Satisfaction on Customer Loyalty. In accordance with the objectives of the study as well as the unit of analysis in the study, the population in this study was all consumers, but given the large number of consumers the total population in this study could not be known with certainty and then determined the number of samples where each consumers do not have the same opportunity to be used as research samples and will be determined the number of samples or sample size based on sampling techniques. Especially for the Structural Equation Model (SEM), the determination of the number of samples has its own rules that are different from the determination of the number of samples commonly used in ordinary statistical research. This study has a sample range of 100 - 300. So it can be concluded that the recommendations in this study are the sample size of the data to be used as many as 200 samples. Slovin formula is one of the simple and easy ways to calculate the number of samples. Primary data used in this study are data collected by researchers based on a questionnaire distributed to respondents in this case the consumer is a statement filled in based on the choice of answers provided. The type of questionnaire used was a questionnaire containing statements accompanied by alternative answers that have been provided relating to marketing strategies through social media consisting of Brand Exposure, Customer Engagement, and Electronic Word of Mouth, Brand Awareness, Customer satisfaction, and Customer Loyalty.

The scale used in this research instrument is the Likert scale. By using a Likert scale, each answer is associated with a positive or negative statement. The answer scale provisions are as follows: Strongly Agree: 5, Agree: 4, Quite Agree: 3, Disagree: 2, Strongly disagree: 1. Then to produce a good instrument, it is necessary to test the research instrument, namely the validity and reliability tests. Validity illustrates how the questionnaire is really capable of measuring what will be measured. So it can be said that the higher the validity of a test, the more accurate the test kit is about its target. Since it is never recommended to carry out a significant test on item analysis, the technique used is total item correlation, that is consistency between item items as a whole, which is the basis of person (product moment) correlation. Because in reality it is difficult to find a validity coefficient greater than 0.60, then the validity coefficient between 0.30 - 0.40 is considered high enough to be used in a study. Based on the calculation results, it can be seen that the validity index value of each statement item is greater than the critical value of 0.3 thus it can be concluded that all statement items on all three variables are valid and fit to be used as a measurement tool for Brand Exposure, Customer Engagement, Electronic Word of Mouth variables, Brand Awareness, Customer Satisfaction, Customer Loyalty.

Reliability relates to the degree of consistency and stability of data or findings. In a quantitative view, a data is declared reliable if two or more researchers in the same object produce the same data, or a group of data when broken into two shows different data. The reliability calculation technique used in this study is the Cronbach's Alpha test. The scale reliability coefficient must be tried as high as possible, the magnitude of which is close to one. The decision rule uses the alpha Cronbach critical value, namely if the coefficient value  $\geq 0.70$ , then the instrument is declared reliable and can be used for research. The reliability value of the statement items on the questionnaire of the three variables being studied is greater than 0.70. These results indicate that the questionnaire items on the four variables namely Brand Exposure, Customer Engagement, Electronic Word of Mouth, Brand Awareness, Customer Satisfaction, and Customer Loyalty are reliable. Descriptive analysis is intended to get an overview / description of the responses of respondents regarding Brand Exposure, Customer Engagement, Electronic Word of Mouth, Brand Awareness, Customer Satisfaction, and Customer Loyalty. After the test, the next step the researcher conducts a quantitative analysis assessment as a phenomenal picture of the

current research variables. To find out how the conditions and the level of suitability of each of these variables, the researcher makes categorization in the interval line as follows: The total number of respondents is 200 people and for the largest measurement scale value is 5 while the smallest measurement scale value is 1. b. Obtained an average ideal score is  $5 \times 200 = 1000$  and the average smallest score is  $1 \times 200 = 200$ . The smallest percentage value is  $(200: 1000) \times 100\% = 20\%$ . Obtained range value of  $100\% - 20\% = 80\%$  if divided by 5 measurement scales will get a percentage interval value of 16%, then the category of score interpretation: **Score:** 20% to 36%, **Category:** Very poor/low. >36% to 52%: Not good/low >52% to 68%: Sufficient/moderate >68% to 84%. Good/high: >84% to 99%. Very good/ very high: >99%

#### 4.1 Structural Equation Modeling Analysis (SEM)

A complete SEM modeling basically consists of the Measurement Model and the Structural Model. The measurement model is intended to confirm the dimensions developed on a factor. Structural Model is a model regarding the structure of relationships that form or explain causality between factors. Structural Equations. While the independent variables are all constructs that have lines with arrows connecting to endogenous constructs. This equation is basically built with the following guidelines: Endogenous Variables = Exogenous Variables + Endogenous Variables + Error. Where researchers determine the variables that measure constructs and determine a series of matrices that indicate conditions hypothesized between constructs or variables.

#### 4.2 Conformity Test and Statistical Test

A model is declared feasible if each of these indexes has a cut of value as shown in Table 3.5 below:

Table 1. Goodness of-fit Index

No	Goodness of-fit index	Cut-off Value
1	Chi-square	< chi square Table
2	Significance Probability	$\geq 0.05$
3	RMSEA	$\leq 0.08$
4	GFI	$\geq 0.90$
5	AGFI	$\geq 0.90$
6	CMIN/DF	$\leq 2.00$
7	TLI	$\geq 0.95$
8	CFI	$\geq 0.95$

Source: Developed for this research

#### 4.3 Interpretation and modification the model

The final step in SEM is to interpret and modify the model, especially for models that do not meet the requirements in the testing process. After the model is estimated, the residual must be small or close to zero and the frequency distribution of the residual covariance must be symmetric. Modification of the model is first tested by testing the standardized residual carried out by the model. A cut-off value of 2.58 can be used to assess the significance of the residuals generated by the model. A residual value greater than or equal to 2.58 is interpreted as being statically significant at the 5% level, and this significant residual indicates a substantial prediction error for a pair of indicators.

#### 4.4 Hypothesis test

In conducting hypothesis testing about causality there are two hypotheses, namely:  $H_0$ . The null hypothesis states that the regression coefficient between relationships is equal to zero through the t test which is commonly used in regression models.  $H_1$ . Alternative hypotheses can be used with two things, namely: The level of significance

or probability ( $\alpha$ ), namely the probability of making a type I error, namely the error rejecting the hypothesis when the hypothesis is true. The significance level that is commonly used is 0.05 with the level of significance ranging from 0.01 to 0.1. The relationship between variables with a significance level above 0.05 indicates that the relationship is a significant relationship. The level of confidence, which is the level at which 95% of the sample value will represent the value of the population from which the sample originated.

## 5. RESEARCH RESULT

The number of respondents based on the age of the respondent. The majority 126 respondents 15 years old. Majority of 116 respondents or 58% are respondents with female gender.

### 5.1 Descriptive analysis.

#### 5.1.1. Respondents' Responses Regarding Brand Exposure

Brand Exposure is measured by 12 item statements with 6 dimensions, namely simple, unexpected, persuasive, relevant, entertaining, and acceptable. In the Brand Exposure variable with 12 item statement items and 200 respondents, a total score of 8793 was obtained and a percentage of 73.28%, so that the total score of respondents' responses to the 12 statement items regarding Brand Exposure was included in both categories.

#### 5.1.2. Respondents' Responses Regarding Customer Engagement

Customer Engagement is measured by 7 statement items with 3 dimensions, namely the physical, cognitive, emotional presence of the customer, the intensity of customer participation and activity, and interactive experiences between customers and the company. In the Customer Engagement variable with 7 item statement items and 200 respondents, a total score of 5114 and a percentage of 73.06% was obtained, so that from the total score of respondents' responses to the 7 statement items regarding Customer Engagement are included in both categories.

#### 5.1.3. Respondents' Responses Regarding Electronic Word of Mouth

Electronic Word of Mouth is measured by 4 item statements with 3 dimensions, namely concern for others, express positive feeling, and helping the company. In the Electronic Word of Mouth variable with the number of items statement 4 items and the number of respondents 200 people, obtained a total score of 2174 and a percentage of 72.75%, so from the total score of respondents' responses to 4 items submitted regarding Electronic Word of Mouth are included in both categories.

#### 5.1.4. Respondents' Responses Regarding Brand Awareness

Brand Awareness is measured by 4 items statement with 3 dimensions, namely brands that are often remembered, known and referred to. On the Brand Awareness variable with the number of items statement 6 items and the number of respondents 200 people, obtained a total score of 4397 and a percentage of 73.28%, so that from the total score of respondents' responses to the 6 items submitted regarding Brand Awareness included in both categories.

#### 5.1.5. Respondents Response Regarding Customer Satisfaction

Customer Satisfaction is measured by 3 item statements with 3 dimensions, namely re-purchase, word of mouth, and brand image. In the Customer Satisfaction variable with 3 item statement items and 200 respondents, a total score of 2188 was obtained and a percentage of 76.90%, so that from the total score of respondent responses to 3 item statements submitted regarding Customer Satisfaction included in both categories.

#### 5.1.6. Respondents' Responses Regarding Customer Loyalty

Customer Loyalty is measured by 6 statement items with 3 dimensions: service reuse, positively embedded service in the minds of customers, and always the first choice. In the Customer Loyalty variable with the number of items statement 6 items and the number of respondents 200 people, obtained a total score of 4373 and a percentage of 72.88%, so that from the total score of respondents' responses to the 6 items submitted statements regarding Customer Loyalty included in either category.

## 5.2 Quantitative Analysis

Assumptions that must be fulfilled in data collection and processing procedures that are analyzed by SEM modeling. Testing is done by looking at the results of standardized regression weight in the output table. If there is an estimate value of the indicators that have a significance level  $\leq 0.50$  then the indicator cannot describe the construct. Model compatibility (goodness of fit), for confirmatory factor analysis will also be tested. Furthermore, conclusions on the suitability of the model built will be seen from the results of the goodness of fit measurements obtained. The goodness of fit test is first performed on the confirmatory factor analysis model. The following is a form of goodness of fit analysis.

Table 2. Loading Factor Coefficient Value for Each Indicator for Brand Exposure Constructions

	Estimate	S.E.	C.R.	P	Label
x16 <--- Brand_Exposure	1.000				
x15 <--- Brand_Exposure	.847	.108	7.872	***	par_1
x14 <--- Brand_Exposure	3.230	.306	10.538	***	par_2
x13 <--- Brand_Exposure	2.194	.215	10.220	***	par_3
x12 <--- Brand_Exposure	1.989	.211	9.433	***	par_4
x11 <--- Brand_Exposure	3.061	.290	10.564	***	par_5
x23 <--- Customer_Engagement	1.000				
x22 <--- Customer_Engagement	1.063	.100	10.624	***	par_1
x21 <--- Customer_Engagement	1.486	.138	10.753	***	par_2
x33 <--- EWOM	1.000				
x32 <--- EWOM	1.065	.152	7.000	***	par_1
x31 <--- EWOM	3.059	.516	5.926	***	par_2
y13 <--- Brand_Awareness	1.000				
y12 <--- Brand_Awareness	.879	.075	11.704	***	par_1
y11 <--- Brand_Awareness	.817	.070	11.691	***	par_2
y23 <--- Customer_Satisfaction	1.000				
y22 <--- Customer_Satisfaction	.941	.163	5.786	***	par_1
y21 <--- Customer_Satisfaction	.943	.164	5.755	***	par_2
z13 <--- Customer_Loyalty	1.000				
z12 <--- Customer_Loyalty	.966	.090	10.731	***	par_1
z11 <--- Customer_Loyalty	.903	.085	10.661	***	par_2

Source: processed data

The confirmatory factor analysis phase of the Brand Exposure construct aims to test the unidimensionality of the dimensions forming each latent variable. These latent variables or Brand Exposure constants consist of 1 unobserved variable with 6 observed variables as their constituents. The table shows that the p value for the six construct indicators for the Brand Exposure is in accordance with the required p value which is  $p < 0.05$ . This means that the six indicators are declared valid and can form the Brand Exposure construct.

The confirmatory factor analysis phase of the Customer Engagement construct aims to test the unidimensionality of the dimensions forming each latent variable. These latent variables or Customer Engagement constants consist of 1 unobserved variable with 3 observed variables as its constituents. The table shows that the p value for the three indicators of the Customer Engagement construct is in accordance with the required p value which is  $p < 0.05$ . This means that the Customer Engagement indicator is declared valid and can form the Customer Engagement construct. The confirmatory factor analysis phase of the Electronic Word of Mouth construct aims to test the unidimensionality of the dimensions forming each latent variable. These latent variables or Electronic Word of Mouth constants consist of 1 unobserved variable with 3 observed variables as its constituents. The table shows that the p value for the three construct indicators of the Electronic Word of Mouth is in accordance

with the required p value of  $p < 0.05$ . This means that the Electronic Word of Mouth indicator is declared valid and can form the construct of the Electronic Word of Mouth.

The confirmatory factor analysis phase of the Brand Awareness construct aims to test the unidimensionality of the dimensions forming each latent variable. These latent variables or Brand Awareness constants consist of 1 unobserved variable with 3 observed variables as their constituents. The table shows that the p value for the three construct indicators for Brand Awareness is in accordance with the required p value, which is  $p < 0.05$ . This means that the Brand Awareness indicator is declared valid and can form the Brand Awareness construct.

The confirmatory factor analysis phase of the Customer Satisfaction construct aims to test the unidimensionality of the dimensions forming each latent variable. These latent variables or the Customer Satisfaction construct consist of 1 unobserved variable with 3 observed variables as their constituents indicating that the p value for the three indicators of the Customer Satisfaction construct is in accordance with the required p value ie  $p < 0.05$ . This means that the Customer Satisfaction indicator is declared valid and can form the construct of Customer Satisfaction.

The confirmatory factor analysis phase of the Customer Loyalty construct aims to test the unidimensionality of the dimensions forming each latent variable. These latent variables or Customer Loyalty constants consist of 1 unobserved variable with 3 observed variables as its constituents. The table shows that the p-value for the three indicators of the Customer Loyalty construct is in accordance with the required p-value i.e.  $p < 0.05$ . This means that the Customer Loyalty indicator is declared valid and can form the Customer Loyalty construct. The next analysis is the Full Model Structural Equation Model (SEM) analysis which is intended to test the models and hypotheses developed in this study. Testing the model in the Structural Equation Model is done with two tests, namely the suitability of the model test and the test of the significance of causality through the regression coefficient test. Furthermore, the test results can be seen in below:

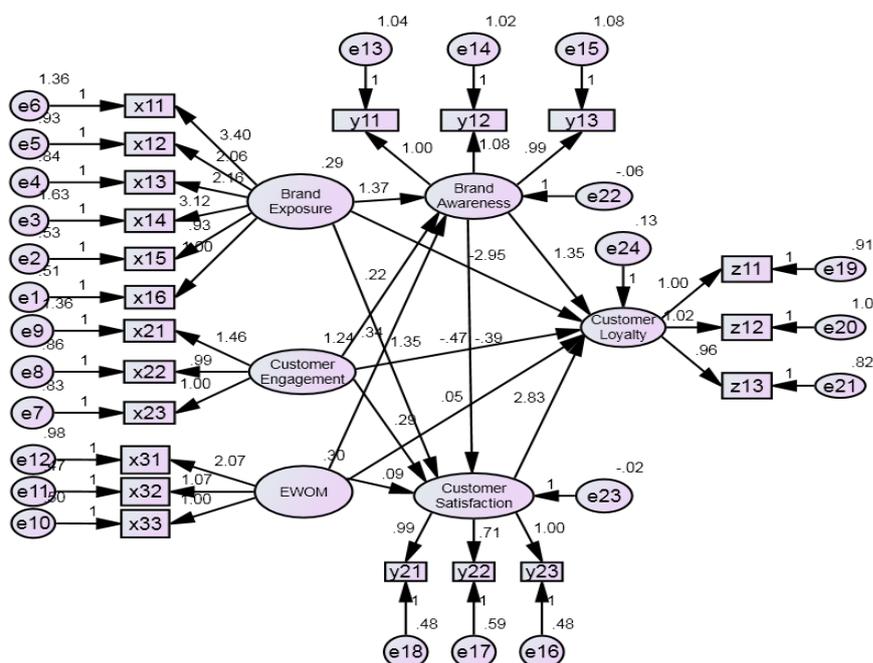


Figure 2 Structural Equation Model Analysis

Source: AMOS

Table 3. Evaluation of Goodness of Fit Criteria in Structural Equation Model

Goodness of Fit Index	Cut Off Value	Results	Explanation
Chi Square ( $\chi^2$ )	$\chi^2$ tabel	191,622	Good
Significant Probability	$\geq 0,05$	0.084	Good

GFI	$\geq 0,90$	0.990	Good
AGFI	$\geq 0,90$	0.886	Marginal
CMIN/DF	$\leq 2,00$	1.154	Good
TLI	$\geq 0,95$	0.987	Good
RMSEA	$\leq 0,08$	0.028	Good
CFI	$\geq 0,95$	0.990	Good

Source: processed data

Based on table above, it can be seen that the structural model that has been modified has fulfilled the cut-off value quite well. Thus it can be concluded that the model has been said to be good and acceptable.

### 5.3 Hypothesis test

Testing hypothesis done by analyzing the value of C.R (Critical Ratio) and the value of P value then compared with the statistical limits that have been required, namely above 2.0 for CR values and below 0.05 for P values. If the results of data processing indicate a value that meets these requirements, the proposed research hypothesis can be accepted. Furthermore, discussion on hypothesis testing will be carried out in stages in accordance with the order of the hypothesis that has been proposed.

The value of the regression weight coefficient between the Brand Exposure variable for Brand Awareness is 1,374 with a probability of 0,000 or  $p < 0.05$  and has a critical ratio (C.R) of 5.734 or more than 1.96 then  $H_0$  is rejected. This means that there is a significant influence between Brand Exposure on Brand Awareness.

The value of the regression weight coefficient between the Brand Exposure variable to Customer Satisfaction is 0.338 with a probability of 0.037 or  $p < 0.05$  and has a critical ratio (C.R) of 2.081 or more than 1.96 then  $H_0$  is rejected. This means that there is a significant influence between Brand Exposure on Customer Satisfaction.

The value of the regression weight coefficient between the variable Customer Engagement to Brand Awareness is 0.220 with a probability of 0.007 or  $p < 0.05$  and has a critical ratio (C.R) of 2.705 or more than 1.96 then  $H_0$  is rejected. This means that there is a significant influence between Customer Engagement on Brand Awareness.

The value of the regression weight coefficient between Customer Engagement variables and Customer Satisfaction is 0.286 with a probability of 0.031 or  $p < 0.05$  and has a critical ratio (C.R) of 2.159 or more than 1.96 then  $H_0$  is rejected. This means that there is a significant influence between Customer Engagement on Customer Satisfaction.

Standardized regression weight coefficient between Electronic Word of Mouth variables and Brand Awareness with a probability of 0.04 or  $p < 0.05$  and having a critical ratio (C.R) of 2.057 or more than 1.96,  $H_0$  is rejected. This means that there is a significant influence between Electronic Word of Mouth on Brand Awareness.

The value of the regression weight coefficient between Electronic Word of Mouth variables to Customer Satisfaction is 0.085 with a probability of 0.013 or  $p < 0.05$  and has a critical ratio (C.R) of 2.368 or more than 1.96 then  $H_0$  is rejected. This means that there is a significant influence between Electronic Word of Mouth on Customer Satisfaction.

The value of the regression weight coefficient between the Brand Awareness variable to Customer Satisfaction is 0.387 with a probability of 0.406 or  $p > 0.05$  and has a critical ratio (C.R) of -0.831 or smaller than 1.96 then  $H_0$  is accepted. This means there is no significant effect between Brand Awareness on Customer Satisfaction.

The value of the regression weight coefficient between the Customer Satisfaction variable against the Customer Loyalty is 2,826 with a probability of 0.049 or  $p < 0.05$  and has a critical ratio (C.R) of 2.441 or more than 1.96

then  $H_0$  is rejected. This means that there is a significant influence between Customer Satisfaction on Customer Loyalty.

Based on the results of the analysis obtained shows that there are several hypotheses that  $H_1 - H_6$  were accepted, others rejected.

#### *5.4 Analysis of Direct Effects, Indirect Effects, and Total Effects*

The magnitude of the effect of each latent variable directly (Standardized direct effect) or indirectly (Standardized indirect effect) and the total effect (Standardized total effect). The magnitude of the influence of each latent variable directly effect and indirect effect and the total effect is explained as follows:

1. Brand Exposure gives a direct influence on Brand Awareness 0.974.
2. Brand Exposure has a direct effect on Customer Satisfaction of 1,556 with an indirect effect of -0,614 and a total influence 0.944.
3. Customer Engagement gives a direct influence on Brand Awareness 0.324.
4. Customer Engagement has a direct effect on Customer Satisfaction of 0.685 with an indirect effect of -0.614 and a total influence 0.480.
5. Electronic Word of Mouth provides a direct influence on Brand Awareness 0.244
6. Electronic Word of Mouth gives a direct influence on Customer Satisfaction of 0.1 with an indirect effect of -0.154 and a total effect -0.053.
7. Brand Awareness has a direct influence on Customer Satisfaction -0,630.
8. Brand Awareness gives a direct influence on Customer Loyalty of 1.272 with an indirect effect of -1.027 and a total effect of 0.245.
9. Customer Satisfaction gives a direct influence on Customer Loyalty of 1,630.

#### *5.5 Discussion of Research Results with Previous Research*

The results of research conducted by As'ad and Alhadid (2014), there is a strong relationship between marketing strategies carried out through social media on brand equity, this reflects that social media marketing is very important for a company. The results of the hypothesis testing of this study which there is a significant influence between Brand Exposure and Brand Awareness. Research conducted by Bruhn, et.al (2012) divides social media into 2 different types, namely firm-created and user generated. Therefore, in the future there is a possibility that the growth of social media in society will have a stronger influence on functional brand image and hedonic brand image. This is different from the results of the hypothesis test conducted in this study.

## **6. CONCLUSION**

1. Brand Exposure is included in the good category which means that the strategies prepared for the products sold in order to build brand awareness have been rated well by consumers. In addition, Customer Engagement is included in both categories so that the process of the product to provide opportunities for consumers to engage and interact in two-way communication so as to create an interactive dialogue and provide a personal experience that will be remembered by the customer is said to be good.
2. Electronic Word of Mouth is also included in good categories, which means that product reviews distributed to others by using electronic media according to respondents are considered good.
3. Digital marketing strategies measured by Brand Exposure, Customer Engagement, Electronic Word of Mouth variables each have a significant positive effect on Customer Satisfaction, where the better the marketing strategy, the Customer Satisfaction on the product will also increase as well as it should.
4. Brand Exposure, Customer Engagement, Electronic Word of Mouth each does not have a significant effect on Customer Loyalty. Social Media Marketing Strategy to Customer Loyalty, the response to the evaluation of a product has been said to be good. Customer Loyalty is included in the category of good means the customer remains to re-subscribe or re-buy selected products or services as a consistent attitude in the future has been said to be good.

5. Brand Awareness is included in the good category so that the understanding possessed by consumers has the potential to accept the brand and embed it in their minds every time using the product has been said to be good. Customer Satisfaction
6. Based on the results of testing the Brand Awareness hypothesis does not have a significant effect on Customer Loyalty, while Customer satisfaction gives a significant positive effect on Customer Loyalty, so the better the Customer Satisfaction, the Customer Loyalty on the product will also increase as well as it should.

### 6.1 Recommendations

Based on the results of research and conclusions that have been presented, will propose suggestions in the hope that it will benefit all interested parties.

1. Respondents responses to brand exposure is based on the percentage of the total score of respondents' responses it can be seen that the respondent's responses to the 12 statements submitted regarding Brand Exposure are included in both categories. Then this variable can be ascertained biased run in the implementation of corporate strategy.
2. Respondents responses regarding customer engagement, which is based on the percentage of the total score of respondents' responses, it can be seen that respondents' responses to 7 items submitted regarding Customer Engagement are included in both categories. Therefore this variable can be implemented well in the future.
3. Respondents responses to the Electronic word of mouth strategy Based on the percentage of the total score of the respondents' responses it can be seen that the respondents' responses to the 4 items submitted regarding Electronic Word of Mouth are included in both categories. Product reviews that are distributed to others in electronic media are said to be good.
4. Respondents responses regarding brand awareness, which is based on the percentage of the total score of respondents' responses, it can be seen that the respondents' responses to 6 items submitted regarding Brand Awareness are included in both categories. This variable will be very effective if it is run by a company.
5. Respondents responses regarding Customer Satisfaction, based on the percentage of the total score of the respondents' responses it can be seen that the respondent's responses to the 3 item statements submitted regarding Customer Satisfaction are included in both categories. Product customer satisfaction needs to be maintained and continuously improved because customer satisfaction will have an impact on customer loyalty.
6. Respondents responses regarding Customer loyalty, which is based on the percentage of the total score of respondents' responses, it can be seen that the respondents' responses to 6 items submitted regarding Customer Loyalty are included in both categories. Customers persist in re-subscribing or re-buying selected products or services as a consistent attitude in the future is already said to be good.] (Garamond 12)

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# The Effect of WHO COVID-19 Announcement on Asian Stock Markets Returns: An Event Study Analysis

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## Abstract

This study aims to examine the effect of World Health Organization (WHO) declaring COVID-19 as a global pandemic on the stock market returns of the five largest Asian stock markets using event study analysis. Results obtained from this research shows that the WHO announcement had a significant negative effect on stock markets returns on major Asian stock markets.

**Keywords:** COVID-19, Asian Stock Markets, Event Study, Pandemic, Stock Markets Returns.

## Introduction

The Covid-19 pandemic can be classified as a ‘black swan’ since it was a very unlikely event that has a severe unfavorable economic consequences. Taleb (2005) defined black swan as a random event satisfying the following three properties: large impact, incomputable probabilities, and surprise effect. Literature shows that there is a strong relation between stock market returns and pandemic outbreaks (Park et al. 2008; Pendell and Cho, 2013; Chen et al., 2009; Chen et al., 2007; Ichev and Marinč, 2018; Bash, 2020; AlAli, 2020).

The coronavirus first appeared in Wuhan, China on December 2019 and since then started spreading around the world. On March 11<sup>th</sup>, 2020 the World Health Organization (WHO) declared COVID-19 as a global pandemic. Since then, there has been 13.95 million confirmed cases and a death toll of 593 thousands as of July 17<sup>th</sup>, 2020. AlAli (2020) studied the effect of first reported case in 11 countries and its effect on their stock markets and concluded that the effect of WHO announcement had a much greater effect than the effect of first case reported. Baig et al. (2020) investigate the effect of COVID-19 on the United States (US) equity markets and found that COVID-19 has led to an increase in market illiquidity and volatility. Zhang et al. (2020) showed that both financial market risk and uncertainty increased following COVID-19 outbreak.

## Data and Methodology

This research is based on the average daily returns of the five largest Asian stock markets which are Shanghai SE, Nikkei 225, Bombay SE, Hang Seng Index, and South Korea KOSPI Composite Index. In addition to Morgan Stanley all-country world equity index (MSCI), all data used cover the period March 4<sup>th</sup>, 2019 to April 22<sup>nd</sup>, 2020. The data for this research were downloaded from Yahoo-finance website.

Two methods are used in this research to determine abnormal returns. The first method is the mean-adjusted returns as conducted by Brown and Warner (1985) where;

$$ABR_d = R_d - \bar{R}_n \quad (1)$$

$$\bar{R}_n = \frac{\sum_{d=-257}^{-11} R_d}{257} \quad (2)$$

Where  $R_d$  is the average return of the 5 indices under study at day d,  $\bar{R}_n$  is the average return of the indices during the estimation window (-257,-11).

The second method is Dodd and Warner (1983) market model method where;

$$ABR_d = R_d - (\alpha_d + \beta_d R_{m,d}) \quad (3)$$

Where  $R_{m,d}$  is the return of all-country world equity index (MSCI).  $\alpha_d$  and  $\beta_d$  are the coefficients obtained from OLS regression over the (-257,-11) estimation window.

## Empirical Results

Mean abnormal returns (ABR) and cumulative abnormal returns (CABR) for both models used are illustrated in figure 1. It can be seen from the figure that CABR showed an accelerating decline after day 0 which is the WHO announcement date indicating the greater effect of the announcement on stock markets returns. In examining the mean difference between cumulative returns before and after WHO announcement date (event date) using event windows (-5,5), (-15,15), and (-30,30). Results presented in table 1 shows that there was a statistically significant difference in CABR mean returns at the 99% confident level except for (-5,5) event window for mean-adjusted return where the confident level was at 95%.

Table 1. Mean equality test for cumulative abnormal returns (CABR)

Mean-Adjusted Return Model				
Event Window	Before	After	After-Before	t-test
-5,5	-2.29%	-14.61%	-12.32%	14.62***
-15,15	-4.77%	-22.19%	-17.42%	16.01***
-30,30	-0.91%	-18.61%	-17.70%	13.22***
Market Model				
-5,5	-1.13%	-5.90%	-4.77%	3.83**
-15,15	-1.03%	-10%	-8.97%	14.35***
-30,30	-0.58%	-9.49%	-8.91%	13.81***

\*, \*\*, \*\*\* represent the confidence level at the 90%, 95, and 99% levels respectively

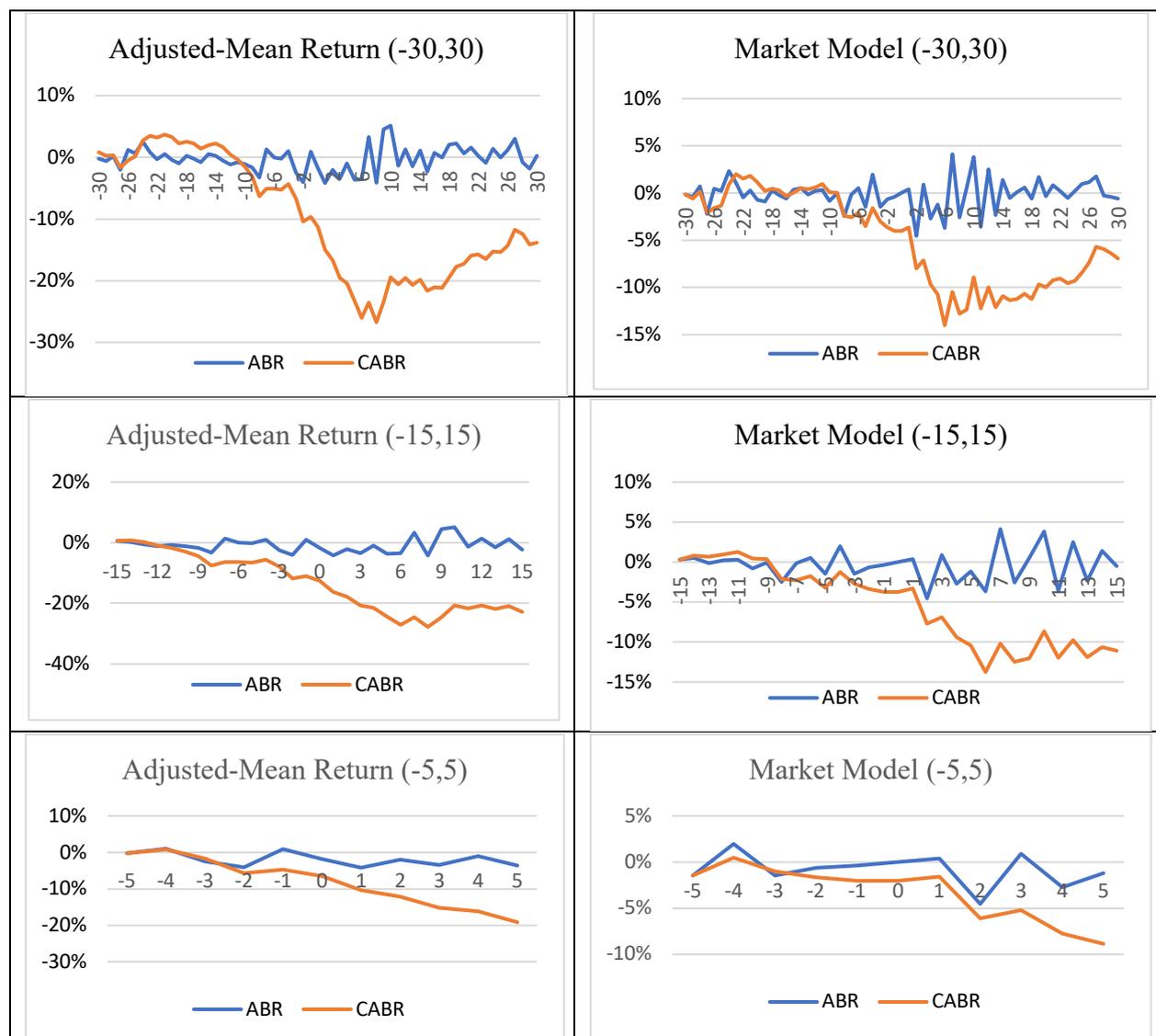


Figure 1. Abnormal Returns (ABR) and Cumulative Abnormal Returns (CABR)

## Conclusion

This study was set to examine the effect of WHO announcement declaring COVID-19 as a global pandemic on stock market returns of the largest five Asian stock markets. Using mean-adjusted returns and market model methods, results shows negative effect of WHO announcement on market abnormal returns and there was a statistically significant difference between market returns before and after the announcement.

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# Dividend Policy and Corporate Financial Performance: Evidence from Selected Listed Consumer Goods Firms in Nigeria

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## Abstract

This study evaluated the dividend policy and corporate financial performance with evidence from selected listed consumer good firms in Nigeria within the period 2015-2019; using dividend pay-out ratio, earnings per share and dividend per share as proxies for dividend policy and Return on equity as proxy for financial performance with two control variables; firm size and financial leverage. The study employed correlation and ex-post facto research designs. Descriptive statistics and multiple regressions were used for data analysis. Secondary data were used, which were extracted from the Central Bank of Nigeria statistical bulletin and the Audited Annual Reports of the ten selected listed consumer goods firms in Nigeria. The results of the study show that dividend pay-out ratio; earnings per share and dividend per share are positively related to return on equity. It also revealed that dividend pay-out ratio and earnings per share were statistically insignificant with the return on equity while dividend per share was statistically significant with return on equity within the period of study. The study therefore recommends that firms should adopt a dividend policy strategy that will guarantee greater financial performance to improve on the dividend per share. It is also recommended that management should act in the best interest of the shareholders as this will go a long way in reducing agency problem. The implication of this finding is that if firms do not adopt a good dividend policy strategy that will benefit the shareholders, investors will lose interest in the firm and this will threaten the growth of some of these consumer goods firms in the future.

**Keywords:** Dividend Policy, Financial Performance, Dividend Pay-Out Ratio, Earnings Per Share, Dividend Per Share

## Background to the study

In a world of significant agency problems between the principal and the agent, the agents who are entrusted with the affairs of the organization are repeatedly faced with the decisions on how to enhance the value of the firm.

Interestingly, such decisions bother on investment in the assets, financing structure and dividend policy decision of the organization. Of these three fundamental responsibilities, dividend policy decision has remained a major factor to appraise the activities of the agent.

Most corporate organizations adopt dividend policy that has the major aim of maximizing shareholders' wealth. The financial managers for instance have to decide on whether to adopt a high payout ratio and turn around to borrow funds from the capital market for investment purposes or adopt a low payout ratio and use the retained earnings in financing the investment opportunities prevalent at that time. Farrukh et al (2017) have argued that financial managers will have to settle on basic business and budgetary choices that will meet their goal of expanding shareholders' wealth and firm's value. In that case, profit will assume an important position.

Dividend policy is a company's policy focusing on paying out profit as dividend against retaining them for investment back in the company. Dividend policy can be referred to as the decision that affects earnings payable to shareholders after all cost and taxes have been removed by the firm from its total earnings.

Majority of financial assets are shares which are individual unit of capital, held purposely for the expected returns (Faure, 2015). These returns are termed as dividend and are only available to shareholders of an equity firm. When firms have earned profits, they are faced with the problem of how much of the profit to be shared as dividend and in that case, dividend policy becomes very imperative. This is because, shareholders would want the greater part of the profit to be distributed as dividend while the managers would want to retain most of the earnings for reinvestment in the future. Foong, Zakaria and Tan, (2007) asserted that dividend is an after tax distribution of a share of the firm earnings to the shareholder and this influence shareholders perception about changes in the firms performance. Oliver and Ugah (2015) noted that, dividend payment by corporate organizations is a fundamental expectation to shareholders and therefore ranks as one of the most important corporate decisions. A company's ability to consistently pay out increased levels of dividend over time conveys information about the management's assessment of the firm's performance as well as its future prospects.

Financial performance refers to the degree to which financial objectives of a firm is being or has been accomplished. It is a measure of how well a firm can use assets from its business and generate revenues. Valentin (2014), puts it as the efficiency with which a firm uses its resources in generating revenues. In the view of Turakpe & Fiiwe, (2017), the notable measures of financial performance in companies are ROA, ROE and net margin on sales. The return on equity (ROE) according Monteiro (2016) is perhaps the most important ratio an investor should consider.

Opinion from scholars ranges from the position that dividend policy has no real impact on the value and performance of the firm to the position that the dividend policy of a firm does impact on the value and performance of that firm and this has led to some conflicting results. Some scholars in the likes of; Thafani & Abdullah (2014); Ogheneochuko, (2015) and Mbah and Anichebe (2018) revealed that dividend policy influence firm's performance, while others also in the likes of; Kapoor (2006) and Ifuero & Iyobosa, (2016) submitted that dividend policy has no significant influence on performance of firms.

The dividend policy of the firm has remained one of the most contentious, but interesting issues in corporate finance. The relative merits of dividend policy on the performance of firms are important both from the firm and stakeholders' perspectives. In this study, the question is whether the dividend policy of a firm actually affects its economic value and performance, particularly in the developing economies.

## **Objective**

Every potential investor who decides to invest in a company will want to investigate its capacity of paying dividends to its shareholders. Dividend policy is a factor because it can be utilized by firm's management to attract investors. It will be quite discouraging when companies that are expected to pay dividend are not paying dividend to their shareholders, when in the actual sense, the ultimate objective of a firm is to maximize its shareholder's wealth. To guarantee success in every company, management needs to completely understand dividend policy

because it can affect their performance positively or negatively. Some school of thoughts; Kapoor (2006) submitted that dividend policy has no significant influence on performance of firms while another; Abdul & Muhibudeen, (2015) noted that dividend policy influence firm's performance. The objective of this study is to evaluate the effect of dividend policy on the financial performance of consumer goods firms in Nigeria. Here the multiple regressions were used to analyze the effect of dividend policy on the financial performance of consumer goods firms in Nigeria. This study used yearly data generated from National Bureau of Statistics and the audited annual report of the selected consumer goods firms in Nigeria between 2015 and 2019.

### **Conceptual Framework**

The study looks at the conceptual issues associated with the study and as a result discusses the concept of dividend policy and the concept of financial performance.

### **Concept of Dividend Policy**

Dividend policy is the policy a company uses to structure its dividend pay-out to shareholders. It is a financial decision of a firm as to the proportion of the firm's earnings to be paid out to the shareholders. The management decides on the proportion of the firm's earnings to be distributed to the shareholders as dividends and the proportion to be retained for the firm. This is important because it sets out amount to be paid, the time of payment and the method of payment. Most firms view dividend policy as an important aspect of their corporate strategy, because the management must decide on the dividend amount to be paid and the time of payment. According to Booth and Cleary (2010) dividend Policy is a framework designed for making decision regarding the percentage of profit to be distributed and the part to be retained in the company for investment purpose. Kajola, Adewumi, & Oworu (2015) also viewed dividend policy as comprising the guidelines, regulations, and corresponding decisions of managers of a company concerning dividend payments to the shareholders of the company. Jo and Pan (2009), emphasized that dividend disbursement is one of the key factors that establish that a company is practicing the required corporate governance. Uwuigbe et al., (2012) noted that dividend policy decisions have also been identified as one of the primary element of corporate finance policy. Ramadan, (2013) disclosed that dividend pay-out and dividend yield are the most popular parameters chosen, as proxies for dividend policy in most dividend Policy researches. He described dividend pay-out as the ratio of total cash dividend distributable to common shareholders over the available net income for the shareholders while dividend yield he also described as a profitability indicator shown as a cash dividend per share for common stocks divided by the per share market value. There are four broad dividend policies in practice which according to Yusuf (2015), including; residual payment policy, stable predictive dividend policy, Constant pay-out ratio policy, Low plus extra or bonus dividend policy. A number of factors affect dividend policy decisions, some of which may include; financing constraints, investment choices and prospects, size of the firm, expectations of shareholders, and regulatory requirements among others. The dividend payments do not reflect the current state of the financial health of a company only but serve as an indicator to the future performance (Kajola, Adewumi, & Oworu, 2015).

### **Concept of Financial Performance**

A firm's financial performance is of importance to investors, stakeholders and the economy at large. Investors are interested in the returns for their investment. A business that is performing well can bring better rewards to their investors. The financial performance of a firm can increase the income of its staff, rendering quality products or services to its customers and creating more goodwill in the environment it operates. A company that has good financial performance can generate more returns which can lead to future opportunities that can in turn create employment and increase the wealth of people. The ability of an organization to achieve success in financial performance is dependent on its ability to manage its financial matters efficiently. Ismaila, (2011), believed that there is evidence of a positive relationship between financially linked activities such as maintenance of sound financial records, planning, procurement of external and professional financial advice, and successful financial performance. Suleiman (2013), in his view, noted that a firm's financial performance is the result of a company's assessment or strategy on how well a company accomplished its goals and objectives. It provides a deductive measure of how well a company can use assets from business operations to generate revenue. A company's

performance is its ability to achieve its target objectives from its available resources (Rahul 1997). Van Horn (2005) defined financial performance as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Measuring of firms' financial performance is one of the strategic management functions aimed at satisfying the interest of shareholders and other stakeholders in a company. The firm's performance appraisal involves a periodic and systematic evaluation of its operations to determine the achievements of the firm's objectives.

The main objective of shareholders in investing in a business is to increase their wealth. Thus the measurement of performance of the business must give an indication of how wealthier a shareholder has become as a result of the investment over a specific time. If a company does not have a stable dividend policy, the shareholders will lose interest and will not want to continue keeping their capital in such company. Significant variables measuring firm's financial performance according to Amidu & Abor, (2006), are profitability, cash flow, sale growth and market-to-book value. Profitability measure of financial performance could be measures such as Return on Equity (ROE) and Return on Assets (ROA). Profitability measures are important in measuring the extent to which a business can generate profits from the factors of production. ROE is the measure adopted for the study. ROE is a financial ratio that shows the percentage of profit a company earns in relation to its shareholder's equity. It is commonly defined as net income divided by shareholder's equity.

### **Theoretical Framework**

This study is anchored on three theories; which are the agency theory, the signaling theory and the bird-in-hand theory.

#### **Agency Theory**

This theory was first used by Jensen and Meckling (1976) in New York. The theory suggests that, dividend policy is determined by agency costs arising from the divergence of ownership and control. Agency theory states that managers of firms are likely to engage in non-value maximizing (NVM) behaviour. The apostles of this theory hold the view that the value of the firm would be decreased by the agency costs incurred due to non-value maximizing managers. Managers may not want to adopt a dividend policy that is value-maximizing for shareholders but would choose a dividend policy that maximizes their own private benefits. The agency problem arises when there is a conflict of interest between shareholders interest and managers' interest. According to Al-Kuwari (2009) shareholder is the principal in agency problem while the manager acts as the agent whose responsibility is to maximize value of the firm and returns to the firm's shareholders. D'Souza and Saxena (1999) observed in their study that there is a statistical significant negative relation between dividend policy and the agency cost, and they expressed that dividends should be paid in a regular basis to decrease the agency cost. Arnold (2008) also agreed that dividend is the best solution to reduce agency cost. However, if a manager's personal wealth were linked to the price of the firm's common equity, these agency costs could be reduced. Thus, managerial ownership of equity could serve as an agency cost reducing mechanism, increasing the value of the firm.

#### **Signalling Theory**

The signaling theory was propounded by Ross (1977) and Bhattacharya (1979). This theory had its root from the information asymmetry existing between managers as fund users and shareholders as fund providers. The theory assumes that managers have access to more information relating to the value of the firm's assets than other outside agents and investors. Therefore managers seek to use dividend pay-out policies to signal to the shareholders about the financial performance of their firms. Miller & Rock (1985), hold the view that managers know more than investors about the true state of the firm's current earnings. The signaling theory assumes that a higher dividend payout sends a signal to investors as to the future cash flow or the profitability of the firm. Amidu (2007) has argued that firms, despite the distortion of investment decisions to capital gains, may pay dividends to signal their future prospects. High dividend payments are considered positive sign of profitability by shareholders. Chaabouni (2017) also noted that dividends have a signaling effect as dividend payment gives the information about a company to the market. When there is an increase in dividend payments, it is a good sign for a company; it

increases its goodwill and its reputation in the mind of customer and share price increases (Al-Hasan, Asaduzzaman & Karim, 2013). The relevance of this theory to this study is that investors are attracted to invest in particular firm only when they have a good signal that such firms are doing well.

### **Bird-in-hand Theory**

This theory was propounded by Gordon 1963 and Lintner 1964. The theory holds that a relationship exists between firm value and dividend payout. It states that dividends are less risky than capital gains since they are more certain. They postulated that investors being rational are usually risk averse and would prefer to receive dividend now than to expect a capital gain in the future that is uncertain. Amidu (2007) argued that investors would prefer dividends to capital gains because dividends are supposedly less risky than capital gains, firms should set a high dividend payout ratio and offer a high dividend yield to maximize stock price. Investors would prefer a dividend today to a highly uncertain capital gain from a questionable future investment. The theory argues that cash dividend received now, reduces the risk associated with the uncertainty surrounding deferred income; in form of capital gain. Hence, investors may prefer to purchase shares of companies with track record of dividend pay-out than companies that retain heavily for growth and expansion. Under the bird-in-hand theory, stocks with high dividend payouts are sought by investors and, consequently, command a higher market price. They argue that, outside shareholders prefer a higher dividend policy and those investors would consequently value high payout firms more highly. The dividend the investors receive today is far better than an increase in the capital gain as a result of expansion by the company as the risk of uncertainty exists, the company could grow resulting in capital gain and it could collapse as well resulting in total loss.

### **Review of Empirical Literature**

Khan et al (2016) examined the Impact of Dividend Policy on Firm Performance: An Empirical Evidence from Pakistan Stock Exchange; using data extracted from the audited annual reports of the listed firms from 2010-2015 and adopting the ordinary least square technique for analysis. From their result, they found positive relationship between return on assets, dividend policy, and growth in sales. Their results also show that dividend pay-out ratio and leverage have significant negative relation with the return on equity.

Williams and Duro (2017), empirically investigated the impact of dividend policy on performance of quoted companies in a developing economy, using a sample of twenty quoted firms in a developing nation actively operating within 2005 to 2016 in the stock market. The Ordinary least square estimation technique was used for the analysis. Their result shows that there is a significant positive impact of dividend pay-out ratio on return on asset. They also found out that there is a positive relationship between return on equity and dividend per share. They concluded that profit after tax should be considered sensitive in relation to dividend payment. It was on this basis that they recommended that dividend policy issuance should be tied to specific range of profit after tax. A situation whereby profit after tax is below the specified range, there should be no dividend. Also, among their recommendations is that most quoted companies on the stock exchange market should be compelled to always make their dividend policy public annually.

Farrukh et al., (2017) examined the impact of dividend policy on shareholders wealth and firm performance in Pakistan; taking annual data from 51 firms listed on the Pakistan Stock Exchange while adopting multiple regressions for the analysis. They found from their result that dividend policy has positively significant impact on shareholders' wealth and firm performance, while commending the implementation of stable, effective, managed and target-oriented dividend policy by firm's financial managers along with effective supervisory framework governed by capital market regulatory bodies to uplift firms' performance and shareholders wealth in Pakistan. They also recommend that appropriate firm disclosure with respect to dividend payout and dividend per share is needed to guard the potential investors in making the right investment choices in listed firms.

Hafeez et al (2018), examined the Impact of Dividend Policy on Firm Performance; with evidence from the Manufacturing firms in Pakistan. The study adopted multiple regressions while the data used were extracted from the audited financial statement of the 15 selected manufacturing firms for the study for a period between 2014 and

2017. Findings reveal that all the independent variables have a positive relationship with dependent variables which indicate that they positively influence return on investment. They recommended that firms should maintain consistency in dividend policy to increase in return on asset.

Akinleye and Ademiloye (2018) examined the impact of dividend policy on performance of five quoted manufacturing firms in Nigeria from 2011-2015 using dividend payout ratio and dividend per share were used as independent variables while return on capital employed was used as dependent variable. Data was obtained from the audited annual report and accounts of the sampled firms and adopted multiple regressions for analysis. Their results show that, DPO and DPS have a negative effect on ROCE. The study also reveals that, DPO and DPS are statistically insignificant with ROCE. They recommended that management of manufacturing firms in the country should not be misguided by the contribution of dividend policy to improve performance to the point that they will consciously distribute more fractions of their earnings than necessary thereby dampening the future growth prospect and investment diversification of their firms.

Usman and Olorunnisola (2019), studied the Effects of Dividend Policy on Corporate Performance of Deposit Money Banks in Nigeria; using purposive random sampling method to select seven out of the sixteen quoted deposit money banks in Nigeria based on the size of their capital. Data were obtained from the audited annual reports of the sampled deposit money banks and Nigerian Stock Exchange over a period of ten years (2009-2018). Panel regression was used, and their study from their result showed that dividend policy has significant effect on corporate performance of deposit money banks in Nigeria. They recommended that, managers should improve their working capital and measure them with fair value and also that banks should increase the level of asset capital to improve profitability.

Idewele and Murad (2019), investigated the relationship between financial performance and dividend policy for a sample of fifteen Deposit Money Banks quoted on the Nigeria Stock Exchange 2009 to 2014. Panel data regression analysis was used as the method of analysis, and the model was estimated using the Pooled Least Squares estimation technique. The study revealed that there is a positive and significant relationship between dividend pay-out ratio and financial performance. Their study also on the contrary, reveals that there is a negative and insignificant relationship between dividend yield and financial performance. The study recommends that since there is a positive and significant relationship between dividend pay-out ratio and financial performance, firms should strive to maintain healthy and a stable dividend policies. It is also recommended that since dividend yield is not affected by financial performance, investigations should be made to ascertain other factors that affect dividend yield.

Many scholars in their studies have tried to discuss the effect of dividend policy on financial performance of corporate organizations; however, these views are not enough for some level of business decisions; more empirical support is needed to complement the findings of these scholars. This paper has become part of the series of studies evaluating the effect of dividend policy on financial performance of corporate organizations in Nigeria so as to provide a clue on contending issues and fill some research gaps.

## **Methodology**

The research design employed for this research is correlational and ex-post facto designs. The design for the study is appropriate because it assists in determining the effect of dividend policy on the financial performance of selected listed consumer goods firms in Nigeria. The general objective in this correlational and ex-post facto research designs is to gain an insight and generate new idea. The ex-post facto research design was used because the events have already occurred and variables not manipulated. Multiple Regression technique was also adopted as the tool of analysis as it is most appropriate for the study and because of its ability to use multiple independent variables to estimate their effect on a single dependent variable. The OLS method adopted in this study is a parametric statistical test that is based on a number of assumptions, the violation of which could affect the reliability of the results. The regression model was used because it assumed linearity and normality and it ascertains the impact of the independent variables on the dependent variable. Yearly data were generated from the Audited Annual Report of the ten (10) selected consumer goods firms listed on the NSE and the Central Bank of Nigeria

statistical bulletin between 2015 and 2019. The model for this study follows the works Hafeez et al (2018) and Butt H.A. (2018) and Usman and Olorunnisola (2019), on the effect of dividend policy on corporate performance, though with little modifications, these studies emphasized and established a relationship among variables in a growth model. The model is therefore specified as:

$$ROE = \beta_0 + \beta_1(DPR) + \beta_2(ESP) + \beta_3(DPS) + \beta_4(FSZ) + \beta_5(FLV) + \mu$$

Where:

ROE = Return on Equity; used to measure financial performance

Dividend policy is represented by dividend pay-out ratio, earnings per share and dividend per share while the other variables; firm size and financial leverage to serve as control variables.

DPR = Dividend pay-out ratio

EPS = Earnings per share

DPS = Dividend per share

FSZ = Firm size proxied by the logarithm of total assets of the selected firms

FLV = Financial leverage measured by the ratio of total debt to total book value of assets

$\beta_0$  = constant of regression equation

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  = Beta coefficients of the regression equation

$\mu$  = error term to capture variations in the mode

## Results

Table 1: Descriptive Statistics

Variables	Mean	Std. Deviation	Minimum	Maximum
ROE	0.164	0.197	-0.23	0.91
DPR	0.335	0.613	-3.99	2.95
ESP	6.759	15.837	-33.21	65.79
DPS	2.794	5.997	0.13	36.95
FSZ	19.720	3.733	12.75	23.67
FLV	2.667	2.533	0.27	7.91

Source: *STATA OUTPUT*:

The above table presents the summary of descriptive statistics for the study. From the table, it shows that the mean value for ROE is given as 16%; this indicates the average level of ROE across the consumer goods firms. It also suggests that for every ₦1 use of assets generates 16% ROE in the sampled consumer goods firms in Nigeria and the standard deviation of ROE is 0.198. The difference between the mean and the standard deviation is 0.033. This is an indication of wide variations in the ROE around the mean. It means that there is a significant variation in the ROE status of the sampled consumer goods firms. The minimum and maximum are -0.23 and 0.91 respectively. This is an indication of a very wide range of 0.68. The range shows that there is a gap in ROE between the consumer goods firms, which explains why some consumer goods firms have low ROE and others with high ROE. The minimum value implies that some consumer good firms make a loss in some accounting years.

The mean value of the dividend pay-out ratio (measured as dividend per share/earnings per share) is given as 0.335 which means that on the average; firms pay about 33% of their profits as dividends with the 67% of the profit as retained earnings.

The mean value of earnings per share and its standard deviation in the listed consumer good companies are 6.759 and 15.837. These values demonstrate the dispersion of the panel data in the study. It also has a maximum value of 65.79 and a minimum of -33.21.

For dividend per share, mean value and its standard deviation are 2.794 and 5.994 respectively. However, the maximum value for the dividend per share is 36.95 per share while the minimum value recorded is 0.13 per share.

The firm size, which is measured as total assets, has a mean value of 19.720 with a standard deviation of 3.733. Leverage also has a mean value of 2.667 with a standard deviation value of 2.533.

Table 2: Correlation matrix

	ROE	DPR	EPS	DPS	FSZ	FLV
ROE	1.000					
DPR	0.273*	1.000				
EPS	0.345**	-0.065	1.000			
DPS	0.713**	0.147	0.343**	1.000		
FSZ	0.314	0.113	0.081	0.169	1.000	
FLV	-0.107	-0.129	0.47	0.63	0.167	1.000

Source: *STATA OUTPUT*:

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

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

This result on table 2; shows the relationship between the independent variables and the dependent variable. Absolute value of the correlation coefficient and larger value indicate strength and strong relationships. The result shows that the correlation coefficients on the main diagonal are 1.000 for all the variables, which indicate perfect and positive linear relationship that each variable has with itself.

The above results in table 2 reveal that the correlation between return on equity (ROE) and dividend pay-out ratio (DPR) is positive and significant at the 5 percent level with  $R=0.273$  and  $p\text{-value}=0.013$ . The implication is that an increase in return on equity is associated with an increase in dividend pay-out ratio and a decrease in return on equity associated with a decline in dividend pay-out ratio.

The result also shows that the correlation between ROE and earnings per share is positive and significant at 1 percent level with  $R=0.391$  and  $p\text{ value}=0.007$  which implies that earnings per share have a significant positive effect on return on equity.

The third variable of interest in the study is the dividend per share; which also has a positive and significant correlation with return on equity at 1 percent with  $R= 0.713$  and  $p\text{-value}=0.001$ ; which also implies that dividend per share has a significant positive effect on return on equity. This further implies that the higher the earnings per share, the higher the return on equity and the lower the earnings per share the lower the return on equity. Looking at the two control variables in the study, firm size and financial leverage; it shows that there is positive relationship between firm size and return on equity while financial leverage shows a negative relationship with return on equity within the period of study.

Table 3: Regression Coefficients: Dependent Variable: Return on equity

Variables	Coefficients	Std. error	t-stat	P-value
Constant	-0.147	0.208	-0.707	0.454
DPR	0.041	0.023	1.783	0.073
EPS	0.011	0.007	1.571	0.115
DPS	0.023	0.003	7.667	0.001
FMS	0.029	0.021	1.381	0.137
FLV	-0.054	0.031	-1.742	0.103

$R^2 = 0.637$ ;  $R^2\text{ Adjusted} = 0.609$ ;  $DW = 1.128$

Source: *STATA OUTPUT*

The above regression result on table 3 shows that all the variables except firms leverage have positive coefficients. Also, all the variables except dividend per share are positive but insignificantly related to return on equity. The dividend per share is positively and significantly related to the return on equity. In the result as above, the coefficient shows the change that takes place in the dependent variable as a result of the change in the independent

variables. The coefficient value of dividend pay-out ratio is 0.041, which indicates that one unit increase in the independent variable (DPR); will increase the dependent variable by 0.041 units. Also, the coefficient value of earning per share is 0.011, which indicates that one unit increase in the independent variable (EPS); will increase the dependent variable by 0.011 units. A unit increase in dividend per share will increase the return on equity by 0.023; this is evidence from the coefficient value of dividend per share given as 0.023.

For the control variables; firm size and firm leverage, they both have coefficient values of 0.029 and 0.054 respectively; which indicates that a unit increase in firm size will increase return on equity by 0.029 while a unit increase in financial leverage will decrease return on equity by 0.054.

The coefficient of determination  $R^2$  which measures the fitness of the model, as from the result on table 3 has a value of 0.637 which mean that about 64% of the variation in the dependent variable are explained by the explanatory variables, while about 36% variations of the firm return on equity of the consumer goods firms are explained outside the unspecified variables such as error term.

### Autocorrelation

Autocorrelation occurs when the residuals are not independent from each other. Durbin-Watson statistics has been adopted in this study to test for the presence of autocorrelation. The regression result shows that the Durbin-Watson statistics (DW) is 1.128 which is less than 2. This signifies a problem of autocorrelation of the variables of the study.

Table 4: Multicollinearity Diagnostics Result

Variables	Collinearity Statistics	
	TOLERANCE (1/VIF)	VIF
DPR	.864	1.139
EPS	.718	1.217
DPS	.791	1.283
FMS	.893	1.121
FLV	.917	1.093

Source: *STATA OUTPUT*

The above results show that the VIF for the independent variables varies; it shows that all the variables are less than ten. The tolerance values are also smaller than one or significantly higher than 0.1. The result shows that there is strong evidence indicating absence of adverse multicollinearity between the independent variables of the study. This shows that the model of the study fits appropriately.

### Discussions

From the regression results, it shows that the three variables of dividend policy which are the dividend pay-out ratio, earnings per share and dividend per share are positively related to return on equity. It also revealed that dividend pay-out ratio and earnings per share were statistically significant with the return on equity while dividend per share was statistically insignificant with return on equity within the period of study.

This finding is in conformity with the submissions of Williams and Duro (2017), Farrukh et al. (2017) and Hafeez et al (2018), who also found that there is a positive and significant relationship between dividend policy and financial performance; but on the contrary, the study failed to agree with the submission of Akinleye and Ademiloye (2018), who found negative relationship between dividend policy and financial performance.

### Conclusions

The study evaluated dividend policy and corporate performance taking a look at some selected listed consumer goods firms in Nigeria. The results of the study revealed that dividend policy has significant effect on the financial

performance of consumer goods firms in Nigeria. It also revealed that dividend pay-out ratio and earnings per share were statistically significant with the return on equity while dividend per share was statistically insignificant with return on equity within the period of study. The research concluded that dividend pay-out ratio and earnings per share have significant effect on financial performance while dividend per share has insignificant effect on financial performance. The study therefore recommends that firms should adopt a dividend policy strategy that will guarantee greater financial performance to improve on the dividend per share. It is also recommended that management should act in the best interest of the shareholders as this will go a long way in reducing agency problem. The implication of this finding is that if firms do not adopt a good dividend policy strategy that will benefit the shareholders, investors will lose interest in the and would not want to keep their stocks with such firm; and this will threaten the growth of some of these consumer goods firms in the future.

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# The Effects of Service Quality on Customer Satisfaction: A Case Study of AWCC in Balkhab District of Sar-E-Pol Province

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## Abstract

The aim of this study was to examine effects of service quality dimensions on customer satisfaction using SERVQUAL model in Afghan wireless communication company of Balkhab district of Sar-e-Pol province. For this propose 170 questionnaires were used and collect data, in the literature review, generally service quality and its impact on customer satisfaction in developing countries have been greatly examined. In this study service quality dimensions such as tangibility, reliability, responsiveness, assurance and empathy have been taken as independent variables and customer satisfaction as dependent variable. Firstly, in order to assess the internal consistency of the questionnaire Cronbach Alpha has been tested. In addition, in order to know the relationship between customer satisfaction and service quality dimensions Spearman correlation has been analyzed, the result shows that reliability 0.601, empathy 0.560, responsiveness 0.550, assurance 0.515, and tangibility 0.389 have positive relationship with customer satisfaction respectively, except tangibility relationship is in a moderate manner. According to regression analysis, tangibility, reliability and empathy can have significant and positive impact on customer satisfaction of Afghan wireless communication company of Balkhab district.

**Keywords:** Customer Satisfaction, Service Quality, SERVQUAL Model, Balkhab

## Introduction

Customer satisfaction is essential for business life and sustainability. If the customers are satisfied with a service/product they will be inclined to repeat a purchase and/or try a line extension. Therefore, enhancing the level of customer satisfaction is vital for an organization's success since satisfied customers may bring additional profits to firms, such as satisfied customers sharing positive recommendations by word of mouth (Nurysh, Naghavi, & Chan Yin, 2019).

Today many successful companies and organizations have embraced new marketing concepts and continually pursue new ways of acquiring and keeping customers. Focusing on customer needs and responding appropriately

to their needs is the most essential task for institutions to achieve their goals. As the main concept in the profitability chain organization; leading organizations have found that even the most creative and unique products will not be requested if it does not meet the needs, wants, and expectations of customers. On average, companies lose about 10 to 30 percent of their customers annually. But often they don't know which kinds of customers are losing, when, and for what reason. Most companies don't focus on why they are losing customers, rather they emphasize new customer recruitment (Salarizada, 2015).

18 years ago there were no signs of infrastructure and telecommunications in Afghanistan; war, terror and horror were everywhere. By establishing telecommunication networks in 2002, Afghanistan witnessed unprecedented growth in this regard and the only reasons are the government's appropriate interventions and organizations' sound customer satisfaction. The telecommunication industry in Afghanistan has developed in a competitive manner and all telecom companies jostle for the attention of subscribers.

The single most important issue influencing organizational survival is customer satisfaction. It has the biggest impact on retaining customers and customer service quality as a customer satisfaction factor (Ako-Nai, 2011). Recently, the Balkhab district of Sar-e-Pol province has witnessed the Afghan Wireless Communication Company (AWCC) services and the majority of the districts' people use these services. AWCC and SALAM are the only communication companies that are active in this district, and so far no research and studies have been conducted about the service quality and customer satisfaction of the AWCC network in the targeted area.

The main goal of this study is to determine the factors influencing AWCC customer satisfaction in the Balkhab district. The research aims to identify the service quality dimensions and the level of their influences over customer satisfaction.

(Arokiasamy & Abdullah, 2013) have studied service quality and customer satisfaction in the cellular telecommunication service provider in Malaysia. The researchers have found that all 5 service quality dimensions positively influenced customer satisfaction in terms of loyalty and attitudes. In addition, t-test results showed that there was a significant gap between perceived satisfaction and expectation (P-E) on all of the service quality dimensions.

(Rahhal, 2015) studied The Effects of Service Quality Dimensions on Customer Satisfaction: An Empirical Investigation in Syrian Mobile Telecommunication Services. The finding showed that, the direct significant impact of service quality on customer satisfaction. This effect had appeared through three dimensions (network quality, responsiveness, reliability) and there was no direct effect of other dimensions of customer satisfaction.

(Amiri Aghdaie & Faghani, 2012) researched Mobile Banking Service Quality and Customer Satisfaction (Application of SERVQUAL Model). They found that the four variables: tangible (0.204), reliability (0.342), responsiveness (0.282), and empathy (0.345) would correlate with satisfaction significantly. However, the assurance factor would have no relationship with CS. The ANOVA test showed that there was a significant correlation between mobile banking service and customer satisfaction.

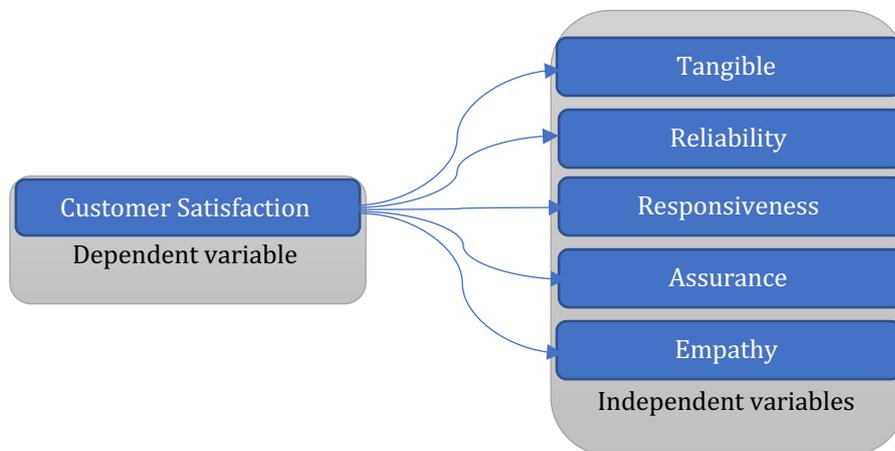
(Alarussi & Alhkami, 2016) studied Service Quality Dimensions and Customer Satisfaction in Telecommunication Companies. The results showed that the majority of the customers satisfied with services provided by telecommunication companies and all the service quality dimensions are positively and significantly associated with customers' satisfaction.

In a study of mobile telecommunication in Pakistan, Asif Khan 2010, discovered that adopting SERVQUAL with additional dimensions is a valid instrument to measure service quality in mobile phone services. He found that the dimensions like tangible, assurance, responsiveness, empathy, convenience, and network quality have a positive and significant relationship with mobile phone users' perceived service quality, network quality, and convenience. He also found convenience and network quality to be the relatively most important dimensions affecting users' perception. Surprisingly, reliability has no significant effect on customers' perception of quality.

(Arslan, Iftikhar, & Zaman, 2014) has researched the effects of service quality dimensions on customer satisfaction: a comparative analysis of the Pakistan telecom sector. The findings of the study revealed that percentages of customer satisfaction change with the service quality dimensions of reliability and empathy. Overall, it can be established that there is a significant relationship between customer satisfaction and service quality dimensions of empathy and reliability.

### Methodology

Figure 1: provides a graphical summary of the conceptual framework that this study examines:



Source: (Alarussi & Alhkami, 2016)

This study is based on Parasuraman et al., (1990). data was collected through a field survey with a standardized questionnaire of five dimensions of service quality (tangibility, assurance, reliability, responsiveness and empathy) with a demographic part. A sample of 170 AWCC users were targeted in this research. SERVQUAL model was conducted for analyzing five dimensions of customer satisfaction so, Cronbach Alpha was computed in order to test the reliability of the instrument. Spearman correlation test employed in order to investigate the relationships between variables. And finally multiple linear regression was conducted in order to find the impacts of service quality dimensions on customer satisfaction.

In 1951 Lee Cronbach developed Cronbach Alpha to assess the internal consistency of a questionnaire (or survey) that is made up of multiple Likert-type scales and items. It is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test. Internal consistency should be determined before a test can be employed for research or examination purposes to ensure validity (Tavakol & Dennick, 2011).

Table 1: shows Cronbach's Alpha internal consistency

Source: (Tavakol & Dennick, 2011)

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$\alpha \geq 0.8$	Good
$\alpha \geq 0.7$	Acceptable
$\alpha \geq 0.6$	Questionable
$\alpha \geq 0.5$	Unacceptable

Table 2: shows Cronbach's Alpha result.

Scale	Number of items	Cronbach alpha
Tangibility	3	0.665
Reliability	5	0.720
Responsiveness	5	0.767

Assurance	5	0.758
Empathy	5	0.715
Customer satisfaction	23	0.902

Source: (research findings)

According to the results, the alpha coefficients are 0.902 for customer satisfaction, 0.665 for tangible, 0.720 for reliability, 0.767 for responsiveness, 0.758 for assurance, and 0.715 for empathy. These scores are acceptable which indicates that there is reliability in the item of variables.

## Results

Table 3: shows Descriptive Statistics

		N	%
Gender	Male	100	58.8
	Female	70	41.2
	Total	170	100
Age	18-28	92	54.1
	29-39	37	21.8
	40-50	21	12.4
	51-61	20	11.8
Education level	Illiterate	35	20.6
	Religious studies	25	14.7
	High school	51	30
	14 pas	31	18.2
	Bachelor degree	28	16.5

Source: (research findings)

Demographic analysis shows that out of 170 valid observations 58.8% were male and 41.2% were female. Interims of age, 54.1% of observations were between 18-28, 21.8% were between 29-39, 12.4% were between 40-50 and the remaining of the respondents were between 51-61 years old. Regarding education level, 20.6% of the respondents were illiterate, 14.7% have studied religious studies, 30% of the respondents were high school graduate, 18.2% had 14 years schooling and the remaining were bachelor degree.

Table 4: spearman correlation coefficient between customer satisfaction and service quality dimensions

	Tangibility	Reliability	Responsiveness	Assurance	Empathy	Customer satisfaction
Tangibility	1.000					
Reliability	.376**	1.000				
Responsiveness	.216**	.644**	1.000			
Assurance	.335**	.612**	.588**	1.000		
Empathy	.213**	.590**	.692**	.659**	1.000	
Customer satisfaction	.389**	.601**	.550**	.515**	.560**	1.000

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

Source: (research findings)

Correlation Coefficient can take any value between  $-1 \leq r \leq +1$  (Güriş, Çağlayan, & Güriş, 2013)

If  $r = 0$  then there is no relationship between the variables

If  $r > 0$  then there is direct relationship between the variables

If  $r < 0$  then there is indirect or reverse relationship between the variables

In order to check the relationship between customer satisfaction and service quality dimension spearman correlation was used. By observing the table there is a positive and high significant relationship between customer satisfaction with reliability, empathy, responsiveness and assurance with volume of ( $r = 0.601, 0.560, 0.550$  and  $0.515$ ). only tangibility has moderate degree of positive correlation with customer satisfaction. In other words, if reliability, empathy, responsiveness and assurance increase; customer satisfaction are affected positively in AWCC of Balkhab district, it can be stated that as tangibility rises, customer satisfaction will moderately have affected.

Regression model are used to predict a variable from one or more than one variables (Dash & Patra, 2014). And specifically the simple (or bivariate) linear regression model is designed to discuss the relationship between a pair of variables that appear in a data set. The multiple LRM is designed to study the relationship between one variable and several of other variables (Campbell & Campbell, 2008).

The regression model is specified as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

**Where,**

$Y$  = customer satisfaction (dependent variable).

$X_{1...5}$  = independent variables

$\beta_0$  = The intercept

$\beta_1 \dots \beta_5$  = estimation Parameters

$e$  = the error term

Table 5: Model Summary (Multiple Regression)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.696 <sup>a</sup>	.485	.469	3.117

a. Predictors: (Constant), Empathy, Tangibility, Reliability, Assurance, Responsiveness

Source: (research findings)

The result shows that R square is 0.485 this means that 48.5% of the total variation in customer satisfaction is explained by the variation in the five independent variables (tangibility, reliability, responsiveness, assurance and empathy), 51.5% remains unexplained.

Table 6: ANOVA<sup>a</sup> ( Multiple Regression)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1498.903	5	299.781	30.849	.000 <sup>b</sup>
	Residual	1593.708	164	9.718		
	Total	3092.612	169			

a. Dependent Variable: customer\_satisfaction

b. Predictors: (Constant), Empathy, Tangibility, Reliability, Assurance, Responsiveness

Source: (research findings)

According to result a large value of F (30.84) with p-value of (0.00) indicate that most of variation in customer satisfaction is explained by the regression equation and that the model is valid.

Table 7: Regression Coefficients<sup>a</sup> (service quality )

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error				Beta	Tolerance
1 (Constant)	1.554	0.903		1.72	0.087		
Tangibility	0.239	0.085	0.176	2.833	0.005	0.813	1.229
Reliability	0.249	0.081	0.255	3.064	0.003	0.455	2.2
Responsiveness	0.099	0.087	0.1	1.141	0.256	0.405	2.468
Assurance	0.057	0.078	0.06	0.739	0.461	0.471	2.125
Empathy	0.308	0.092	0.292	3.335	0.001	0.411	2.436

a. Dependent Variable: customer satisfaction

Source: (research findings)

In table 7 the result shows that tangibility (beta = 17.6, t = 2.833, p = 0.005), reliability (beta = 25.5, t = 3.064, p = 0.003) and empathy (beta = 29.9, t = 3.335, p = 0.001) have high positive impact on customer satisfaction. But responsiveness (beta = 10, t = 1.14, p = 0.256) and assurance (beta = 6 t = 0.739 p = 0.461) have no impact on customer satisfaction

## Conclusion

This study examined effects of service quality dimensions on customer satisfaction of Afghan Wireless communication company in Balkhab district of Sar-e-Pol province by using SERVQUAL model. We used 170 sample with the contribution of 100 males and 70 females. by testing Cronbach Alpha, it's found that there is reliability in the item of variables. According to correlation test it is observed that there is significant and positive relationship between service quality dimensions and customer satisfaction in AWCC of Balkhab district, it means that if reliability, empathy, responsiveness, assurance and tangibility increase; customer satisfaction affected positively. Regarding the impacts of service quality dimensions on customer satisfaction and regression analysis it shows that tangibility, reliability and empathy have high positive and significant impact on customer satisfaction, in other words, if tangibility change 100% in AWCC of Balkhab district it leads to 17.6% change in customer satisfaction level, correspondingly, 100% change in reliability aspects will lead 25.5% change in customer satisfaction level, and finally 100% changes in empathy aspects leads to 29.2% changes in customer satisfaction level.

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# Corporate Social Responsibility and Financial Performance Amongst Rural and Community Banks in Ghana

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## Abstract

This study examines the connection between corporate social responsibility and firms' financial performance through competitive advantage and access to finance as mediating variables and the role of corporate governance as a moderating variable in such relationship using rural banks as study case. A sample of 126 banks were selected and data from these banks were analysed using structural equation modeling and hierarchical regression with moderation. It was found that embarking on corporate social responsibility leads to improvement in competitive advantage and gaining access to capital. These are both related to increase in corporate financial performance. The study found that business organisations that practise CSR activities turn to gain a defensible competitive position in their industry. The practice of CSR tends to create access to finance for business strategies, resulting in positive impact on financial performance depending on the efficiency of their corporate governance practices. The study recommends that activities of CSR should be integrated into firms' corporate and business level strategies. It also recommends that rural banks and the banking industry at large should adopt proper corporate governance structures to ensure judicious use of firm resources in order to enjoy improved financial performance.

**Keywords:** Access to Capital, Competitive Advantage, Corporate Financial Performance, Corporate Governance, Corporate Social Responsibility, Structural Equation Modelling

## Introduction and motivation

In recent years, it has become increasingly apparent for corporate entities in various industries to continually search for new strategies to gain a competitive advantage to be able to increase their market share and enhance their financial performance. One of such strategies is the use of corporate social responsibility (CSR). A typical instance can be cited in the case of Vodafone Ghana CSR initiatives, where the company in 2009 established the Vodafone Ghana Foundation which has supported and sponsored impactful projects to improve the standards living of

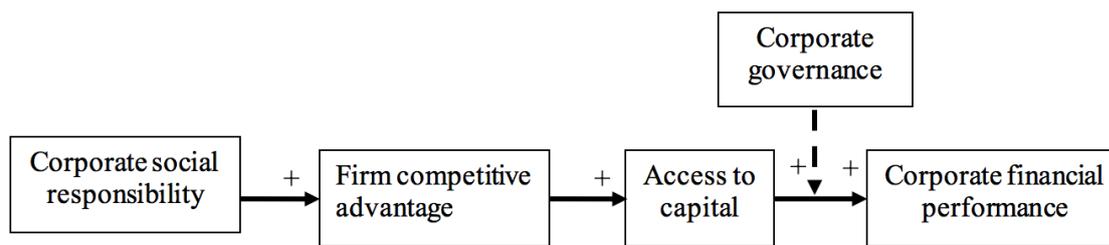
Ghanaians in various deprived communities. Similarly, MTN Ghana in 2007 established a foundation in which annually, the company set aside one percent of its profit for social responsibility programmes in the area of health, education, sanitation, among others (Danso, Poku & Agyapong, 2017). In the rural banking industry, Amanfeman Rural Bank has consistently supported the educational and health needs of their environment to the tune of over GHS2 million. All these entities are profit-oriented, and embarking on CSR activities brings out the need to inquire what motivates these profit-seeking firms to set aside resources to finance their CSR agenda. Contrary to the classical economic theory of a firm (which postulate that a firm is socially responsible if it maximises its profits while operating within the required legal framework), contemporary view of CSR has attempted to link ethical behaviour of a firm to its performance both in the short term and long term, in that, a firm would be able to survive in its environment not based on what it could do for itself to be sustained in the environment but also how it would satisfy the varying need of its stakeholders in terms of its ethical behaviour. This ethical perspective of CSR has raised eyebrow among investors, and currently, the consensus is that; CSR demands organisations to manage the economic, social and environmental impacts of operations to maximise the benefits and minimise losses to stakeholders (CSR Network, 2011).

The previous discussion seems not to necessarily suggest that firms should commit to CSR just because it is ethical to do so; rather, CSR has its commercial implications. Quoting from Friedman (1970); "social responsibility of businesses is meant to increase its profit". The concept of CSR is societal and ethically oriented. At the same time, financial performance is firm-focused, thus linking the two concepts raised a fundamental issue as to whether or not CSR enhances corporate financial performance, and if so, through what means and on what basis? Some studies identified significant positive relationship between firms CSR activities and financial performance (Tsoutsoura, 2004; Lin, Yang & Liou, 2009; Saeidi, Sofian, Saeidi, Saeidi, & Saaeidi, 2015; Guo, He & Zhong 2018; and Choi, Jo, Kim, & Kim, 2018), while others which are mainly underpinned by neoclassical economics have argued that CSR has a negative impact on corporate financial performance (Saxena & Kohli, 2012; Aggarwal 2013; Nollet, Filis, & Mitrokostas, 2016). They argue that CSR unnecessarily increases the firm's costs and as a result, positions the firm in a disadvantageous competitive stage against its competitors who do not embark on CSR activities. The inconclusive outcome of these studies has been attributed to empirical and theoretical drawbacks associated with these studies (McWilliams and Siegel, 2000).

Despite the numerous studies linking corporate social responsibility to firms' financial performance which have yielded inconclusive results (Nejati & Ghasemi, 2013; Scholtens & Kang, 2013; Özçelik, Öztürk, & Gürsakal, 2015; Sulemana, 2016; Abukari & Abdul-Hamid, 2018), the mechanisms and processes that mediate the relationship between them (corporate social responsibility and firms' financial performance) is one area that has been grappled with over the past three decades by researchers. Agyemang and Ansong (2017) contented that the conflicting outcome amongst these constructs could be resulting from the disregard of the mediating roles of some pertinent variables such as access to capital and corporate reputation. This study adds to the argument that, the inconclusiveness of the CSR and firms' financial performance nexus is not only due to the neglect of the mediating roles of some relevant variables but also the moderating roles of other influencing variables. While extant literature has suggested a positive or inverse relationship between CSR and corporate financial performance, an inquiry to make is whether the relationship is direct or otherwise.

Also, previous research in this area has examined a firm's competitive advantage, access to capital financing and corporate governance as independent predictors of corporate financial performance (Kyereboa-Coleman & Biekpe, 2006; Ofori, 2010; Mobarak & Albahussain, 2014). Nevertheless, it is rarely seen in the literature how substantial competitive advantage, access to capital financing and corporate governance interact with each other to influence financial performance among listed firms in Ghana. The present study argues that there is an interactive effect between corporate governance and firm's access to capital on corporate financial performance. In this direction, the study is premised on the following objectives; (a) to examine how firms' competitive advantage and access to capital mediate the relationship between corporate social responsibility and financial performance and (b) to investigate the moderating role of corporate governance in the relationship between access to finance and financial performance. The achievement of the stated objective is built on the hypothesised model as stated in Figure 1

Figure 1: Hypothesised model



Source: Adapted from Jensen, M. C. (1993)

### Corporate social responsibility and competitive advantage

Review of the extant literature on CSR seems to reveal two contrasting drivers for CSR (Branco & Rodrigues, 2006); the normative drivers, which are of the view that firms embark on CSR activities only because it is ethical and moral to do so. The second driver is the business case which is of the view that firms view CSR activities as a means of furthering their economic aspirations. The business case for CSR and its capacity for improving competitive performance appears to take centre stage of the debate from the late 1990s to date (Battaglia et al., 2014). Quoting from the European Commission's report in 2005, "CSR has the potential of playing a key role in contributing to sustainable development while enhancing Europe's innovative potential and competitiveness" (European Commissions, 2005). Despite this declaration, several studies linking CSR activities to CA have come out with mixed results with unclear relationships between the two variables (Mackey & Mackey, 2007; Morsing, Schultz, & Nielson, 2008; Carroll and Shebana, 2010; Battaglia et al., 2014).

Based on the trend of results of prior studies reviewed, the current study hypothesised that;

*H1: there is a positive relationship between corporate social responsibility and firm's competitive advantage among rural banks in Ghana.*

### Competitive advantage and access to capital

Competitive Advantage (CA) involves making choices in respect to the markets in which a firm compete, defending its market share in clearly defined segments using the attributes of price and product performance and responding quickly to the changing needs of the market (Stalk, Evans & Shulman, 1992; Day 1994). CA arise from the formation of superior competencies by firms that are in a position to achieve cost and or differentiated advantages and to create value for customers, resulting in market share and profitability performance (Barney, 1991).

The extant literature has sought to provide theoretical and empirical nexus between gaining competitive advantage and firms having access to capital financing with mixed results (Lipton & Lorsch, 1992; Yermack, 1996; Rais and Goedegebuure, 2009; Oppong, 2014; Nyuur et al., 2014;).

Prior studies have found some mixed results on the relationship between competitive advantage (CA) and secure access to capital financing (Waddock & Graves, 1997; Mallin et al. 2013; García-Sánchez et al. 2015; Flammer 2015; Turnbull 2015; Zingales et al. 2016;). The first strand of empirical studies report that CA impacts negatively on firms' access to capital finance. Barnea and Rubin (2010) also explored the relationship between CA and access to capital of 68 US Bank over the period 2005-2007, they found a adverse relationship between the two variables. They attributed these finding to the fact that, increase in market share and associated competitive advantage comes with diseconomies of scale which when not well managed would lead to the firm experiencing some inherent disadvantages which include limited access to capital financing. Similarly, using a data sample 243 US commercial banks over the period 2007-2010, Marin et al. (2012) found a negative but statistically immaterial relationship between competitive advantage and access to capital financing.

Notwithstanding the reported inverse relationship between competitive advantage and firm's access to capital financing, there are other strands of empirical studies that have found a positive relationship between competitive advantage and access to capital financing (Koufteros, Vonderembse & Doll, 1997; Zhang, 2001; Ven & Jeurissen, 2005; El-Garaihy, Mobarak & Albahussain, 2014). Based on the preceding argument on the competitive advantage and access to capital financing nexus, the current study hypothesised that;

*H2: competitive advantage is positively related to access to capital financing among rural banks in Ghana.*

### **The influence of competitive advantage and access to capital**

The discussion in the preceding section suggests that gaining competitive advantage is likely to play a mediation role in the relationship between corporate social responsibility (CSR) and secure access to capital. Dube *et al.* (2011) emphasised that competitive advantage is gained naturally when firms embark on CSR activities which focused on the welfare of the environment. Also, Usman and Amran (2015) argued that by responding to the environmental demands through CSR and showing concern about the stakeholder needs, a firm could win the 'sympathy' of the environment and thus, experience increase in their market share through expansion in the market base which is in line with the stakeholder theory, which asserts that a satisfied stakeholder is willing to invest in the interest of the entity. Recent studies on CSR and firm performance have shown that gaining competitive advantage within the industry of operation has a significant role to play in the positive relationship between CSR and performance of the firm in terms of raising capital financing. (Kashyap *et al.*, 1996; Kasekende & Opondo, 2003; Abor & Adjasi, 2007; Nakiyingi, 2012; Oppong, 2014). Iwu-Egwuonwu, (2011) found a significant positive relationship among the various dimensions of competitive advantage even though, among the various dimensions considered, product differentiation was found to be a strong predictor of the firm's access to capital financing. Furthermore, in a related study by Agyemang and Ansong (2017) on the role of firm reputation on the relationship between CSR and firm performance among small and medium scale enterprises (SMEs) in Ghana. The result was that good reputation is derived through competitive advantage which has the tendency of mediating between CSR and performance. Extending this stream of studies, we expect competitive advantage to serve as a mediator, linking corporate social responsibility to firm access to financial capital. It can therefore be concluded that a concern for the environment by the firm implies a concern for the activities of the firm by the environment leading to the gaining of advantage over peers who do not embark on similar activities. Consistent with the preceding arguments, the current study proposes the following hypothesis:

*H3. Competitive advantage mediates the positive relationship between corporate social responsibility and firms' access to capital.*

Considering competitive advantage (Porter and Kramer, 2002; Nyuur *et al.*, 2014), and access to capital as mediating constructs, the study seeks to explore the indirect effect of access to capital on corporate financial performance among rural banks in Ghana. It is argued that entities that embark on strategic competitive advantage policy are more likely to attract capital financing opportunities at the least cost which may improve financial performance. Consistent with the assertion of Marin *et al.* (2012), entities with higher market share and thus enjoying a definite competitive advantage are bound to win stakeholder selection when it decides where to invest.

Recent empirical findings support the positive relationship between access to capital and financial performance, even though, governance has a vital role to play (Gangi and Trotta, 2015; Turnbull, 2015; Shahzad *et al.* 2016). Albareda *et al.* (2008) defend the idea that the adoption of the firm having access to capital financing with efficient financing policies leads to the implementation of regulations and standards which would improve the firm's financial performance. Ntim and Soobaroyen (2013) confirm the results presented by Aguilera *et al.* (2012) using a meta-analytic study to find whether access to capital financing had a robust positive relationship with corporate financial performance. In a parallel study, Surroca *et al.* (2010), found that among the various determinants of the financial performance of listed entities, having access to capital financing plays a very significant role as lack of financing and high cost of financing can adversely affect the firm's financial performance. Furthermore, it has also been specified that there exists a positive relationship between firm's competitive advantage and access to capital

financing. (Russo and Fouts, 1997; Brammer and Millington, 2005; Nakao et al., 2007; Scholtens, 2008; Okamoto, 2009; and Yang et al., 2010). The preceding discussions can then be summarised in the hypothesis below:

*H4. Access to capital mediates the positive relationship between firm's competitive advantage and financial performance.*

Previous research has generally indicated the linkage between CSR and corporate financial performance, only that the linkage is indirect, implying that, CSR is indirectly related to corporate financial performance. For instance, Agyemang and Ansong (2017), Stanaland *et al.*, (2011) and Lai *et al.*, (2010) were able to link CSR and corporate financial performance through access to capital and also through firm's reputation. In the same way, Gramlich and Finster (2013) cited in Jean-Michel *et al.* (2019), studied the relationship between CSR and financial performance outcome with governance playing a mediating role. They found that useful and structured governance mediated the relationship between CSR of manufacturing and mining firms and their financial performance in both long term and short term. Although empirical findings support an indirect relationship between CSR activities and financial performance, most of these studies have used single mediator variables (Lai *et al.*, 2010; Stanaland *et al.*, 2011; Agyemang and Ansong, 2017). The current study however examines multiple mediators in the CSR and financial performance nexus with data drawn from rural banks in Ghana.

Adopting Walumbwa and Hartnell (2011) approach, we anticipated in H3 that firm's competitive advantage would facilitate the relationship between CSR and firm access to capital. Also, H4 suggested that the relationship between firms' competitive advantage and firms' financial performance will be mediated by access to capital financing. By connecting firms' competitive advantage, CSR activities presumably become an indirect antecedent to firms' access to capital financing, which then affects their financial performance. The study, therefore, proposes as a last mediation hypothesis from these two predictions as follows:

*H5. Firms' CSR activities are indirectly related to financial performance through the mediating influence of competitive advantage and access to capital financing.*

### **The influence of corporate governance**

Researchers have emphasised the influence of corporate governance variables such as board size, board composition, board committees, company ownership structure, independence of directors, on company performance.

On-Board size: The extant literature has sought to provide a theoretical and empirical nexus between corporate board size and firm financial performance with mixed results (Kent & Stewart, 2008; Lipton & Lorsch, 1992; Yermack, 1996). On theoretical grounds, the agency theory proposes that larger boards are sub-optimal, while smaller boards are excellent and effective at improving financial performance (e.g. Lipton & Lorsch, 1992; Sonnenfeld, 2002) with the following justification; first, smaller boards can plan, organise, direct and control the entity, and besides, the large-size board has financial cost implications. Secondly, Jensen (1993) argues that the large-size board is difficult to coordinate, less likely to function effectively and may create a diminished sense of individual responsibility.

More specifically, Lipton and Lorsch (1992) suggested that corporate board size must preferably fall between eight (8) and nine (9) directors. They argue that as corporate board size goes beyond a maximum number of ten (10) directors; additional costs of having larger boards typically associated with slow decision making are higher than any marginal gains from intense monitoring of management's activities. Again, Yawson (2006) argued that larger boards suffer from more serious agency problems and are far less effective than smaller boards. Thus, limiting corporate board size may improve efficiency. Conversely, another strand of theoretical literature emanating from the resource dependence perspective suggests that boards are chosen to maximise the provision of essential resources to the firm (Pfeffer and Salanick, 1978; Klein, 1998; Hillman and Dalziel, 2003). Thus, larger boards may be better for corporate financial performance (John & Senbet, 1998; Yawson, 2006) and may link the organisations to its external environment and secure critical resources. It is argued that larger boards are associated

with a diversity of skills, business contacts and experience that smaller boards may not have, which offer more significant opportunity to secure critical resources (Haniffa and Hudaib, 2006).

**On-Board composition:** Having a significant percentage of outside directors on board could be considered as a management innovation as one of the mechanisms to lessen agency costs between management and shareholders (Chizema and Kim, 2010). According to the agency theory, the non-executive directors are assumed to be essential monitors that supervise and control the executives.

There are volumes of empirical literature that argue that boards dominated by outside directors or non-executive directors impact positively on firm performance (Cho and Kim, 2007; Bino and Tomar, 2007; Laun and Tang, 2007; Trabelssi, 2010; Yesser et al., 2011; Al-Hawary 2011; Al-Sahafi et al., 2015;)

**On-Board committees:** There is empirical literature which suggests a positive relationship between board committees and financial performance (see Wild, 1994; Liang & Weir, 1999; Vefaes, 1999b; Young & Bucholtz, 2010; Black & Kim, 2012; Bussoli, 2013; Puni, 2015). From the preceding discussions, it is apparent that corporate governance influences firms' ability to deploy available capital to achieve financial performance. Thus, the current study expects corporate governance to interact with access to capital to influence corporate financial performance. On this basis, the following hypothesis is stated:

*H6: Corporate governance will moderate the positive relationship between access to capital and corporate financial performance.*

## Methodology

A cross-sectional survey was applied during the study. A sample of 126 rural banks was selected from the 144 rural banks (Bank of Ghana, 2020) distributed over the sixteen regions<sup>1</sup> Of Ghana. The sample of 126 was purposely chosen based on the banks being classified as at least 'satisfactory' during the Bank of Ghana clean-up exercise in 2019. From this exercise, 21 banks were rated strong, implying such banks were sound in all indicators, 105 banks were classified as satisfactory, implying that they were fundamentally sound with modest collectable weakness. Four (4) banks were so profoundly distressed that they were considered to be at high risk of failure, and 11 banks were not classified because they failed to submit their financial data for audit (Apex, 2020). Even though the study aimed at including all the banks in the study, based on this classification, the study considered banks that were classified as at least satisfactory. Also, the selected banks ensured a regional balance among the 144 licensed rural banks. The regional distribution of the selected banks is indicated in Table 1.

Data on directly observed variables (such as corporate performance) were collected from the 2019 financial statement, and unobserved variables (such as competitive advantage) were collected through the use of a questionnaire. For unobserved variables, the questions were developed based on previous research and scale developing procedures. The research instrument was applied with the help of Google form sent to the targeted banks and contacts with the targeted person to complete the questionnaire and supplied us with the required data for the study.

Table 1: Regional distribution of rural banks in Ghana and sample selected for the study

<b>Region</b>	<b>Number of rural banks</b>	<b>RB Selected for the study</b>
Upper East	5	4
Upper West	4	2
Northern	4	2
Savannah	1	1
North East	2	1
Bono	10	9

<sup>1</sup> Ashanti, Bono, Bono East, Ahafo, Central, Eastern, Greater Accra, Northern, Savannah, North East, Upper East, Upper West, Volta, Oti, Western and Western North.

Bono East	7	6
Ahafo	5	4
Ashanti	27	25
Eastern	25	23
Western	8	7
Western North	6	4
Volta	8	8
Oti	5	4
Central	20	19
Greater Accra	7	7
<b>Total</b>	<b>144</b>	<b>126</b>

Source: Bank of Ghana, December 2019

### Measurement of variables

The latent variables used for the study were measured using a questionnaire with Likert scale type of items as the main instrument based on previous research and scale developing procedures. The constructs concerning the scales were measured with multiple item-scales based on the related literature, and some were adopted from literature and modified to suit the domain of the study.

Corporate social responsibility was measured using a four-level construct, following the measuring procedure similar to that adopted by Sweeney (2009), Hinson et al. (2010) and Sulemana (2016). The details of the measuring indicators are shown in Table 2 below.

Competitive advantage was measured by adapting the scale introduced by Zhang (2001). The scale initially consists of 16 items rated on a 5-point Likert-type scale with anchors ranging from 1 (strongly disagree) to 5 (strongly agree) and organised into five dimensions (price and cost, quality, delivery dependability, time to market, and product innovation). However, after carrying out factor analysis, 13 items were retained and have been organised into four dimensions (price and cost, quality of service delivery and customer, time to market, and product innovation) the detail of which is shown on Table 2.

In measuring access to capital as a construct, the study concentrated on formal sources of ascertaining capital, as the regulator is strict on the sources of raising capital to finance the activities of these banks. The details of the indicators of this construct is shown in Table 2

Corporate governance was measured as a construct following the procedure adopted by Hillman & Dalziel (2003), Leng (2004), and Adams & Mehran (2012). The construct was measured using three indicators; board size, board composition and several committees operated by the board. The details of the indicators are described in Table 2.

In addition to the substantive measures presented above, the study included three control variables in the hypothesised model as these might account for some variations in the financial performance of the banks (Ranti, 2011; Al-Manaseer et al., 2012; Al-Sahafi et al., 2015). In this direction, we controlled for bank size, interest income and bank age. Measurement of these variables is shown in Table 2.

Since self-report measures were applied in collecting the data for the construct, the possibility of standard method variance (CMV) in the constructs was anticipated. As a result, most of the recommendations by Podsakoff et al. (2003) were applied in the quest to remedy the prospect of the method bias.

Table 2: Measurement of constructs

Second-order	First-order	Indicator	Statement on the questionnaire
Corporate social responsibility (CSR)	Environment (SREn)	Concern for Environment (SREn1)	Conduct business while maintaining the integrity of the environment
		Energy conservation (SREn2)	Use alternative renewable sources of energy in business operations.
		Conservation of natural resources (SREn3)	Conserve water, protecting flora & fauna etc.
		Recycling and e-waste management (SREn4)	Policy to re-use, recycle paper, recycling electronics waste & other materials used in production
		Support environmentally oriented business (SREn5)	Concessional arrangement for granting a loan to a business that has concern for the environment
	Human Resource (SRHr)	Employee Health and Safety (SRHr1)	Protects employees against work hazards
		Employee training and development (SRHr2)	Organise training, refresher training and other educational opportunities
		Employee discrimination (SRHr4)	The policy of anti-discrimination in terms of recruitment, remuneration and promotion
		Fair employee evaluation process (SRHr4)	Fair performance appraisal system
	Community (SRCm)	Support for education (SRCm1)	Commitment to promoting education in terms of assistance in the areas of classroom infrastructure, textbooks, computer donations, teaching & learning materials, building the capacity of teachers, schools internet connectivity & other educational scholarships.
		Support for health (SRCm2)	Assistance in health infrastructure, refurbishment, donating hospital equipment, training for health Professional
		Employment of local residence (SRCm3)	The policy of recruiting qualified local residence.
		Support youth entrepreneurship (SRCm4)	Assistance aimed at training the youth to be entrepreneurial to create their jobs and be self-reliant.
		Employee volunteerism (SRCm5)	Company employees are getting out of their comfort zone and doing community work. Contributing cash or kind to the community
	Ethical (SREt)	Integrity (SCEt1)	Be honest & upright in corporate dealings.
Professional conduct (SCEt2)		Allowing sound, good moral judgment in the conduct of business.	
Transparency (SCEt3)		corporate actions and decisions are open to employees, stakeholders, shareholders and the general public.	
Customer confidentiality (SCEt4)		Keep legitimate and legal dealings with customers in confidence.	

Table 2: Measurement of constructs (continuation)

Second-order	First-order	Indicator	Statement on the questionnaire
Competitive Advantage	Price and Cost	Equality and diversity (SCEt5)	Treating people fairly and equitably without prejudice and allowing cultural differences to fester
		Pricing	Prices of products/services are competitive relative to other competitors.
		Industry average price	Price of product/service below the average industry price

	Price flexibility	Prices are adjustable to suit customer expectations.	
	Operational cost	Operational cost is kept as minimal as possible.	
Quality of service and customers	Customer view of product/service quality	Sought for customer view on the quality of our product or service	
	Customer complains	Provides avenues and platform to deal with customer complains.	
	New customers	There is a detailed policy for attracting and retaining new customers.	
Product Innovation	Flexible product development	Products/services are developed to meet customer requirements.	
	Continual product development	Respond to customer demand for changes in product features	
	Unique products	Products/services are uniquely designed to distinguish themselves from the industry.	
Time-to-market	Response to market changes	Respond to changes in the market conditions	
	Time to response	Time to respond to changes is shorter than the average time of the industry.	
	Lead time	The time between customer demand for a product and actual product development is kept minimal as possible	
Access to capital	Equity financing	Obtain finance from investors in the form of shares	
	Debt financing	Obtain finance from banks and other financial institution in the form of loan	
Corporate governance	Board size	Number of members on the board of the bank	
	Board composition	No. of Non-executive directors / no. of directors	
	Board committees	No. of committees the board have	
Financial performance	Return on asset	Profit after tax/capital employed.	
	Return on equity	Profit after tax / shareholder's fund	
	Sales growth	% change in interest income between 2018 and 2019	
	Liquidity	Current ratio	Current asset /current liability
		Capital adequacy ratio	?
Control variables	Liquid asset ratio	Liquid asset / total liability	
	Bank size	Natural logarithm of total asset	
	Cost income ratio	Operating cost/ net income	
	Bank age	Years of incorporation	

## Results and discussion

The data collected from the field was analysed using SmartPLS version 3.2.6 (Ringle *et al.*, 2015) and IBM SPSS version 20 (Micros).

### *Model fitness test*

The fitness of the data to the hypothesised model was estimated using the Standardised Root Mean Square Residual (SRMR), Squared Euclidean Distance (d\_ ULS), Geodesic distance (d\_ G) and Root Mean Squared Theta (RMS  $\theta$ ) as recommended by Bagozzi and Yi (2012). The multiple fitness indices have been utilised to ensure the robustness of the results. The chi-square goodness-of-fit index (commonly used fitness index) was excluded due to its sensitiveness to larger sample size (above 100 cases).

Hu and Bentler (1999) recommended that SRMR of value less than 0.08 is considered a good fit, and also, the hypothesised model is not misspecified (Henseler *et al.*, 2014). d\_ ULS is based on bootstrapping iteration result of the exact model fit. The d\_ ULS fit indices, which measure the difference between the correlation matrix implied by the hypothesised model and the empirical correlation matrix. Such difference should not be significant ( $p > 0.05$ ) to indicate the fitness of the measurement model (Dijkstra *et al.*, 2015). Bentler and Bonett (1980) stated that, the NFI result in value is between 0 and 1, and that, the closer the NFI to 1, the better the fit. NFI value above 0.9 represents an acceptable fit. RMS  $\theta$  value below 0.12 is, therefore, an indication of a well-fitting model, whereas higher values indicate lack of fit (Henseler *et al.*, 2014).

Based on the data from the sample of 126 rural banks, the model fitness test exhibited that the five-factor hypothesised model (with items loading onto the corresponding factors of corporate financial performance predicted by corporate social responsibility, competitive advantage, access to capital financing, and corporate governance) had an excellent fit to the data as indicated in Table 3.

Table 3: Fit indices for the measurement model

Model Fit index Acceptable level	SRMR ( $\leq 0.08$ ) <sup>2</sup>	d_ ULS ( $p > 0.05$ ) <sup>3</sup>	d_ G ( $p > 0.05$ ) <sup>4</sup>	NFI ( $\geq 0.90$ ) <sup>5</sup>	RMS $\theta$ ( $< 0.12$ ) <sup>6</sup>
Five-factor hypothesized model (CSR, CA, AC, CG, CFP)	0.069	0.214	0.248	0.985	0.012
Four-factor hypothesized model (CSR, CA+AC, CG, CFP)	0.072	0.103	0.001	0.832	0.102
Three-factor hypothesized model (CSR, CA+AC+ CG, CFP)	0.083	0.003	0.005	0.617	0.152
Two-factor hypothesized model (CSR+CA+AC+ CG, CFP)	0.079	0.000	0.000	0.662	0.031
Single-factor hypothesized model (CSR+CA+AC+ CG+CFP)	0.109	0.000	0.003	0.815	0.110

**Note:**  $n = 126$ . CSR, Corporate social responsibility; CA, Competitive advantage; AC, Access to capital; Corporate governance; CFP, corporate financial performance.

This model showed SRMR = 0.069, NFI = 0.985 and RMS  $\theta$  = 0.012. Bootstrap result for d\_ ULS and d\_ G disclosed a probability of acceptance of the null hypothesis of no difference at 21.4% and 24.8% respectively, showing an insignificant difference between the correlation matrix implied by the hypothesised model and the empirical correlation matrix. All the indices show a superior model fit for the five-factor model to the alternative models, as indicated in Table 3.

### Validity and reliability

Validity and reliability test were carried out as part of the CFA to ascertain the validity and reliability of the hypothesised model shown in Figure 1. In testing the validity of the constructs, the study focused on the degree to which the data exhibit both convergent and discriminant validity.

By convergent validity, the study seeks to explore whether all statements posed for a particular construct are collected just under a single factor. Convergent validity evidence for a hypothesised model exist if all observable

<sup>2</sup> Hu & Bentler (1999)

<sup>3</sup> Dijkstra & Henseler (2015)

<sup>4</sup> Dijkstra & Henseler (2015)

<sup>5</sup> Bentler and Bonett (1980), Lohmoller (1989)

<sup>6</sup> Henseler *et al.* (2014), Lohmoller (1989)

indicators load significantly onto their respective latent factors (Anderson et al., 1988). Four indices which were used in assessing convergent validity are standard factor loading (SFL) with bootstrapping, composite reliability (CR), the Rho\_A and average variance extracted (AVE). Table 4 below shows the result of the convergent validity test.

Table 4: Measurement scale and indicators of the hypothesised model

Measurement scale and indicators	Standard factor loading			CR	AVE	$\alpha$	Rho_A
	loading	t - value	p-value				
<i>Corporate Social Responsibility (CSR)</i>				0.918	0.672	0.906	0.907
Indicator 1	0.831	15.331	***				
Indicator 2	0.804	11.435	***				
Indicator 3	0.889	16.400	***				
Indicator 4	0.788	11.078	***				
Indicator 5	0.779	12.181	***				
Indicator 6	0.811	12.383	***				
Indicator 7	0.866	14.423	***				
Indicator 8	0.805	11.349	***				
Indicator 9	0.730	10.348	***				
Indicator 10	0.784	11.471	***				
Indicator 11	0.796	12.086	***				
Indicator 12	0.767	10.513	***				
Indicator 13	0.891	16.175	***				
Indicator 14	0.804	11.885	***				
Indicator 15	0.825	13.179	***				
Indicator 16	0.791	12.161	***				
Indicator 17	0.824	13.199	***				
Indicator 18	0.776	11.489	***				
Indicator 19	0.807	12.213	***				
<i>Competitive Advantage (CA)</i>				0.900	0.511	0.880	0.882
Indicator 1	0.827	13.123	***				
Indicator 2	0.907	17.963	***				
Indicator 3	0.876	14.992	***				
Indicator 4	0.825	13.536	***				
Indicator 5	0.865	15.091	***				
Indicator 6	0.736	9.383	***				
Indicator 7	0.832	12.754	***				
<i>Access to Capital (AC)</i>				0.823	0.699	0.769	0.569
Indicator 1	0.873	12.071	***				
Indicator 2	0.834	10.776	***				
<i>Corporate Governance (CG)</i>				0.897	0.743	0.827	0.830
Indicator 1	0.824	10.217	***				
Indicator 2	0.843	11.738	***				
Indicator 3	0.813	10.873	***				
<i>Corporate Financial Performance (CFP)</i>				0.924	0.669	0.901	0.902

Indicator 1	0.786	12.379	***
Indicator 2	0.839	14.097	***
Indicator 3	0.819	12.050	***
Indicator 4	0.790	10.174	***
Indicator 5	0.810	11.789	***
Indicator 6	0.859	14.762	***

In Table 4, all the indicators load significantly on their respective construct with a loading coefficient ranging 0.730 to 0.907 for the various factors in the hypothesised model exceeding the suggested ratio of 0.7 (Bagozzi and Yi, 2012; Hair *et al.*, 2014), which is an indication of a tolerable item convergence on the proposed constructs. The bootstrapping results indicate that the loading obtained are significant at 1%. Also, the reported AVE for the five scales were greater than the tolerable level of 0.5 (Fornell & Larcker, 1981). Also, composite reliability (CR) values of all the five scales were well above the cut-off point of 0.7 as recommended by Nunnally and Bernstein (1994). Again, a more robust measure, Rho\_A showed a result above the cut of 0.75 as recommended by Dijkstra and Henseler (2015). The results indicate an acceptable convergent validity for all constructs in the measurement model.

In assessing discriminant validity, the study aimed at testing whether the scale measures that are not expected to relate are actually unrelated. In this direction, the study applies the Heterotrait-monotrait (HTMT) ratio of correlations which indicate an establishment of discriminant validity for HTMT value below 0.80 (Henseler *et al.* 2015) and the Fornell–Larcker criterion. Table 5 shows the HTMT ratios which meet the threshold of below 0.80 and are significant at 5% after conducting the bootstrapping of 300 samples from the 126 sampled banks demonstrating that, the scale measures that are not expected to relate are not relating. Also, applying the Fornell–Larcker criterion as indicated in Table 5, the square root of the AVE (shown on the leading diagonal of the correlation matrix) in each row and column is higher than the figures in that row or column indicating the appropriateness of discriminant validity.

Table 5: Fornell–Larcker criterion analysis and Heterotrait-monotrait (HTMT) ratio of correlations

	CSR	CA	AC	CG	CFP
<i>Fornell–Larcker criterion</i>					
CSR	<i>0.820</i>				
CA	0.605	<i>0.715</i>			
AC	0.733	0.706	<i>0.836</i>		
CG	0.795	0.691	0.536	<i>0.862</i>	
CFP	0.639	0.629	0.577	0.867	<i>0.818</i>
<i>Heterotrait-Monotrait ratio</i>					
CA	0.311				
AC	0.224	0.398			
CG	0.109	0.298	0.378		
CFP	0.221	0.226	0.204	0.402	

**Note:**  $n = 126$ . CSR, Corporate social responsibility; CA, Competitive advantage; AC, Access to capital; Corporate governance; CFP, corporate financial performance. *Italic figures in the diagonal of the correlation matrix in the Fornell–Larcker criterion denotes the square root of the AVE. For appropriate discriminant validity, the italic figures in each row and column should be greater than the figures in that row or column.*

Reliability of the constructs was assessed using the Cronbach's alphas ( $\alpha$ ) and AVE values. The results of reliability analyses showed Cronbach's alphas of the constructs ranging from 0.769 to 0.906, which is considered high and above the suggested value of 0.70 (DeVellis, 2012).

In conclusion, the results obtained show that the measurement model utilised in this study has the right internal consistency, reliability, convergent validity and discriminant validity. In other words, these results on validity and reliability provide evidence for the instruments used in this study.

### Inter-correlations and descriptive statistics

The object of this section is to describe the responses about the study variables using basic descriptive statistics and to assess the appropriateness of the study hypotheses as well as examining whether there is the presence of multicollinearity or not. Table 6 presents the descriptive statistics of the study variables and the correlation between them. The variance inflation factor of the study construct is presented, as well.

From Table 6, all the unobserved variables (CSR, CA, AC, CG and CFP) appears to be approximately normally distributed judging from their skewness coefficient and their kurtosis. The responses to the questionnaire items seem to be fairly answered with most of the responses agreeing to the statement posed to them. On their relationship, it can be observed that all the variables relate positively with the dependent variable; corporate financial performance, which is an indication that improvement in all the variables considered is capable of improving the financial performance. For instance, corporate social responsibility and competitive advantage individually, showed a positive correlation of ( $r = 0.426, p < 0.1$ ) and ( $r = 0.312, p < 0.1$ ) respectively even though the correlation coefficient is not significant at 5%.

Table 6: Descriptive statistics and Inter-correlation coefficients

	Descriptive				Inter-correlation coefficients						
	Mean	SD	Skew.	Kurt.	CSR	CA	AC	CG	CFP	BS	CIR
CSR	2.905	1.342	0.116	-1.114	(1.408)						
CA	3.063	1.424	-0.063	-1.282	0.315**	(1.711)					
AC	3.016	1.297	0.081	-1.023	0.375	0.274**	(2.024)				
CG	3.04	1.137	0.085	-0.684	0.307	0.356	0.306	(2.197)			
CFP	3.151	1.322	-0.198	-1.029	0.426*	0.312*	0.623**	<b>0.544</b>	(1.729)		
BS	18.249	1.281	0.095	-1.023	0.205	0.301	0.398	0.233	<b>0.321</b>		
CIR	0.618	5.359	-0.04	-1.162	0.414	0.272	0.418	0.239	<b>0.275</b>	0.317	
BA	15.135	9.316	0.091	-1.017	0.324	0.316	0.359	0.161	0.225	0.338	0.367

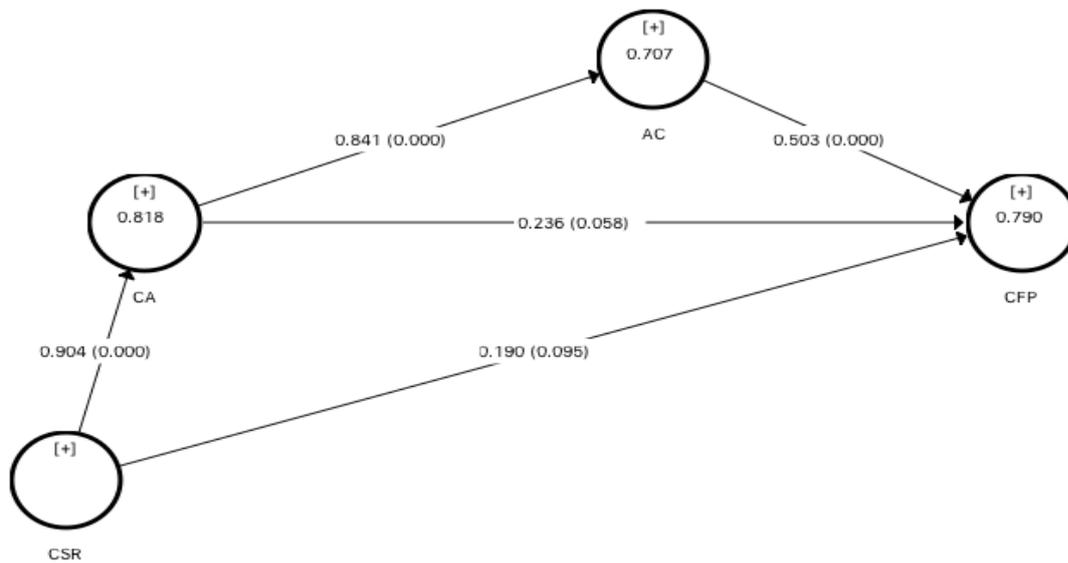
*Note:*  $n = 126$ . CSR, Corporate social responsibility; CA, Competitive advantage; AC, Access to capital; Corporate governance; CFP, corporate financial performance; BS, Bank size; CIR, cost income ratio; BA, bank age. Figures on the leading diagonal of the correlation matrix put in parenthesis are the variance inflated factors (VIF). \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ ;

There is a strong positive significant correlation between access to capital and corporate financial performance with a correlation coefficient of ( $r = 0.623, p < 0.05$ ) which is an indication that proper use of capital available to the banks will lead to improved financial performance. Examining the critical constructs for multicollinearity, which occurs when there is a strong correlation between two or more predictor variables in a regression model (Field, 2009), Hair et al. (2014) recommended two approaches. First, it involves an examination of the correlation matrix among the predictor variables. A correlations coefficient greater than or equal 0.90 is an indication of significant collinearity. The results of the study (see Table 6), reported the highest correlation coefficient among the predictor variables to be 0.418, indicating the absence of collinearity. Secondly, to avoid collinearity as a result of the combined effect of two or more predictors as recommended by Hair et al. (2014), the VIF of the predictor variables were assessed. Applying the threshold of VIF values of 10 as recommended by Gaur and Kumar (2009) and Hair et al. (2014), the VIF values (ranging from 1.408 to 2.197), as indicated in parentheses in Table 6 shows there is no challenge of multicollinearity among the predictor variables. Consequently, the hypothesis of the study could be tested.

## Structural model

The hypothesised CSR model (see Figure 1) was empirically tested using structural equation modelling (SEM), which allows all paths to be evaluated simultaneously. The result of the path analysis is presented in the form of a path diagram, as shown in Figure 2. Hypotheses (H1 to H5) were tested by conducting a bootstrap analysis with bias-corrected 95% confidence interval using the Smart PLS, where 5000 sub-samples were created with observations randomly drawn (with replacement) from the original set of data.

Figure 2: Path diagram for the hypothesised Model (Excluding moderating effect)



## Hypothesis testing

**H1-H2.** H1 predicted that corporate social responsibility would be positively related to firm's competitive advantage, whereas H2 hypothesised that firm's competitive advantage would be positively related to firm's access to capital financing. From Table 6, corporate social responsibility is positively related to firm's competitive advantage ( $r = 0.315$ ,  $p < 0.01$ ) and also firm's competitive advantage is positively related to firm's access to capital finance ( $r = 0.274$ ,  $p < 0.01$ ). From Figure 2 and Table 7, the outcome of the direct effect of corporate social responsibility on a firm's competitive advantage is positive. It is significant at 1% ( $\beta = 0.904$ ,  $|t| = 55.069$ ,  $p < 0.01$ ). Hence, hypothesis 1 is reinforced by the CSR model.

Table 7: Direct, indirect and total effects of the hypothesised model

	Std Estimate	Std Error	t-value	Bias Corrected 95% CI.		p-value
				LLCI	ULCI	
<i>Standardised direct effects</i>						
CSR → CA	0.904	0.016	55.069	0.861	0.928	0.000***
CA → AC	0.841	0.025	33.188	0.774	0.882	0.000***
AC → CFP	0.503	0.112	4.488	0.283	0.719	0.000***
CSR → CFP	0.190	0.108	1.751	-0.054	0.394	0.096*
CA → CFP	0.236	0.116	2.037	-0.026	0.443	0.068*
<i>Standardised indirect effects</i>						
CSR → CA → AC	0.761	0.033	23.316	0.674	0.813	0.000***
CA → AC → CFP	0.423	0.092	4.595	0.237	0.602	0.000***

CSR →CA →CFP	0.213	0.105	2.035	0.212	0.549	0.042**
CSR →CA →AC→CFP	0.382	0.083	4.598	-0.026	0.402	0.000***
<i>Standardised total effects</i>						
AC →CFP	0.503	0.112	4.488	0.283	0.719	0.000***
CA →AC	0.841	0.025	33.188	0.774	0.882	0.000***
CA →CFP	0.658	0.098	6.692	0.461	0.867	0.000***
CSR →AC	0.761	0.033	23.316	0.674	0.813	0.000***
CSR →CA	0.904	0.016	55.069	0.861	0.928	0.000***
CSR →CFP	0.785	0.043	18.406	0.660	0.845	0.000***

*Note:*  $n = 126$ . CSR, Corporate social responsibility; CA, Competitive advantage; AC, Access to capital; Corporate governance; CFP, corporate financial performance. Standardised estimate was obtained from 5,000 sub-samples. \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ ;

Also, the direct effect of firm's competitive advantage on firms' access to capital showed a positive significant path coefficient at 1% significant level ( $\beta = 0.841$ ,  $|t| = 33.188$ ,  $p < 0.01$ ) indicating that the CSR model supports hypothesis 2.

**H3-H5.** As indicated in Table 6, the correlation coefficients ( $r = 0.315$ ,  $p < 0.05$ ) indicates corporate social responsibility was positively and significantly related to competitive advantage. Also, competitive advantage was positively and significantly related to firm's access to capital financing with correlation coefficient ( $r = 0.274$ ,  $p < 0.05$ ), and firm's access to capital was also positively and significantly related to corporate financial performance ( $r = 0.623$ ,  $p < 0.05$ ). More importantly, from the path diagram in Figure 2 and the result from the bootstrapping analysis of the path coefficient as indicated on Table 7, the outcomes of the direct effects of corporate social responsibility on firm's competitive advantage ( $\beta = 0.904$ ,  $|t| = 55.069$ ,  $p < 0.01$ ), firm's competitive advantage on access to capital financing ( $\beta = 0.841$ ,  $|t| = 33.188$ ,  $p < 0.01$ ) and access to capital finance on corporate financial performance ( $\beta = 0.503$ ,  $|t| = 4.488$ ,  $p < 0.01$ ) were all statistically significant at 1%. This is an indication that the basic conditions of mediation in the hypothesised model are satisfied. Consequently, the indirect effects of the hypothesised model are then examined.

To do this, the bias-corrected bootstrapping analysis at 95% confidence interval with 5,000 sub-samples was conducted. Following the recommendation by Preacher and Hayes (2008), the confidence interval of the upper and lower limit was calculated to test the significance of the indirect effects of the mediating variables (result shown in Table 7). The result of this analysis showed the existences of positive and significant mediation effect of firms' competitive advantage between corporate social responsibility and firm's access to capital ( $\beta = 0.761$ ,  $|t| = 23.316$ ,  $p < 0.01$ ). Also, the results show a positive and significant mediating effect for access to capital finance between firm's competitive advantage and corporate financial performance ( $\beta = 0.423$ ,  $|t| = 4.493$ ,  $p < 0.01$ ). Finally, the bootstrapping analysis showed that there is a positive and significant mediating effect for competitive advantage and access to capital finance between corporate social responsibility and corporate financial performance ( $\beta = 0.382$ ,  $|t| = 4.598$ ,  $p < 0.01$ ). With the preliminary result, H3-H5 were supported by the CSR model.

It can again be observed that, the direct consequence of corporate social responsibility on corporate financial performance is not significant at 5% ( $\beta = 0.190$ ,  $|t| = 1.751$ ,  $p < 0.1$ ). This is an indication that firm's competitive advantage and access to capital financing plays a full mediation between corporate social responsibility and corporate financial performance. In another dimension, firm's competitive advantage showed positive and significant mediation effect between corporate social responsibility and corporate financial performance ( $\beta = 0.213$ ,  $|t| = 2.035$ ,  $p < 0.05$ ), however, the effect of the relationship is not robust as the relationship would be insignificant at 1% significant level. The relationship confirms that the relationship between corporate social responsibility and corporate financial performance is fully mediated by competitive advantage and access to capital finance.

### Assessing the moderating role of corporate governance

The second objective of the study seeks to investigate how the relationship between access to finance and financial performance is moderated by corporate governance. That is if firms have access to capital financing, does corporate governance play any role in determining whether a firm will improve its financial performance or not? To test this hypothesis, hierarchical regression was carried out with three controlled variables (bank size, cost to income ratio and bank age) and two predictor variables (access to capital finance and corporate governance). Based on the predictors, the moderating variable was derived (that is, the interaction between access to capital and corporate governance). The outcome of the hierarchical regression in Table 8 indicates that corporate governance significantly moderates the relationship between access to capital finance and corporate financial performance ( $\beta = 1.683$ ,  $|t| = 1.982$ ,  $p < 0.05$ ) with the interaction effect between access to capital and corporate financial performance explaining 35% of the variances in the corporate financial performance and the global regression model being significant at 5% level of significance. The results from the hierarchical regression, therefore, provides adequate support for H6.

Table 8: Result of hierarchical linear regression for corporate financial performance

	Corporate financial performance
<i>Step 1: Controlled</i>	
Bank size	0.105* (2.160)
Cost to income ratio	- 0.069 (- 0.767)
Bank age	- 0.086 (- 0.956)
$R^2$	0.024**
$\Delta R^2$	0.024**
$F_{(3,122)}$	2.979**
$\Delta F_{(3,122)}$	2.979**
<i>Step 2: Predictors</i>	
Access to capital (AC)	0.590** (2.951)
Corporate Governance (CG)	0.411*** (7.13)
$R^2$	0.27**
$\Delta R^2$	0.246**
$F_{(3,122)}$	5.667**
$\Delta F_{(2,120)}$	2.18**
<i>Step 3: Mediators</i>	
AC $\times$ CG	1.683** (1.982)
$R^2$	0.35**
$\Delta R^2$	0.08**
$F_{(3,122)}$	5.937**
$\Delta F_{(2,120)}$	5.690**
<i>Notes: n = 126. Reported coefficients are standardised estimates with robust t-statistics (in parenthesis). *p&lt;0.1; **p&lt;0.05; ***p&lt;0.01</i>	

### Discussion

The first hypothesis of the study (H1) postulates a positive relationship between firm corporate social responsibility outcomes and firms' competitive advantage. The result of the study provided evidence to support the first hypothesis (H1) of the study such that, corporate social responsibility is significantly positively related to firms'

competitive advantage. This aspect of the finding is in accordance with extant literature (Marin *et al.*, 2012; Russo & Perrini, 2010) that, the perception of corporate stakeholders of firms' corporate social responsibility outcomes is positively associated with the market shares they control in the industry.

The second hypothesis (H2) of the study also proposed that a firm's competitive advantage relates positively with its access to capital financing. The result of the study confirmed that there is a significant positive relationship between firms gaining competitive advantage and firms having access to capital finance. This aspect of the result of the study is consistent with Du *et al.* (2010), Marin *et al.* (2012) and Wagner *et al.* (2009). They confirmed that competitive advantage is directly associated with liquidity, especially when firms engage in a proactive competitive strategy than a reactive one.

The third hypothesis (H3) stipulates that a firm's competitive advantage mediates the positive relationship between corporate social responsibility and the firm's access to capital. The result of the study discovered that competitive advantage significantly mediates the positive relationship between corporate social responsibility activities and the firm's access to capital finance. This finding implies that firms that engage in corporate social responsibility can win the heart of their clients and through that, increase their market share. As the market share of these firms increases, the firms can have access to varying capital avenues as investors and other stakeholders know such funds would be utilised effectively to provide returns that will be paid back to society. This, as a result, is consistent with the study of Battaglia *et al.* (2014), and Ferdous and Moniruzzaman (2013). They carried out similar studies and found that firms that have a more significant market share (used as a measure of competitive advantage) which is acquired through corporate social responsibility outcomes can access capital from different sources as they are considered as liquid firms. Thus, social responsibility outcomes may not directly expose firms to different capital sources. However, as firms gain competitive advantage through social responsibility outcomes, it gives access to the firms in obtaining capital from different sources. The result of the study further indicates that there is a positive and significant mediating effect of access to capital finance between firm's competitive advantage and corporate financial performance. There is also a positive and significant mediating effect for competitive advantage and access to capital finance between corporate social responsibility and corporate financial performance which as a result provides support for hypothesis 4 (H4) and hypothesis 5 (H5) of the study. This result provides a contradiction to the view held by Kapstein (2001) and Hillman & Keim (2001). They argue that firms with superior corporate social responsibility performance are faced with lower constraint in accessing capital. Since the rural banking setting is much related to the community than the general macro economies, stakeholders tend to be interested in firms that have a concern of the community as part of their corporate plan and thus gives back to the community. Thus, rural banks that engage in more corporate social responsibility activities tend to win more customers within the community as most of their shareholders tend to be within the community. Also, regardless of corporate social responsibility outcomes of rural banks, capital providers in developing countries characterised by poor-functioning fiscal regime tend to channel their resources to more substantial firms where they presume that returns are higher. On this basis, rural banks, due to their size and risk level encounter many difficulties in accessing capital from capital providers. The discoveries of the study, however, has reiterated that rural banks that embark on corporate social responsibility gain competitive advantage which tends to expose them to favourable and easy capital access which eventually improve their financial performance. This observation is in line with the assertion that having access to capital is relevant to the growth and survival of firms (Carter *et al.*, 2003). Thus, the ability of these rural banks to improve on their performance would be enhanced if capital is readily accessible (Kashyap *et al.*, 1996; Kasekende & Opondo, 2003; Nakiyingi, 2012) capital would be accessible based on their ability to gain much competitive advantage within the industry they operate which comes about through adopting proper corporate governance practices.

### **Conclusion and policy recommendation**

Corporate social responsibility practice can be viewed as a strategic management tool necessary to achieve competitive advantage in business settings such as the Ghanaian banking industry. The findings of this study have shown that business organisations that practice CSR activities, in turn, gain a defensible competitive position in their industry which tends to give them access to finance to fund their business strategies, hence having a positive impact on financial performance. The study has also indicated that corporate governance has a role to play as to

how the capital obtained can be translated into improved financial performance. On this basis, it can be concluded that firms that commit more to corporate governance activities tend to gain much competitive advantage in their industry. When these advantages are sustained, the firms gain access to capital financing, and with good corporate governance practices, the firms would show improvement in their financial performance.

Based on the key findings of the study, the following are recommended for implementation: The study revealed that firms that perform CSR activities do not have the intention of creating a competitive advantage, however, it comes out when such activity is well executed. It is therefore essential for organisations to plan for CSR activities to enhance their competitive advantage. The study recommends that the activities of CSR should be integrated as part of firms' corporate and business level strategies. This will, in turn, help organisations to budget for such CSR activities and also devote much time to them. From discussion with corporate managers in the selected banks consistent with extant literature, the study confirmed that rural banks in Ghana are more concerned with externally focused CSR activities (education, health need of the community etc.). This, in effect, makes them more concerned in providing for the needs of the communities in which they operate than meeting the needs of their internal stakeholders, particularly employees. Contrary to this, other studies attest to the fact that, when firms have the best interests of their internal stakeholders at heart, they are likely to gain competitive advantage. It is therefore recommended that management takes into consideration internally related CSR activities as well so as to gain more competitive advantage. These practices include transparent recruitment processes, work-force diversity and equal opportunities, fair pay or financial support satisfaction and improvement in working conditions, health and safety, human rights, work/life balance, training and staff development, employees' communication and participation in business decisions. The study also revealed that, financial performance is linked to CSR activities through competitive advantage and access to capital. It was however observed that, there is a gap between knowledge and the implementation of CSR in the Ghanaian rural banking industry. In most cases, the person in charge of CSR activities is the only one in the organisation who knows how CSR activities are implemented. This makes it difficult for the entire organisation structure to appreciate the need for CSR activities. To overcome this, the study recommends to the concept of CSR be clarified and included in the training curriculum of employees so as to educate or inform people, especially other non-management members within the organisation on CSR activities so as to get a uniform view on CSR practices. There should an organisational policy framework to set out clear-cut parameters for CSR activities so as to avoid haphazard practices of CSR. This will help ensure proper accountability on CSR activities by organisations. This can be done by spelling out the principles or rules that would provide definite direction for carrying out an organisation's CSR activities. The study reveals that, corporate governance moderates the positive relationship between access to capital and corporate financial performance. In this direction, firms would experience an improved financial performance from the capital they have acquired depending on the efficiency of its corporate governance structures. The study therefore recommends that, rural banks (and the banking industry at large) should adopt proper corporate governance structures that would ensure judicious use of firms' resources in order to enjoy the improved financial performance.

### **Directions for future research**

The study used mediating variables such as competitive advantage and access to capital finance. Future studies could consider other mediating variables such as customer and employee satisfaction as these could be a medium through which CSR activities could be translated into financial performance. Again, this study adopted a cross-sectional research approach, where data was collected from respondents at a point in time. Thus, such responses may be influenced by pertaining conditions of the individual at that particular point in time. The utilisation of different approaches, such as longitudinal research may provide significant differences in the findings, which would be interesting to compare with the result of the current study.

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# Public Debt Dynamics and Fiscal Sustainability in Namibia: An Intertemporal Budget Constraint Analysis

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## Abstract

The paper examines Namibia's salient issues of public debt-dynamics and fiscal sustainability from 1980 to 2018. Time series data for the same study period was used. Of interest is the aspect of demystifying the dearth surrounding the trend of increasing public debt in Namibia when it is economically concerning that the existing capacity to mobilise needed resources is inadequate. The inter-temporal budget constraints model was used to examine the various fiscal reaction functions, debt dynamics and fiscal policy adjustment to debt. The study found that the intertemporal budget constraint does not hold for Namibia. This is for the period under review, confirming that no surplus exists or somewhat too little to offset the accumulated debt from the previous period. The fiscal reaction functions are consistent with the intertemporal budget constraint with resounding results for both fiscal reaction and extended fiscal reaction functions. The debt dynamics function exposition is that in the short-run, Namibia's public debt is unsustainable. The government can address debt and fiscal sustainability issues by adjusting its expenditure through resources-wise matching. While government expenditure-containment amidst a global down turn could be complicated there is scope to design workable approaches for generating needed revenues while seeking to balance up expenditure concerns.

**Keywords:** Debt Dynamics, Fiscal Sustainability, Inter-Temporal Budget Constraint

## 1. Introduction and background

In lieu of the current fiscal constraints and the quest for fiscal sustainability in many countries across the world, the issues of public debt dynamics and fiscal sustainability has gained momentum. The principle of increasing debt-financed for government spending to be paid by posterity has over the years brought great controversies in economic literature and political debates. Elliot and Kearney (1988) used cointegration and Restricted Garber tests in seeking to assess the hypothesis of unsustainable financing. They purport that intertemporal budget constraint gives the sustainable limits about how government debt should grow considering performance of the

macroeconomy. They further enlightens that in the short term, such constraint can be exceeded by engaging in bubble financing.

Of late, common debates on this matter revolve around whether there exists a certain debt threshold that has negative implication for economic growth (Chudik, Mohaddes, Pesaran, and Raissi, 2017; Chandia and Javid, 2013). Critics argues that persistent public debt retard economic growth because it raises equilibrium interest rates that will ultimately crowds out private borrowing. Moreover, uncapped high debt levels have raised concerns of debt sustainability that may increase default risk and hyperinflation. Sovereign defaults have deteriorating effect to the macroeconomic fundamentals. They are often associated with straining fiscal and structural adjustment programmes that negatively affects output and employment. According to Bohn (1998) fiscal sustainability will be attained if an increase in primary public balance is observed after an increase in debt financed spending.

Arguing from a point of Portfolio Theory of Inflation, Bossone (2019) asserts that a country that has low credibility and heavily indebted could have its economy held tighter to an intertemporal budget constraint by investors. Such an action would undermine its policies, cause currency depreciation and trigger inflation.

In order to understand government spending shocks not only on output and prices but such should be extended to include debt to GDP ratio and interest on public debt (Auerbach and Gorodnichenko, 2017). It is difficult to determine an acceptable fiscal debt especially when an economy is not doing well. Even so, debt sustainability analysis is pertinent as it aids planning for financial and economic growth of a country. It is more imperative for small economies due to their narrow fiscal and reduced domestic resource mobilization options.

For a country like Namibia, its surge in public debt has raised various concerns regarding debt sustainability and its implication to the growth prospects of the economy. Public debt has increased faster than the GDP growth rate since independence, (Zaaruka et al., 2004, MOF, 2017). Also, in terms of the country's adopted benchmark, the government expenditure, budget deficits and public debts should be within the 40%, 5% and 35% of GDP respectively (MOF, 2017a). Despite the government's efforts to introduce the SDMS in 2005 and the MTEF, Namibia has breached its own thresholds. Both total expenditure, budget deficit and public debt exceeded the targets by end of 2015/2016 while total government revenue slowed to 35%, failing to keep up with growing public spending public (MOF, 2017a). According to Sherbourne et al. (2002), the formulation of consistent fiscal policy should consider how revenue, expenditure and debt relate to each other in order to maintain a stable debt to GDP ratio. To our knowledge, there is currently limited research in Namibia intended to address the nexus between public debt dynamics and fiscal sustainability.

Based on the raising concerns of fiscal sustainability and increase in debt burdens, expenditure and budget deficits above thresholds in Namibia, it is therefore imperative to examine and understand the underlying dynamics and determine the fiscal sustainability of the surge in public debt in Namibia. In order to achieve these objectives, an inter-temporal budget constraints model was used to examine the various fiscal reaction functions, debt dynamics and fiscal policy adjustment to debt.

## **2. Literature review**

Theoretical predictions on the issue of fiscal deficit and the macroeconomic fundamentals are not without ambiguities. They revolve around three macroeconomic schools of thought. These are essentially the Neoclassical (crowding out effect); the Keynesians (crowding in effect) and the Ricardian equivalence. The proponents of the Neoclassical School of thought are of the view that fiscal deficit is bad and it has a deteriorating effect to the macroeconomic fundamentals. Deficit financed government expenditure directly crowds out private investment and through the multiplier effect it will further restart the growth prospects of the underlying economy. This transmission mechanism occurs through the capital market, where increased government spending will raise consumption that may lead to a fall in savings. This will cause a temporal disequilibrium in the capital market, implying that to restore equilibrium in the capital market an upward movement in interest rate will be required. The resulting increase in interest rate crowds out private investment,

leading to a fall in consumption spending and aggregate demand which will ultimately lead to a fall in economic activity/growth. Contrary to the Neoclassical school of thought, the proponents of the Keynesian school of thought postulates that debt-financed government spending is not necessarily bad, especially when there is an underemployment of resources. According to the Keynesian view, fiscal deficit crowds-in private investment by stimulating aggregate demand through expansionary effect of government spending.

Debt-financed spending is argued to increase domestic productivity and marginal productivity of private investment. The proponents further argued that, government spending on infrastructure and other developmental capital projects will stimulate backward, forward and complementary linkages with the private sector, this process will therefore crowds in private investment and simultaneously enhance economic growth. The Ricardian equivalence offers a balancing act between the Neoclassical and the Keynesian schools of thoughts. It proponents assert that deficit financed government spending (through an increase in taxes) does change economic agents permanent income or lifetime constraints, hence their consumption decisions are not responsive to fiscal deficits (Barro, 1974). The agents are assumed to have perfect foresight such that a low or tax cuts in the current period is regarded as threat for future tax burden and vice versa. Therefore the present value of the taxes is not influenced by the timing of tax driven budget deficits but depends largely on real government spending. This implies that any increase deficit finance spending has no real effects on the macroeconomic fundamental. (Barro, 1974). This is often regarded as the neutrality of the Ricardian equivalence theorem.

In a study looked at intertemporal budget constraint and current account in Cyprus, Pattichis (2010) used a bounds testing approach and discovered that Cyprus was not in violation of the intertemporal budget constraint and it had a sustainable current account. In another study that used dynamic ordinary least squares method on ascertaining budget deficit sustainability in Asian economies, it was confirmed that a long run relationship existed between government revenue and expenditure. It was also found that fiscal consolidation needs adjustment of revenues in order to control spending in Nepal whereas controlling expenditure is effective for India, Bangladesh, Pakistan and Sri Lanka (Shastri, Giri and Mohapatra, 2019).

In an attempt to investigate the sustainability of fiscal policy in Turkey, a fiscal reaction function was employed for analysis. It was found that primary budget balance showed significant reaction to the previous increase in the GDP gap (Vural, 2018).

While studying the dynamics of fiscal policy in Algeria Chibi, Chekouri and Benbouziane (2019) used quarterly data from 1963 to 2017. For their analysis, they applied a smooth transition autoregressive model. The results show that the time series of budget balance was not stationary which implied that it was not possible to sustain the budget deficit in that country. That called for government authorities to reduce the deficit.

When anticipating joining the EU, there arose a need to assess how Poland fared in fiscal sustainability issues. Against this need, a study was conducted by Tronzano (2017) used cointegration test and also a vector autoregressive model. The results confirmed an existence of a long run relationship between revenues and expenditure variables. Furthermore, it was found that there was a bi-directional causality between revenues and expenditures. To join the EU, it was advisable for Poland to engage in further fiscal consolidation mechanisms in seeking to balance up revenue options with declining expenditure.

### **3. Methodology**

#### **3.1. Theoretical framework**

The paper is anchored on theoretical framework of the intertemporal budget constraints for the public sector which was developed by Hamilton and Favin (1986). The same was also referred to as the present value of borrowing constraint. The rationale of the inter-temporal budget constraint model is informed by the assumption that when current period fiscal deficits are proportionately associated with future period surpluses that will be used to repay the accumulated principal plus interest. The economics of this model implies that the present value of the cumulative sum of current and expected future non-interest outlays must be less or equal to the associated

cumulative sum the present value of revenues and seignorage (Baglioni, A. and Cherubini, A. (1993). The mathematical expression of the borrowing constraint is given by;

$$b_t = (1 + r)b_{t-1} - s_t \quad (1)$$

Such that  $b_t$  denotes real value of outstanding public debt,  $r$  represent the real interest rate accrued to the debt and  $s_t$  is the budget surplus in real terms. The expression for the budget surplus is given by;

$$s_t = t_t + \frac{(m_t - m_{t-1})}{p_t} - g_t \quad (2)$$

Where  $t_t$  denotes real tax revenue,  $g_t$  represent government non-interest expenditures,  $m_t$  is the nominal stock higher powered money and  $p_t$  captures the price index. The underlying assumption regarding equation (2) is that budget surplus includes seignorage but excludes interest payment of debt. Taking a forward solution of equation (1), and denoting expected values at time  $t$  to be represented by  $E_t$  will yield an expression that relates the present value of public debt to the expected discounted values of cumulative future budget surplus as well as the constraining values of the discounted debt stock. This expression is given by;

$$b_t = \sum_{i=t+1}^{\infty} \frac{1}{(1+r)^{t-i}} E_t S_i + \lim_{n \rightarrow \infty} \left( \frac{1}{(1+r)^n} \right) E_t b_n \quad (3)$$

According to Baglioni and Cherubini (1993), the binding condition for debt sustainability to hold is that the current budget deficit should equate to the cumulative sum of expected future surplus. This implies that the following hypothesis should hold;

$$H_0: b_t = \sum_{i=t+1}^{\infty} \frac{1}{(1+r)^{t-i}} E_t S_i \quad (4)$$

For the hypothesis in equation (4) to hold, the following hypothesis should also be true:  $H_0: \lim_{N \rightarrow \infty} \frac{E_t b_N}{(1+r)^N} = 0$ . (5)

It is important to note that equations 1-5, debt sustainability condition allows for the scenario where the deficit is indefinite. However, an indefinite net of interest budget deficit is not desirable because it leads to unsustainability issues. This does not rule out the fact that government may run a deficit indefinitely. An indefinite deficit may be sustainable conditional to the reasoning that the growth rate of debt is less than its associated rate of interest incurred by the government. To capture the dynamics of the economy, equations 1-5 can be modified by factoring in the growth rate of the underlying economy. In this instance, the above variables should be expressed as a ratio to gross national income. Additionally the interest rate needs to be expressed as difference between real interest rate charged on fiscal deficit and the growth rate of the national income.

### 3.2 Modelling strategy

The paper adopts Chandia and Javid (2013) IBC function of the form;

$$PL_t - PL_{t-1} = r_t PL_{t-1} + G_t - R_t \quad (6)$$

Where:  $PL_t$  denotes debt stock at in period  $t$ ;  $G_t$  represent primary public expenditure (less interest payment);  $R_t$  captures government revenue and  $r_t$  is the lagged interest rate on government debt. From equation 6, the primary deficit is expressed as  $G_t - R_t$  where  $PL_{t-1} + G_t$  represents the government expenditure. According to Sanchez-Fung (2006), the government budget constraint is expressed as;

$$PS_t = \alpha + \beta PL_t \quad (7)$$

Where;  $PS$  represent the ratio of primary budget surplus to GDP,  $PL$  is the ratio of debt to GDP. Debt sustainability is tested using Bohn (1998) policy rules/reaction function. According to Bohn (1998), the government should take sustainable measures that are aligned with the inter-temporal budget constraint i.e. surplus to GDP ratio and debt to GDP ratio. The satisfaction of the intertemporal budget constraint is tested as follows;

$$PS_t = \gamma_0 + \gamma_1 PL_{t-1} + \xi_t \quad (8)$$

Where;  $PS$  is net budget surplus measured a ratio to GDP,  $PL$  represent the ratio of debt to GDP. The following one sided hypothesis is tested;  $H_0: \gamma_1 < 0$ . The inter-temporal budget constraint will hold if the alternative hypothesis is supported (positive and significant) i.e. current period surplus should be large enough to offset the the accumulated debt from the previous period. Equation (8) is based on the assumption that the underlying process is stationary if unit exists then a long-run relationship will be estimated

### 3.2.1 Fiscal reaction functions

According to Bohn (1998); Barro (1986); Weichenrieder & Zimmer (2014) fiscal sustainability is constrained by government expenditure and the accumulated value of debt. Therefore, the fiscal reaction function is expression;

$$PS_t = \gamma_0 + \gamma_1 PL_{t-1} + \gamma_2 G_t + \gamma_3 GAP_t + \xi_t \quad (9)$$

Where  $PS$  is the primary budget surplus to GDP ratio,  $PL$  denotes debt to GDP ratio,  $G$  represent government spending,  $GAP$  is the output gap (difference between actual and potential GDP of Namibia). From economic theory, debt to GDP ratio is expected to be positive. This is driven by the inter-temporal budget constraint where an increase in public debt in a given period should be associated with an increase of a higher budget surplus in the next period to offset the accrued deficit. On the contrary, a negative sign expected for government spending and output gap. This is because an increase in government spending/output gap will reduce the prevailing budget surplus. Economic theory further postulates that current period budget surplus is also determined by the previous period budget surplus. This leads to the following extended fiscal reaction function;

$$PS_t = \gamma_0 + \gamma_1 PL_{t-1} + \gamma_2 G_t + \gamma_3 GAP_t + \gamma_4 PS_{t-1} + \xi_t \quad (10)$$

Where: all term are as defined before. There are various methods {linear method, single variate (Hodrick-Prescott (HP) filter)}, hybrid approach, multivariate, DSGE models, etc.} to estimate the output gap<sup>1</sup>. The linear trend is the simplest method of estimating the output gap. It uses a linear trend to estimating the potential output. The main criticism for this approach is that the output gap is highly influenced by the sample period. Moreover the output gap estimates are highly sensitive to the underlying sample period, rendering uncertainty of the results. The HP-filter is the common single variate technique to estimate output gap. Both linear method and HP filter only use one variable i.e. GDP for estimation. Restricting estimation to one variable may produce unreliable results because other macroeconomic fundamentals (labour, inflation, total factor productivity, etc.) are not incorporated in the analysis. However the ability of the HP-filter to render the output gap stationary over longer horizons makes it to be superior to the linear method. The hybrid and multivariate methods are often regarded as more reliable when estimating the output gap because they incorporate economic information that reflects both on the supply side and on business cycles, Alich (2017). Due to data limitations, this paper uses the HP filter to estimate the output gap.

### 3.2.2 Debt dynamics

To gain deeper insight on Namibia's fiscal sustainability, a dynamic analysis is required. This paper capture debt dynamics by using Bohn (1998) short -run dynamics between surplus to GDP and debt to GDP ratios. This analysis is based on the basic theoretical assumptions that surplus to GDP ratio and debt to GDP ratio may temporary moves away from each in a short-run, however there exists an adjustment process where debt to GDP ratio revert to its mean. This dynamic process is expressed;

$$\Delta PS_t = \gamma_0 + \gamma_1 \Delta PL_{t-1} + \gamma_2 \Delta G_t + \gamma_3 \Delta GAP_t + \xi_t \quad (11)$$

### 3.2.3 Government revenue and expenditure adjustment to debt

In addition to debt sustainability and debt dynamics analyses, the paper further examines how fiscal adjustment trickle down to the output. In line with Blanchard and Perotti (2002); Chandia and Javid (2013), the following revenue and expenditure functions are analyzed;

$$R_t = \gamma_0 + \gamma_1 PL_{t-1} + \gamma_2 GAP_t + \xi_t \quad (12)$$

See Alich (2017) for a detailed discussion on output gap methods

$$G_t = \gamma_0 + \gamma_1 PL_{t-1} + \gamma_2 GAP_t + \xi_t \quad (13)$$

Where  $R_t$  and  $G_t$  denotes government revenue and expenditure respectively. The revenue and expenditure functions model their dependency on public debt and output gap.

### 3.3 Data sources and description

The paper employs secondary time series data from 1990 to 2017. Data on government spending, revenue and debt are sourced from the Ministry of Finance, whereas GDP, money supply, interest rates and consumption expenditure are sourced from Bank of Namibia.

### 3.4 Time series properties of the data

To ensure meaningful sample statistics, it's important that the time series properties are evaluated. Most economic time series data are prone to unit roots but a stable long-run relationship may exist. The paper uses the Augmented Dickey-Fuller test (ADF) to test for unit root. In addition to the ADF test, the Phillips–Perron (PP) test that corrects for autocorrelation and heteroscedasticity is also used as a robustness approach. The existence of the long-run relationship is examined using the Johansen cointegration test.

#### 3.4.1 Unit root

The ADF and the PP unit roots are used to test for unit root. The general expression for the ADF tests is given as  $\Delta x_t = \gamma x_{t-1} + \xi_t$ ; where  $\gamma = (1 - \rho)$ . This expression sets on testing the null hypothesis that  $\rho = 1$  i.e. the series exhibits a unit a unit root process. The alternative hypothesis can be that  $x_t$  is  $I(0)$  or  $x_t$  exhibits a deterministic trend ( $t$ ) or ( $t^2$ ). The ADF test may produce biased results when the residual term suffers from serial correlation/ heteroscedasticity, this also reduces the power of the ADF test. In the presence of serial correlation or heteroscedasticity, the PP-test is presumed to have more power as it corrects for serial correlation and heteroscedasticity in the residual term. The PP-test expression is given by;  $y_t = c + \delta_t + \alpha y_{t-1} + \varepsilon_t$ . The null hypothesis of unit root restrict  $\alpha = 1$ , where as  $c$  and  $\alpha$  is restricted to be zero.

#### 3.4.2 Cointegration

Cointegration is said to exist when the time series variables are non-stationary but their linear combination exhibits a long-run relationship. The common stochastic process between X and Y can be expressed as;

$$\begin{aligned} X_t &= \gamma_0 + \gamma_1 Z_t + \varepsilon_t \sim I(1) \\ X_t &= \delta_0 + \delta_1 Z_t + \xi_t \sim I(1) \\ \varepsilon_t, \xi_t &\sim I(0) \end{aligned}$$

The above expressions indicate that although X and Y may be non-stationary, there exists a stochastic linear process that is stationary. This paper uses the Engle-Granger cointegration technique because of the limited number of observations.

## 4. Analysis of empirical estimates

### 4.1 Descriptive statistics

The descriptive statistics are reported in Table 1. It reports the mean, standard deviation the coefficient of variation. The coefficient variation provides important descriptive statistics for comparing the degree of variation between the data series, even if the means are different from one another. Table 1 shows that the coefficient of variation is fairly uniform between the data series.

Table 1: Descriptive statistics

Variable	Mean	S.deviation	C.variation
PS	-0.0196	0.0350	1.7857
PL	0.1672	0.2147	1.2840
GE	0.2040	0.1992	0.9764
GR	0.1844	0.1697	0.9202

#### 4.2 Time series properties of the data

Table 2: Unit root tests

Variable	ADF-level	ADF-1st difference	Critical value at 5%
PS	-0.4413	-6.4030*	-2.9458
PL	-1.4758	5.3123*	-2.9511
G	-3.1667	-4.7547*	-3.5742
GAP	-3.5228	-6.4605*	-3.5330
GR	1.8060	-4.0599	-3.2046

Table 2 reports both the ADF-unit root test and Engle granger cointegration results. It shows a mixture of I(0) and I(1) and I(2) order of integration. This indicates that although the variables exhibit a unit root process, they become stationary after the dth order of differencing.

#### 4.3 Intertemporal budget constraints result

The inter-temporal budget constraint results show that an inverse relationship exists between primary budget deficit and government debt stock. This finding is inconsistent with the debt sustainability condition. The sustainability condition requires a negative/positive relationship to hold for a budget surplus/deficit in response to public debt stock.

Table 3: Inter-temporal budget constraint

Dependent variable: budget deficit			
Regressors	coefficients	t-statistics	Prob.
Debt stock (-1)	-0.1419	-7.4065	0.0000
Constant	0.0020	0.4247	0.6752
R-squared			0.6037
Prob. (F-statistics)			0.0000
Durbin-Watson			0.8285

Table 3 shows that if debt stock increases by one unit, budget deficit will decrease by 0.14 units, an outcome that is contrary to the sustainability condition. Therefore, the sustainability condition does not hold. This provides empirical evidence that for the period under review, Namibia's stock of debt does not satisfy the fiscal stability condition.

#### 4.4 Fiscal reaction functions

The fiscal reaction function is tested using equation 9. Table 4 reports an insignificant and positive coefficient of the public debt, this indicates that after adjusting for other control variables Namibia public debt could be unsustainable. Accordingly Bohn (1998) predicts that a positive/negative relationship between primary surplus/deficit and debt stock should hold.

Table 4: Fiscal reaction function

Dependent variable: primary budget deficit

Variables	Coefficients	t-statistics	Prob.
Debt stock(-1)	0.0398	0.7757	0.4433
G	-0.1876	-4.0552	0.0003
GAP	0.0155	0.1005	0.8783
Constant	0.0131	2.8728	0.0070
R-squared			0.7573
Prob(F-statistic)			0.0000
Durbin-Watson stat			0.7509

Table 4 reports a positive relationship between budget deficit and debt stock, an indication of public debt unsustainability. The output gap carries the correct sign, any increase in output gap will worsen budget deficit whereas government exhibits a wrong sign. The extended fiscal reaction function supports the hypothesis that the intertemporal budget constraint does not hold an indication that fiscal policy may be unsustainable if it continues on the same trajectory.

Table 5: Extended fiscal reaction function (Dependent variable-primary budget deficit)

Variables	Coefficients	t-statistics	Prob.
Debt stock(-1)	0.1434	3.5629	0.0011
G	-0.1688	-5.1462	0.0000
GAP	0.0593	0.8313	0.4117
PS(-1)	0.7510	5.9356	0.0000
Constant.	0.0073.	2.1861	0.0360
R-squared			0.8826
Prob(F-statistic)			0.0000
Durbin-Watson stat			2.5828

Table 5 shows a positive relation between primary budget deficit previous, period primary surplus and public debt. Similarly there exists supporting evidence that an increase in government expenditure will lead to fall in the budget deficit. These findings are indicative of the fact that fiscal policy in Namibia may be unsustainable and also shows potential weakness in the form of debt sustainability.

#### 4.5 Debt dynamics

To further unlock the underlying dynamics, equation 11 is estimated to examine debt dynamics.

Table 6: Debt dynamics (Dependent variable -  $\Delta$ primary budget deficit)

Variables	Coefficients	t-statistics	Prob.
$\Delta$ Debt stock(-1)	0.1340	2.4729	0.0187
$\Delta$ G	-0.4224	-3.8933	0.0005
$\Delta$ GAP	-0.026	-0.3537	0.7258
Constant	0.0022	0.7352	0.4674
R-squared		0.3600	
Prob(F-statistic)		0.0018	
Durbin-Watson stat		1.4511	

In Table 6, there exists supporting evidence that Namibia's public debt is not sustainable in the short-run. This is further reinforced by the presence of an inverse relationship between public expenditure and primary budget deficits, indicating that debt dynamics is pro-cyclical in response to government expenditure.

#### 4.6 Government expenditure and revenue adjustment to debt

In order to address policy issues of debt and fiscal policy sustainability, equations 12 and 13 are estimated to provide insights on how fiscal policy components (expenditure and revenue) are adjusting to debt accumulation.

Table 7: Government expenditure adjustment to debt accumulation

Dependent variable: government expenditure			
Variables	Coefficients	t-statistics	Prob. values
Debt stock (-1)	1.0512	17.311	0.0000
GAP	1.1174	3.5465	0.0011
Constant	0.0535	3.8240	0.0005
R-squared			0.8954
Prob (F-statistic)			0.0000
Durbin-Watson stat			0.7278

Table 8: Government revenue adjustment to debt accumulation

Dependent variable: government expenditure			
Variables	Coefficients	t-statistics	Prob. values
Debt stock (-1)	0.8938	17.1957	0.0000
GAP	0.9232	3.4233	0.0016
Constant	0.0566	4.7231	0.0000
R-squared			0.8942
Prob (F-statistic)			0.0000
Durbin-Watson stat			0.6181

The findings in Tables 7 and 8 indicate that there exists an adjustment process from both the government expenditure and revenue. This is consistent with the inter-temporal budget constraint and it reinforces the arguments that revenue can be enhanced to maintain debt fiscal policy sustainability. Similarly the government can address debt and fiscal sustainability issues by adjusting its expenditure and/or through the output gap.

#### 5. Conclusion

The paper found that the intertemporal budget constraint does not hold for Namibia, this indicates that there is no sufficient budget surplus that exists or somewhat too little to offset the accumulated debt from the previous periods. The evidence of debt unsustainability is robust even after employing the fiscal reaction functions. Additionally, the debt dynamics analysis supports the hypothesis that fiscal policy instruments in terms of government expenditure and revenue could be used to address the issues of debt and fiscal sustainability. For a small economy such as that of Namibia, fiscal consolidation is vital especially when the global economy is declining. This is necessitated by the fact that trade tends to decline and as such inflows as well declines which then has consequences on fiscal resources. It is also rational to engage in possible approaches that tend to assist with fiscal debt arrest or expenditure containment. On the supply side, revenues need to increase to finance a growing deficit. For expenditure reduction, the process needs to be considered as urgent in order to avoid a spiral effect beyond the GDP limit. Some of the ways of containing the deficit would require reducing fiscal allocations to non-pertinent sectors for a while. Productive sectors such as agriculture, tourism and mining have a multiplier effect on the economy and should thus receive support. However, increasing tax is unsustainable in a long run as such have potential to cause social unrest when job opportunities become scarce.

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# R&D Investments and Idiosyncratic Volatility

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## Abstract

This paper investigates how R&D investment intensity can infuse information asymmetry about the growth prospects and the idiosyncratic volatility of non-financial firms. Panel Data Method has been employed in order to regress idiosyncratic volatility on R&D investments. Using a sample of research-intensive FTSE-100 and S&P-100 firms having the highest market capitalization between 2008 and 2017, the study finds the evidence of a positive association in between R&D investment intensity and idiosyncratic component of total stock return volatility. The study provides the insight that R&D-led firms should leverage on their R&D related sensitive information to reduce the level of idiosyncratic volatility.

**Keywords:** R&D, Idiosyncratic Volatility, Firm Size, Information Asymmetry

**JEL:** G1, G12, G15

## 1. Introduction

Total stock return volatility typically determines the overall financial risk of a firm. This volatility measure can be classified into two forms, for instance, market-related risk or systematic risk, and firm-specific risk or idiosyncratic risk. Campbell et al. (2001) show that firm specific idiosyncratic risk, i.e. the degree to which firm specific returns are more volatile than average market returns, has risen since the 1960s. R&D investments are pretty unique to the companies that execute the projects. As a result, R&D is accountable for generating asymmetry in information transmission about the firms' future prospects and growth potentials. In this connection, Aboody and Lev (2000) find the evidence that the distinctiveness of R&D investments makes it difficult for general investors (the outsiders) to learn about the productivity and worth of a particular company's R&D. This may critically contribute to the information asymmetry for the R&D intensive firms relative to those having no R&D attempts. Accordingly, Gu and Wang (2005) provide the evidence that the extent of informational asymmetry in high-tech R&D driven companies is high because of the complication and technical features of innovation.

A large body of literature explores the riskiness of R&D investments and document that R&D intensive firms are riskier than those with no R&D intensity (Chan et al. 2001; Kothari et al. 2002). Goyal and Clara (2003) evaluate the similar association and exhibit that idiosyncratic volatility has a significant impact on the required rate of return on the stock market. Furthermore, Xu (2006) examines how R&D strategies of US biotech companies influence their stock price volatility. Taylor (2008) also derives the evidence that the presence of idiosyncratic volatility enhances the quality of market volatility predictions. And, Kearney and Poti (2008) report the similar empirical results for the European capital markets. The finding of Mazzucato and Tancioni (2008) supports the insight that the more the R&D intensity a firm has, the greater would be its consequent idiosyncratic risk. Later on, Gharbi et al. (2013) examine the relationship between R&D investments and hi-tech firms' return volatility from the context of France and find the evidence of a strong positive nexus between R&D investments intensity and idiosyncratic risk.

Up until now most of the earlier studies exclusively concentrate on the United States. This is because; the US firms constantly invest more in R&D activities than the European nations (Moncada et al. 2010). Moreover, studies on European context hardly exist explicitly from the background of the United Kingdom. Hence, the present research proposes R&D investment as a likely determinant of the idiosyncratic volatility for the non-financial research-oriented UK firms under the FTSE-100 Index and the non-financial research-led US firms under the S&P-100 Index.

R&D largely relies on size, gross profit margin, and nature of business. Undoubtedly, R&D expenditures are very much distinctive to a particular company. The more the R&D investments made by a company, the greater will be its variability in the business activities and expected financial success. Hence, it is anticipated that R&D intensity is more linked to the idiosyncratic part of total volatility. Therefore, the study develops the following hypothesis:

Idiosyncratic stock volatility is positively associated with the R&D investments.

The rest of the paper is organized as follows:

Chapter 2 focuses on the data and methodology of the study. Chapter 3 provides the summary measures of the study, i.e. key features of the data collected from both the UK and the USA perspective. Chapter 4 covers the analysis and discussion of the empirical results. Finally, Chapter 5 presents the conclusion, implications of the study, and the scope of further research.

## **2. Data and Methodology**

### ***2.1 Details of the variables***

#### **Idiosyncratic Volatility (IDV)**

The capital markets do not explain the idiosyncratic volatility or firm specific risk. So, Idiosyncratic volatility has little or no association with systematic or market risk factor. However, idiosyncratic volatility is very specific to a firm. For instance, if a firm has to close down a major plant because of a natural calamity, its share price may be affected whereas the rest of the market remains unaffected. Equivalently, R&D expenditures are unique to a firm.

In the past, researchers employ several proxies to represent idiosyncratic volatility. For instance, Mazzucato and Tancioni (2012) consider a proxy for idiosyncratic risk which captures the degree to which firm-specific returns are more volatile than the average industry returns: the log ratio between the standard deviation of a firm's return and the standard deviation of the average industry return. However, Gharbi et al. (2013) define idiosyncratic volatility as the annualized standard deviation of weekly errors from the CAPM. Using the same formula in this study, idiosyncratic volatility has been characterized by the annualized standard deviation of weekly errors from

the Capital Asset Pricing Model (CAPM) in each year. Therefore, natural logarithm of idiosyncratic volatility (IDV) is regarded as the response variable.

### R&D Expenditures

The study regards R&D as the ratio of R&D expenses to sales. Net sales or revenue has been treated as Sales. Total assets represent the size of the firm. Natural logarithm of total assets is utilized. This logarithmic transformation reduces both skewness and kurtosis and helps obtain the end results fairly closer to the normal distribution. Table 1 lists the definition of all the variables along with abbreviations.

Table 1: Definitions of variables employed in this study

Name of the variable	Abbreviation	Definition
Idiosyncratic Volatility	IDV	Annualized standard deviation of weekly errors from the CAPM Model
R&D Expenditures	R&D (RnD in Stata)	The ratio of R&D Expenditures to Sales
Size of the firm	SIZE	Natural logarithm of Total Assets of a firm
Leverage	LEVERAGE	The ratio of Total Debt to Total Assets

Besides, the study encompasses two control variables. Control variables, for example, size and leverage, are broadly acknowledged as determinants of stock return volatility. Here, Leverage is categorized as the ratio of total debt to total assets of a company. In addition, Size is generally measured as the total assets of a company. The logarithm of total assets is taken as a control variable to derive the estimations. Two control variables included in this study are meant to limit the bias of omitted variables and ensure the legitimacy of the regression model.

### 2.2 Sample

S&P-100 is the most remarkable stock market indicator in the world that incorporates the largest 100 US firms according to strong company fundamentals and highest market capitalization. The S&P 100 index is a subgroup of the broad S&P 500 index. S&P 100 accounts for about 63% of the market capitalization of the S&P 500 index and also represents almost 51% of the entire market capitalization of the US equity markets as of June 2017. While FTSE-100 is by far the most widely used UK capital market indicator. FTSE 100 occupies around 81% of the entire market capitalization of the London Stock Exchange (LSE). FTSE-100 firms are taken into account.

Since, the present study is based on both the UK and the US context, it comprises two independent groups of sample data for the research. Table 2 shows the sample summary of this research:

Table 2: Overview of final sample of the study

TARGET INDEX	NUMBER OF TOTAL NON-FINANCIAL COMPANIES	NUMBER OF COMPANIES WITH R&D INTENSITY	CROSS SECTIONS OF SAMPLE	TIME SERIES OF SAMPLE (YEARS)
FTSE-100	79	43	43	10
S&P-100	84	70	70	10

Datastream 5.0 version has been accessed to accumulate necessary data for the study. Altogether, five variables, regarding company performance indicators and business activities, have been downloaded from Datastream. Each data set covers information of eligible sample firms for a period of 10 years between 2008 and 2017. The study concentrates on a balanced panel that is labeled as *strongly balanced by the data processing software, STATA*. Every single firm underlying the study has been observed each year.

### 2.3 Model Specification

In order to choose the appropriate model fit, pooled OLS estimation, the fixed effects model, and the random effects model are taken into account in this study. All the three models are demonstrated below:

i) Pooled Regression: Pooled OLS applies the same constant  $\alpha$  for all the sample firms. The model can be signified as:

$$Y_{it} = \alpha + \beta'X_{it} + \varepsilon_{it} \quad (1)$$

ii) The Fixed Effects Model: The fixed effects model permits the constant to vary between firms, however, it is time invariant. The coefficients ( $\alpha_i$ ) make the difference, which indicate unobservable heterogeneity or individual firm specific effects. The fixed effects model is shown below:

$$Y_{it} = \alpha_i + \beta'X_{it} + \varepsilon_{it} \quad (2)$$

iii) Random Effects Model: The random effects model entitles the constant variable as a random variable that can be shown in the form as follows:

$$\alpha_i = \alpha + u_i \quad (3)$$

Overall, this model can be written as:

$$Y_{it} = \alpha + \beta'X_{it} + u_i + \varepsilon_{it} \quad (4)$$

To select the correct specification, the study conceives three tests. First, the F-test approves the significance of the fixed effects. Second, The Breusch and Pagan (1980) Lagrangian Multiplier test evaluates the relevance of the random effects. Third, the Hausman test (1978) distinguishes between the fixed effects model and the random effects model. All the variables are winsorized at both upper and lower levels at 1% of their distribution in a manner to curb the impact of the outliers on the estimated results.

### 3. Summary Statistics

Table 3 presents the summary Statistics of the UK firms within the FTSE-100 Index. Firm specific or idiosyncratic volatility measure shows an average of 44%. Average R&D investment intensity is moderate for the giant firms. UK firms allocate, on average, 2.5% of their sales to R&D endeavor. The standard deviation of R&D is 4.70%.

Table 3: Summary statistics of the UK firms under the FTSE-100

Variable	Observations	Mean	Standard Deviation	Min	Max
R&D	430	2.524	4.704	0	26.13
TOTAL ASSETS (Size)	430	15.88	2.404	1	19.74
DEBT TO ASSETS (Leverage)	430	26.884	15.233	0	72.21
IDIOSYNCRATIC VOLATILITY (IDV)	430	.4388	.27423	0	1.746
LN (IDV)	430	-.90596	0.53612	2.09481	0.55770

Table 4, similarly, lists the summary statistics of the research-driven US firms within the S&P-100 Index. Here, idiosyncratic volatility measure stands at 39% on average. The biggest US firms invest, on average, 7% of their sales into R&D activity. Nonetheless, the standard deviation of R&D investment intensity is little over 8%.

Table 4: Summary statistics of the US firms under the S&amp;P-100

Variable	Observations	Mean	Standard Deviation	Min	Max
R&D	700	6.823	8.162	0	45.49
TOTAL ASSETS (Size)	700	17.311	2.782	1	20.497
DEBT TO ASSETS (Leverage)	700	25.509	18.337	0	156.61
IDIOSYNCRATIC VOLATILITY (IDV)	700	.38988	.22282	0	1.50987
LN (IDV)	700	-.96000	.51270	-2.21324	.41202

Skewness and Kurtosis of the volatility measures are as follows:

Table 5: Summary details of idiosyncratic volatility

UK context	Skewness	Kurtosis	US context	Skewness	Kurtosis
IDV	1.652157	6.83381	IDV	1.255829	5.959843
LN (IDV)	0.292247	2.570396	LN (IDV)	0.240298	2.778884

The volatility measure shows high magnitude of skewness and kurtosis. But log-transformation lowers the level of skewness and kurtosis considerably. So, the distributions of the log-transformed variables are close to the normal distribution.

#### 4. Empirical Results

##### Impact of R&D on the idiosyncratic volatility (IDV)

This study applies the following model to estimate the expected link between R&D investment intensity and idiosyncratic volatility:

$$IDV_{it} = \beta_0 + \beta_1 R\&D_{it} + \beta_2 Leverage_{it} + \beta_3 Size_{it} + \varepsilon_{it}$$

Table 10: Effects of R&amp;D on idiosyncratic volatility

Independent variables	FTSE-100 (UK)	S&P-100 (US)
R&D	0.0605** (3.07)	0.0127*** (3.82)
Leverage	0.00697*** (3.77)	-0.00147* (-2.10)
Size	-0.0781** (-2.64)	-0.0415*** (-3.42)
Constant	1.365** (3.01)	1.057*** (5.29)
	N=430	N=700

t statistics are in parentheses. Asterisks indicate significance level

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

The above table shows the regression results regarding the relationship between R&D investment intensity and idiosyncratic volatility. At first, Breusch and Pagan Lagrangian multiplier test has been performed. Significant p value of Breusch and Pagan Lagrangian multiplier test has suggested that random effects model is more fitting than the pooled OLS estimation (Breusch and Pagan LM statistic: 140.87 with a P value of 0.0000). Then, the study conducts the Hausman test to pick the appropriate specification between fixed effects and random effects.

Finally, significant p value corresponding to Hausman test score recommends that fixed effects model is more suitable than the random effects model. The test result along with p value is given under:

$$\begin{aligned}\text{Hausman test} &= 17.18 \\ \text{Prob} > \chi^2 &= 0.0006\end{aligned}$$

Since the Hausman test statistic is significant at less than 1% level, the fixed effects model specification has been chosen. In this model, idiosyncratic volatility has been regressed. Here, R&D intensity is the major explanatory variable along with two control variables. Control variables are Leverage and firm size. The estimated coefficients are 0.0605 and 0.0127 for the UK and the US respectively. The coefficients are positive and significant at the 1% level for the FTSE-100 and 0.1% level for the S&P-100. In fact, R&D intensity is always exclusive to a firm. A firm can engage in more R&D activities or can do nothing at all. As a result, the impact of R&D investments on the idiosyncratic component of total stock return volatility is substantial. Thus, this finding indicates that the idiosyncratic volatility is positively related to the R&D investments.

The Hausman test score for the S&P-100 ensures that fixed effects model is more appropriate than the random effects model since the p value is significant. The test result together with the p value is given under:

$$\begin{aligned}\text{Hausman test} &= 12.42 \\ \text{Prob} > \chi^2 &= 0.0061\end{aligned}$$

Likewise, the UK scenario, the influence of R&D investments on firm specific risk or idiosyncratic volatility is positive in the US context. This means the effect of R&D investments on the idiosyncratic component of total volatility is notable among the leading US firms. Moreover, firm size is inversely related and significant at less than 1% level. However, leverage is also negatively significant at the 5% level for the S&P-100. This result is different from that of the FTSE-100 case. The negative impact of leverage in the US context infers that the presence of debt financing produces extensive positive signaling effect for the large-cap firms to reduce the idiosyncratic volatility. Stata generated regression outputs are placed in the Appendix.

## 5. Conclusion

It is easy to understand that R&D activities and required investments are very specific to a firm that actually involves them. Thus, the study is based on the concept of idiosyncratic volatility to find the impact of firm-specific investment on firm-specific volatility. Based on the firms under the two indexes that invest in R&D, this study presents the evidence that idiosyncratic volatility is positively associated with the R&D investment intensity. After controlling for leverage and firm size, the study regresses idiosyncratic volatility on R&D intensity. The finding of the study adds to the extant literature by offering R&D intensity as an important determinant to idiosyncratic stock return volatility.

This research has broad implication for the finance managers who should work on maintaining effectual communication policy to decrease extreme informational asymmetry concerning R&D activities. The management of R&D specific information with caution is highly advised. The study also has influences on investors' risk calculation, investment analysis and portfolio management decisions since higher level of idiosyncratic volatility is responsible for massive unpredictability of investment value. Future research can examine the nexus between R&D intensity and the valuation of derivative instruments. Also, the influence of several key firm characteristics on idiosyncratic risk can be appraised.

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## Appendix

### Effects of R&D on idiosyncratic volatility

UK:

```
. xtreg IDV RnD leverage Size, fe
```

```
Fixed-effects (within) regression      Number of obs   =    430
Group variable:  companynum           Number of groups =    43

R-sq:                                Obs per group:
    within = 0.0499                    min =          10
    between = 0.0083                   avg =         10.0
    overall = 0.0004                   max =          10

corr(u_i, Xb) = -0.8554                F(3,384)        =    6.73
                                         Prob > F         =    0.0002
```

IDV	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
RnD	.0605133	.0197311	3.07	0.002	.0217188	.0993079
leverage	.0069687	.0018504	3.77	0.000	.0033305	.010607
Size	-.0780841	.029552	-2.64	0.009	-.136188	-.0199801
_cons	1.365295	.4534373	3.01	0.003	.4737639	2.256825
sigma_u	.32988989					
sigma_e	.22815563					
rho	.6764406	(fraction of variance due to u_i)				

F test that all u\_i=0: F(42, 384) = 5.51                      Prob > F = 0.0000

USA:

```
. xtreg IDV RnD Leverage Size , fe
```

```
Fixed-effects (within) regression      Number of obs   =    700
Group variable:  companynum           Number of groups =    70

R-sq:                                Obs per group:
    within = 0.0509                    min =          10
    between = 0.0868                   avg =         10.0
    overall = 0.0474                   max =          10

corr(u_i, Xb) = -0.6631                F(3,627)        =   11.22
                                         Prob > F         =    0.0000
```

IDV	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
RnD	.0126825	.0033218	3.82	0.000	.0061592	.0192057
Leverage	-.0014666	.0006994	-2.10	0.036	-.0028401	-.0000931
Size	-.0414618	.0121078	-3.42	0.001	-.0652386	-.017685
_cons	1.056876	.1998772	5.29	0.000	.6643661	1.449386
sigma_u	.1214343					
sigma_e	.12265464					
rho	.49500055	(fraction of variance due to u_i)				

F test that all u\_i=0: F(69, 627) = 5.32                      Prob > F = 0.0000

## UK evidence of Idiosyncratic Volatility: Random vs. Fixed Effects

```
. hausman fixed
```

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) .		
RnD	.0605133	.0011274	.0593859	.0187048
Leverage	.0069687	.0023882	.0045805	.0012769
Size	-.0780841	-.0218032	-.0562809	.0256079

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

```
chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          =      17.18
Prob>chi2 =      0.0006
```

## US evidence of Idiosyncratic Volatility: Random vs. Fixed Effects

```
. hausman fixed
```

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
RnD	.0126825	.0038524	.0088301	.00304
Leverage	-.0014666	-.0008348	-.0006318	.0004311
Size	-.0414618	-.0296063	-.0118555	.0089616

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

```
chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          =      12.42
Prob>chi2 =      0.0061
```



# Measuring Hospital Accountability

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## Abstract

Although the principle of accountability around the world across organizations is similar, its implementations differ from one country to another country, as well among different industries. Previous research found the specific dimensions, variables, and indicators of accountability applicable for hospitals in Indonesia. This research is a continuation of the first research, with the aim to analyze the measurement model of accountability practices of hospitals in Makassar, Indonesia. The data used was obtained from questionnaires distributed to the top and middle managers of hospitals, including public and private hospitals. There are 77 indicators measuring eight variables, i.e., institutional aspect, healthcare delivery process, liability, financial, quality assurance and patient safety, accessibility clarity of information, and use of information. The validity and reliability of indicators are analyzed using confirmatory factor analysis. The result shows the variable of health delivery process is not reliable, while the other variables are reliable. This reflects that the health delivery process differs depending on the environment, including regulation applied. Further, two indicators measuring institutional aspects are not valid, while the rest are valid measuring each respected variables.

**Keywords:** Accountability, Institutional, Liability, Financial, Accessibility, Information

## 1. Introduction

An unaccountable functional and operational system in hospital management affects inefficiency in financial, human resources, time, and the decrease of stakeholders' satisfaction. (Sudirman & Sidin, 2014). Besides, accountable hospital management is expected to control unhealthy competition among hospitals (Sudirman, 2012). Data obtained from Indonesia Corruption Watch (ICW) also shows there are 220 cases of corruption in the health sector during 2010 – 2018 with the amount of state budget losses around IDR 822 billion (Kontan.co.id, 2018). According to ICW, the two potential aspects leading to corruption sources, i.e., health infrastructure and disease prevention programs. In regard to health infrastructure, the vulnerable crucial things are medical equipment, drugs, consumable medical material for hospitals. It is obvious, the absence of accountability principles in hospital management might cause losses for not only hospitals, but also for community, even state.

The above opinions are in line with the opinions from other authors who emphasized the importance of accountable hospital management in order to achieve the strategic goals of health care delivery in high competition and rapid changes in health sector environment, regulation changes, and the increasing demand of community to high-quality health services (Gamm 1996; Emanuel & Emanuel 1996a; Daniels & Sabin 1998; Lanier & Roland et al. 2003; Brinkerhoff 2004; Timmermans 2005). Most literature reviews on hospital accountability still use traditional approach since they just focus on vertical accountability and financial aspect. These aspects are considered insufficiently effective in evaluating the comprehensiveness of accountability of hospitals to fulfil high demands on New Public Management (Jessop 1998; Erkkila 2007).

Previous research has explored the practices of accountability of public and private hospitals in Indonesia. The result shows that, in general, the practices of accountability of public hospitals differ from private hospitals. The public hospitals tend to be more rigid and bureaucracy, while private hospitals are more flexible in the administration process. The distinct of public hospitals is in their answerability and transparency, while private hospitals distinction is they are more efficient due to flexibility. This indicating that both styles have their advantages and disadvantage (Sudirman, et al.; 2018). This finding is consistent with Mulgan (2000), who stated that private sector (for-profit) companies are more accountable in terms of their 'bottom line,' accountability requirements in the public sector are generally more stringent, particularly with regard to process and general policy.

The significance of variables and indicators found in previous research have not tested yet. That is the reason why it is important to further analyze the validity and reliability of the variables and indicators explored from previous research. The result of the analysis can be used to develop further the measurement model of hospital accountability practices in Makassar, Indonesia.

## 2. Literature Review

The way to improve the quality and safety of care, the control of costs, or the health of the population itself are among goals raised the issue of accountability (Denis, 2014). That is why accountability should take into consideration the shared goals of the authority of the governing bodies and providers to measure the achievement or the fulfilment of accountability principles. It is not necessary that the relationship between the governing bodies and hospitals in hierarchical order. It can be a dialogue between hospitals and governing bodies about their shared pre-defined goals (Saltman & Ferroussier-Davis 2000).

Despite the fact that the accountability can be viewed from different perspectives, the main principles widely accepted lie on responsibility and transparency. According to Jabbara dan Dwivedi (1989), who studied accountability from public policies, accountability can be defined as answerability. On the other side, Sinclair (1995), who approached accountability from the management point of view, stated that management control is a key point to improve hospital accountability. The disadvantage of accountability in the private sector has been widely discussed and reached to an agreement. Indeed, a reduction in accountability when contracting out may be one of the reasons why private sector provision is often more efficient (Mulgan, 1997b). Private sector providers are not subject to the same degree of political control such that they can operate more flexibly and economically. In general, then, while private sector companies may often have a stronger incentive to satisfy their customers, they are not subject to the same range of effective accountability mechanisms as is the typical government agency (Mulgan, 2000). Some of research in accountability have explained what dimensions should be accountable to improve governance effectively as well as efficiency in achieving goals. Some of authors have the same opinions concerning dimensions of accountability, such as organizational, administrative, professional, and financial performances (Daniels & Sabin, 1998; Brinkerhoff, 2001; Brinkerhoff, 2004; Bovens.M, 2007; Koppell, 2005; Blagescu & Lloyd, 2009). In the same tone, Emanuel & Emanuel (1996) stated that the domain of accountability consist of professional competence, management practices in accordance with the regulation and ethics applied, financial performance, accessibility, public health promotion, and the benefit of the community. It is consistent with authors' findings in previous research that the conceptual variables of hospital accountability consisting of institutional aspect, healthcare delivery

process, liability, quality assurance and patient safety, financial, accessibility, the clarity of information, and the usefulness of information.

### *2.1 Institutional Aspect*

Institutional plays an important role in hospital accountability. Therefore, it is important to identify the strategic level in hospital organization. According to Saltman et al. (2011), hospital governance is divided into three levels of governance. At the macro-level, hospital governance is the part of traditional national, regional and/or supranational policy-making that establishes the structural, organizational, and operational architecture of the hospital sector. At intermediate level, hospital governance is focused on decision making at the overall institutional level of the hospital. Lastly, the micro-level of hospital governance focuses on the day-to-day operational management of staff and services inside the organization. This level is, in fact, what is known as hospital management and incorporates such subsets as personnel management, clinical quality assurance, financial management, patient services, other cleaning services such as cleaning and catering services, etc. (Saltman et al.; 2011). (Mikhaylov et al., 2014).

Concerning human resources management, the contingency approach to strategic human resource management on firm performance is conditioned by an organization's strategic posture (Youndt, et al. 1996). Especially as a public sector, recruitment and hiring were planned strictly by local government. When facing the adjustment of organizational structure, initiative and flexibility were limited (Yang & Chen; 2015). Arthur (1992, 1994) found that human resources practices focused on enhancing employee commitment (e.g., decentralized decision making, comprehensive training, salaried compensation, employee participation) were related to higher performance.

According to Engelbrecht et al. (2002), financial management in public hospital is an integral part of district health management. The financial planning made up in cyclical way through a series of stages. The processes start from assessing the current financial position, linking financial to programs, and determining a budget. Based on the first process, financial allocated across district services. Service and district managers receive support from their finance sections to manage the finances. During the disbursement, managers keep ensuring that funds are spent and revenue collected according to the financial plan and according to the norms and standards set by the treasury or authorized bodies. They apply suitable internal control measures and monitor the process. At the end, they draw up an annual report.

### *2.2 Healthcare Delivery Process*

According to Ferlie and Shortell (2001), there are four levels of health care system i.e. the individual patient; the care team (clinicians, pharmacists, and others), the patient, and family members; the hospital that supports the development and work of care teams by providing infrastructure and complementary resources; and the political and economic environment (e.g., regulatory, financial, payment regimes, and markets). The last is the conditions under which organizations, care teams, individual patients, and individual care providers operate.

Further, Ferlie and Shortell (2001) added that the recent changes in health care policy reflect an emphasis on consumer-driven. The increasing expectation of the patients' demand among them are the availability of information and the establishment of private health care spending accounts. This shifting has driven the changes in the system for improved quality, efficiency, and effectiveness. In conclusion, there is a shifting role of patients from a passive recipient of care to a more active participant in care delivery. The article published by The Royal College of Radiologists (2012) emphasizes the importance of the involvement of patients in shared decision making process and agrees with the outcome.

The overall purpose of health care delivery is to provide holistic, patient-centred, respectful, timely, safe, high quality, efficient, and effective services to the patients addressing their individual health care needs in a safe environment (Alam & Alabdulaali, 2016).

### *2.3 Liability*

Adopting from Random House Dictionary of the English Language, Harris & Spanier, (1976) proposed the definition of liability related to accountability as a liable person is "subject, exposed, or open to something possible or likely, especially something undesirable." In other words, liability refers to people's obligations. Here, the obligation does not mean that the people will be subjected to sanction. It rather means the people are open to be sanctioned if their performance is unsatisfactory. According to Mahlmeister (1999), based on the principle of vicarious liability, the hospitals are liable for the negligent acts of its employees. However, the reverse has occurred in many settings in the name of cost containment. We have the same understanding with Sage (1997) that one of the purposes of managing care is to control costs. It can be understood if both patients and physicians are concerned with the cost of health services. At the patient's side, they are afraid the cost they paid is correlated with the quality of care they received. While at the physician side, they are in a dilemma between arbitrary contracting policies and administrative requirements and legal responsibility to optimize clinical outcomes. The implementation of hospital liability for medical malpractice may reduce conflict, curb abuses, and protect patients in managing care. Further, Kinney (1995) stated the challenge of hospital liability is how to promote fair compensation, clinical quality improvement, and administrative efficiency.

### *2.4 Quality Assurance and Patient Safety*

Patient safety has been becoming the most priority in health care systems. The topic of patient safety is a subject that should be taken up by all personnel working in health services (Dursun, et.al., 2010). One of the works on the idea of the importance of patient safety was released in the report entitled "To Err is Human: Building a Safer Health System" in 1999 by the Institute of Medicine (IOM). According to this report, almost 98,000 die in United States (US) hospitals every year as a result of preventable medical errors. Consequently, the occurrence of medical errors was highly considered by health policy-makers and stakeholders worldwide (Al-Ahmadi, 2009). However, Yaprak (2016) stated that medical errors cause by health workers is impossible to be annihilated. It might be possible to reduce at the minimum level by implementing patient safety culture in hospitals including employees.

### *2.5 Financial*

In both public and private hospitals, director medical services play a key role in providing in translating the pressures of cost efficiency into reality pressures upon acute units into operational reality (Jones, 1999). For example, a study of attitudes in a large acute hospital (Jones and Dewing, 1997) showed that the implementation of financial accountability for the director of a medical service focuses more on quality and quantity of care. While unit managers put financial accountability as their top priority. In addition, poor quality of management accounting reporting and under-developed costing only provides little information to pursue cost efficiency at the operational level.

That is why having clinical pathways are very important in the context of case tariff fees as a part of the International Statistical Classification of Diseases and Related Health Problems (ICD) for inpatient hospital services. Many authors agree that clinical pathways has significant contribution to reduce the period of hospitalization (Hommel et al., 2008; Ishiguro et al., 2008), reducing costs (Verdú et al., 2009; Barbieri et al., 2009; Rook, 1998) and increasing the quality of the services provided (Schwarzbach et al., management point of view, the clinical pathway can be used as a strategic management instrument for controlling cost continually, and also considered as a part of transparency health services. That is why very important to acquire relevant knowledge to quality and supply planning. Such that, the range of services, can be standardized without neglecting the individual requirements of the patients (Romeyke & Stummer, 2012).

### *2.6 Accessibility*

According to Pearson et al. (1999), equal access to information is very important to design, develop, and implementation of consumer health information systems, regardless of location and cost. Further, Bental et al., (1999), the consumer satisfaction and the willingness to use the information can also be affected by the complexity of the interface and content. It is recommended to develop customized information systems to provide more appropriate interfaces and content, such as able to provide equal access to information.

The study conducted by Milne et al. (2008) illustrates how important is the accessibility. Further, they concluded that the unavailability information in order to obtain support and advice from healthcare professionals when people being home might cause anxiety and uncertainty. Patients feel convenient when being able to access hospitals and healthcare when they are at home easily.

### *2.7 Clarity of Information*

According to Ranallo et al. (2016), the use of health information technology (IT) has a significant contribution to facilitating the delivery of safe, high-quality, and cost-effective health services. Asymmetry of information between patients and health professionals can be minimized by providing internet and customer hotline. It is very important to provide clear information in accordance with the level of knowledge maturity of each patient; such patients can understand (The Royal College of Radiologists, 2012).

The complaint centre also plays an important role in providing the clarity of information and handling the patient's complaint. The response of the complaint centre affects patient's satisfaction. As a matter of fact, many patients dissatisfied with the response of the complaint centre (Friele et al., 2008; Daniel et al., 1999; Doig, 2004). That is why very important to find such ways to handle complaints in meaningful ways for patients. Such ways should be more than just a common thing to do (Eaves-Leanos & Dunn, 2012; Duclos, 2005).

De Feijter et al., (2012) emphasized that improving complaints handling may reduce many some crucial things, such as the numbers of financial claims, prolonged legal disputes between patients and their physicians. Even, it can be used as a feedback information for quality improvement (De Feijter et al., 2012) as well as improving patient safety (Eaves-Leanos & Dunn, 2012; Haw et al., 2010).

### *2.8 Usefulness of Information*

The recent issues on accountability in health care systems show several concerns. Firstly, concerns are related to the unsatisfactory level of health care systems performance. There are different issues between industrialized countries and developing countries. In industrialized countries, the main concerns are on cost issues, quality assurance, and access. While in developing countries, in addition to the same issues in industrialized countries, the issues are more complex, including the availability and equitable distribution of basic services, abuses of power, financial mismanagement and corruption, and lack of responsiveness. Secondly, the requirement of specialized knowledge, complexity of the size, and scope of health care bureaucracies in both the public and private sectors lead to significant demand for the improvement of hospital accountability since it can affect people's lives and well-being. Thirdly, health care constitutes a major budgetary expenditure in all countries, and proper accounting for the use of these funds is a high priority (Brinkerhoff, 2003).

According to WHO (2016), health professionals have an obligation to inform the individual (or, where appropriate, their career) of the risks and benefits of the examination and, in doing so, explain the risks of not having the imaging examination in a form understandable to the patient. Patients should become a part of the decision making process concerning their care by providing clear information to enable their participation and being involved in the actual decisions (The Royal College of Radiologists, 2012).

### 3. Methods

The conceptual and measurement model of hospital accountability in this research using quantitative method approach. In this research, the validity and reliability of variables and indicators forming and measuring hospital accountability are tested. There are eight variables forming the construct of accountability consisting of institutional aspect, healthcare delivery process, liability, quality assurance and patient safety, financial, accessibility, the clarity of information, and the usefulness of information. The technique of analysis using confirmatory factor analysis (CFA). Data obtained from 60 top and middle managers of public and private hospitals in Makassar, Indonesia, who have a good understanding of hospital management practices. The questionnaires are prepared, referring to previous research that used in-depth interviews and literature review, as presented in appendix 1.

### 4. Result and Analysis

Based on statistical analysis, all variables are valid to measure accountability. However, the delivery process is not reliable in measuring accountability. This result reflecting the despites the same principles; the health care delivery process differs from one to another environment. This finding is consistent with the findings of Ferly and Shortell (2001), who wrote that the health care delivery process is also affected by the environment in which hospitals as an organization, physicians, and other care teams, as well as the patients, taken in place. The validity of each indicator to measure each variable is described as follows.

#### 4.1 Institutional Aspect

There are 28 indicators proposing to measure institutional aspect as described in table 1. Among 28 indicators, there are two indicators that are not valid to measure the institutional aspect. The t-statistic value for both indicators is less than 1.96, which is the threshold in assessing validity, as could be seen in appendix 2. Those indicators are consist of hospital should develop corporate social responsibility and performance contract signed between hospitals and staff. Based on the interview, the program of corporate social responsibility does not reflect the accountability since the services provided has been considered as the implementation of social responsibility itself. The second invalid indicator is also not suitable for hospitals. It is consistent with Han et al.; 2011, who stated the nature of health services in hospitals is unpredictable and uncertain. The number of patients and the level of severity are difficult to predict. As a consequence, the resources needed and performance is also difficult to determine. That is why it is difficult to prior determine the performance off staff.

#### 4.2 Healthcare Delivery Process

Conversely, five indicators measuring the health delivery process are valid since all t- statistic values are larger than 1,96. However, the reliability test shows the Cronbach alpha value is 0.3162, as could be seen in appendix 3, while to assess the reliability, the value should larger than 0.60. This circumstance reflecting that even though all indicators significant to measure the health delivery process, but the demand or standards using to deliver health services are different from one context to another context. This research is conducted in Makassar, Indonesia, which may be different from the standards using for another city or country. This finding is also consistent with the statement of Ferlie and Shortel (2001), who stated that regulatory bodies, regulation, financial aspects, payment regimes, and markets could affect the health delivery process. In Makassar, Indonesia, the health delivery process is different for out of pocket patients and patients who covered by social insurance. This is in line with Sparrow et al. (2013) research, which assesses the targeting and impact of subsidized social health insurance for the informal sector and the poor in Indonesia. It is obvious that in the beginning, the social insurance program is indeed targeted to the poor and those most vulnerable to catastrophic out of pocket health spending. Nowadays, the increasing health expenditure has slightly widened the access to health care the increasing utilization of outpatient care among the poor.

#### *4.3 Liability*

Among seven indicators measuring liability, none is eliminated. All indicators are considered valid since the t-statistic value is larger than 1,96, as could be seen in appendix 2. The indicators are mostly concerning about answerability, which accepted as the main dimension of accountability since five decades ago. According to Harris and Spanier (1976), a person who is liable is 'subject, exposed, or open to something possible or likely, esp. something undesirable. They believe accountability attaches liabilities to people's obligations, not in the sense that they necessarily will be subjected to sanction, but rather in the sense that they are open to sanction if their accounts are unsatisfactory.

#### *4.4 Quality Assurance and Patient Safety*

The same result with quality assurance and patient safety; all indicators tested are valid in measuring the variable, as could be seen in appendix 2. The seven indicators under the construct of quality and patient safety derived from quality and patient safety standards required to be implemented by any hospitals around the world. This is confirmed by the Institute of Medicine (IOM), which considers patient safety "indistinguishable from the delivery of quality health care." (Erickson, et al., 2003). Such a statement is quoted from Mitchell (2008), who concluded that patient safety is the cornerstone of high-quality health care. Further, Mitchell (2008) explain that there are workgroups, who have attempted to define the quality of health care in terms of standards. Initially, quality is defined as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge. This led to a definition of quality in a list of indicators, which are known as standards.

#### *4.5 Financial*

The financial is measured by three indicators, which all are valid, as could be seen in appendix 2. Those three indicators are related to the implementation of clinical pathways to control the quality and cost, the importance of calculating unit cost for cost containment, and informed consent concerning the tariff of health services. The two first indicators are consistent with Engelbrecht (2002), who points out that the budget reflects the service priorities. Budgeting is an important framework for spending money and for assessing financial performance. The last indicator is might not directly related to the financial aspect, but it reflects the implementation of accountability as required by new federal law in health care.

#### *4.6 Accessibility*

Accessibility has eleven indicators measuring it, which all are valid, as could be seen in appendix 2. Millman (1993) defines access Hospital access is defined as the degree to which individuals and groups are able to obtain needed services from the hospitals. The terminology of access is referring to the equitability to access hospitals with insurance coverage and having enough doctors and hospitals in the areas in which they live. Nevertheless, having insurance or living nearby hospitals does not mean people who need health services are able to get them. Conversely, many who lack coverage or live in areas that appear to have shortages of health care facilities do, indeed, receive services (Millman, 1993). In this research, accessibility is not limited measured by distance or wealth, but more by the equitability in getting clear and asymmetric information.

#### *4.7 Clarity of Information*

There are six indicators analyzed to check their significance in measuring the clarity of information. All indicators are valid, as presented in appendix 2. This variable is closely related to accessibility. The clarity of information obtain by people will improve the ability to access hospitals. The clarity of information in this

research covers of understandability of information, lack of information gap between hospitals and patients, and patients' education.

A clear example of the clarity of information is federal healthcare law started to be implemented on 1st January 2019. The new federal law required all hospitals to post prices online for services they provide. This change in policy aims to help consumers in search of the most suitable healthcare services for them. Previously, these patients could request the information from the hospital, but the process was seldom smooth or easy. As a result of the new law, nowadays, patients are able to compare the tariff of one hospital to another hospital regardless of the hospital is near or far, and of all sizes. This changing behavior is reflecting more transparency to the consumer than ever before (NC Coalition for Fiscal Health, 2019).

#### *4.8 Usefulness of Information*

The ten indicators measuring the usefulness of information are valid, as could be seen in appendix 2. This finding is relevant since the essential aspect of hospital management quality is the availability of information about the processes of care delivery, as this provides input for improvement strategies. External accountability has become increasingly important over the last few years. As a result, hospitals are under increasing pressure to share indicator-based performance information with the government, regulatory bodies, health insurers, and the general public. Hospital performance indicators facilitate patient choice and hospital-insurer contracts and promote public accountability.

The information hospital provided cover management, quality, ethics, financial, staff competence, and patients education on hospital health services. From time to time, this coverage has changed from just provide information to principal in form performance reports. Then, new federal law in healthcare emphasize the importance to provide information on tariff. Overall, information should be provided to multi-stakeholders such they could make use of such information.

### **5. Conclusion**

The result of this research show that the institutional aspect, healthcare delivery process, liability, financial, quality assurance and patient safety, accessibility, clarity of information, the usefulness of information are valid in measuring accountability. However, the health delivery process is not reliable in measuring accountability. This result reflects that the health delivery process differs from one country to another country or even among districts. It depends on the environment in which the health services operated. Furthermore, the indicators to measuring those eight variables mostly valid except two variables under the institutional aspect that are the obligation of the hospital to have a corporate social responsibility program and the performance contracted between hospitals and medical staff.

### **6. Agenda for further research**

The results found in the previous research, and this research can be used as a basis to develop operational guidelines to be implemented in an effort to improve hospital management, especially in developing countries. Such guidelines should reflect the fulfillment of accountability dimensions in each functional management, such as monitoring and performance evaluation system, remuneration systems, employee career systems, and other related functions

### **Acknowledgment**

We thank all directors and managers in public and private hospitals in Makassar, Indonesia, for their experiences sharing on accountability practices in hospital management. We also thank to Directorate of Research and Community Service, Ministry of Research, Technology and Higher Education Republic of Indonesia for funding this research.

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# The Effect of Government Incentives on the Performance of Micro and Small Enterprises (MSE's) in Eastern Ethiopia: Evidence from Harar, Dire Dawa city Administration and Haramaya Town

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## Abstract

MSE's are serving as a vehicle of the economic development for developing countries and the government is trying to incentivize the enterprises through different mechanisms. But, the effect of government incentives on the performance of MSE's is not yet examined in Eastern part of Ethiopia which is the main aim of this study. In the same vein, there is no study that used both capitals, saving amount and employment together as a proxy measure of performance in the study areas. Based on the findings, enterprises who accessed credit accumulated higher capital, saved higher money, and created higher employment opportunity than enterprises who do not get credit access. MSE's operating on government provided working-premise have lower capital and lower savings but employed higher number of employees than MSE's who work on their own or rented working premises. Enterprises who accessed tax incentives saved higher, but less average capital and less employment compared to enterprises who have not accessed tax incentives. Furthermore, MSE's who accessed training have had higher capital, saving and employment compared to MSE's who have not accessed trainings provided by the government. Finally, based on the findings, necessary recommendations were forwarded for considerations.

**Keywords:** Capital, Employment, Micro and Small Enterprises (MSE's), Saving

## 1. Introduction

### *1.1. Introduction and problem justification*

The vast majority of the firms in the developing countries were constituted by Micro and small Enterprises (MSE's). These MSE's generate a considerable share in creating employment and output as well (Nichter, S., & Goldmark, L., 2005). It is recognized that Micro and Small Enterprises (MSE's) are useful to overcome the problem of

unemployment through creation of job opportunities and development of businesses having less capital. The development and growth of these MSE's can activate the business environment and enhance their competitiveness in the market. Broadly speaking it may also help to have equitable distribution of income and wealth between the poor and the rich which is one of the roles of public finance of a given country. The Micro and Small Enterprises (MSE's) have been recognized as an engine of economic growth and development for a given country. In poor countries like Ethiopia, Micro and Small Enterprises (MSE's) are believed to have a vital role in poverty reduction, employment generation as well as economic development (Haftu, B., et al, 2009). Prior attention must be given to MSE's as they serve as sources for sustainable job opportunities for a country (Alemayehu, D. et al., 2016). Due to the fact that MSE's play a key role in job creation, improving household income and well-being, and boosting national economy of the county, it has been one of the top agendas of various policy makers and academics (Drbie, M., & Kassahun, T., 2013). Generally, the MSE's sector have great contribution in enhancement of the economy, particularly in employment opportunity creation, improvement of the income level, women empowerment, changing the habit of operators to save money, skills and knowledge development of operators, improvement of the people's living conditions and social issues (Geleta, D. S., 2013). Even if the assets owned by small enterprises is by far less than that of medium and large enterprises, they do have highest contribution on employment creation compared to the later once. (Weldeslassie, H. A., etal, 2019).

Albeit MSE's were serving as a vehicle of the economic development for a country the effect of the government incentives on the performance of these enterprises is not yet examined in Eastern part of the country. In the same vein, to the best of the researcher knowledge, there is no study that used both capitals, saving amount and employment together as a proxy measure of performance in Eastern part of Ethiopia. The main objective of the study is therefore to measure the effects of government incentives on the performance of MSE's in Eastern part of the country. The government incentives included in this study are incentive through credit access, through provision of working premises to MSE's, through tax and through provision of training on the performance of the enterprises. The specific objective of the study is to measure the economic differences in between the enterprises accessed incentives or not.

## *1.2. Literature review*

### *1.2.1. Definition of Micro and Small Enterprises (MSE's)*

There is no generally accepted definition of MSE's across the globe. Some of the commonly used criteria include number of employees, asset values, revenue (Sales) and amount of capital they have and initial investment (Seyoum, 2016). There is no any single definition that can reflect the differences between MSE's. Even if organizations give a working definition to MSE's, mostly non-definitional policy was adopted by different international organizations across the globe (UNCTAD, no date).

The MSE's sector is a diversified activity which creates livelihood opportunity and serve as a remedy to curb the problem of unemployment and poverty (Firasew, 2011). Considering different factors, MSE's are defined in different ways across the world. Even though, many countries use common factors for the definition of MSE's their degree of emphasis and measures employed quite differ considerably. The factors considered include number of employees, sales volume, and the capital of MSE's. Generally, there are operational and theoretical definition of MSE's. The first one is largely used for working purposes and the latter is employed to characterize the sector. Recently, particularly in Europe, there has been some degree of convergence in the definition of MSE's. The European Commission used a combination of employee numbers, annual turnover or balance sheet total and ownership while defining MSE's (Zemenu, A., & Mohammed, M., 2014). The official definition of Micro and Small Enterprises is an enterprise having 10 or less workers (Gebrehiwot, A., & Wolday, A., 2006). Enterprises having a paid-up capital below 20,000 ETB excluding consultancy or other firms that use advanced technology are Micro enterprise whereas enterprises having paid up capital ranges between Birr 20,000 and 500,000 and save other firms using high technology are small enterprises (Belay, K., Asmera, T., & Tekalign, M., 2015).

### *1.2.2. Determinant factors of MSE's*

Albeit the degree of the effects is different from one to another, MSE's can be affected by both internal and external

factors. The factors having strong positive relationship with the growth of MSEs include factors related with working premise, management and experience, marketing, infrastructural, financial factors, and also factors related with the external environment (Mengesha, B. T., 2018). Some of the most critical factors affecting MSE's include work premises, access to finance, infrastructure, entrepreneurship and business managerial problems (Cherkos, T., et al, 2018). Furthermore, age of manager's or owner's, marital status and education were also important factors affecting growth of MSE's in the study area (Tarfasa, S., et.al, 2016). The development of MSE's can be affected by internal and external factors the former includes human resources, finance, production, marketing and development strategy and the external one includes policies of the government, socio-economic, cultural, the role of related institutions, and information technology as well. Moreover, there are also other factors that determine the performance of MSE's including capital, training, information about the market, marketing network, product promotional, and institutional capacity (Munizu, M., 2016).

### *1.2.3. Challenging factors of MSE's*

In Addis Ababa Ethiopia, about 55% and 64% of MSE' affected by the problem of access to finance. Majority of the MSE's in Addis Ababa have not accessed loan due to bulky bureaucracy, limited working premises, and also high collateral requirement (Tarfasa, S., et.al, 2016). Sources of finance and loan term, low educational level of managers and entrepreneurs, the problem of working premise provided by government are the problems of MSE's (Fufa, F. G., 2015).

The problems that MSE's are facing include: intensive competition, lack of credit facility, starting business without conducting survey, inappropriate imposition of tax, inappropriate tenure, lack of business training, lack of working capital, absence of appropriate technology, bad debts and lack of financial management skill and experience (Zemenu, A., & Mohammed, M., 2014). Some of the challenges that MSE's are facing in Ethiopia includes the problem of access to finance, selling at less price compared with other similar enterprises, lack of access to raw material, lack of experience in own business, limited market access, lack of working premise, lack of training access, cultural oppressions, high level of competition, the development strategy and policy of the country focusing on agriculture than others, unappealing market, lack of promotion due to the problem of working capital, high tax, unachievable collateral requirement and high interest rate by credit institutions, lack of technology, weak performance, and lack of financial management skill (Abdulmelike A, 2018). Some of the foremost regulatory challenges that MSE's are facing include high taxes, the problem of tax administration, high collateral requirement, absence of working premise and lack of supports (Gebrehiwot, A., & Wolday, A., 2006).

While taking credit most MSEs are forced to use the informal institutions in which there is limited amount of money to meet their credit needs and requirement. This is due to the fact that there is requirement of collateral, high interest rate and also other governance and related accountability issues in the formal financial institutions (Abera A, 2012). The most challenging factors that hinders the growth of MSE's were problems related with marketing, accounting and financial related factors, infrastructural factors, technological, business location, educational status and experience (Samuel B, 2019). Less amount of capital for investment, regulatory framework, lack of collateral and socio-cultural beliefs and practices are among constraining factors that influence the MSE's performance (Osoro, K., & Areba, A., 2013).

### *1.2.4. Micro and Small Enterprises (MSE's) in Ethiopia*

In Ethiopia, particularly for the low-income earners, the poor and women groups, the micro and small enterprises (MSE) sector is important. These can be seen from their relatively large presence in the country, share in employment and small capital requirements. There are sufficient reasons for governments and other stakeholders in development to be interested in micro and small enterprises. MSEs are seen as an emerging private sector, forming the basis for private-sector-led growth in the context of many developing countries, including Ethiopia. In Ethiopia, at the level of strategy and policy, the roles of MSE's have received recognition and seen as means of providing employment, alleviating poverty, ensuring food security, and private sector development (Gebrehiwot, A., & Wolday, A., 2006). With regard to the promotion in the community-building and social activities in the rural and small towns, the private small businesses and micro-enterprises create jobs and new opportunities (Wedeslassie, H. A., Etal, 2019).

To improve the performance and role of MSE's in reducing poverty, transformation of industries, reducing unemployment and overall development of the economy, lot of efforts has been made by the government (Cherkos, T., et al, 2018).

In Ethiopia MSE's are recognized as important vehicles of economic growth, employment creation, income generation, and poverty reduction, due to these facts, they occupy a prominent position in the development agenda of the country (Fufa, F. G., 2015).

Even though MSMEs make the smallest total proportion of assets, their contribution to employment creation is much higher than that of medium and large enterprises (Weldeslassie, H. A., Etal, 2019). In Ethiopia's industry development plan, MSE's given a recognition in and they are considered as vehicles for employment opportunities (Alemayehu, D. et al., 2016). Within the Industrial Development Strategy of the country, the Micro and small enterprise (MSE's) development holds a strategic place. They are the key instruments of job creation in urban centers, at the same time as job creation is the core of the country's development plan. MSE's development should be one of Ethiopia's top development priorities as they play a pivotal role in employment creation (MoUDH, 2016).

## **2. Methods**

### *2.1. Description of the study areas*

The study areas included in this study were Harari regional state, Dire Dawa administration and Haramaya towns. They are taken from three different regions and City Administrations of the Federal Democratic Republic of Ethiopia.

#### *2.1.1. Harari Regional state*

The Harari People Regional State is one of the nine regional states of the Federal Democratic Republic of Ethiopia. The total area of the region is 343.2 sq. km. (19.5 sq. km urban and 323.7 sq. km. rural) According to the 2007 Central Statistical Authority (CSA) Report, the total population of the Region is 183,415. It is the only region in Ethiopia where the majority of its population, i.e., 99,368 or 54.18% is urban inhabitants (Harari BoFED, 2006).

#### *2.1.2. Dire Dawa city Administration*

Dire Dawa city is one of the cities organized under the federal democratic republic of Ethiopia. The city administration area covers nearly 130,000 hectares, of which only 2 percent constitute built-up urban areas and the remaining 98 percent is considered rural (Habitat, U. N., 2008).

#### *2.1.3. Haramaya Town*

Haramaya is a town which is located within the Eastern Hraghe zone of the Oromia regional state which is 21 KM Northwest of Harar town and 505 KM away from the East of capital city Addis Ababa. (Shishaye, H. A., & Nagari, A., 2016).

### *2.2. Research Design*

This study used a cross-sectional survey study design. The researcher used this design due to the fact that there was a limitation of available resources including previous years data in this topic. Furthermore, the study used a survey type as it will try to generalize the data collected from sample respondents representing the whole population of the study areas.

### 2.3. Data and Methods

The study employed both primary and secondary data. The primary data were collected from sample respondents of the entrepreneurs engaged in MSE's using structured questionnaire. The questions included in the questionnaire are both open ended and close ended. From secondary source of data, the study used journal articles and previous studies of researchers and/or scholars in the sector as they provide detailed and latest findings on the field of study.

### 2.4. Sampling technique and Sample Size Determination

In this study, the researchers distributed a total of 360 respondents which includes 129 from Harar, 211 from Dire Dawa and 20 from Haramaya using proportionate sampling design from the total population of 3447 MSEs (1230 from Harar, 2017 from Dire Dawa and 200 from Haramaya). The sample size for the study calculated using to the formula recommended by Yamane (1973) as cited by (Wickramasinghe, 2007).

$$n = N / (1 + Ne^2) \text{ ----- Equation 3.1}$$

Where:

n => Sample size

N => Total population

e<sup>2</sup> => Probability of error

Therefore, the sample size for this study is:

$$n = 3,447 / (1 + 3,447(0.05)^2)$$

$$n = 359 \approx 360$$

With N = 3447, e = 5% (at least 95 % confidence level), thus the sample size is 360

Table 1. Sample size determination

S.No	Areas	Total population (N)	Proportion	Sample (n)
1.	Harar	1,230	$\frac{1,230}{3,447} * 360$	<b>129</b>
2.	Dire Dawa	2,017	$\frac{2,017}{3,447} * 360$	<b>211</b>
3.	Haramaya	200	$\frac{200}{3,447} * 360$	<b>20</b>
Total		<b>N= 3,447</b>	<b>100 %</b>	<b><u>n= 360</u></b>

### 2.5. Sampling Technique

The researchers applied two stage sampling procedures, in the first stage, MSE's which are found in the study areas were categorized into Five groups. These are MSE's engaged on manufacturing sector, service sector, trade associations, construction, and urban agriculture. In the second stage, the researchers proportionally selected respondents from each city as per the table 3.1 above. A total of 360 questionnaires were distributed and 354 questionnaires were collected representing a response rate of 98.33 percent. The samples taken includes 129 from Harar, 211 from Dire-Dawa and 20 from Haramaya considering the total population and their sectoral classifications as depicted in the table 3.2. here below.

Table 2. Data collected from each sector and respondent's city.

		Type of MSE's					Total
		Manufacturing	Service	Trade	Construction	Urban Agriculture	
Respondent's City	Harar	12	18	18	74	5	127
	Dire Dawa	64	47	18	60	22	211
	Haramaya	4	6	4	1	1	16
Total		80	71	40	135	28	354

### 2.6. Method of Data Analysis

In this study, the researcher used the descriptive analysis. The descriptive method of analysis used to make necessary assessments about the activities of MSE's among different sectors of investment and across different cities. Simple descriptive statistical tools such as percentage, mean, standard deviation, frequency and cross-tabulation, are employed in the study.

### 3. Result

In many nations, especially in developing countries including Ethiopia, Micro and Small Enterprises are one of the areas of development and also considered as a center of innovation. These MSE's may serve the nation in different ways including generating immediate employment opportunity with relatively small amount of capital requirement. Due to this and many other reasons, the government has been supporting the MSE's in terms of different incentives and many other supporting mechanisms.

The supports provided by the government to MSE's include facilitating credit access, providing working premises, and also providing tax incentives. Therefore, in this study the researcher tried to analyse the incentives provided by the government on the performance of MSE's.

#### 3.1. Government Incentive through credit

Table 3 below shows summary statistics of average values of capital, saving, number of employments and MSE's experience between enterprises which have accessed credit and enterprises which have not.

Table 3: Statistics on difference on Capital, Saving, Number of employment and experience between Credit accessed and Not accessed enterprises

MSEs Loan from Government	Credit accessed =46				No Credit accessed =307			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Net Capital	215832.15	214073.84	12500.00	900,000	124677.34	165130.63	600	950,000
Saving	92623.17	135719.93	3000.00	700,000	33992.60	46877.01	0	300,000
No of Employment	11.50	11.20	1.00	42.00	9.78	9.63	1.00	65.00
Age of MSE	5.09	2.75	1.50	11.00	5.28	2.92	0.50	19.00

As we can see from the above table that, around 87 % of the sample respondents did not received credit from government and only 13 % of them took credit from government. This implies that the role of government in providing credit is so low in the study areas. But, since one of the limitations of MSE's is having small amount of capital to run their business, there must be another mechanism that may allow them to access credit from government.

The average experience of enterprises which accessed credit equals 5.09 years and the average experience of enterprises which do not get access to credit equals 5.28 years. This result indicates as that emphasis of giving credit is given for newly established enterprises compared to experienced once. On the other hand, Credit accessed

enterprises have higher average capital (=215832.15) than the enterprises who do not received credit from government indicating an average capital of (=124677.34). Also, credit accessed enterprises saved, on average, more (=92623.17) than no-credit accessed MSEs (=33992.60). Besides, average employment creation (=11.50) is higher for the enterprises who accessed credit compared to enterprises who do not accessed credit which is (9.78).

In general, credit accessed enterprises accumulated higher capital, saved higher money, and created higher employment opportunity than enterprises which do not get access to credit. This indicates as that the credit access provided by the government had great effect on the performance of MSE's. in the study areas.

On the other side, the distribution of credit across the different types of business activities looks like the following.

Table 4. Distribution of credit based on the type of business activity

Credit access based on enterprises' business activity						
	Manufacturing	Service	Trade	Urban agriculture	Construction	Total
<b>Number of MSE's accessed credits</b>	12	8	9	12	5	=46
<b>Number of MSE's Not-accessed credits</b>	68	62	31	123	23	=307
<b>Total samples</b>	80	70	40	135	28	=353
<b>Proportion</b>	0.15	0.114286	0.225	0.088889	0.178571	0.130312

Table 4 shows that a total of 80 samples taken were engaged in manufacturing activities, out of this, only 21 or 15 percent obtained credit. Similarly, out of 70 enterprises which engaged on services business, only 8 or 11.43 percent have got access to credit. The proportion of credit access for enterprises which are involved in trade activity is 22.50 %. Similarly, the proportion of urban agriculture is equal to 8.88 % and the proportion of the credit accessed enterprises engaged in a construction sector are only 5, or 17.80 percent.

In addition, respondents were asked to write their reasons for not taking credit from government. From the result we can observe that majority of them (79.10 %) responded that the complicated loan approval procedures are the major factors hindering them to take credit from government.

Table 5: Reasons for not taking credit

Reasons	Frequency	Percent
The Amount of Loan is Insufficient	6	2.00
Loan approval Procedure is Complicated	238	79.10
Other	57	18.90
Total	301	100.00

### 3.2. Government Incentive through provision of working premises to MSE's

Another form of incentive provided by the government comes from provision of working premise. In some towns of the country, for example, micro and small-scale development agencies-built plants which MSEs can use to sell their products or they may provide land access to MSE's. These will be essential especially for newly established enterprises since they may face capital constraint.

Table 6. Statistical difference on Capital, Saving, Number of employments and Experiences of MSE's between enterprises which are provided work premise and not

	Work on gov't =50				Private or rented in =299			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
<b>Net Capital</b>	102,361.18	143,194.06	600.00	800,000.00	144,318.27	179,347.29	2,000.00	950,000.00
<b>Saving</b>	23,072.22	36,074.44	750.00	200000.00	45,104.34	72,268.75	0	700,000.00
<b>Number of employments</b>	11.10	10.46	2.00	43.00	9.89	9.81	1.00	65.00
<b>Age of MSE's</b>	6.13	3.41	0.50	15.00	5.10	2.79	0.50	19.00

Table 6 indicates as that only 50 out of 349 operate on government provided work premise. The remaining 299 MSE's on the other hand work of either their own work-premise or rented-in work-premise. When we observe their average capital, enterprises which operate on government provided work-premises have less average capital of 102,361.18 birr, than that of MSE's who operate on their own or rented working premises having 144,318.27 birr. Similarly, enterprise who operate on either on their own work-premise or rented-in work-premises have higher savings on average (=45,104.34) compared to enterprises who operate government provided work premise (=23,072.22). Generally, MSE's who operate their businesses on government provided work-premise have lower capital and also lower average savings than MSE's who work on their own or rented-in working premises.

But, when we see their employment status of enterprises, those MSE's who operate on either on their own work-premise or rented-in work-premises have lower average number of employees (=9.89) compared to enterprises who operate government provided work premise (=11.10).

From the above result we can observe that, enterprises who accessed government provided working premise employed higher number of employees on average compared to enterprises working by their own or rented working premises.

In addition, if we see the average experience between the two groups, it is 6.13 years for enterprises working on government provided premises and 5.10 years for enterprises who work on private or rented in. This indicate on average more experienced business enterprises have an access to working premises supplied by the government compared to the new enterprises.

### 3.3. Incentive through tax

As we all know, one of the main sources of revenue for a government is a tax revenue. By the money collected through tax and other sources, governments will provide necessary services to the society such as building infrastructures including roads, health canters, schools and universities. To see the effect of incentive through tax, the researcher tried to see the difference in capital, saving and number of employees between enterprises accessed tax incentives provided by the government or not.

Table 7. Statistical differences on Net Capital, Saving, Number of employments and Experiences of MSE's between enterprises accessed tax incentive or not

	Enterprises accessing tax incentive =21				Enterprises not accessed tax incentive =331			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
<b>Net Capital</b>	59000.00	50466.82	5000.00	186000.00	141816.38	178712.77	600.00	950000.00
<b>Saving</b>	79777.78	158378.76	3000.00	700000.00	39477.74	58584.94	0	350000.00
<b>Number of employments</b>	9.43	10.19	1.00	32.00	10.04	9.84	1	65.00
<b>Age of MSE's</b>	4.24	2.71	1.50	11.00	5.32	2.91	0.50	19.00

As we can see from the above table. that 21 enterprises who have accessed tax incentives provided by the government have less average capital which is 59,000 compared to the remaining 331 enterprises who have not accessed tax incentive which is 141,816.38 birr. Similarly, MSE's who have not accessed tax incentive have higher number of employees on average (=10.04) compared to enterprises who accessed incentives through tax (=9.43). Note also that the average experience of enterprises not accessed tax incentive (=4.24 Years) is smaller than the average experience accessed enterprises (=5.32 years). This indicates that government gives tax incentive for newly established enterprises whose experience is less compared to other experienced enterprises. Hence, as we can see from the above result, incentivized enterprises have smaller capital compared to other once. So, this happened due to the fact that the average experience of the incentivized enterprises is relatively smaller than the average experience of enterprises not accessed tax incentive.

But, when we see their savings, enterprises who are got access of tax incentive provided by the government saved higher amount of money on average (=79777.78) compared to enterprises who are paying tax (=39477.74).

### 3.4. Governments incentive through provision of training

Table 8: Statistical differences on Net Capital, Saving, Number of employments and Experiences of MSE's between enterprises which have accessed training or not

	Provision of Training for MSE's							
	Enterprises not accessed Training (90)				Enterprises accessed Training (263)			
	Mean	Standard Deviation	Maximum	Minimum	Mean	Standard Deviation	Maximum	Minimum
Net Capital	72440.26	95416.52	670000.00	600.00	159051.70	189494.73	950000.00	2000.00
MSE's Saving Amount	24168.48	47152.51	350000.00	.00	46689.28	72657.99	700000.00	400.00
Number of Employees	4.61	5.05	33.00	1.00	11.87	10.40	65.00	1.00
Age of MSE's	4.72	3.23	15.33	.50	5.45	2.75	19.00	0.50

As we can see from the above table 8 that from the sample a total of 263 enterprises have accessed training provided by the government, but the remaining 90 enterprises do not accessed training. 263 MSE's who accessed training have an higher average capital of 159,051 birr compared to the remaining 90 enterprises who have not accessed training having an average capital of 72,440 birr. Similarly, when we see their savings, enterprises who accessed training saved by far higher amount of money on average (=46,689.28) compared to enterprises who are have not accessed trainings (=24,168.48). In addition, MSE's who accessed training have higher number of employees on average (=11.87) compared to not accessed MSE's (=4.61). This result implies as that on average MSE's who took training are performing well both in terms of capital, saving and also employment compared to MSE's who do not took trainings provided by the government.

## 4. Conclusion and Recommendation

MSE's were serving as a vehicle of the economic development and also considered as a foundation of job opportunities specially for developing countries. This study mainly aimed at measuring the effects of government incentives on the performance of MSE's in Eastern part of the country. The government incentives employed in this study are incentive through credit access, provision of working premises to MSE's, incentive through tax and provision of training on the performance of the enterprises. Performance of the enterprises measured in terms of growth in capital, saving and number of employees. Furthermore, the study measured the economic differences in between the enterprises accessed incentives or not.

Based on the finding of the study, very limited number of enterprises accessed credit in the study areas, mainly due to complicated loan approval procedures. Albeit their small numbers, credit accessed enterprises accumulated higher capital, saved higher amount of money, and created higher employment opportunity compared to enterprises who do not get access to credit. Therefore, the provision of credit access to MSE's and simplifying the loan approval procedures should be given due consideration.

MSE's operating on government provided working-premise have lower capital and lower average savings but employed higher number of employees than MSE's who work on their own or rented-in working premises. Enterprises who have accessed tax incentives provided by the government have less average capital and also less employment number compared to enterprises who have not accessed tax incentives. This happened due to the fact that the average experience of the incentivized enterprises is relatively smaller than the average experience of enterprises not accessed tax incentive. But, enterprises who have accessed tax incentives provided by the government saved higher amount of money compared to enterprises who have not accessed tax incentive. MSE's who accessed training have had higher capital, saving and employment compared to MSE's who have not accessed trainings provided by the government. Thus, the government in general and particularly the MSE's development agency should prepare periodical trainings to MSE's.

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# Firm Specific and Macroeconomic Determinants of Financial Institutions' Profitability: Evidence from Banks and Insurances in Ethiopia

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## Abstract

Now a day's financial institutions play a significant and irreplaceable role in the growth of financial services which ultimately leads to the overall success of the economy of a country. The very aim of this study was to investigate the key firm specific and macroeconomic determinants of profitability of financial institutions in Ethiopia using balanced panel data from 25 financial institutions (14 banks and 11 insurance companies) covering 12 years of period from 2008 to 2019. Quantitative approach and explanatory design was employed to realize the stated objective. In order to achieve the study objective, secondary data were collected from annual audited financial statements of sampled financial institutions for the stated period. The model results of the study revealed that liquidity ratio, asset tangibility and leverage have positive and statistically significant effect on profitability of financial institutions while firm age and inflation rate have negative and statistically significant effect on the profitability of financial institutions in Ethiopia. However, capital adequacy, size and real GDP growth rate were found to have insignificant effect on the profitability of the sector. Future studies are suggested to be conducted on this research area by incorporating variables that are other than variables used in this study and unlike this particular study, all other financial institutions need to be included.

**Keywords:** Financial Institution, Determinants, Profitability, Bank, Insurance

## 1. Introduction

A financial institution is a company engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments, and currency exchange. Among others, some of the roles played by this sector include provision of indispensable financial services to the economy, contributing to economic growth, efficient resource allocation, reduction of transaction costs, creation of liquidity, facilitation of economies of scale in investment, and spread of financial losses (Haiss and Sümegi, 2008).

According to Barney (1997) as quoted by (Peter, 2013), performance has been the most important issue for every organization whether it is for profit or non-profit one. Performance is used to indicate the hard work to attain a particular goal and it is a matter not only of what people achieve but how they achieve it. The attainments of goal include combination of human, fiscal and natural resources (Armstrong, 2006). The performance is an activity applied to a part or all of performance of actions in a time period, often with connection to previous or proposed expenditure efficiency, management responsibility or accountability. Financial performance management is a part of total performance management of an organization (Muhammad *et al.*, 2015). According to (Armstrong, 2006), financial performance is a subjective measure of how well a firm can use assets for its primary mode of business and generate revenue. This term is also used as a general measure of a firm's general financial health over a given period of time, and can be used to compare similar firms across the same industries or sectors in aggregation. The best financial performance of the firm not just plays the function to raise the market value of that particular organization but also leading towards the growth of the whole industry which ultimately leads to the overall success of the economy.

According to Hifza (2011) profitability is one of the most important objectives of financial management since one of the goals of financial management is to maximize the owners' wealth, and profitability is the very important measure of performance. A business that is not profitable cannot survive whereas a business that is highly profitable has the ability to reward its owners with a large return on their investment. Hence, the ultimate goal of a business entity is to earn profit in order to make sure the sustainability of the business in prevailing dynamic business conditions.

Measuring the profitability of financial institutions has gained the relevance in the corporate finance literature because as intermediaries, these companies in the sector are not only providing the mechanism of saving money and transferring risk, they are also helping to channel funds in an appropriate way from surplus economic units to deficit economic units so as to support the investment activities in the economy (Hifza, 2011 and Weldeghiorgis, 2004).

Over the years, there have been variations in profit as reported in financial statements of financial institutions in Ethiopia. This suggests investigating the factors responsible for the profitability of financial institutions overtime. Moreover, much of the extensive empirical literature on the determinants of profitability of this sector is mostly focused on the banking industry excluding other financial institutions such as microfinance institutions and insurance companies (Vejzagic and Zarafat, 2014 and Williams, 2003), and very little studies are conducted on the profitability of the financial industry in Ethiopia. Thus, this study aimed at filling this gap by identifying determinants of profitability of financial institutions in Ethiopia.

## **2. Literature Reviews**

### ***2.1. Concept of Profitability***

The term profit can take either its economic meaning or accounting concept which shows the excess of income over expenditure viewed during a specified period of time. Michael (2011) argued that profitability is the most important and reliable indicator of performance as it gives a broad indication of the ability of an institution to raise its income level (Kaur and Kapoor, 2007). The existence, growth and survival of a business organization mostly depend upon the profit which an organization is able to earn. According to Hamad Ahmed Ali Al-Shami (2008) there are different ways to measure profitability such as: return on asset, return on equity and return on asset is an indicator of how profitable a company is relative to its total assets whereas return on equity measures a company's profitability which reveals how much profit a company generates with the money shareholders have invested.

## **2.2. Theories of Profitability**

There are various theories of profit which have been advanced from time to time regarding the nature of profit in a competitive economy. Almost all of them differ basically from one another and are inadequate (not capable enough) to explain the actual role of profit in the operation of free economy. The most important theories are:

### **1) Dynamic theory of profit:**

The dynamic theory of profit was formulated by J.B. Clark (Clark, 1908). According to him profit accrues because the society is dynamic by nature. Since the dynamic nature of society makes future uncertain and any act, the result of which has to come in future, involves risk. Thus profit is the price of risk taking and risk bearing. It arises only in a dynamic society which means in a society where changes does not occur i.e. it is static by nature the risk element disappears and hence the profit element does not exist there. Actually, a society is said to be dynamic when there is a change in its population, change in trends of the people, change in stock of the capital, change in the supply of entrepreneurs etc. when all these factors becomes constant, the future also becomes certain and the risk element disappears from the society. According to Clark, there are certain changes which are of a recurring and calculable nature. They can be anticipated and the output can be adjusted according to that. The profits do not arise on those regular changes but on those which are unforeseen or unpredictable. Thus, he observes that: "It is not dynamic changes or any changes as such which cause profits but he divergence the actual conditions from those which have been expected and on the basis of which business arrangements have been made."

### **2) Uncertainty bearing theory of profit**

The theory of uncertainty bearing was developed by Prof. F.H. Knight in 1921. According to him, profits are the reward for uncertainty bearing rather than risk taking. He has divided the risk into insurable risks and non-insurable risks. Non-insurable risk is also known as uncertainty.

#### **a. Insurable risk**

The risk whose statistical probability can always be computed like the risk of fire, theft and accident are known as insurable risks. These risks can be insured and the entrepreneur can reduce such risks. No entrepreneurs feel fear on this type of risk because such risk can be transferred to insurance agency by paying suitable premium.

#### **b. Non-insurable risk**

The risk which is neither definite nor foreseen is called non-insurable or uncertainties risk. It cannot be guarded against because no insurance companies afford an insurance against such uncertainties. Its statistical probability also cannot be computed. Non-insurable risk arises due to business cycle, technological changes, unhealthy competition among business firms, change in government policy etc. According to Prof. Knight the main function of the organization is to bear such non-insurable risks or uncertainties and profit is the reward for bearing such risks.

### **3) Risk bearing theory of profit**

The risk bearing theory of profit was developed by F.B Hawley in 1907 A.D. According to him, profit is a reward of risk bearing. The main function of entrepreneur is to bear risk. Production involves various kinds of risks and other emergency expenses. Nobody will bear risk unless there is expectation of profit. Profit is the main motive for taking risk. Thus, profit is reward for taking risk. Risk differs from industry to industry. Some productive activities are more risky while others are less. The rate of profit is also different from industry to industry. Profit is the reward for taking risk. Higher the risk, higher will be the profit and vice versa (Nabraj Lama, 2013).

### **4) Monopoly theory of Profit**

This theory is established by Kalecki (1942) and he said that there is no doubt that profits arise from dynamic changes, innovations and from making a correct estimate of future economic conditions. However in his point of view, monopoly and monopolistic competitions in the market also give rise to profits. The firms under monopoly or monopolistic competition have greater control over the price of the product. They are the price makers rather

than the price takers. As such they raise prices by restricting the level of output and thus keep profit at higher level. Monopoly power, thus, is the basic sources of business profits. Nevertheless, this theory is also criticized because, monopoly is no doubt an important cause and source of monopoly profits but it does not replace other theories. Monopoly power only supplements other theories (www.economicsconcepts.com).

### **2.3. Determinants of Profitability and Research Hypothesis**

#### **1. Firm Size**

An important factor employed in determining firm performance is the size of a firm and this is attributable to economies of scale as found in the traditional neo-classical view of the firm. A firm size influences its financial performance in several ways. Firms with large size have the advantage of economies of scale thereby leading to efficiency in comparison to firms with small size. Small firms are likely to face difficulty as it relates to competing with large firms in highly competitive markets due to the fact that smaller firms are likely to have lesser power (Hailegebreal, 2016)). The empirical findings as it relates to size and performance of financial institutions have been mixed. Mazviona *et al.*, (2017), Kazeem (2015) and Mwangi and Murigu (2015) found negative relationship between size and performance. On the other hand, Alomari and Azzam (2017); Dey *et al.* (2015); Bawa and Chattha (2014) and Charumathi (2012) found positive relationship between size and profitability.

**H1:** *There is positive relationship between size and profitability*

#### **2. Leverage**

Leverage is an important determinant of performance (Mehari and Aemiro, 2013). Leverage reveals the extent at which borrowed funds are being utilized by a firm. A risk of bankruptcy exists when a company that is highly levered finds it difficult to make debt payments; difficulty in finding new lenders in future may also arise. The impact of financial leverage on the performance of a firm can be positive this is due to the fact that leverage can be used as a tool for disciplining the management of a company. Leverage can function as a disciplinary tool that guides management of a company from wasting company resources (Grossman & Hart, 1982). Findings revealed that, the effect of financial leverage on performance have been mixed. Mazviona *et al.* (2017); Mwangi and Murigu (2015); Burca and Batrinca (2014); and Boadiet *et al.* (2013) found a positive association between leverage and performance. However, Alomari and Azzam (2017); Hailegebreal (2016); Kazeem, (2015); and Dey *et al.* (2015) found that leverage has a negative effect on profitability.

**H2:** *There is positive relationship between leverage and profitability*

#### **3. Age**

The age of the company is one of the most influential characteristics in organizational studies and is an important determinant of financial performance. Newly established companies are not particularly profitable in their first years of operation, as they place greater emphasis on increasing their market share, rather than on improving and maintaining financial healthiness (Athanasoglou *et al.*, 2005). The empirical findings with respect to age and company's performance were mixed. Berteji and Hammami (2016); Kaya (2015) and Derbali (2014) in their respective studies found that age has a significant positive impact on performance. On the other hand, Mwangi and Murigu (2015) and Malik (2011) found positive relationship between age and performance.

**H3:** *There is positive relationship between age and profitability*

#### **4. Liquidity**

Liquidity ratios measure the firm's ability to fulfill short-term commitments out of its liquid assets. Companies with more liquid assets are less likely to fail because they can realize cash even in very difficult situations. It is therefore expected that financial institution with more liquid assets will outperform those with less liquid assets. Daniel and Tilahun (2013) confirmed that there is a positive relationship between liquidity and profitability of financial institutions. However, Pasiouras & Kosmidou (2007) hypothesized a negative relationship liquidity and profitability.

**H4:** *There is positive relationship between liquidity and profitability*

## 5. Asset Tangibility

Tangibility of assets ratio measures the share of fixed assets from total assets, this allows the firm to get a borrowing access easily, due to it is serving as collateral to get sufficient loan. According to Asnakew (2011), tangible assets are likely to have an impact on the borrowing decisions of a firm because they are less subjected to informational asymmetries and usually have a greater value than intangible assets in case of bankruptcy. Therefore, it is considered that the availability of such borrowing capacity will affect the profitability of the financial institutions. A study by Daniel and Tilahun (2013); Hifza (2011) and Naveed *et al.*, (2011), found positive and significant relationship between asset tangibility and profitability of financial institutions. On the other hand, a high ratio of asset tangibility may indicate an inefficient use of working capital which reduces the firm's ability to carry receivables and maintain inventory and usually means a low cash reserve. This may often limit the ability of the firm to respond to increased demand for products or services (Liargovas and Skandalis, 2008). This concept also supported by the findings of Abdelkader (2014); Yuvaraj and Gashaw (2013) and Abate (2012).

*H5: There is positive relationship between asset tangibility and profitability*

## 6. Capital Adequacy

Capital adequacy also known as volume of capital is a measure of financial strength or financial soundness of financial institutions, in terms of its ability to withstand operational and abnormal losses. Capital is seen as a tool to protect, insure and promote the stability and efficiency of financial system, it also indicates whether the company has enough capital to absorb losses arising unforeseeable circumstances. Capital adequacy (volume of capital) also indicates the ability of a firm to undertake additional business (Tanveer, 2004). Regarding its relationship with profitability, finding by Yuvaraj and Gashaw (2013); Gashaw (2012); Imad *et al.*, (2011) and Hifza (2011) stated that capital adequacy has positive relationship with financial institutions' profitability.

*H6: There is positive relationship between capital adequacy and profitability*

## 7. Real GDP Growth rate

GDP is one of the primary indicators used to gauge the health of a country's economy. Fadzlan and Royfaizal (2008) states that GDP is the most commonly used macroeconomic indicator to measure total economic activity within an economy, its growth rate reflects the state of the economic cycle. A significant change in GDP, whether up or down, usually has a significant effect on the stock market. It's not hard to understand why a bad economy usually means lower profits for companies, which in turn means lower stock prices. Investors really worry about negative GDP growth, which is one of the factors economists use to determine whether an economy is in a recession ([www.investopedia.com](http://www.investopedia.com)). There are also empirical evidences that found, real GDP has a positive effect on profitability of financial institutions, such as Cecila (2014), Doreen (2013) and Doumposet *al.*, (2012).

*H7: There is positive relationship between real GDP and profitability*

## 8. Inflation

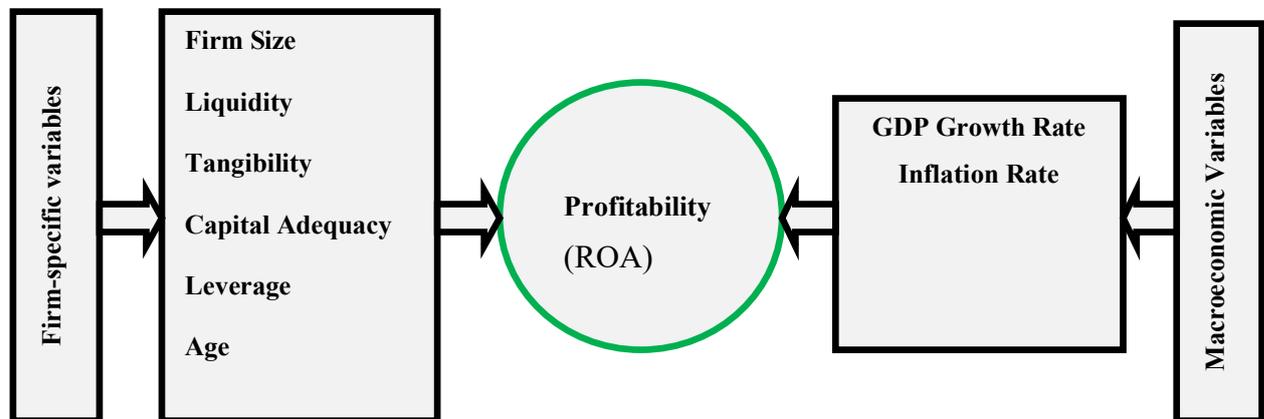
The term inflation refers to the sustained rate of depreciation of the purchasing power of a unit of local currency over time or simply, it is the rate at which the general level of prices for goods and services is rising, and, subsequently, purchasing power is falling. It is measured on a continuously compounded rate basis (differences in the natural logarithms) or as an annual percentage increase as reported in the Consumer Price Index (CPI). Inflation, to one degree or another, is a fact of life. High rate of inflation negatively effects the real economic growth and thus causes adverse consequences for economic performance at the aggregate level. However, the nature of relationship between inflation and economic growth and the channels through which inflation affects real economic activities is still a debatable issue (Li, 2006). Godfrey (2012) suggested that "there was drop in performance (profitability) of financial institutions not due to poor management but it was due to inflation". According to John (2011) inflation tends to raise investors' required real rate of return on equity and to lower real capital income for tax-related reasons. As a result, there is a strong negative correlation between inflation, real income, and real and nominal stock prices.

*H8: There is negative relationship between inflation and profitability*

## 2.4. Conceptual framework of the study

Conceptual framework helps to clearly identify the variables that are used in the research process and shows how particular variables are connected with each other in the study. The conceptual framework presented both internal and external variables used in this study in figure 1 below;

Figure 1. Theoretical model on determinants of profitability



Source: Developed based on literatures

## 3. Materials and Methods

The major objective of the study was to investigate the determinants of profitability of financial institutions in Ethiopia. This study has employed quantitative approach and an explanatory research design to realize the stated objectives. The sample constitutes 14 banks and 11 insurance companies out of 18 commercial banks and 17 insurance companies in Ethiopia. The study employed purposive sampling technique to include all public as well as private banks and insurance companies, which have been in operation from 2008 to 2019 based on the availability of data. The study used secondary data which includes the audited annual financial reports of insurance companies and banks under study. The data were strong balanced panel type, which captured both cross-sectional and time series behaviors.

### 3.2. Methods of Data Analysis

The study used both descriptive statistics and econometric tools to analyze the data and address the predefined objective. The former one includes simple descriptive methods such as: mean, maximum, minimum, standard deviations and other simple statistical tools that enable to better understand the existing situation and analyze the general trends of the data. The study substantiated the descriptive analysis through manipulating econometric models to examine causal relationship between the explanatory and dependent covariates. In this regard, the study employed Random Effect Model to identify the explanatory variables that are significantly affecting profitability of financial institutions.

### 3.3. Variable Measurement and Model Specification

Several important factors need to be considered in specifying an empirical model. These include choice of suitable dependent and explanatory variables, measurement of these variables, and model specifications.

#### 3.3.1. The Dependent Variable

In accordance with previous studies that have investigated the determinants of profitability of financial institutions, this study employed one of the most commonly used measure of profitability; that is return on total assets (ROA). Return on Assets (ROA) measures the overall profitability and reflects both the profit margin and how the institution is efficient in using the total assets to generate revenue (Brealey *et al.*, 2006). ROA is calculated as net profit after tax divided by total assets. This is probably the most important single ratio in

comparing the efficiency and financial performance of financial institutions as it indicates the returns generated from the assets that firm owns. The formula for the profitability measure is given as follows:

$$ROA = \text{Net profit after tax (t)} / \text{Total Assets (t)}$$

### 3.3.2. Independent Variables

The choice of explanatory variables used in this study is based on their theoretical relationship with the dependent variable. Depending on the research hypothesis the explanatory variables used to determine the profitability of financial institutions in Ethiopia are firm size, liquidity, asset tangibility, capital adequacy, leverage and age as firm-specific variables and GDP and inflation as macroeconomic variables. Those variables are used and reported significant by various studies as determinants of financial institutions profitability with different combinations (Hongxing, 2018; Mazviona *et al.*, (2017); Muhammad *et al.*, 2015 and Hifza, 2011). Table 1 presents the summary of variables and their expected effect on the financial institutions profitability.

Table 1. Summary of variables and their expected relationship

Categories	Variables Name and Notations	Measurement	Expected Effect
<b>Dependent Variables</b>	Profitability (ROA)	Net Income/ Total Asset	NA
<b>Independent Variable</b>	Firm Size (SIZE)	Natural Log of Total Asset	+
	Liquidity (LQ)	Current Asset/Current Liability	+
	Leverage (LEV)	Total debt / total equity	+
	Capital Adequacy (CA)	Equity/Total Asset	+
	Asset Tangibility (TNG)	Fixed Asset / Total asset	+
	Firm Age (AGE)	Number of years firms operated	+
	Real GDP Growth Rate (GDPG)	Real GDP Growth Rate	+
	Inflation Rate (INFR)	Annual Inflation Rate	-

Source: Developed based on the literatures

To identify effect of determinant variables on profitability of financial institutions, this study formulated the following econometric models.

$$ROA_{it} = \alpha + \beta_1(SIZE)_{it} + \beta_2(LQ)_{it} + \beta_3(TNG)_{it} + \beta_4(CA)_{it} + \beta_5(LEV)_{it} + \beta_6(AGE)_{it} + \beta_7(INFR)_{it} + \beta_8(GDPG)_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

Where, ROA is Profitability, SIZE is the Firm Size, LQ is the Liquidity, TNG is Asset Tangibility, CA is Capital Adequacy, LEV is Leverage, AGE is the Firm Age, INFR is Annual Inflation Rate and GDPG is the Real GDP Growth Rate, *i* is the *i*<sup>th</sup> Financial Institutions, *t* is the time period,  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$  and  $\beta_8$  are the coefficients for each explanatory variables in the model,  $\varepsilon_{it}$  is the error term.

## 4. Result and Discussions

### 4.1. Descriptive Statistics

As presented in Table 2, the average value of ROA is 0.11(11.48%) with a minimum value of -0.23 and a maximum value of 9.49. This result implies that, sampled financial institutions on average generate 0.11 cents from a birr invested in their asset which ranges from 0.23 cents to a profit of 9 birr and 49 cents during the study period with the high standard deviation of 0.56 (56%) from the mean.

Regarding explanatory variables, the size of the financial institutions which is measured by natural logarithm of total asset has an average value of 9.35 while the minimum and maximum values were 6.21 and 11.75 respectively and a standard deviation of 0.88. Liquidity measured as a ratio of current asset to current liability

has average value of 22.08 with a minimum and maximum value of 0.13 and 400.44 respectively. The standard deviation is 50.41, which indicates the existence of large variation among the sampled firms with respect to their liquidity position. The average value of asset tangibility is 0.10 with the minimum and maximum value of 0.008 and 5.05 respectively. The standard deviation is 0.31, which indicates that the asset tangibility of the sampled institutions deviates from the mean up to 0.31. The average value of capital adequacy is 0.48 with minimum and maximum values of 0.004 and 35.44 respectively and a standard deviation of 2.32, which shows the existence of high variation among the sampled institutions in Ethiopia. The average value of leverage is 5.76 with maximum and minimum values of 85.53 and 0.06 respectively and large standard deviation value of 6.82 from the mean. This result signifies that in Ethiopia, most of financial institutions were financed through borrowed funds compared to funds raised by owners' contributions. The average age of the financial institutions in Ethiopia is 26.87 (26 years and 10 months). The maximum age of the institutions is 58 years while the minimum age is 13 years with the standard deviation of 9.75 (9 years and 8 months).

Regarding macro-economic variables, the average value of real GDP growth rate is 9.77% with minimum and maximum values of 7.7% and 11.4% respectively, which indicates that, during the study period the economic growth were reasonably stable. Finally, the average value of inflation rate for the period was 15.87% with a standard deviation of 1.13%.

Table 2. Descriptive statistics for the dependent and explanatory variables

Variable	Obs = 300	Mean	Std. Dev.	Min	Max
ROA		0.1148	0.5691119	-0.2323	9.4978
SIZE		9.3572	0.8862787	6.2137	11.7544
LQ		22.0867	50.41024	0.1368	400.4407
TNG		0.1013	0.3104362	0.0082	5.0599
CA		0.4853	2.325927	0.0046	35.4439
LEV		5.7660	6.825035	0.0628	85.5347
AGE		26.8712	9.753559	13	58
INFR		15.875	10.3339	2.8	36.4
GDPG		9.7725	1.133033	7.7	11.4

Source: own competition, 2020

#### 4.2. Regression Result

Table 3 presents the random effect regression results to identify determinants of financial institutions profitability in Ethiopia. The variables included in the model explained about 84% of the total variation on profitability which is reasonably a good fit. This implies that the explanatory variables (such as, liquidity, asset tangibility, leverage, firm age and inflation rate) jointly explained about 84% of the total variation in the profitability.

The model result shows that, **Liquidity**, which measures the ability of a firm to meet its short term obligations, has a positive and statistically significant effect on the profitability of financial institutions in Ethiopia. The result shows that, an increase in liquidity leads to increased profitability. The result is in line with the prior expectation and consistent with the findings of Suheyli (2015), Abate and Yuvaraj (2013), John *et al.*, (2013) and Agnes (2012) argued that, the greater the amount of the resources that are tied up to meet the liquidity position, the higher is the profitability but in contrast with the findings of Berhe(2017), who has concluded that liquidity is negatively related to profitability.

**Asset Tangibility** has positive and statistically significant effect on profitability of financial institutions. The result implied that, an increase in asset tangibility leads to an increased profitability, due to the fact that companies with more tangible assets tend to be profitable because more investment in the long term assets, research and development and innovation are highly associated with companies' position in generating large volume of profit. This result is consistent with the prior expectation along with findings by Boadiet *al.* (2013), Ahmed *et al.* (2011) and Nucci (2005) found a positive relationship between tangibility and performance of

financial institutions. In contrast to this, findings of Abdelkader (2014), Yuvaraj and Gashaw (2013) and Abate (2012) documented that profitability is negatively associated with asset tangibility.

**Leverage** which is measured as the ratio of debt to equity has positive and significant effect on the profitability of financial institutions, which shows that the higher the leverage ratio the better is the profitability of financial institutions in Ethiopia. The result is in congruent with Baye (2011) and Navee *et al.*, (2010) who found positive and significant relationship between leverage and profitability but against with the findings of Alomari and Azzam (2017), Hailegebreal (2016) and Kazeem, (2015) found that leverage has negative effect on profitability.

The **Age** of companies has negative and statistically significant effect on profitability of financial institutions, which implies when firm's age increases, performance of the company decreased since younger firms are more focused on maximization of their profit through adaptation of new technology, quality of service, good management and efficient resource utilization. The result is against from the prior expectation but consistent with the findings of Malik (2011) and Ahmed *et al.*, (2011) found negative relationship between age and profitability. However, the result is against with the findings of Berteji and Hammami (2016), Kaya (2015), and Derbali (2014) who found that age has a significant positive impact on profitability in their respective studies because older firms can gain experience based on economy of learning and can avoid the liabilities of newness.

Finally, **Inflation Rate** is the key macro-economic parameter that has negative and statistically significant impact on financial institutions' profitability. This negative correlation between inflation and profitability is in agreement with the prior expectation and the findings of Andres & Stephen (2017), Teklit&Jasmindeep (2016) and Asrat and Tesfahun (2016) found negative association between inflation and firms' profitability.

Table 3. Random Effect model result for Return on asset (ROA)

Explanatory Variables	Coefficient	Std. Err.	Z-Value
SIZE	-0.01393	0.0257	0.54
LQ	0.0006***	0.0002	3.19
TNG	1.2409***	0.4714	2.63
CA	0.0627	0.0726	0.86
LEV	0.0063***	0.0024	2.64
AGE	-0.1503***	0.0674	2.23
GDPG	-0.0095	0.0092	1.04
INFR	-0.0024***	0.0008	3.54
_cons	0.3639	0.2766	1.32
R <sup>2</sup> Within	0.8451	sigma_u	0
R <sup>2</sup> Between	0.9277	sigma_e	0.2269
<b>R<sup>2</sup> Overall</b>	<b>0.8477</b>		

\*\*\* and\*\* implies significant at 1 and 5% level of significance, respectively.

Source: Own computation, 2020

### Conclusions and Recommendations

The rationale of this study was investigating the major determinants of profitability of financial institutions in Ethiopia that were in operation over the periods of 2008 to 2019. For the purpose of analysis, the researchers used return on assets (ROA) as a measure of profitability against which a number of internal and external variables were regressed. Results of the analysis indicated that liquidity, leverage and asset tangibility has positive and statistically significant effect on profitability of financial institutions while age and the annual inflation rate have negative and statistically significant affect on profitability of financial institutions in Ethiopia. However, factors such as capital adequacy, size and real growth rate of GDP were found to be insignificant variables on profitability. Lastly, we suggest future investigation on factors influencing profitability of financial

institutions in Ethiopia by including variables such as economic and fiscal policy of the country and financial system regulation etc.

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**Appendix**

## Multi-collinearity test

Variable	VIF	1/VIF
CA	5.60	0.178444
TNG	5.57	0.179571
SIZ	1.15	0.870338
AGE	1.05	0.948529
LIV	1.04	0.957693
LQ	1.04	0.958203
GDPG	1.02	0.978283
INFR	1.01	0.988749
Mean VIF	2.19	

## Model specification test for ROA

Breusch	and Pagan Lagrangian multiplier test for random	Effects
ROA[ <i>YEAR,t</i> ] = $Xb + u[YEAR] + e[YEAR,t]$		
Estimated results:		
	Var	sd = sqrt(Var)
ROA	0.3238883	0.5691119
e	0.0514891	0.2269122
u	0	0
Test: Var(u) = 0		
chibar2(01) = 0.00		
Prob > chibar2 = 1.0000		



# Reduction of Income Inequality in Sub-Saharan Africa: Which Fiscal Instrument Matters?

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## Abstract

The existing literature is inconclusive on the relationship between fiscal instruments and income inequality. Many governments concerned with issues of income redistribution have paid attention to the way in which tax revenues are collected. In this study we shed new light on this issue by empirically investigating which between weight of tax revenues and tax structure used to collect revenues is more important in reducing income inequality in SSA. We use panel data on 34 Sub-Saharan Africa (SSA) countries over the period of 1992- 2014. Our model was inspired by the model developed by Martinez-Vazquez and al. (2012) and modified by Dao and Godbout (2014). We present both conventional fixed effect regressions and instrumental variable analyses, where fiscal instruments using the employment rate and the proportion of the working-age population as an instrument. The results reveal that the fiscal instrument tax revenues are count much more in reducing inequalities than the fiscal instrument used to collect revenues. The results are robust to different econometric specifications.

**Keywords:** Fiscal instruments, Income Inequality, SSA, instrumental variables

**JEL:** E2, H2, O.

## 1. Introduction

Fiscal instruments play a key role in reducing income inequality. According to IMF (2015) this experience has been observed in both developed and developing countries. For several decades, Sub-Saharan Africa (SSA) has experienced high- and growing-income inequality. Income inequality measured by the Gini Index increased from 43.8 between 2011-2015 on average to 44.3 in 2019. According to the United Nations Development Programme (UNDP) (2017), ten of the world's nineteen most unequal countries are in SSA. Moreover, according to the International Monetary Fund (IMF), the World Bank (WB) and the (UNDP), SSA is one of the most unequal regions in the world. To combat income inequality, numerous studies have highlighted the role of fiscal instrument (Stiglitz, 2012; Mooij and al. 2015; Saez, 2017, Alavuotunki and al. 2018; Cimenelli and al. 2019). For these authors, the mobilization of tax resources is recognized as one of the key factors in reducing income inequality. The role of fiscal instrument in reducing income inequality would be observed through public spending. By way of illustration, these studies indicate that the reduction of income inequality is achieved through the financing of social programs and global redistribution policies, as well as public investment in

infrastructure and human capital. Consequently, fiscal instruments can be a potent tool for achieving income inequality.

The empirical literature on relationship between fiscal instruments and income inequality has provided inconclusive evidence. The results differ depending on the choice of fiscal instrument. Two fiscal instruments are being debated upon. On one hand, some authors believe that the tax revenues collected are beneficial in reducing income inequality (Dao and Godbout, 2014; Martorano, 2018). According to these authors, tax revenues are used to finance policies to combat income inequality through the provision of public services such as health, education and transfers. Some other studies, on the other hand, agree that the tax structure, that is, how tax revenues are collected, is the only fiscal instrument that contributes in reducing income inequality (Martinez-Vazquez and *al.* 2012). Specifically, this work indicates that the introduction of progressive and indirect taxation are the key factors in the fight against income inequality.

This inconclusive literature between fiscal instruments and income inequality can also be seen in the stylized facts. This analysis of the state of fiscal instruments and income inequality in SSA allows to draw at least two lessons. The first is on the mobilization of tax revenues. Between 1990 and 2016, SSA recorded an increase in tax revenues of 4 points to 15% of GDP. This global statistics disguise disparities between countries. For example, oil-exporting countries achieved an average level of tax revenue of 27% between 1990 and 2016 compared to 18% for other countries in the same period. In fragile states, this mobilization was more difficult. In 2016, the latter recorded a level below 15% of GDP. Despite this improvement in the mobilization of tax revenues, it appears that it is still insufficient compared to other regions of the world. Indeed, two elements can better justify this insufficient level of tax revenue. Firstly, statistics show that tax revenues represent 19.1% of GDP in SSA compared to 22.8% and 34.3% respectively for Latin America and the Caribbean and OECD countries in 2016. Secondly, according to Jacquemot and Raffinot (2018), tax and para-fiscal revenues for the African continent in 2017 amounted to more than \$310 billion, compared to the \$50 billion provided by development partners, \$70 billion in foreign direct investment and \$65 billion in diaspora remittances. Although this performance of tax revenue mobilization is encouraging, they indicate following the work of Schmidt-Traub (2015), that this mobilization of tax revenues is still far from financing the financing needs related to the achievement of ODDs, whose needs amount to more than \$1,000 billion per year, or a third of the gross national income of all African countries. The second lesson is the paradox that emerges between fiscal instruments and income inequality in SSA. Indeed, some countries, which have experienced high-income inequality, have a significant proportion of the growth rate of tax revenue mobilization. These include Comoros, Zambia and South Africa, which, despite high levels of income inequality, recorded an average tax revenue mobilization growth rate of 5%. However, other countries with high levels of income inequality have experienced low levels of tax revenue mobilization. For example, Namibia, Botswana or Seychelles have high-income inequality with an average increase of 2% in tax revenues.

A fundamental question emerges from recent developments : Which is the fiscal instrument between weight of tax revenues and tax structure that reduces income inequality in SSA? The purpose of this article is to identify which of the fiscal instrument reduces income inequality in SSA. The contribution of this article is on two levels. First, tackling inequality is one of the Sustainable Development Goals (Sdgs). As such, this article helps to provide practical solutions to fight income inequality in SSA through tax policy. Secondly, to the best of our knowledge, there are no studies that have highlighted the identification of fiscal instrument that reduces income inequality in the specific case of SSA. Our article contributes to the extension of the empirical literature. The paper proceeds as follows. Section 2 presents stylized facts of income inequality and fiscal instruments in SSA. Section 3 is devoted to the literature review. Section 4 introduces the methodological strategy. Section 5 reports and analyses main results. Section 6 concludes.

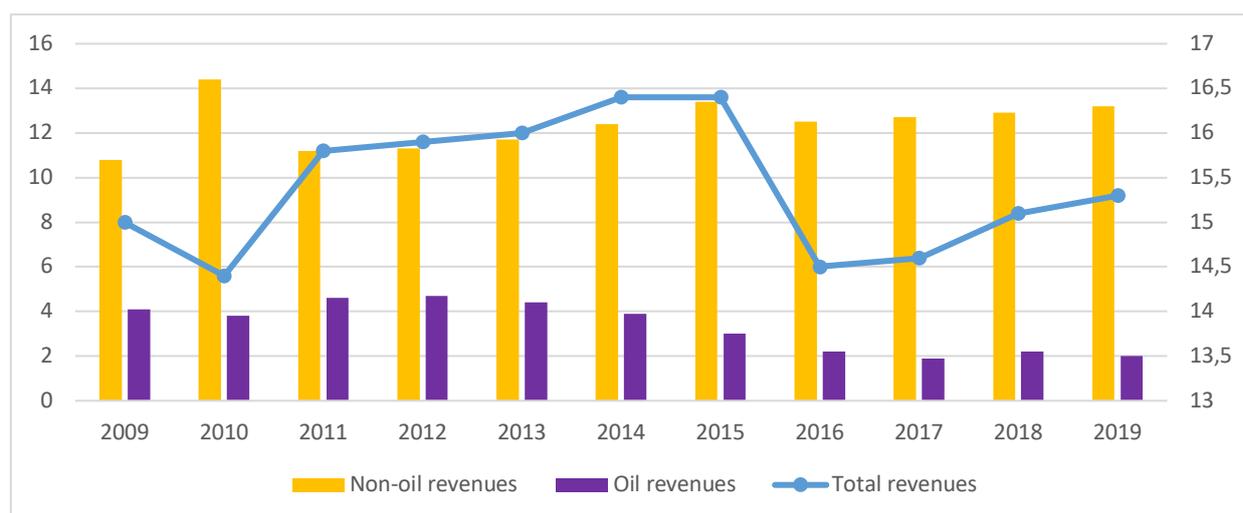
## **2. Stylized Facts of Income Inequality and fiscal instruments in SSA**

### ***2.1 Income inequalities in SSA are high and differ from sub-region to sub-region***

The stylised facts of income inequality in SSA provides two lessons. The first lesson shows that income inequality in SSA is high. Indeed, it appears that the Gini index of SSA is on average 44. The second teaching shows that the level of income inequality in SSA differs from one sub-region to another. For instance, it is apparent that the Southern Africa countries record the most important inequalities in SSA. Their Gini index is 50.17. This high level of income inequality in Southern Africa is mainly driven by countries such as South Africa, Namibia, Zambia and Botswana with a Gini coefficient of 63; 59.1; 57.1 and 53.3 respectively. In contrast, East Africa is the sub-region with the lowest level of income inequality with a Gini index of 40.02. For example, Ethiopia has a low level with a Gini index equivalent to 35. Summarily, world bank's statistic shows that SSA countries with the highest levels of inequality are in Central and Southern Africa. Their Gini index is above the SSA average of 43.74. In contrast, East and West African countries have relatively lower levels of inequality than the SSA average. These indices are 40.02 and 40.64 respectively. However, it is important to note that income inequality in SSA across all regions is high and persistent.

## 2.2 Fiscal performance are insufficient in SSA

Figure 1: Tax revenue as % of GDP in SSA

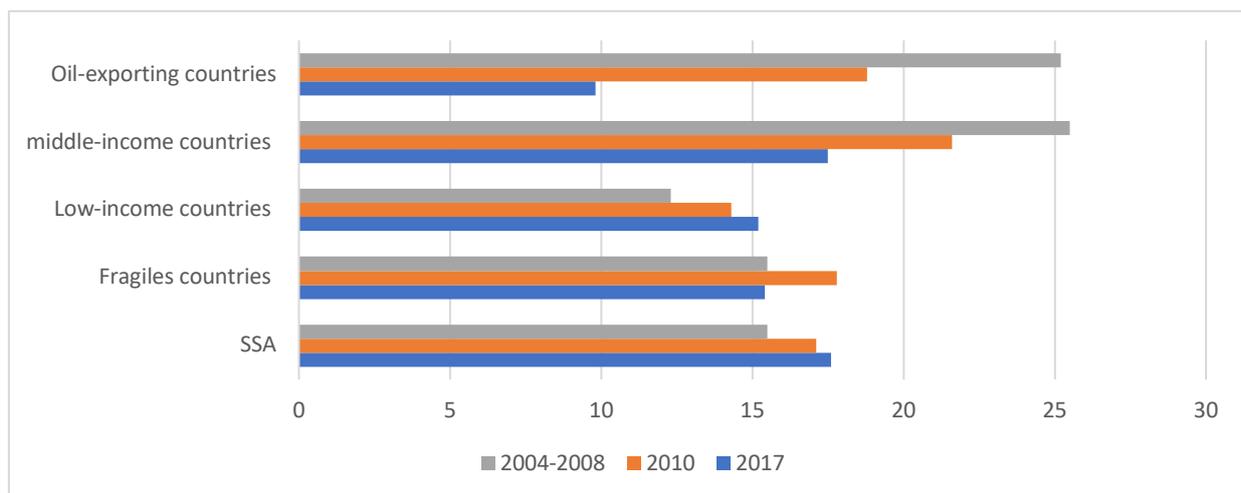


Sources: Author with IMF data (2018)

The main lesson drawn from Figure 1 is that, for several years now, SSA has achieved positive results in terms of raising tax revenues. For example, non-oil revenues rose from 10.8% of GDP in 2009 to 13.2% of GDP in 2019, an increase of 2.6 points. However, we note that the performance of oil revenues shows much lower levels of performance. This trend can be explained by the fall in oil prices in 2014. Overall, however, the total SSA tax revenues performed positively. They rose from 14.5% of GDP in 2016 to 15.3% in 2019, an increase of 0.8 point. Even though the mobilization of tax revenues in SSA follows a positive trend, the level of mobilization of these revenues remains insufficient compared to other regions of the world, as we mentioned at the introduction. Thus, we can say that, SSA has experienced increasing levels of tax revenue mobilization in recent years. However, these performances differ depending on whether countries are fragile, low-income, middle-income or oil exporters.

### 2.3 The mobilization of tax revenues in SSA differs according to the level of income

Figure 2: Mobilization of tax revenues in SSA with respect to on the level of income (% of GDP)



Sources: Author from Jacquemot and Raffinot (2018) and IMF (2018)

Figure 2 above shows the disparities in tax performance excluding grants in the SSA. Two lessons can be detected. The first is that, oil-exporting and middle-income countries show a decreasing trend in fiscal performance. This drop is more pronounced in oil-exporting countries, which fell from 18.8% of tax revenues in 2010 to 9.8% in 2017, a drop of 9 points. This poor performance is due to the fall in oil prices in 2014, which led to lower oil revenues. Fragile countries also experienced a fall in tax revenue mobilization. Secondly, low-income countries have recorded positive performances. According to Jacquemot and Raffinot (2018) these performances are linked to the major efforts to adapt to the tax systems undertaken by these countries. They point out that, in the past, burden-sharing focused on exports and imports, turnover and income of a small number of operators. The so-called first-generation tax transition that was initiated consisted for many countries to reduce the share of the taxation based on door duties to favour indirect taxation and especially VAT, of which the implementation has widely extended.

### 3. Literature Review

The theoretical and empirical work on the effect of fiscal instruments on income inequality is consensus that taxation is an instrument for combating income inequality. However, the results of the relationship between fiscal instruments and income inequality don't agree on the fiscal instrument likely to reduce income inequality.

At the theoretical level, the relationship between fiscal instruments and income inequality is based on the modern theory of optimal taxation developed by Mirrlees (1971). According to this theory, the primary distribution of income is likely to be changed by means of tax levies and transfers. In addition, confronted with the use of indirect taxation and direct taxation to combat income inequality, Mirrlees (1971) advocated the choice of direct taxation. According to Mirrlees (1971), the fight against income inequality should be achieved only with direct income tax because it guarantees a greater and necessary fiscal mobilization to execute the transfers. It shows the efficiency of production and the uniform imposition of basic products. It therefore refutes indirect taxation such as production subsidies, tariffs or differentiated taxation of basic products which it considers to be sub-optimal. However, the theoretical work of Saez (2004) relativized this approach by showing that the choice of direct taxation is not systematically effective in reducing income inequality. According to Saez (2004), direct taxation ceases to be relevant when labour taxation is based solely on income and when there is an imperfect substitution of the types of work in the production function. Hence, it suggests that the choice of the fiscal instrument should be based on objectives to be achieved in the short or long term. To this end, it recommends that, in the short term, the fight against income inequality should be carried out through indirect taxation. On the other hand, it suggests that direct taxation should be implemented in the long run to combat

income inequality. Stiglitz (2012) finds more mitigated results. He suggests that, to combat income inequality, progressive taxation should be introduced. This progressive taxation according to Stiglitz (2012) is illustrated by the transformation of corporate taxes so that they are more progressive and more impermeable.

Empirical literature on the relationship between fiscal instruments and income inequality is also inconclusive. There are two conflicting trends regarding the tax component that can reduce income inequality. According to the first trend, it is the tax structure (that is, the way tax revenues are collected) that leads to the reduction of income inequality. For example, the work of Martinez-Vazquez and *al.* (2012) attests that progressive personal income tax and corporate income tax reduce income inequality. They also note that general consumption taxes, excise duties and customs duties have a negative impact on the distribution of income. These results are consistent with the work of Bastagli and *al.* (2012) and Chu and *al.* (2004). Similarly, Woo and *al.* (2013) analysed the effect of taxation on income inequality on a sample made up of developed and emerging countries. They showed that the introduction of progressive taxation, introduced in the framework of a wider fall in expenditure, can help offset some of the unfavourable distributive impact of consolidation. And as a result, this progressive taxation leads to a decline in income inequality. The second trend is that tax revenues are much more important in reducing income inequality than the tax structure. In this vein, Dao and Godbout (2014), in a sample of OECD countries, point out that the level of tax revenue collected is more important than the tax structure that governments use to collect it. They also add that collecting more tax revenues allows governments to provide more public services and transfers to their citizens. The work of Martorano (2018) also went in the same direction. Indeed, it has shown that the effect of the tax structure on income inequality is limited; therefore, it suggests more mobilization of tax revenues to reduce income inequality.

#### 4. Methodology Strategy

##### 4.1 Empirical Model

Equation (1), which models the relationship between fiscal instruments and income inequality is based on the model developed by Martinez-Vazquez and *al.* (2012) and modified by Dao and Godbout (2014).

$$\text{Gini}^{\text{net}} = \alpha \text{Gini}_{it}^{\text{market}} + \beta X_{it} + \gamma F_{it} + \delta_i + \varepsilon_{it} \quad (1)$$

Pour  $i=1, \dots, 37$  et  $t=1992 \dots 2014$ .

Where  $\text{Gini}^{\text{net}}$  is the dependent variable that captures income inequality after taxes and transfers. According to Dao and Godbout (2014), the choice of this variable is related to the fact that it measures the ability of taxation to reduce income inequality. The explanatory variables are as follows: (i) the Gini market taxes and transfers, (ii) the vector of the control variables ( $X$ ), which is made up of six variables. The first variable is per capita income (Gdp) measured by GDP per capita. This variable is used in accordance with Kuznets' theory, which shows that the reduction of income inequality depends on the increase in household incomes. The second variable represents natural resources (NRs); this variable is captured by the ratio of the rent of natural resources to GDP. Indeed, Buccellato and Alessandrini (2009) show that dependence on natural resources increases income inequality. However, Fum and Hodler (2010) questioned this result by demonstrating that natural resources widen income inequalities in ethnically polarized societies but reduce them in ethnically homogeneous societies. The third variable is trade openness (Open) which is measured by the ratio of the sum of exports and imports to GDP. According to the international trade theory, trade openness has a positive effect on income inequality. In other words, commercial openness through specialization increases the level of productivity, which in fine reduces income inequality. While François and Nelson (2003) find that open trade leads to reduced income inequality, Mahesh (2016) shows that open trade accentuates income inequality. The fourth variable is inflation as measured by the Consumer Price Index (Cpi). For Easterly and Fischer (2001), income inequality is negatively affected by inflation in the sense that, rising prices induce a reduction in household purchasing power. Also, the work of Erosa and Ventura (2002) and Albanesi (2007) cited by Doumbia and Kinda (2019) indicates that inflation tends to aggravate income inequality through various channels. The fifth variable is credit to the private sector (CPS), which according to Claessens and Perotti (2007) plays an important role in reducing income inequality. In addition, the works of Galor and Zeira (1993) and Corak (2013) have shown that the

ability of modest households to invest in physical capital or education is reduced in a context of the imperfection of the credit market, where only the wealthiest have access to credit unlike the poor; which tends to accentuate income inequality. The sixth variable represents public expenditure (Expen) measured by the ratio of total expenditure as a percentage of GDP. Some work has shown that high public spending is associated with lower income inequality (Fournier and Johansson 2016; Doumbia and Kinda, 2019). (iii) the variable that captures taxation (F). We use four measures to capture taxation: tax revenues as a percentage of GDP (tax revenues), the ratio of income taxes to total revenues (imp), direct taxes and indirect taxes.

#### 4.2 Estimation technique and data presentation

The estimation technique used in this study is the Fixed Effect Ordinary Least Squares method. The choice of this method is based on the simplicity and advantages it has. On one hand, this method corrects the biases caused by the autocorrelation of errors and heteroscedasticity. Finally, this method takes heterogeneity into account in a simple way and makes it possible to test the uniformity of behaviours. The robustness of our results is developed by the Two stage least squares with Instrumental Variables method. The choice of this technique is justified insofar as we suspect an endogeneity between certain variables. For example, as demonstrated by Dao and Godbout (2014), there may exist an endogeneity between fiscal instruments and income inequality. In fact, they show that a government could have to change its tax structure precisely because of pre-existing income inequality before taxes. In this respect, the method using instrumental variables can solve the problem of endogeneity.

Our study covers the period 1992 to 2014 on a sample of 34 SSA countries. For data sources, the Gini index is extracted from the World Income Inequality Database (WIID) and World Development Indicators (WDI) of the World Bank. Tax variables and control variables come from the World Bank's World Development Indicators database.

### 5. Presentation and analysis of results

In this section, we analyse the effect of taxation on income inequality in SSA. Table 1 presents the results of the standard fixed effect least squares estimate. We selected four tax variables: total income from taxes (tax weight or volume) (model 1), the ratio of taxes to total revenues (model 2) which measures the relative distribution of tax categories by the ratio of one category to another, direct taxes (model 3) and indirect taxes (model 4).

Table 1: Estimation of the effect of fiscal instruments on income inequality in SSA using the fixed-effect Ordinary Least Square method

	Tax Weight	Taxes to total revenues	Direct taxes	Indirect Taxes	All fiscal variables
NRs	-0.01*** (0.01)	-0.002 (0.11)	-0.009*** (0.001)	-0.009*** (0.007)	-0.001 (0.25)
CPI	-0.06*** (0.00)	-0.005 (0.43)	-0.009*** (0.00)	-0.01 (0.00)	0.0003 (0.69)
Open	0.004** (0.00)	0.007*** (0.002)	0.005** (0.02)	0.005** (0.02)	0.002*** (0.003)
CPS	0.001 (0.25)	0.007*** (0.02)	0.005* (0.055)	0.002 (0.27)	0.007*** (0.00)
GDP	0.003 (0.27)	0.005 (0.24)	0.02 (0.11)	0.01 (0.11)	0.003 (0.26)
Expen	-0.001 (0.17)	-0.0003 (0.44)	-0.0009 (0.44)	-0.0008 (0.36)	-0.0002 (0.40)
Gini	0.4 (0.18)	0.82*** (0.01)	0.65*** (0.00)	0.31*** (0.00)	0.31*** (0.00)

Tax revenues	-0.0013*** (0.01)	-0.0011** (0.04)	-0.0011** (0.03)	-0.0014** (0.05)	-0.00012* (0.05)
Imp		0.001 (0.33)			0.001 (0.32)
Direct taxes			0.003*** (0.00)		0.0002 (0.1)
Indirect taxes				0.001*** (0.00)	0.00009 (0.24)
R <sup>2</sup> adjusted	0.80	0.79	0.81	0.81	0.81

Note: The values in bracket represent P-values. (\*\*\*), (\*\*), (\*) give significance at the respective threshold of 1%, 5% and 10%.

The empirical estimation on Table 1 reveals two main results; firstly, it emerges that, the tax volume or tax weight (tax revenue as a percentage of GDP) is the only tax indicator that reduces income inequality in SSA. In other words, the increase in tax volume leads significantly to a decrease in income inequality in SSA. This result is consistent with literature since the fight against income inequality is achieved through the provision of public services, transfers and public infrastructure. The implementation of these services depends on public spending. These expenditures, among other things, find their source in the mobilization of tax revenues. Thus, tax volume is more important in reducing income inequality in SSA. Secondly, direct and indirect taxes do not seem to be instruments for combating income inequality in SSA. This result corroborates the work of Martinez-Vasquez and *al.* (2012) which demonstrated that the tax structure is less effective against income inequality. To verify the relevance of our results, we introduced in the same regression all tax variables (model 5). Our analysis confirm that tax volume is the only tax variable to a negative and significant sign. In other words, the tax volume is the only tax variable that contributes in reducing income inequality, unlike the variables related to the tax structure in SSA. Both results are consistent with the work of Dao and Godbout (2014), who found that the weight of tax revenues in an economy is much more important in reducing income inequality than the characteristics of the tax structure used to collect them.

Concerning the control variables, trade openness, credit to the private sector and gross domestic product per capita have a positive effect on income inequality in SSA; in other words, they contribute to widening the income gap between households. These results are significant and consistent with several empirical studies. For instance, Mahesh (2016) found that an increase in trade as percentage of GDP has in fact resulted in the worsening of the income distribution in concerned countries. This result is predictable as imports do not promote employment opportunities but constitute a large consumption market. Similarly, this result reflects the fact that even the expansion of exports is not enough to reduce income inequality as these exports require advanced technology and adequate infrastructure. With respect to credit to the private sector, the positive result reflects the idea that the loans granted are directed towards a minority of wealthy households, eligible for these credits. In other words, access to credit would be conditioned by a certain level of income and regulatory requirement, of which only the wealthiest can provide. Regarding gross domestic product per capita, our results show that economic growth is not consistently associated with lower income inequality. This finding corroborates the work of Piketty (2015) and Stiglitz (2015) who challenged Kuznets's (1955) theory that economic growth reduces income inequality. When it comes to natural resources, our results show that natural resources contribute in reducing income inequality in SSA. This result contrasts those of Buccellato and Alessandrini (2009). It is explained by the fact that by generating significant resources, natural resources give States the opportunity to provide public goods and services that eventually contribute to the reduction of inequalities.

Robustness analysis were conducted to address a potential endogeneity bias between taxation and income inequality. Indeed, a high level of income inequality encourages the public authorities to increase the mobilization of tax revenues. Thus, permitting all things being equal, transfers to vulnerable strata. Similarly, for public authorities to make an investment decision in sectors likely to reduce income inequality, they will consider the previous levels of these inequalities. The use of the Two-stage least squares technique involves the choice of instruments. The choice of instruments is inspired by the work of Dao and Godbout (2014). For

example, we use two demographic indicators: the employment rate and the proportion of the working-age population. This choice is motivated by the fact that tax revenues are collected, among other things, from taxes on income and wages. Note that the higher the employment rate, the higher the revenues. Likewise, a large labour force is a potential source of substantial tax revenue mobilization. The computing of the correlation coefficients between the tax volume (the tax variable most likely to suffer from an endogeneity bias) and the employment rate on one hand and the working-age population on the other hand gives values of 0.71 and 0.53 respectively. The results of this robustness analysis (Table 2) is in line with those of our baseline analysis

Table 2: Estimation of the effect of fiscal instruments on income inequality in SSA by the Two Stage Least Square method

	Tax Weight	Taxes to total revenues	Direct taxes	Indirect Taxes	All fiscal variables
NRs	-0.03*** (0.00)	-0.003 (0.21)	-0.02*** (0.001)	-0.02*** (0.007)	-0.003 (0.25)
CPI	-0.01*** (0.00)	-0.004 (0.73)	-0.02*** (0.00)	-0.02 (0.00)	0.0005 (0.69)
Open	0.008** (0.02)	0.003*** (0.003)	0.007** (0.02)	0.008** (0.02)	0.003*** (0.003)
CPS	0.003 (0.45)	0.01*** (0.00)	0.009* (0.055)	0.005 (0.27)	0.01*** (0.00)
GDP	0.02 (0.18)	0.008 (0.26)	0.03 (0.11)	0.03 (0.11)	0.008 (0.26)
Expen	-0.002 (0.27)	-0.0005 (0.44)	-0.001 (0.44)	-0.002 (0.36)	-0.0005 (0.40)
Gini	0.8 (0.18)	0.92*** (0.00)	0.82*** (0.00)	0.82*** (0.00)	0.92*** (0.00)
Tax revenues	-0.0015*** (0.00)	-0.0013 (0.37)	-0.0013** (0.03)	-0.0018** (0.05)	-0.0011* (0.08)
Imp		0.002 (0.41)			0.002 (0.32)
Direct taxes			0.005*** (0.00)		0.0005 (0.21)
Indirect taxes				0.002*** (0.00)	0.0002 (0.45)
Sargan test	0.089	0.77	0.098	0.098	0.098
P-Value	0.76	0.37	0.75	0.7548	0.7548
Basman test	0.087	0.73	0.095	0.095	0.095
P-value	0.76	0.39	0.75	0.7577	0.7577
R <sup>2</sup>	0.91	0.90	0.9197	0.9162	0.9162
R <sup>2</sup> adjusted	0.90	0.89	0.9181	0.9145	0.9145

Note: The values in brackets represent students. (\*\*\*), (\*\*), (\*) give significance at the respective threshold of 1%, 5% and 10%. The results on this table use the employment rate and the proportion of working age the population as instruments of tax volume.

## 6. Conclusion

In this paper we use fixed effect Ordinary Least Square and instrumental variables to estimate the effect of fiscal instruments on income inequality in SSA. We use panel data on 34 Sub-Saharan Africa (SSA) countries over the period of 1992- 2014. The results suggest that the fiscal instrument tax revenues is count much more in reducing inequalities than the fiscal instrument used to collect revenues. This result is consistent and in line with literature and confirms that although all fiscal instruments don't reduce income inequality one of them particularly tax

revenues are a tool to achieve income inequality in SSA. The paper suggests three recommendations. Firstly, the paper calls on the authorities of the SSA countries as well as non-State institutions to strengthen the mobilization of tax revenues. Secondly, the paper calls on the authorities to review the nominal tax rates and promote the expansion of the tax base. And Thirdly, the paper invites public authorities to put in more efforts in improving the business climate in order to attract more foreign direct investment.

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# Agency Theory, Accounting Based Performance Evaluation Systems and IFRS: A Brief Relational Overview

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## Abstract

This paper covers multiple related topics. To begin, the use of a performance evaluation system is helpful to the success of an organization (Wu et al., 2018). Performance evaluation systems drive corporate governance by results. The metrics used in the evaluation determine the direction that the executives of a company will govern it; corporate governance influences firm performance (Brahmana et al. 2018). The research topic covered is Agency Theory, its relation to corporate governance on an international scale related to IFRS. The paper concludes the issues with a look at the possible future effect on corporate governance and areas of future research.

**Keywords:** Agency Theory, Accounting, Performance Evaluation Systems, IFRS

## Background

Currently, performance evaluation is done manually, leading to multiple opportunities for bias (Kaur & Sood, 2017). Companies now realize that current performance evaluation systems are an archaic reminder of how things were in the past (Lidinska & Jablonsky, 2018). The central problem with the current performance evaluation system is how it affects the employee's emotions and perceptions of the evaluation system resulting in biased evaluations (Rahmati & Noorbehbahani, 2017).

Performance evaluation systems have changed. Gone are the rules-driven, process-centered, bureaucratic focused procedures. Enter the results based, process consolidated; economic theory focused on a new way of evaluation. The anchoring of this approach is the fact that goal setting and employee salary is at the center of an employee's performance; this means less bureaucratic behavior is needed from managers to increase firm effectiveness (Wiemann et al., 2019).

## Solutions

There can be an elimination of manual evaluation systems with the omnipresent sensing means of Internet of Things (IoT). IoT is a new criterion that connects objects through sensors, actuators, RFID, and wireless technology (Kaur & Sood, 2017). Since employee performance evaluation is a complex task weighted with various aspects, the recommendation is for the utilization of the analytic hierarchy process (AHP) tool by using the absolute measurement mode of the tool (Lidinska & Jablonsky, 2018). Yet another method is to use a fuzzy AHP in which the calculation of the weight of the evaluation criteria done ((Rahmati & Noorbehbahani, 2017). Performance evaluations based on Management by Objectives (MBO) can have a positive effect (Wiemann et al., 2019).

## Accounting Based Solutions

Kihn (2005) noted accounting-based performance evaluation uses such financial information as profitability, liquidity, and solvency ratios; it is generally a superior form of evaluation. Accounting based evaluations allow the economic activity of a high stability criterion such as ROI and profitability. The selection of ROI can be the primary evaluation criteria. Because of different valuations and calculations, organizations in the same industry may not be able to be compared via accounting evaluation information (Kihn, 2005). Ignasiak-Szulc et al. (2018) surmised that financial data from ratios is advantageous because it gets the relevant information the fastest, and evaluations based on the tools, as mentioned above, allow managers to assess the economic output of a firm objectively.

Luchko (2016) acknowledged accounting information is needed to make quick and reasonable decisions regarding contractual obligations. And accounting information is a tool upon which to base all financial decisions made by the management of an organization. Therefore, it behooves a company to use accounting-based solutions to evaluate organizational production. For example, using managerial cost accounting to estimate better individual costs of products and services of a company allowing company managers to assess the performance of individuals concerning these costs (Mohr, 2017).

Alabdullah (2019) implied the accounting performance measurement is an approach that keeps a company on target to hit its goals. Additionally, it is a system used by both the managers and shareholders of an organization because performance measurements must sync with the organization's strategy to be sufficient. Accounting Performance measurements identify the strategies that offer the highest potential for obtaining the corporation's objectives (Alabdullah, 2019).

## Research Topic: Agency Theory, Corporate Governance, and International Reporting Standards (IFRS).

### Background

Agency theory notes the severance of owners from managers and the agent's self-serving motivation (Nalukenge et al., 2018). The adhering to IFRS limits self-interest because managers are required to meet stricter accounting practices to produce annual reports and to be in compliance with IFRS. Additionally, the prevailing theme behind IFRS is to eliminate information imbalance between the agent and the principal by acceding to the information disclosure requirements. Moreover, the stakeholder institutes a corporate governance mechanism by placing a board to oversee the managers (Nalukenge et al., 2018).

According to Samaha & Khelif (2016) Agency Theory recognizes two agency relationships, that of the manager/shareholder and shareholder/debtholder. A detachment of the principal and agent is evident in both of these liaisons. This detachment causes agency costs of monitoring and bonding. Monitoring costs initially charged to the principal for overseeing the agent, are eventually shifted to the agent via a contract. In the manager/shareholder arrangement, changing monitoring costs adjust the agent's compensation package. In the shareholder/debtor arrangement, shifting monitoring costs are completed via debt covenants that restrict the

company's investing, financing, and dividend activities. Since agents are responsible for monitoring costs, they are prone to create mechanisms that align the interests of the principal and agent called bonding costs. These costs are also the responsibility of the agent (Samaha & Khelif, 2016).

Samaha & Khelif (2016) acknowledged Agency Theory explains the why of managers' accounting choices for financial disclosure; it postulates that accounting choices are used to lower agency costs and information imbalance between agent and principal. Since complying with IFRS means adhering to stricter accounting regulations, IFRS compliance explains the existence of agency costs.

### **Current Theories**

Long (2019) reported integrity, stability, and innovation are the benchmarks of an organization's profits and the building of good governance. Corporate governance policies are the rules and regulations that a company uses to governs itself. Defined and adhered to internal controls coupled with external verification reduces errors, negligence, and corporate fraud. Corporate governance protects investors from unscrupulous managers (Long, 2019).

Long (2019) surmised traditional corporate governance contains Agency Theory and that Agency Theory emphasizes transparency with shareholders. Mgammal et al. (2018) reported Agency Theory provides a framework that connects disclosure to behavior to corporate governance. Corporate governance components are put in place to manage the agency problem and assure that managers always work in the best interest of the shareholders.

### **Critiques of Agency Theory**

The longevity of Agency theory has produced its detractors. Agency Theory purports under a socialized view of people by focusing on the possible social relationships that may unquestionably affect human behavior (Kumar, 2019). Agency Theory, although influential, cannot provide a deep enough comprehension of corporate governance issues (Mohamad Yusof, 2016). Agency Theory has impractical assertions about managers' motivations and actions, unproductive suggestions, and doubtful legal analysis of corporate governance (Kultys, 2016).

### **Affected Industries**

All businesses that operate on a global scale with locations in other countries will be affected by IFRS and its effect on corporate governance. IFRS aims to complement international comparability and the character of financial statements and is used globally (Kashiwazaki et al., 2019). Adopting IFRS has revamped corporate financial statements. Presenting the financial statements in IFRS format ensures fair representation of an organization's financial position (Ben, 2017).

According to Ben (2017), corporate governance is the way that companies are run and cannot be taken for granted; it's used to boost shareholder interest and to exhibit transparency. The use of corporate governance is to monitor internal controls and to aid the company in achieving its objectives.

The acceptance of IFRS increases fair value accounting, specifically financial instruments which make up a large portion of insurance firm's assets and liabilities, IFRS adaptation will affect insurance firms (Abdallah et al., n.d). IFRS has been a global incident with most countries adhering to the standards. Because of its unique temperament, Islamic financial institutions will hamper the progress of IFRS (Mulyany, 2018). Abdo (2016) reported because of the growth and globalization of capital markets, comparing financial statements has become a problem. Historically, it has been challenging to analyze financial statements. Therefore, there needs to be an undertaking of the adoption of IFRS by extractive companies in mineral wealthy countries. The companies mentioned above are a small sample of the global organizations that are affected by IFRS. The international standards are all-encompassing and far-reaching.

## Discussion on the Impact

The impact of IFRS on corporate governance is positive. The undertaking of IFRS is a critical accounting initiative Hoshino (2017). The adoption of IFRS affords quality information on financial statements whose analysis and examination will boost the value of the company (Sandoval-Mora et al. 2019). Companies worldwide are converting to IFRS, and this conversion leads to improved disclosure, clarity, affinity, and enhanced accountability (Zahid & Simga-Mugan, 2019). IFRS conformance is high-quality accounting because it has removed several accounting alternatives allowing the financial data to be a better reflection of the firm's actual financial position (Wijayana & Gray, 2019).

The undertaking of IFRS can acknowledge the maximization of the impact by the global economy and by the United States. Tribuze (2018) quoted Paul Volcker:

*“If we believe in open international markets and the benefits of global finance, then it can't make sense to have different accounting rules and practices for companies and investors operating across national borders. That is why we need global standards. Ultimately this will get done”* (p. 817).

Tribuze (2018) remarked that Volcker's vision of the global economic future was a certainty. The standards issued by GAAP and IFRS are very similar, and therefore, integration of the two is the next logical step (Negash et al. 2017). A unified set of accounting standards has been a big step in the process of consolidating capital markets (Kavame-Eroglu, 2017). The character of IFRS and GAAP are commensurate, and the two sets of accounting principles have accomplished a high degree of confluence (Mohammad, & Shehata, 2015). Both accounting boards of the FASB and IASB are toiling together to create a practical and homogenous method for reporting financial activity on financial statements (Guillaume & Pierre, 2016).

## Future Directions

**Future areas of research.** Delaney et al. (2016) reported the direction of future research to be at examining what comprises a performance measurement system in the auspices of the context of the formal and informal metrics of management upon which to base their decisions. The drivers and stabilizers of management control systems used to identify internal inconsistencies is an area for future research (Lechner, 2016). From a corporate governance standpoint, future research should be in the field of types of institutional work or internal governance done by HR managers that reproduce or change the governance structure (Martin et al., 2016). Research in the leadership characteristics, training, and culture of the organizations that use performance and financial information in lockstep (Mohr, 2016).

**Potential Impact.** In the next 3 to 5 years, corporate governance will be entirely dominated by IFRS and how a company conducts itself on the global economy. There have been significant changes in the worldwide economy; imports and exports have increased, industrial production is off the charts, and there was an increase from global manufacturers (Famous, 2019). As alluded to before, IASB and FASB will converge on one set of rules for all companies operating in the world, thereby changing corporate governance moving forward. Changes such as these are desirable based on their governance principles (Bebchuk & Hirst, 2019).

Performance-based evaluation needs to evolve from its current state of being. Firms need to move away from metrics based on time and billable hours (Ackerman, 2016). One area of development in accounting-based performance evaluation systems is the development of key performance indicators (KPI). KPIs measure the effectiveness of an organization's operations (Haber & Schryver, 2019). According to Haber & Schryver (2019), KPIs are metrics that can be task-specific designed to group operating indicators of importance into a conducive set of tools to be used by management. Hu & Feng (2017) advocated for optimization and coordination of supply chain with revenue sharing contracts and recommended for future research to study other contract formats and options such as channel rebate contract supplying information on how to serve a supply chain better.

**Future Social Change.** Cullinan et al. (2016), speculated on social change occurring because investors asked their companies to include social and environmental obligations in their core decisions. Organizations are

focused on appeasing their investors. Shareholders can submit recommendations for changes when unhappy with a company's actions (Cullinan et al., 2016).

Laise (2019), speculated on a fixed income sustainable bonds that will revolutionize boring bonds into a device for corporate governance and social and environmental change. It involves buying funds from issuers that have impeccable records of ecological, social, and governance (ESG). They actively do business with funds that charter corporate and municipal issuers of ESG projects.

Chiu (2019) remarked new CEOs are motivated to meet the needs of various stakeholders, and the implications are significant for corporate social policies. Wirth (2018) suggested a new model of service companies by highlighting the Norwegian Government Pension Fund

Global, the largest in the world that would not allow organizations into the fund that had records of harsh environmental damage. A sort of forced compliance with social responsibility, forcing companies to clean up their act if they wanted to be a part of the fund's enormous success.

Cho & Lee (2019), noted how the efficiency of a firm's manager affected a change in corporate social responsibility (CSR). The emphasis is on a product-related CSR that could have a double purpose of fulfilling the corporate CSR agenda and generating sales as a product. The manager is lauded as a success because of his/her ability to meet the needs of stakeholders. And, additionally, deliver a CSR success and also meet the demand of the stockholder by generating a product that has a positive financial performance (Cho & Lee, 2019).

## Conclusion

This paper covered multiple topics related to accounting-based performance objectives. It began with a look at the field of accounting-based performance objectives followed by some solutions to address the problems in the area. The next section of the paper embarked on a research topic of Agency Theory, Corporate Governance, and (IFRS). Beginning with a definition of Agency theory, followed by a discussion on Agency Theory concerning corporate governance on the international front concerning IFRS. The final section discussed the future direction of the field with a look at areas of research, potential impact, and planned social change. From these topics, the reader can glean the importance of IFRS and corporate governance that will perhaps one day govern all organizations doing business on a worldwide front.

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# The Impact of COVID-19 on Entrepreneurship Globally

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## Abstract

The pandemic of the Covid-19 virus originated from China in December 2019, and since then it has significantly affected the world's economy and all sectors of life. This review will highlight the impact of Covid-19 on entrepreneurship. Due to preventive measures taken by governments to limit virus transmission, there was a prodigious disruption socially and economically to entrepreneurship, at different levels, of which small scale businesses and startups were among the most vulnerable. The adverse impact was observed in businesses worldwide and most of the newly formed businesses and startups were compelled to dismiss their employees, leading to issues such as widespread unemployment, lack of productivity, and the downturn of economies. Covid-19 also impacted the global supply chain, which resulted in a contraction of the worldwide economy. Many entrepreneurs and startups faced a significant reduction in revenue due to the impact on the global supply chain of both goods and services. In this article, we have discussed the challenges which entrepreneurs have experienced in the catastrophic time of Covid-19, and the measures taken by them to protect their ventures. It can be concluded that Covid-19 has significantly caused disruption to economies and entrepreneurship, and has posed several unprecedented challenges, however, the absolute impact remains unclear, as more in-depth longitudinal studies are required to better investigate this issue.

**Keywords:** Entrepreneurship, Covid-19, Global Health Crisis, Economy, Business, Finance

## Introduction

Entrepreneurship is a process of designing a new business or running an already existing business, that was previously initiated on a small scale (Ratten and Entrepreneurship 2020). Entrepreneurs are a vital source of a country's economy. They boost the economy by introducing innovative technologies, services, products, and by providing new opportunities and jobs that contribute to the economy (Liu et al. 2020).

A global public health emergency was declared on 11 March 2020, which affected hundreds of thousands of lives throughout the world, posing a challenge for healthcare professionals (Keni et al. 2020). In addition to its impact on human lives, this pandemic has influenced entrepreneurial business greatly throughout the world (Liguori and Winkler 2020). It is estimated that nearly 40% of the new businesses will fall under the red zone. Many businesses were even compelled to terminate contracts of full-time employees (Vaccaro et al. 2020). On the other hand in some businesses, there was an increase in entrepreneurial activity noticed (Bacq et al. 2020).

These businesses included automotive companies that experienced high demands for new product lines, such as ventilators. Throughout the world, steps are being employed on the company level as well as individual levels to tackle this crisis (Kuckertz et al. 2020).

Due to preventive procedures taken by the governments of many countries, numerous small scale businesses, startups and entrepreneurs are the most vulnerable groups that are greatly impacted in this time of crisis (Ratten and Policy 2020). Many start-ups have re-directed their business strategies to produce products that are in greater demand. Producing these goods is a fundamental survival strategy and growth opportunity for these businesses (Sedlacek and Sterk 2020). Covid-19 created problems such as meeting deadlines in both the short and long term (Maritz et al. 2020).

### **Changes in perspectives of entrepreneurship after a global health crisis**

Without a doubt, entrepreneurship has been greatly affected by Covid-19. There is an argument stating that these changes in perception, will act as a double-edged sword (Shane 2011). In the future, these changes might have a negative impact and discourage new entrepreneurs, whereas, some suggest that these changes might have a positive impact, and can be a source of advancement by providing learning opportunities and new business tactics (Brown and Rocha 2020). Covid-19 has also enhanced the sense of competition among entrepreneurs and existing businesses (Sterk and Sedláček 2020).

Many economies such as the one in China, have formed strategies to encourage entrepreneurship and facilitate them (Gössling, Scott, and Hall 2020). These countries know that Covid-19 has posed a great threat to an established system. This threat must be well regulated and is crucial in maintaining economic competitiveness in comparison to other countries, to cope with the downturn in the economy (He and Harris 2020).

### **The unprecedented downturn in the global economy and business**

There is an overall recession in the world's economy, due to a reduction of entrepreneurship and business activity. A recent report by World Bank has revealed that gross domestic production (GDP) has been reduced significantly due to the pandemic, particularly in those countries which are dependent on trade or tourism (Papadopoulos, Baltas, and Balta 2020). However, this issue is still ongoing, and estimates by the International Monetary fund (IMF) and World Bank are revised weekly. In Asia, it has been observed that the growth may remain steady (Papadopoulos, Baltas, and Balta 2020).

#### *Decline in productivity*

With facilities being shut down temporarily, or permanently, companies were compelled to terminate their employees or send them on unpaid leave, and even a slight decline in the number of employees has led to decreased productivity and serious issues in businesses (Nicola et al. 2020a). During this extraordinary time, staff also experienced mental stress due to work or family pressures, which had a cumulative impact on their productivity over these months, making it difficult for the entrepreneurs to compete in the world (Ozili and Arun 2020).

#### *Loss of employment*

Activities of entrepreneurs elevate the productivity of firms which in turn boosts the economy, but in the recent pandemic of Covid-19, an extensive structural change has been observed across the globe, by exhibiting replacement in established and sclerotic firms (Nicola et al. 2020b). These changes at the country level have resulted in an overall recession on the world's economy, due to the decrease in entrepreneurship. Many established firms were compelled to reduce their production or number of branches causing a drastic increase in unemployment (Fernandes 2020).

## **Entrepreneurship in countries with high cases of Covid-19**

As of March 30<sup>th</sup>, the number of Covid-19 cases increased to 735,210, in almost 100 countries. The number of deaths approached 34,808, which shows the high magnitude of the impact of the virus (Sohrabi et al. 2020). In countries with a greater number of cases, borders were sealed to avoid transmission of the disease, and massive lockdowns were imposed in Italy, California, UK, and New York (Acs and Szerb 2007). In the United States, two states declared the State of Emergency, and many other countries were implementing lockdowns. Further efforts were made to adopt social distancing, thus many countries, even with sound economies, compelled most of the businesses to shut down and restrict their interactions, leading to a significant downturn in economies, both at domestic and international levels (Sergi et al. 2019). Partial or complete closure of borders also hindered the movement of goods causing a considerable interruption of goods circulation in the global supply chains. In countries with a high number of cases like the USA and Europe, the impact was more intense than the rest of the world (Sadeghi et al. 2019). These countries experienced a macroeconomic hit due to the pandemic. In less than 3 months these countries had been plunged into crisis, leading to a global recession (Cervelló-Royo et al. 2020).

## **Changes in Governmental support and policies for business**

Governmental support is essential for all industries, whether small scale or large scale, in times of crisis, to ensure their smooth running (Ratten and Research 2020). Many governments have taken the necessary steps to facilitate supporting local ecosystems. For example, in the United Kingdom government initiated a program to provide a fund of 1.25 billion pounds, as a rescue package for entrepreneurs (Lata 2020). South Korean government has announced a relief package of 53.7 trillion to encourage entrepreneurship (Narula 2020).

## **Worldwide supply chain**

Since the commerce community is usually connected worldwide, it was a dire issue when they were unable to communicate with vendors in the red zone (Majumdar et al. 2020). Dun and Bradstreet published a whitepaper that stated that 94% of 1000 companies had their supply chain linked to China, which was the center of Covid-19. These problems in the supply chain also posed a challenge to healthcare and technology (Veselovská and Management 2020).

China has the biggest market for industrial goods due to its cost-effectiveness, not only small business owners faced challenges, but there were regulatory, legal, and industrial dysregulation challenges to the large scale industries as well (Fabeil et al. 2020).

### *Impact on the electronics industry*

To limit the extent of the spread of the virus in China, many electronics hubs were temporarily closed, thus impacting the supply chain of the world. Due to a shortage of materials and goods, there was a marked reduction seen in electronics and automobile production, since China is greatly integrated with the supply chain of the world (Barua 2020). Some of the most affected provinces in China are the inner Henan province and coastal Guangdong. At present, the electronic industry is not working at full capacity, it is only 30% to 50% (Baldwin and Tomiura 2020). Taiwan and Korea are dependent on China for importing electronic goods and a nearly 70% reduction in production is seen in both countries. Other countries such as Indonesia, India, Vietnam, and Thailand also outsource goods (Amit 2020). Due to this pandemic, a 30% to 40% reduction is seen in their entrepreneurial activity. As a result, a loss of 2.2 million dollars has been reported in this sector (Guan et al. 2020).

### *Impact on the automobile industry*

The pandemic has impacted the Korean manufacturing industry, which was mainly dependent on the vertical supply chain from China (Baldwin and Tomiura 2020). Hyundai Motor Company was temporarily shut down. In

this sector, the greatest set-back was seen in Korea, which was more advanced than in other countries (Fernandes 2020).

#### *Impact on the food industry*

During the time of the virus, Singapore mitigated the interruption of food supply, which is an example of supply chain resilience for other countries (Rizou et al. 2020). Some other countries which exhibited resilience included Italy, Mexico, France, Germany, Brazil, Canada, Morocco, Peru, Turkey, and the UK (Shahidi 2020).

#### *Impact on the education industry*

Many questions were raised regarding the challenges to the higher education landscape. Covid-19 undoubtedly impacted educational entrepreneurship (Gupta et al. 2020). Universities were compelled to change their approach by canceling conferences and public events and transitioned from face-to-face to online lectures (Shinghal, Saxena, and Misra). Universities in the United States took more drastic measures by extending spring break and switched to e-learning at Harvard, New York University, and Florida State University (Page 2020).

#### *Impact on the travel and tourism industry*

Among the first measures to mitigate the spread of Covid-19 were the travel bans to and from certain parts of the world. The ban on international and national flights adversely affected the tourism industry. The restrictions on traveling affected 90% of tourists since March 2020 (Sharma and Nicolau 2020). The travel and tourism industries were negatively impacted, which in turn also affected individual entrepreneurs. Due to a lack of traffic, airlines were compelled to reduce flight fares and the number of flights (Nepal 2020). As stated by the International Air Transport Association (IATA), the industry lost 113 billion dollars. By the end of the year, it is estimated that IATA will experience a total loss of 11% to 19% in global passenger revenues. It is also suggested that tourism would decline further in the year 2020 (Syriopoulos 2020).

#### *Impact on the sports and entertainment industries*

Large sporting events such as hockey leagues, basketball tournaments, and Formula 1 racing were postponed as a precautionary measure. The cancellation of events or those being held without spectators also impacts entrepreneurship globally as it involves various corporate sectors (Parnell et al. 2020). In Tokyo, the Olympics was canceled, affecting the sports and entertainment industry and associated entrepreneurs. Additionally, cinemas were also shut down worldwide, resulting in a decline in the entertainment industry (Yeo 2020). On the brighter side, a massive increase in Netflix, Amazon Prime, HBO Now was reported, providing increased income to associated entrepreneurs (Ratten and Research 2020).

#### *Impact on the information technology (IT) industry*

Many information technology-related conferences and events, such as Google I/O, Facebook F8 Developer Conference, Mobile World congress, Electronic Entertainment Expo, have been canceled. Across the globe, more employees are directed to work from home, resulting in some IT companies experiencing a hike in revenues in this Covid-19 crisis (Scott et al. 2020). Another application that has gained popularity in the past few months is Zoom, which provides solutions for video communication. It was amongst the most downloaded application from the Apple Store in the USA in the 2<sup>nd</sup> week of March 2020 (Kumar et al. 2020). Some other online platforms such as TikTok, Microsoft Teams, Instagram, Facebook, LinkedIn have experienced a significant increase in traffic and revenue. On the other hand, many giant technology companies such as Apple, also experienced negative effects of the pandemic (Philippidis 2020).

### *Impact on the fitness industry*

The pandemic forced fitness studios globally to shut their doors and adjust to the new reality. Many famous fitness clubs like the Soul Cycle was forced to close some of its locations globally and will reopen once the situation settles down (Nishiura et al. 2020). A transition has been observed in entrepreneurial fitness organizations such as Modo Yoga, which is offering online classes on social platforms like Instagram and Facebook, which promotes the trend of virtual workouts (Nyenhuis et al. 2020).

### **Global fallout in small scale entrepreneurship**

Throughout the world, millions of entrepreneurs have been the victim of economic fallout due to Covid-19 (Dele-Ijagbulu et al. 2020). Many small-scale entrepreneurs were compelled to close their business while some were just working 'hand to mouth' and struggling with their businesses. These small scale businesses play a role in local economies by providing jobs to individuals and much-needed products and services (Price 2020). Youth Business International had to enact a policy to support entrepreneurship in almost 50 countries, by identifying the problems and providing solutions (Hernández-Sánchez et al. 2020). Two global initiatives were launched, namely the SOS meeting and rapid response/recovery program, which is capable of supporting over 200,000 businesses in 32 countries. This will aid young entrepreneurs in growing businesses (Mickiewicz and Rebmann 2020).

### *Remuneration*

During Covid-19, 41% of startups fell in the red zone and barely had cash left for three months, although 29% of them were in that situation even before the crisis. This pandemic posed a 40% further threat to them (Bodas and Peleg 2020). On evaluation, it was seen that about 20% of the startups had term sheets pulled by the investor, and after Covid-19, 53% experienced a slowdown in process, whereas only 28% of the startups were able to function normally and continue to receive funds (Swinnen and McDermott 2020).

### *Impact on employment*

At the onset of the virus, 74% of startups terminated its fulltime employees. It was also observed that 39% of the startups had to further reduce 20% of its employees later on. When the share values of startups plummeted, further negative effects were observed for the entrepreneurs, and some were compelled to terminate all of their employees (Bartik et al. 2020). Among the top three continents, North America showed the greatest reduction in employees by 84%, this was followed by Europe which experienced 67% termination of employees, and the least was observed in Asia which was 59% (Bartik et al. 2020).

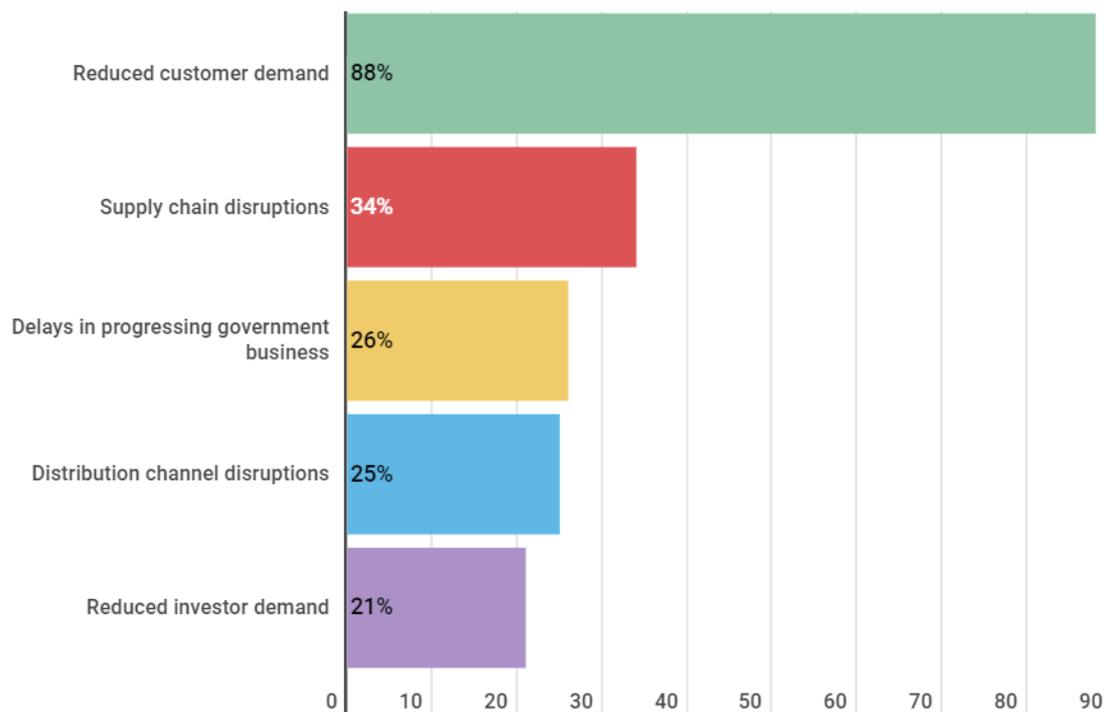
### *Operations and management*

Since December 2019, approximately two-thirds of the startups had reduced their expenses. In some companies, an aggressive reduction in cost was noticed, in more than 10 companies 60% reduction in cost was observed, with some startups showed a reduction of up to 76% by March 2020. These figures indicated that all of these reductions were directly related to the Covid-19 crisis (Organization 2020).

### *Impact on startups ecosystem globally*

Approximately more than 70% of the new start-up business had to end the contracts of their full-time employees since the emergence of the Covid-19 pandemic (Bennett et al. 2020). On the other hand, it has also provided opportunities for new goods and services, due to their increased demand. Governments of various countries have provided funds to small scale and start-ups for supporting them in these extraordinary times (Arundale and Mason). Ahn, Kang, and Entrepreneurship (2020) conducted a study to find out reasons for obstacles in entrepreneurship Table 1 summarizes how Covid-19 has impacted entrepreneurship.

Table 1: Summary of How Covid-19 has impacted entrepreneurship globally



Youth Co:Lab survey of 410 young entrepreneurs across 18 countries in Asia-Pacific (March 2020)

## Discussion

Massive lock-downs and social distancing implemented in various countries have reduced the consumption of various products, which in turn has altered production and entrepreneurship (Donthu and Gustafsson 2020).

### *Finding opportunities amid the crisis is agility crucial*

All entrepreneurs, whether large scale or small scale, must take the pandemic as an opportunity for re-directing and re-purposing their existing business by making use of their knowledge, skills. They should try to find out the new needs that have emerged in the community, and then boost their businesses accordingly (Fairlie 2020). Re-directing will help them in identifying the needs of the community, such as face masks, shields, and online grocery services, which have become the essentials for surviving. Also, a hike is seen in taxi startup businesses (Androniceanu 2020).

### *Every crisis is an opportunity*

This crisis can be turned into an opportunity through constant encouragement of entrepreneurs even in bad times through persistent encouragement and motivating new firms to be established. This will, in turn, produce new job opportunities and reduce unemployment (Ioannides and Gyimóthy 2020). Through the production of novel products, a change may be noticed from stagnant entrepreneurship to dynamic ones, which will aid in improving the economy of the world (Padilla and Petit 2020).

### *Entrepreneurship after a pandemic is over*

It is predicted that a quick recovery will be noticed in the world's economy and entrepreneurship, and soon will be revitalized (Buheji 2020).

## Conclusion

Based on the above literature it can be concluded that Covid-19 has caused significant disruption to economies and entrepreneurship globally, and has posed several unprecedented challenges, however, the absolute impact remains unclear, as more in-depth longitudinal studies are required to better investigate this issue.

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# Combined Effects of Institutional Quality and Financial Development on Macroeconomic Performance in Sub-Saharan African Countries

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## Abstract

The objective of this paper is to show the importance of institutional quality as a factor enhancing the contribution of financial development to macroeconomic performance in SSA. In this context, we first present the theoretical literature and the empirical debates on the subject. Next, we derive an endogenous growth model that addresses the relationship between financial development, institutional quality, and macroeconomic performance. Finally, two dynamic panel models were estimated using the GMM method over the period from 2010 to 2017 and on a sample of 38 SSA countries. The estimation results reveal that institutional quality is considered as an important factor to be taken into account in analyzing the impact of financial development on macroeconomic performance.

**Keywords:** Combined Effects, Quality of Institutions, Financial Development, Macroeconomic Performance, Sub-Saharan Africa

## 1. Introduction

Since the work of Goldsmith (1969), McKinnon (1973), King and Levine (1993a and 1993b), there has been renewed interest in the role of financial capital in explaining economic performance. However, this idea of "capital accumulation fundamentalism" alone could explain only a small part of the differences in the level of development between countries. It implies that other factors affect the productivity of financial capital and consequently macroeconomic performance. These were ultimately to be related to the quality of institutions.

In the economic literature, the analysis of the importance of sound institutions in economic activity has followed two directions. The first refers to a logic of overall macroeconomic coherence to explain the impact of the institutional environment on economic performance. In the second direction, the work proposes a theory of the

firm based on the endogenous accumulation of resources. However, it is important to note that all these theories insist on the importance of systemic effects likely to create a link between the quality of institutions and economic performance. Thus, the theories agree on the idea that good-quality institutions would further improve the productivity of production factors and thus the overall productivity of the economy, which is a guarantee of economic performance.

On this basis, most developing countries, including those in Sub-Saharan Africa (SSA), began institutional and financial reforms at the end of the 1990s, motivated by the idea that improving the financial system, by improving the efficiency of financial intermediation, will lead to more sustained economic growth (Igue, 2013). However, after the economic crisis of 2008, it became apparent that these reforms differed greatly in terms of their impact on financial and economic development. It is therefore essential to know the reasons for the success of financial reforms in some countries and the causes of failure in others. On this subject, specific empirical work show that beneficial financial reforms presuppose a sound institutional framework (Arestis et al., 2002; Rodrik and Wacziarg, 2005). Otherwise, efforts in terms of financial reforms are not a sufficient condition for ensuring economic performance if they are not accompanied by appropriate institutional reforms (Mijiyawa, 2010). On this subject, most empirical work show that financial development and institutions emerge separately as fundamental determinants of economic growth. This is why we try in this study to show the complementarity between these two factors to explain the differences in levels of economic development across SSA countries.

Indeed, this new line of thinking assumes that the financial system does not operate in a vacuum, but rather presupposes the existence of a set of quality institutions. These institutions are responsible for transparency in the functioning of markets and government activity. Therefore, our main objective is to determine the combined effect of institutional quality and financial development on macroeconomic performance in Sub-Saharan African countries. To achieve this objective, we are proceeding in stages. Thus, the first point is devoted to the literature review. At this level, after defining the concept of institutional quality and presenting its measures, we will show, theoretically, that institutional quality is considered as the main determinant of financial development. In a second step, we empirically test a Solow growth model augmented by the quality of institutions, dealing with the relationship between financial development, quality of institutions and macroeconomic performance. This approach allows us to show the direct and indirect effects (through the quality of institutions) of financial development on macroeconomic performance in SSA countries.

## **2. Literature review**

### *2.1. Theoretical literature*

In the theoretical literature, several doctrines explain the importance of the quality of institutions in strengthening the role of financial development in the performance of economies. These are mainly legal and financial theory, endowment theory and political theory.

Indeed, the theory of law and finance, whose precursors are La Porta et al. (1997, 1998), emphasizes the role of legal institutions in differences in levels of financial development. First, this theory argues that in countries where the legal system facilitates contracts between private agents, and protects property and investor rights, savers are more inclined to invest in firms, thereby contributing to the expansion of financial markets. Conversely, a financial system that provides little protection of property and investor rights will tend to hinder financial development. Second, legal and financial theory emphasizes that the legal origin of the judicial system may explain the differences between countries in the protection of investor rights, contracts and level of financial development. Subsequently, Levine (1999) and Thorsten et al. (2000) show that financial intermediaries develop further when the legal system allows creditors to obtain the repayment of all their loans in case of bankruptcy. However, this theory has been much contested by several authors.

Indeed, Enrico and Modigliani (2000) base their analysis, not on the nature of the law, but on the quality of application of the legal rules. They prove the superiority of Scandinavian civil law countries over Anglo-Saxon countries regarding the impact of the quality of application of law on financial development.

With regard to endowment theory, Thorsten et al. (2003) consider that the formation of institutions promotes financial development and depends on the hostile environment faced by Europeans during the period of colonization. Thus, countries that protect property rights have a high level of development of banks and financial markets.

As far as the political thesis is concerned, it is treated according to two approaches. First, the economic approach (the new political economy), proposed by Pagano and Volpin (2001), aims to analyze political interventionism in the financial market. Indeed, economic interests actually influence the political process which, in turn, will have an impact on the elaboration of legal rules and their application. Thus, political representatives introduce the legal reforms desired and suggested by interest groups. This can promote economic outcomes in the sense of maximizing the objectives of interest groups. Similarly, the political factor influences banking development. Political reforms aimed at increasing the legal protection of creditors may lead to a reduction in borrower selection efforts. Reforms that aim to increase the efficiency of the legal system encourage banks to reduce the frequency of verification of the performance of borrower firms.

Second, the "ideological" approach of the political thesis proposed by Roe (1999) shows that political choices, which determine investor protection and the quality of its application, are induced by ideological factors. This approach is concerned with the resolution of the problems generated by the opening up of firms' capital and by the desire to make markets more substantial, which lies in the establishment of policy and social structure for these firms. Solving these problems does not only require the establishment of a legal environment. But legal reforms must be accompanied by policy reforms to enable the development of financial markets and economic growth.

## *2.2. Quality of institutions in the relationship between development, finance and economic performance: Empirical debates*

Since the early 1990s, most countries have embarked on financial reforms motivated by the assumption that a well-functioning financial system ensures efficient financial intermediation, which will lead to more sustained economic growth. However, in times of crisis, there appears to be a big difference in the effect of crises on financial and economic development. This leads us to wonder why financial reform ends in success in one country and failure in another. In this context, several research studies show that financial reforms presuppose a sound institutional framework (Arestis and al., 2002). Otherwise, these reforms are not a sufficient condition for reversing the trend in activity if they are not accompanied by appropriate institutional reforms.

According to the work of the New Institutional Economics (NIE) School, political and institutional factors play an important role in long-term macroeconomic performance. The NEI covers multiple areas, ranging from property rights and transaction costs to asymmetric information. NIE theorists show that the market does not operate in a vacuum, but rather requires a set of institutions.

Financial institutions and markets still pose problems for the reforms that have taken place in developing economies. Although there have been efforts to analyze these problems, experts in institutional economics have focused on improving institutions in general, while financial specialists have focused solely on financial development in particular. Thus, it has become clear that there is a close link between financial markets and institutions. According to Levine (1997), institutions are "third type" factors that provide an important structure without which improvements in the financial system could not take place. In this regard, previous attempts have been made to analyze the meaning of institutions and financial markets and the relationship between them.

The econometric study by Pistor et al. (2000), on transition countries, shows that institutional structure is important in financial markets to encourage economic growth. However, most of the work has weaknesses that can be explained by the use of different definitions of an institution and a financial market. This is clearly because institutional economics and financial market theory are separate fields of research.

Many countries do not have the institutional capacity to monitor and regulate their financial sector, or to collect the data they need to get an accurate picture of the health of their financial institutions. It has become clear that institutional shortcomings have been an obstacle to the development of nations.

In addition, a sound institutional framework is a crucial element in the success of investment projects. Thus, Dollar and Levin (2005) showed that there is a strong and significant relationship between institutional quality and project success. Similarly, Knack and Keefer, (1995) found that the two measures of institutional quality (the law measure and the democracy measure) are very significant with respect to a project's success rate. Their main finding is that political and democratic institutions facilitate political borrowing, while property rights are more important for investment borrowing. Indeed, it will be difficult to have a good public investment if the institutional structure is not favorable to economic growth. Therefore, the success of investment projects depends on the quality of the institutions in each country.

### 3. Econometric approach

#### 3.1. Theoretical model

Our objective in this section is to analyse the effects of financial development and institutions on economic growth. For this, we follow the approach of Mankiw et al. (1992) and Demetriades and Law (2006). So, consider the following Cobb-Douglas function.

$$Y_{it} = K_{it}^{\alpha} H_{it}^{\beta} (A_{it} L_{it})^{1-\alpha-\beta} \text{ avec } L_{it} = L_0 e^{n_{it}} \text{ et } A_t = A_0 e^{gt+W_{it}\theta} \quad (1)$$

In equation (1)  $Y$  is output,  $K$  the stock of physical capital,  $H$  the stock of human capital,  $L$  the labor,  $A$  the factor reflecting the technological level and efficiency of the economy,  $\alpha + \beta < 1$ ,  $n$  the rate growth of the labor force,  $g$  the assumed constant rate of technical progress,  $W$  the vector of financial and institutional policy development and other factors affecting the level of technology and the efficiency of the economy, and the  $\theta$  vector of coefficients which link these policies to the other variables and  $i$  and  $t$  are respectively the country and time indices.

Demetriades and Law (2006), show that  $A_t$  may be relevant to empirical studies on the link between financial development, institutional quality and economic development. For example, technological improvements can be the result of a developed financial system and a sound institutional framework (North, 1991). These two fields of analysis tend to increase the efficiency of the productive sector and improve investment productivity (Landesmann & Ugo, 1994).

The evolution of the economy is determined by :

$$\dot{K}_t = \frac{dK_t}{dt} = s_t Y_t - \delta K_t \text{ et } \dot{H}_t = s_h Y_t - \delta H_t \quad (2)$$

In equation (2)  $s_t$  and  $s_h$  are respectively the rate of investment in physical capital and the rate of investment in human capital. Thus, we assume that :

$$\dot{K}_t = I_t - \delta K_t \text{ et } I_t = S_t : \text{with } \delta \text{ the rate of depreciation of physical capital.}$$

It is known that the stock of physical capital per unit of effective labor and the stock of of human capital per effective unit of labor are given by :

$$k_t = \frac{K_t}{A_t L_t} \text{ et } h_t = \frac{H_t}{A_t L_t}. \text{ We can then derive their evolutions as follows :}$$

$$\dot{k}_t = \frac{d}{dt} \left[ \frac{K_t}{A_t L_t} \right] \text{ and } \dot{h}_t = \frac{d}{dt} \left[ \frac{H_t}{A_t L_t} \right]. \text{ So, } \dot{k}_t = \frac{\dot{K}_t (A_t L_t) - (A_t L_t)'_t K_t}{(A_t L_t)^2} \text{ and } \dot{h}_t = \frac{\dot{H}_t (A_t L_t) - (A_t L_t)'_t H_t}{(A_t L_t)^2} \text{ with}$$

$\frac{\dot{A}_t}{A_t} = g$  and  $\frac{\dot{L}_t}{L_t} = n$ . After doing all the intermediate calculations, we obtained

$$\dot{k}_t = s_t y_t - (\delta + g + n)k_t \quad (3)$$

$$\dot{h}_t = s_t y_t - (\delta + g + n)h_t \quad (4)$$

Knowing that, the gross domestic product per effective unit of labour is written as follows :

$$y_t = \frac{Y_t}{A_t L_t} = k_t^\alpha h_t^\beta \quad (5)$$

By replacing equation (5) in (3) and in (4), we get :

$$\dot{k}_t = s_k k_t^\alpha h_t^\beta - (\delta + g + n)k_t \quad (6)$$

$$\dot{h}_t = s_h k_t^\alpha h_t^\beta - (\delta + g + n)h_t \quad (7)$$

At equilibrium, the change in physical capital stock is equal to the change in human capital per unit of effective labor, equal to zero.

$$\dot{k}_t = \dot{h}_t = 0 \Rightarrow s_k k^\alpha h^\beta = (\delta + g + n)k \quad (8)$$

$$\dot{k}_t = \dot{h}_t = 0 \Rightarrow s_h k^\alpha h^\beta = (\delta + g + n)h \quad (9)$$

By making the ratio between (8) and (9), we obtain :

$$\frac{(8)}{(9)} \Leftrightarrow h = \frac{s_h}{s_k} k \quad (10)$$

By substituting (10) in (8) and in (9), we have :

$$k^* = \left[ \frac{s_k^{1-\beta} s_h^\beta}{\delta + g + n} \right]^{\frac{1}{1-\alpha-\beta}} \quad (11)$$

$$h^* = \left[ \frac{s_h^{1-\alpha} s_k^\alpha}{\delta + g + n} \right]^{\frac{1}{1-\alpha-\beta}} \quad (12)$$

Demetriades and Law (2006) indicate that relations (11) and (12) reflect the steady state of the economy. By considering relation (5), we have :

$$\left( \frac{Y_i}{A_i L_i} \right)^* = (k_i^*)^\alpha (h_i^*)^\beta \Leftrightarrow \left( \frac{Y_i}{L_i} \right)^* = (y_i)^* = (A_i)^* (k_i^*)^\alpha (h_i^*)^\beta \quad (13)$$

Relation (13) represents the output per unit of labor at equilibrium for each country.

Technological progress at equilibrium is given by :

$$A_i^* = A_{i0} e^{W_i \theta_i} \quad (14)$$

In equation (14),  $W_i$  represent the vector of variables representing the factors that can influence technological progress for country  $i$ . In this article,  $W_i$  groups together variables reflecting the levels of financial development, the quality of institutions and interaction variables between these two fields of analysis.

By substituting (11), (12) and (14) in (13), we find :

$$y^* = A_0 e^{W^* \theta} \left[ \frac{s_k^{1-\beta} s_h^\beta}{\delta + g + n} \right]^{\frac{\alpha}{1-\alpha-\beta}} \left[ \frac{s_h^{1-\alpha} s_k^\alpha}{\delta + g + n} \right]^{\frac{\beta}{1-\alpha-\beta}} \quad (15)$$

In order to linearize equation (15), we apply the logarithm to it.

$$\ln(y_{it}) = \ln \left( A_0 e^{W^* \theta} \left[ \frac{s_k^{1-\beta} s_h^\beta}{\delta + g + n} \right]^{1-\alpha-\beta} \left[ \frac{s_h^{1-\alpha} s_k^\alpha}{\delta + g + n} \right]^{\frac{\beta}{1-\alpha-\beta}} \right) \quad (16)$$

By adding the time and individuals indices to equation (16) is rewritten as follows :

$$\ln(y_{it}) = \ln(A_{0i}) + \theta_i W_{it} + \frac{\alpha}{1-\alpha-\beta} \ln(s_{kit}) + \frac{\beta}{1-\alpha-\beta} \ln(s_{hit}) - \frac{\alpha+\beta}{1-\alpha-\beta} \ln(\delta + g + n_{it}) \quad (17)$$

Equation (17) represents the economic model which serves as a derivation of the econometric model for estimating the combined effects of financial development and the quality of institutions on economic performance.

### 3.2. Empirical model

As already seen in the theoretical study, levels of financial and institutional development are considered relevant factors in explaining differences in economic development across countries. However, a financial system does not operate in a vacuum, but rather presupposes a set of institutions. To this end, we will try to test the effects on economic development of the quality of institutions, financial development, and their interaction. The latter can be empirically translated by an interaction variable between the two fields of analysis (financial development and institutional development).

In order to empirically translate these ideas, the product  $\theta_i W_{it}$  can be transformed as follows :

$\theta_i W_{it} = \theta_1 W_{1,it} + \theta_2 W_{2,it} + \theta_{3i} W_{3,it}$  with  $W_{1,it}$ ,  $W_{2,it}$  and  $W_{3,it}$  financial development, the quality of institutions and their interaction, respectively.

From there, equation (17) is written then :

$$\ln(y_{it}) = \ln(A_{0i}) + \theta_1 W_{1,it} + \theta_2 W_{2,it} + \theta_{3i} W_{3,it} + \frac{\alpha}{1-\alpha-\beta} \ln(s_{kit}) + \frac{\beta}{1-\alpha-\beta} \ln(s_{hit}) - \frac{\alpha+\beta}{1-\alpha-\beta} \ln(\delta + g + n_{it}) \quad (18)$$

In the (18) equation,  $\ln(A_{0i})$ ,  $\ln(s_{kit})$ ,  $\ln(s_{hit})$ ,  $n_{it}$ ,  $g$  and  $\delta$  are respectively constant by country, the reserves in physical and human capital, the rate of growth of the labor force, the growth rate of technological progress and the rate of depreciation. The rates  $g$  and  $\delta$  are assumed to be constant across countries and over time and their sum is equal to 0.05 (Mankiw, Romer, and Weil, 1992).

Thus, given the assumption made for taking into account the quality of institutions in explaining the contribution of financial development to economic performance, two models (M1) and (M2) are estimated :

$$(M1): \ln(y_{it}) = \alpha_i + \beta_1 \ln k_{it} + \beta_2 \ln h_{it} + \beta_3 \ln L_{it} + \beta_4 DF_{it} + \beta_5 QI_{it} + \mu_{it} \quad (19)$$

In the model (M1), the aim is to estimate the individual effects of financial development and institutional quality on economic performance.

$$(M2): \ln(y_{it}) = \alpha_i + \beta_1 \ln k_{it} + \beta_2 \ln h_{it} + \beta_3 \ln L_{it} + \beta_4 (DF_{it} * QI_{it}) + \mu_{it} \quad (20)$$

In (M2), the purpose is to assess both the individual effects of financial development and institutional quality and their combined effect.

In equations (19) and (20),  $y$  is the real GDP per capita,  $\alpha_i$  the individual effect, FD the financial development, QI the quality of institutions, (DF\*QI) the combined effect of DF and QI,  $\beta_i$  the parameters to be estimated with  $i$  ranging from 1 to 6 and  $\mu$  the error term of zero mean and equal variance  $\sigma_\mu^2$ . It is important to specify that the QI variable is composed of several components that we present following the article.

### 3.3. Presentation of variables

Our endogenous variable is represented by the real gross domestic product per capita. Indeed, GDP per capita is used as an indicator of macroeconomic performance.

The explanatory variables include:

The stock of physical capital per capita (*capi*) : We calculate the stock of physical capital using the perpetual inventory method described by Van (1997). Thus, the stock of physical capital  $K$  in year  $t$  is equal to its stock in  $t - 1$  adjusted by a depreciation rate plus investment  $I$  in  $t$ :  $K_t = I_t + (1 - \delta) K_{t-1}$  where  $I_t$  is gross fixed capital formation (GFCF) and  $\delta$  is the depreciation rate ( $\delta = 6\%$ ) (Hall and Charles, 1999). The stock of initial physical capital  $K_0$  is equal to the initial investment  $I_0$  divided by the sum of the annual growth rate  $\rho$  of investment  $I_t$  and the depreciation rate  $\delta$  of physical capital:  $K_0 \frac{I_0}{(\rho + \delta)}$ . The physical capital stock per capita is the ratio of the calculated physical capital stock to the total population.

Human capital stock per capita (*ch*): In economic theory, exogenous and endogenous growth models emphasize the importance of human capital in explaining the development of an economy. The work of Barro (1991), Mankiw et al (1992), Mankiw et al. (1992), clearly suggest that developing countries must be equipped with a skilled workforce, i.e. human capital capable of assimilating foreign technology. The work of Mankiw et al (1992) uses the growth rate of the gross secondary school enrolment rate as a proxy for human capital. However, given the lack of data on the gross enrolment rate for most SSA countries, this paper uses the composite indicator proposed by Islam (1994) to measure human capital. Indeed, this indicator highlights the importance of education and thus of human capital on the level and variation of GDP per capita in a sample of African countries based on panel data.

Labor force (*ft*): it represents all workers and is measured by the active population.

Financial development (*df*): Several indicators are used in the economic literature to measure financial development. These indicators can be grouped into two categories. First, there are indicators relating to the size and efficiency of bank activity and second, there are indicators relating to the functioning of financial markets. Because of the low level of financial market development in developing countries in general, it is more appropriate to use the first category. Like King and Levine (1993), credit to the private sector as a percentage of (GDP) is used as an indicator of financial development in this work.

Institutional quality: This is a composite variable. Based on the indicators of Kaufmann, et al. (2010), the variables used are: rule of law and control of corruption (*rdcc*), good governance (*eg*), political stability and absence of violence and terrorism (*spavt*), regulatory quality (*qr*) and citizen responsibility (*rc*). Good institutions are likely to lead to a more competitive economy, which is a positive sign.

### 3.4. Data Sources

The data used in this article are annual secondary data and come exclusively from the World Bank database except for the institutional quality variables which come from the World Governance Indicator (WGI) database. The data cover the period from 2010 to 2017, i.e. seven (07) years, and are related to 38 SSA countries. The choice of this period was essentially guided by the availability of data on the variables.

### 3.5. Estimation method

The estimation of the model (19) is done using the generalized method of moments (GMM). The choice of this method is linked to the fact that the number of individuals in the model exceeds the number of individuals in the period. This method provides solutions to problems of simultaneity bias and controls for specific effects. In addition, it solves the problem of endogeneity of one or more explanatory variables, in particular the presence of the lagged dependent variable.

There are, however, two variants of the GMM estimator. The first is the first difference estimator of Arellano and Bond (1991) which consists in taking for each period the first difference in the equation to be estimated and eliminating the individual effects and then instrumenting the explanatory variables of the first difference equation by their level values lagged one or more periods. The second version is the system estimator of Blundell and Bond (1998). This estimator is an improved version of the first and consists of combining the first difference equation with level equations in which the variables are instrumented by their first differences. As a result, the GMM in system is more efficient than the GMM in first difference.

Thus, in the estimation of our model, we use the GMM in system in one step in order to take advantage of the robustness it offers, notably the absence of simultaneity and autocorrelation bias. Before moving on to estimation, we perform tests to ensure the efficiency of our results. Thus, we perform the preliminary model specification tests, the unit root test, the overall significance test, the Sargan/Hansen over-identification test, and the Arellano and Bond error autocorrelation test.

#### 4. Estimations results and discussions

##### 4.1. Presentation of estimation results

Before presenting the results of the combined effects of institutional quality and financial development on macroeconomic performance, we first present the results of the baseline tests.

The result of the model specification test gave a fisher statistic of  $F(37, 242) = 95.03$  and P-value greater than  $F = 0.0003$ . At the 5% threshold, this empirical evidence makes it possible to reject the null hypothesis of the absence of individual effects. The coefficients of the model are then homogeneous and this indicates that the data support the panel structure chosen. Moreover, Pesaran's (2004) inter-individual dependency test concluded that autocorrelation was present at the 1% threshold. This result made it possible to carry out the series stationarity test using Pesaran's (2007) second generation test. Table 1 presents the results of the stationarity test.

Table 1: unit root t ests in panel on the variables

Variables	CPIS *	Differentiation level	Decision
peme	-1.699	0	Stationary at 5%
df	-1.343	0	Stationary at 1%
capi	-2.675	0	Stationary at 5%
Ch	-0.959	0	Stationary at 5%
ft	-2.390	0	Stationary at 5%
rdcc	-1.981	0	Stationary at 5%
eg	-1.921	0	Stationary at 5%
spavt	-2.454	0	Stationary at 5%
qr	-1.983	0	Stationary at 5%
rc	1,700	1	Stationary at 5%

Source: Author's calculation using data from (World Bank, 2020a and 2020b).

As can be observed, the results of the stationarity test show that apart from citizen responsibility, which is stationary in first difference, all other variables are stationary in level.

The results of these preliminary tests allow us to estimate the models (M1) and (M2)

Table 2: effects of financial development and institutional quality on the economic performance of SSA countries

Variables	Coefficients	Standard deviations	t-student
Delayed economic performance	0.0512768 **	0.01949 7	2.63
Capital	0.5803041 **	0.269048	2.16
Human capital	0.1118391 **	0.0414794	2.7
Workforce	0.8457145 **	0.4130228	2.05
Financial development	0.1644856 **	0.064252 2	2.56
Corruption	- 0.517668 **	0.206242	-2.51
Good governance	0.3175408 **	0.1373801	2.31
Political stability / absence of terrorism	0.131504 **	0.0558355	2.36
Regulatory quality	0.1747689	6.326427	0.03
Responsibility of citizens	0.753196	1.394068	0.54
Constant	0.1201483 ***	0.0372797	3.22
AR (1)	-1.84	Prob> chie2 = 0.11 7	
AR (2)	-0.07	Prob> chie2 = 0.944	

Source : Author, using data from (World Bank, 2020a and 2020b).

Table 3: effects of the combination of financial development and institutional quality on the economic performance of SSA countries

Variables	Coefficients	Standard deviations	t-student
Delayed economic performance	0, 0491656 **	0.018414	2.67
Capital	0.5 796 04 2 **	0.2658734	2.1 8
Human capital	0.1 09 839 4 **	0.039941 2	2.75
Workforce	0, 58771 32 **	0.27335 5	2.15
Comb1	- 0.7501647 **	0.32474 7	-2.31
Comb2	0, 8071201 **	0.35872	2, 25
Comb3	0, 4425172 **	0.187507	2.36
Comb4	0, 6312568 **	0.318816	1.98
Comb5	0.412147 **	0.16226 3	2.54
Constant	0.784235 ***	0.249756	3.14
AR (1)	-0.96	Prob> chie2 = 0.339	
AR (2)	-0.05	Prob> chie2 = -0.05	

\*\* , \*\*\* indicate respectively a significance at 5% and 1 %.

Source : Author, using data from (World Bank, 2020a and 2020b).

### *Efficiency of GMM estimates in both models*

First, the instrument used in our regression is valid because Sargan's tests and Hansen's tests failed to reject the hypothesis of validity of the job lagged variable at level as an instrument. In addition, there is no first- and second-order autocorrelation of first-difference errors because Arellano and Bond's first-order AR (1) and second-order AR (2) autocorrelation tests validated the hypothesis of no autocorrelation of errors. Sargan and Hansen's tests allow us to conclude that at the 5% threshold, we do not reject the null hypothesis of an overidentification of models. Thus, it is possible to conclude that the models are well specified. In order to eliminate the presence of heteroskedasticity, we estimate the model by the GMM method in a one-step system

using the robust option and then correct the student t-statistics for heteroskedasticity. Therefore, we can conclude that all our results are robust.

#### *4.2. Discussion of results*

The results of model estimates (M1) and (M2) show, on the one hand, that financial development and the quality of institutions significantly affect macroeconomic performance in SSA countries at the 5% threshold (Table 2) and, on the other hand, that the combination of financial development and the variables making up the quality of institutions positively and significantly affect macroeconomic performance with higher elasticities. (Table 3).

Indeed, Table 2 presents the results of the estimation of the M1 model. They indicate that, in addition to performance lagged by one period, human capital, labor force, capital, and financial development positively and significantly affect macroeconomic performance in SSA countries. Concerning financial development, its elasticity is 0.16. Regarding the variables of institutional quality, only good governance and political stability/absence of terrorism have positive effects on macroeconomic performance. These variables are significant at the 5% threshold and the respective elasticities are 0.31 and 0.13. The corruption variable is significant at the 5% threshold and admits an expected negative effect with an elasticity of -0.51. This confirms Mauro's (1996) idea, which showed that corruption is considered as the main cause of the failure of the majority of investment projects. The financing of these projects is guaranteed by the banking sector, which dominates most financial systems in developing countries.

In the second table, instead of analyzing the individual effects of the variables, we combined financial development with all the variables of institutional quality. The M2 model estimates in table 3 confirm those found in the first table 2. Indeed, the terms of interaction between financial development and good governance, political stability/absence of terrorism, regulatory quality, and citizen accountability show significant and positive effects at the 5% threshold on macroeconomic performance. Regarding the combination of financial development and corruption, it remains significant and negative, but the elasticity is lower than that obtained in Table 2. All these results confirm those obtained by Hasan and al. (2009).

Another important aspect that deserves to be stressed is that the combination of financial development and the quality of institutions allows the former to better support economic activity and ensure its development. This is because all the elasticities obtained are higher than those obtained in Table 2. These results confirm those of Dollar and Levin (2005) and Mijiyawa (2010). For these authors, a sound and efficient institutional framework allows financial development to better contribute to the performance of the economy.

## **5. Conclusion**

The objective of this work is to assess the effect of the combination of financial development and institutional quality on macroeconomic performance in SSA. Having shown through the existing literature that a financial system presupposes a sound institutional framework with low levels of corruption, a more efficient judiciary, and better bureaucracy, we have shown that the elements of good governance provide an enabling environment for financial development and hence macroeconomic performance.

These theoretical analyses are empirically confirmed by the estimation of an endogenous growth model that allowed us to find a significant effect between financial development via a sound institutional framework.

In any case, these conclusions confirm the hypothesis that financial development admits more marked effects on the performance of the economy when there is a sound and efficient institutional framework, allowing a more consequent mobilization of the credit granted by banking and non-banking financial institutions for the financing of development projects and programs.

## Notes

The variables : comb1 = Financial development\*Corruption ; Comb2 = Financial development\*Good governance ; Comb3 = Financial development\*Political stability / absence of terrorism ; Comb4 = Financial development\*Regulatory quality ; Comb5 = Financial development\*Responsibility of Citizen.

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**Appendix A**

Table A: List of the 18 SSA countries in the sample

<b>Country</b>	
Angola	Guinea
Benin	Guinea-Bissau
Botswana	Madagascar
Burkina Faso	Liberia
Ghana	Malawi
Kenya	Mali
Burundi	Niger
Cameroon	Nigeria
Centrafrique	Mozambique
Chad	Mauritania
Congo, Dem. Rep.	Namibia
Gabon	Rwanda
Djibouti	Senegal
Cote d'Ivoire	Sierra Leone
Congo, Rep.	South Africa
Gambia	Tanzania
Lesotho	Togo
Comoros	Uganda
Ethiopia	Zimbabwe



ASIAN INSTITUTE OF RESEARCH  
Connecting Scholars Worldwide

The Asian Institute of Research  
Journal of Economics and Business  
Vol.3, No.3, 2020: 1187-1208  
ISSN 2615-3726  
Copyright © The Author(s). All Rights Reserved  
DOI: 10.31014/aior.1992.03.03.274

# Entrepreneurial Success for Women through Microfinance and Effect of Education: Evidence from Sri Lanka

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## Abstract

Microfinance is considered a poverty alleviation strategy in most countries especially in Asia and Sri Lanka is no exception. Sri Lanka is providing microfinance services through microfinance institutions (MFIs) to poor women for setting-up and developing micro-enterprises. It has been revealed through research that there are five components of microfinance services offered in Sri Lanka namely; Microcredit, Micro-savings, Micro-insurance, Business-support, and Skills -development. The past researchers have focused on the socio-economic, environmental, and individual factors that have an impact on the entrepreneurial success of women obtaining microfinance services, however, the impact of each of these service components and their specific constituents and indicators for measuring these are not agreed upon. It is important to know the individual impact of usage of these service components on the entrepreneurial success of the users and the influence of their level of education, for the industry and policymakers. Hence the main aim of this study was to determine the relationships (magnitude and direction) of usage of these service components to entrepreneurial success and the moderating effect of level of education on microfinance service users and their entrepreneurial success. The results of the study confirmed that out of the five microfinance services (components), usage of Microcredit, Micro-savings and Skills-development had a positive relationship to entrepreneurial success and the other two services, Micro-insurance and Business-support did not have such relationship. Further, it was revealed that the level of education had moderated only the relationship between the usage of micro-savings and entrepreneurial success. Further, the study confirmed that the usage of microcredit component was the most vital service component impacting the entrepreneurial success of women. Further, specific constituents and indicators for measuring these microfinance service components have been developed.

**Keywords:** Microfinance, Poverty, Entrepreneurial Success, Microfinance, Women Entrepreneurs, Sri Lanka

## 1. Introduction

### 1.1 The Research Problem

The nature of inconclusiveness on the outcome of microfinance services for women to achieve entrepreneurial success, globally and locally can be observed based on the empirical research findings (Newman et al., 2013; Ahlstrom, 2010; Bruton et al., 2013). This is due to both theoretical and empirical gaps existing in the area of this specific research. Empirical research conducted as to whether microfinance services have any impact on the entrepreneurial success of women using such services in Sri Lanka is limited. Further, there is inconclusiveness on the specific components of microfinance services and attributes of women who would achieve entrepreneurial success through the use of such services.

Accordingly, both empirical and theoretical gaps have been identified in relation to this research and in order to further understand these gaps, the discussion will be extended to aspects such as who are encountering this problem, scope, and limitations related to the problem, and why this research is important from an academic perspective, as follows.

There is a strong belief among the industry professionals revealed through expert opinion, that the level of education of these women has a moderating effect on their success. Further, according to literature, researchers have found that education has a relationship to the entrepreneurial success of recipients of microfinance services (Mahmood, Hussain, & Z. Matlay, 2014, Fisher, Maritz, & Lobo, 2014). The effect of these factors appears to have been not previously researched in Sri Lanka and no evidence on such studies conducted in Asian countries too. Therefore, there exists an opportunity for researching in this area.

### 1.2 The Importance of the Research

Success among women is very important for a country like Sri Lanka as women constitutes almost 52 percent of the population of the country and their active participation in the economy is only 36 percent and represent 75 percent of the economically inactive population (Department of Census and Statistics, 2015). However, according to the Economic Census, 2013/14 of the Department of Census and Statistics of Sri Lanka, women own more than 93 percent of microenterprises in Sri Lanka and this sector provides the highest number of employment. Further, it is also evident from this survey that more than 26 percent of micro establishments are run by women. This percentage of women owners of microenterprises is significantly higher across the sectors considered in this study. Hence the success of women entrepreneurs is vital to microenterprise sector and to the country. On the other hand, the number of successful women entrepreneurs in general (not specific to microfinance) has found to be low in Sri Lanka (Ranasinghe, 2008). Microfinance provides financial and non-financial services mainly to women in the micro-enterprise sector to develop their entrepreneurial activity and to become successful entrepreneurs elevating from micro to small, medium and large categories. Hence, there is a need for researching the entrepreneurial success of women utilizing microfinance services and to evaluate the degree of influence exerted by each of these services on the entrepreneurial success of Sri Lankan women and to establish any moderating effect of level of education on these relationships. Identification of these moderator variable would fill the existing gap in deciding on the attributes (demographic and industry related) women who would achieve entrepreneurial success through the usage of microfinance services. The microfinance institutions who are offering these services can identify target groups of women who would really be benefited by using these services, on the basis of their education level. Hence MFIs can make use of their funding in a productive manner, which would in turn facilitate the entrepreneurial success of women which will have an impact on the overall economy of a country.

### 1.3 The Literature

Microfinance provides small business loans to people with low-income levels, to facilitate economic development through enhancing entrepreneurial activity. However, microfinance services include both financial and non-financial services to low-income groups (Khavul, Chavez, & Bruton, 2013). Hence, microfinance is

recognized as a development strategy for poverty alleviation through facilitating the development of the poor socially and economically, focusing on women empowerment (Yeboah, 2017). There are two main approaches in offering microfinance services to lower-income earners namely; the *poverty lending approach*, which promotes donor-funded credit for the poor taking the approach of reducing poverty through subsidized and charitable non-finance methods and the *financial system approach*, which advocates commercial microfinance for economically active poor (Robinson, 2002; Mokhtar & Ashhari, 2015). According to Robinson (2002), though the primary goal of the two approaches is the same, large-scale sustainable microfinance services can be maintained only through the financial system approach. The focus of this study is on the *Financial System Approach*, and the objective is to conduct an empirical investigation to accomplish the relationship between usage of microfinance services and entrepreneurial success of women using such services and the effect of educational qualifications of such women on these relationships. The preliminary study conducted by the author about the microfinance sector showed that the non-bank financial institutions (NBFI) registered with the Central Bank are following the financial systems approach in delivering microfinance services whilst other providers of microfinance services appear to have a mixed approach. Especially, some of the NGOs operating in the market follow a non-commercial orientation to their business and donate funds to overcome extreme poverty situations. However, NBFIs are catering to the majority of microfinance clients at present according to the information maintained by these institutions. According to the Director-Division of NBFI of the Central Bank, there are 45 NBFIs registered with the Central Bank of Sri Lanka and of which 6 NBFIs have a major share of their portfolio in microfinance. Hence research focused on the women using the microfinance services of MFIs operate on a commercial basis which was registered with the Central Bank of Sri Lanka. Further, having observed the progress of the microfinance sector by government authorities, the Government of Sri Lanka had passed a bill in the parliament to regulate the industry by the Central Bank of Sri Lanka, in 2016.

At the outset, it is useful to get a clear idea as to what the target population of this research fits into a broader context. Figure 1 displays the poverty alleviation toolbox with financial services; the third column shows nonfinancial tools for poverty alleviation that are essential for the extremely poor and also suitable for those below the poverty line.

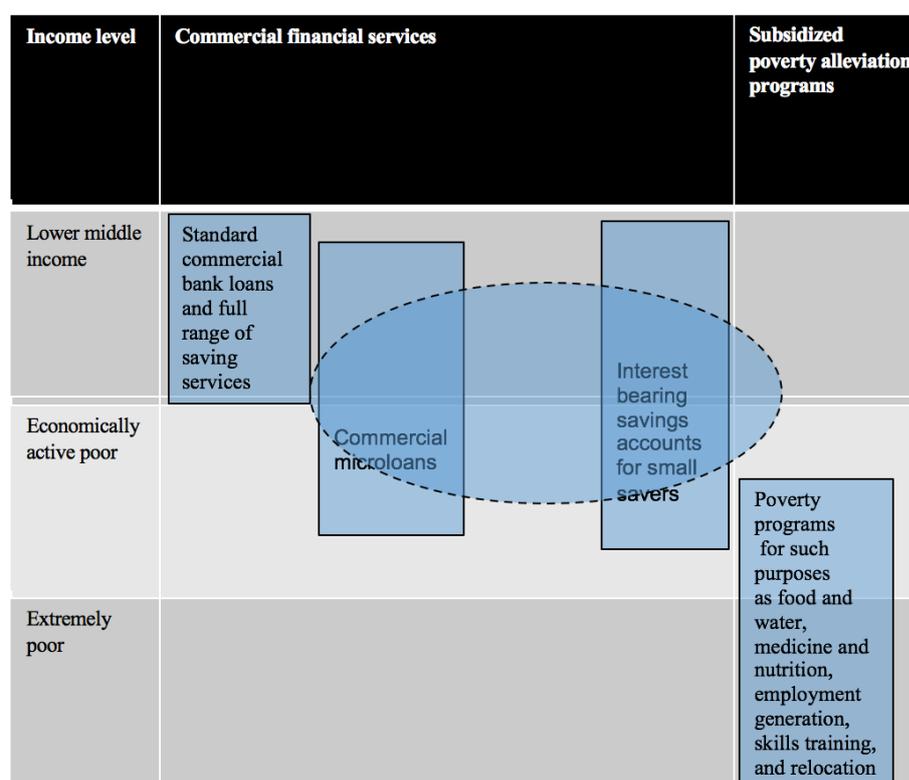


Figure 1: Financial services in the “poverty alleviation toolbox”

Source: Robinson, 2002: p.21

Hence, the third column shows the tools funded by direct subsidies or grants. Microfinance is targeted to the economically active poor to promote entrepreneurial activity on a commercial basis. Therefore, the target population of women in this study is shown (marked with a dotted ellipse) in Figure 1 who belongs to economically active and lower-income categories

## 2. Materials and Methods

### 2.1 Conceptual Framework

The foundation of the entire research project is based on the conceptual framework. If explained further, a framework is a logically derived and elaborated network of associations of variables relevant to the problem situation and identified through processes such as interviews, observation, and literature review (Sekaran & Bougie, 2010). The basic features of the schematic diagram have been illustrated in Figure 2. The schematic diagram of the conceptual model helps to visualize relationships among the variables. Important relationships that were theorized to exist among the variables are shown in this model. The basis for constructing the model was the past literature, interviews, and focus group discussions with the women using microfinance services and interviews held with industry experts and managers of MFIs. The model consists of five different service components of microfinance; microcredit, micro-savings, micro-insurance, business-support and skills development (Bernard, 2014), and the moderating variable which lead to the entrepreneurial success of women.

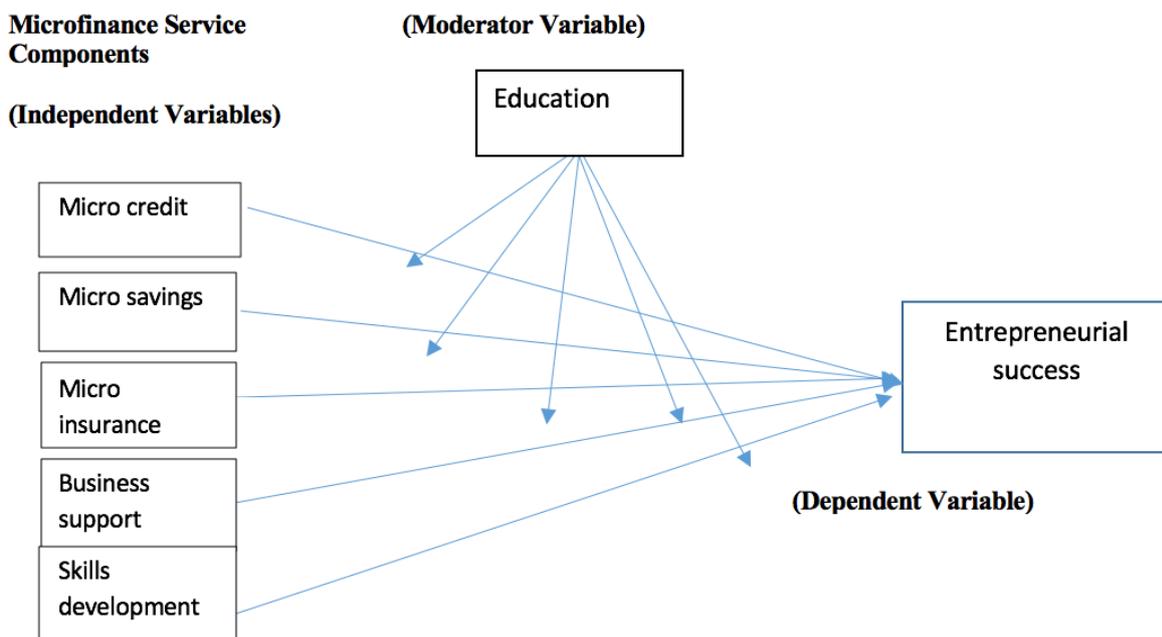


Figure 2: The relationship of microfinance variables and effect of moderating variable

Source: Developed by the Author

To study the nature and magnitude of the association between their level of education on the relationship between entrepreneurial success and each of the microfinance service components, six testable hypotheses were developed.

The following had been identified as research hypotheses for this study to understand the relationship between the usage of microfinance components and entrepreneurial success of women. According to studies conducted by Roxin (2010) in Sierra Leone, a substantial impact of microfinance had been identified on women's economic empowerment. Kabeer (2005) had concluded that access to financial services had made an important contribution to the economic productivity and social well-being of poor women and their households. On the contrary, in India, Bangladesh, and Mexico microcredit had been criticized for high-interest rates and the use of microloans for personal consumption (Roodman, 2012). Therefore, the hypothesis (H1) can be stated as follows:

H1: There exists a relationship between the usage of microcredit by women and their entrepreneurial success. Crepon et al. (2010) and Banerjee et al. (2010) had established a positive impact of microfinance services on business income and profits based on their studies in Morocco and India, while Karlan & Zinman (2011) had concluded from their studies that increased access to microfinance in the Philippines had resulted in a reduction of the number of businesses run by entrepreneurs and the people employed. Therefore, the three following hypotheses can be developed.

H2: There exists a relationship between the usage of micro-savings by women and their entrepreneurial success.

H3: There exists a relationship between the usage of microinsurance by women and their entrepreneurial success.

H4: There is exists a relationship between usage of business support by women and their entrepreneurial success.

The poor training and lack of financial funding were major challenges for failing rural women achieving success in their enterprises in certain selected provinces in South Africa (Mogashoa, 2014). According to Hussain & Mahmood (2012), entrepreneurial attributes and characteristics of women were critical for the success of an enterprise in general and the improvement in a household with special reference to Pakistan. Raven & Le (2015) concluded by examining the outcomes of business training programs for women microcredit recipients in rural areas of Vietnam that business training can improve microenterprise performance including many other positive results, such as improved motivation, and perceptions of entrepreneurs. Therefore:

H5: There exists a relationship between the usage of skills development programs by women and their entrepreneurial success.

Further, the literature presented above on the influence of education on the relationship between entrepreneurial success and microfinance services, the following hypotheses can be developed. Therefore the sixth hypothesis can be developed as:

H6: Level of education moderates the relationship between the usage of microfinance services and entrepreneurial success of women entrepreneurs.

## *2.2 Data Collection and Measures*

For this purpose, primary data were gathered through a pre-tested questionnaire by conducting face to face interviews with 500 women using microfinance services from Non-Bank Financial Institutions (NBFIs) authorized and registered by the Central Bank of Sri Lanka operating in three Divisional Secretariats representing the total population of women entrepreneurs in the microfinance sector and employed factor analysis and multiple regression to determine the impact of usage of microfinance services on entrepreneurial success and to determine the moderation effect of level of education.

The survey was conducted over around six weeks beginning from August 2019 to December 2019, to collect data from around 500 women using microfinance services from three selected Divisional Secretariat Divisions to get a representative sample. The interviews were administered using a structured questionnaire through face to face interviews. Hence, it was able to maintain a little over 90% response rate from the respondents and there were 471 good questionnaires for evaluation. The data were collected from women using microfinance in the sample who had been engaged in microfinance projects for periods from at least two months to more than three years to address the research problems.

A pilot study was conducted for testing the questionnaire for wording, sequencing, and layout. It also helped in gaining familiarity with respondents, estimating response rates, and questionnaire completion times (Veal 2005). Also, the pilot test provided an opportunity for researchers to recheck the questions and to minimize errors and weaknesses associated with the questionnaire.

The demographic profile of the women using microfinance services was analyzed using the frequencies relevant to such factors (see Appendix 1).

### 2.2.1 Assessment of Measures: Reliability and Validity of Constructs.

This study uses factor analysis as a data reduction technique and to verify the conceptualization of constructs. The validity and reliability of the constructs are tested statistically. The intention is to remove highly correlated or redundant variables from the existing data and replacing with a relatively smaller number of variables.

The results from factor analysis are discussed in this section. This research model identifies six constructs concerning five independent variables of microfinance services (Bernard, 2015) namely; microcredit, micro-savings, micro-insurance, business support, skills development, and dependent variable entrepreneurial success.

### 2.3 Entrepreneurial Success

This particular construct had 8 items. Likert scale of 1 to 5, was used to measure the degree of disagreement to an agreement to a stated item/ statement. According to the descriptive statistics and inter-item correlation values, there is a moderate level of agreement in all 8 items given below.

- 1 Profits of the enterprise increased
- 2 Turnover of the enterprise grew
- 3 Employees of my enterprise increased
- 4 The products of my enterprise increased
- 5 The buyers of my enterprise increased
- 6 My household income increased
- 7 My household assets grew
- 8 My household savings increased

The correlations between the items in the construct are between 0.3 and 0.9. Exploratory Factor Analysis (EFA), the Kaiser-Meyer-Olkin (KMO) value was 0.928, much higher than 0.7 which is considered to be good (Hair et al., 2012). KMO statistic (0.928) for sampling adequacy indicates that the sample is adequate to compute a single factor from the underlying instruments (indicators). A significant statistic in Bartlett's Test of Sphericity also indicates that the correlations among measurement instruments exist. 57.6% of the total variation in the 8 items was explained by a single factor (Appendix 2).

The minimum factor loading is 0.657. Thus, the construct validity corresponding to Entrepreneurial success is well justified. Moreover, the Cronbach's alpha (0.912) indicates that all underlying instruments are internally consistent and therefore reliability of the same construct is justified. The mean for the 8 items was computed as Entrepreneurial Success (ES).

### 2.4 Microcredit

This particular construct had 5 items. Likert scale of 1 to 5, was used to measure the degree of disagreement to an agreement to a stated item/ statement. According to the descriptive statistics and inter-item correlation values, there is a moderate level of agreement in all 5 items given below.

- 1 Interest charged for the loan is reasonable
- 2 The procedure to obtain the loan is simple
- 3 The amount of the loan is sufficient
- 4 The repayment period given is sufficient
- 5 The repayment procedure of the loan is easy

The correlation between items in the construct is between 0.3 and 0.9. In exploratory factor analysis (EFA), the Kaiser-Meyer-Olkin (KMO) value was 0.866, much higher than 0.7 which is considered to be good (Hair et al., 2012).

KMO statistic (0.866) for sampling adequacy indicates that the sample is adequate to compute a single factor from the underlying instruments (indicators). A significant statistic in Bartlett's Test of sphericity also indicates that the correlations among measurement instruments exist. 57.3% of the total variation in the 5 items is

explained by a single factor (Appendix 2). The minimum factor loading is 0.733. Thus, the construct validity corresponding to microcredit is well justified. Moreover, Cronbach's alpha (0.874) indicates that all underlying instruments are internally consistent and therefore reliability of the same construct is justified. The mean for the 5 items was computed and saved as microcredit (MC).

### *2.5 Micro Savings*

This particular construct had 4 items. Likert scale of 1 to 5, was used to measure the degree of disagreement to an agreement to a stated item/ statement. According to the descriptive statistics and inter-item correlation values, there is a moderate level of agreement in all 4 items given below.

- 1 Interest rates on savings are reasonable
- 2 Attractive options are on offer for savings
- 3 The procedures for savings are simple
- 4 Savings withdrawal is easy

The correlations between the items in the construct are between 0.3 and 0.9. Exploratory Factor Analysis (EFA), the Kaiser-Meyer-Olkin (KMO) value was 0.821, much higher than 0.7 considered to be good (Hair et al., 2012). KMO statistic (0.821) for sampling adequacy indicates that the sample is adequate to compute a single factor from the underlying instruments (indicators). A significant statistic in Bartlett's Test of Sphericity also indicates that the correlations among measurement instruments exist. 61.1% of the total variation in the 4 items is explained by a single factor. The minimum factor loading is 0.645 (Appendix 2). Thus, the construct validity corresponding to microcredit is well justified. Moreover, the Cronbach's alpha (0.859) indicates that all underlying instruments are internally consistent and therefore reliability of the same construct is justified. The mean for the 4 items was computed and saved as micro-savings (MS) to be used in further analysis.

### *2.6 Micro Insurance*

This particular construct had 5 items. Likert scale of 1 to 5, was used to measure the degree of disagreement to an agreement to a stated item/ statement. According to the descriptive statistics and inter-item correlation values, there is a moderate level of agreement in all 5 items given on the next page (ie. pg.10).

- 1 Benefits offered in Insurance policies are effective
- 2 There is a wide selection of insurance policies
- 3 It is compulsory to obtain an insurance policy
- 4 Premiums charged for insurance policies are reasonable
- 5 Insurance claims are paid promptly

The correlation between items in the construct is between 0.3 and 0.9. Exploratory Factor Analysis (EFA), the Kaiser-Meyer-Olkin (KMO) value was 0.846, much higher than 0.7 considered to be good (Hair et al., 2012). KMO statistic (0.846) for sampling adequacy indicates that the sample is adequate to compute a single factor from the underlying instruments (indicators). A significant statistic in Bartlett's Test of Sphericity also indicates that the correlations among measurement instruments exist. 55.4% of the total variation in the 5 items is explained by a single factor. The minimum factor loading is 0.724. Thus, the construct validity corresponding to microcredit is well justified (Appendix 2). Moreover, the Cronbach's alpha (0.852) indicates that all underlying instruments are internally consistent and therefore reliability of the same construct is justified. The mean for the 5 items was computed and saved as micro-insurance (MI).

### *2.7 Business Support*

This particular construct had 5 items. Likert scale of 1 to 5, was used to measure the degree of disagreement to an agreement to a stated item/ statement. According to the descriptive statistics and inter-item correlation values, there is a moderate level of agreement in all 5 items given below.

- 1 Assistance from Business Support programs for marketing was useful
- 2 Assistance from Business Support programs for product improvement was adequate
- 3 Assistance from Business Support programs for operating my enterprise was useful
- 4 The knowledge given by Business Support programs to improve products was sufficient
- 5 The knowledge given by Business Support programs on marketing was sufficient

The correlation between the items in the construct is between 0.3 and 0.9. Exploratory Factor Analysis (EFA), the Kaiser-Meyer-Olkin (KMO) value was 0.879, much higher than 0.7 considered to be good (Hair et al., 2012). KMO statistic (0.879) for sampling adequacy indicates that the sample is adequate to compute a single factor from the underlying instruments (indicators). A significant statistic in Bartlett's Test of Sphericity also indicates that the correlations among measurement instruments exist. A single factor was extracted that explained 66.3% of the total variation in the 5 items. The minimum factor loading is 0.783. Thus, the construct validity corresponding to microcredit is well justified. Moreover, Cronbach's alpha (0.907) indicates that all underlying instruments are internally consistent and therefore reliability of the same construct is justified (Appendix 2). The mean for the 5 items was computed and saved as business support (BS).

### *2.8 Skills Development*

This particular construct had 4 items. Likert scale of 1 to 5, was used to measure the degree of disagreement to an agreement to a stated item/ statement. According to the descriptive statistics and inter-item correlation values, there is a moderate level of agreement in all 4 items given below.

- 1 I benefitted from skills development programs in running my business
- 2 Number of skills development programs conducted were adequate
- 3 Skill development programs facilitated me in improving my social status
- 4 Skills development programs facilitated me in improving my family life

The correlation between each item in the construct is between 0.3 and 0.9. Exploratory Factor Analysis (EFA), the Kaiser-Meyer-Olkin (KMO) value was 0.802, which is much higher than 0.7 considered to be good (Hair et al., 2012). KMO statistic (0.802) for sampling adequacy indicates that the sample is adequate to compute a single factor from the underlying instruments (indicators). A significant statistic in Bartlett's Test of Sphericity also indicates that the correlations among measurement instruments exist. 62.8% of the total variation in the 5 items is explained by a single factor. The minimum factor loading is 0.657. Thus, the construct validity corresponding to microcredit is well justified. Moreover, Cronbach's alpha (0.869) indicates that all underlying instruments are internally consistent and therefore reliability of the same construct is justified (Appendix 2). The mean for the 5 items was computed and saved as Skills Development (SK).

### *2.9 Reliability of Individual Items*

The reliability of individual items was assessed by examining their internal consistency values using construct reliability, Average Variance Extracted (AVE), and Cronbach's alpha values. The summary of Individual Items Reliability of the constructs is given in Table 1.

Generally, composite reliability and AVE values above 0.9 and 0.5 respectively, are acceptable (Viljoen & Dunga, 2013). Further, Cronbach's Alpha value should exceed a minimum value of 0.7 (Hair et al., 2010). Hence the relevant values are given in Table 1 satisfy the minimum threshold values and the reliability of items was adequate. Hence data were consistent and reliable for further analysis.

Table 1: Summary of Individual Items Reliability of the Constructs

Construct	No. of Items	AVE	Composite Reliability	Cronbach's Alpha
Entrepreneurial success	8	0.57	0.943	.912
Microcredit	5	0.59	0.926	.874
Micro-savings	4	0.61	0.916	.859
Micro-insurance	5	0.55	0.915	.832
Business support	5	0.66	0.943	.907
Skills development	4	0.62	0.922	.869

### 2.10 The validity of the Constructs

Besides factor analysis, the discriminant validity was tested using AVE. As per Hair et al. (2010) the AVE should be greater than 0.5 and higher than the corresponding inter-construct squared correlations. Table 2 presents the AVE for each construct and square of the correlations between each construct and the others.

The values in Table 2 confirm the discriminant validity of each construct (i.e. AVE of each construct was greater than the corresponding inter-construct squared correlations). Hence, it can be concluded that discriminant validity has been achieved. Further, none of the correlation coefficients of corresponding inter-construct correlations was above 0.85, indicating the absence of multicollinearity issue in the model. Hence, this was not in violation of the assumption of independence of the predictors.

Table 2: Inter –construct Squared Correlations Matrix

	ES	MC	MS	MI	BS	SK
ES	0.57*					
MC	0.35**	0.59				
MS	0.34	0.43	0.61			
MI	0.28	0.39	0.58	0.55		
BS	0.27	0.36	0.41	0.44	0.66	
SK	0.31	0.38	0.38	0.33	0.75	0.62

\* AVE

\*\* Squared correlation coefficient

Therefore, the above analysis shows that all six constructs used in this study satisfy the validity and reliability requirements.

The mean scores of the six constructs are shown in Table 3.

Table 3: Descriptive statistics and correlations among five microfinance service variables

Items	Descriptive statistics						
	Mean	SD	MC	MS	MI	BS	SK
MC	4.0764	.77817	1.000	.599	.623	.653	.616
MS	4.0993	.80921	.599	1.000	.662	.644	.806
MI	3.9949	.85719	.623	.662	1.000	.762	.577
BS	4.0101	.86758	.653	.644	.762	1.000	.623
SK	4.0706	.81602	.616	.806	.577	.623	1.000

There is a moderate level of association between the five constructs (Table 3). The mean values for all the constructs are towards 4. Hence there exists a moderate level of association among the five constructs. The

correlations for each construct between them are between 0.3 and 0.9. Thus microfinance service variables correlate adequately. The highest correlation between each factor does not exceed 0.80, as such, there is no issue concerning multicollinearity between the five microfinance service variables.

### 3. Results

#### 3.1 The Fitness of the model with direct effects due to independent variables

Table 4: Results of Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.666	.444	.438	.62689	1.114

According to Table 4, the basic model can explain 44.4% of the variation of entrepreneurial success of women by the five predictor variables identified in the model, namely microcredit, micro-savings, micro-insurance, business support and skills development programs.

Table 5: Results of Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	145.743	5	29.149	74.171	.000 <sup>b</sup>
Residual	182.742	465	.393		
Total	328.484	470			

Dependent Variable: ES

Predictors: (Constant), SK, MI, MC, MS, BS

According to Table 5, the p-value is less than .001 in ANOVA, the overall model appears to be significant with at least one independent variable in the model.

Table 6: The table of Regression Coefficients for Entrepreneurial Success (ES) upon Microfinance Services

Variables	Unstandardized Coefficients		Standardized Coefficients	t	P-value.	VIF
	B	Std. Error	Beta			
(Constant)	.839	.172		4.873	.000	
Microcredit	.298	.054	.277	5.555	.000	2.080
Bus. Support	.005	.066	.005	.070	.944	3.449
Micro Ins	.068	.056	.069	1.199	.231	2.803
Micro Saving	.208	.057	.216	3.663	.000	2.898
Skills Deve	.212	.063	.207	3.365	.001	3.171

Dependent Variable: Entrepreneurial Success

Table 6 above depicts that out of five microfinance service variables, p-values of Business Support and Micro Insurance are more than 0.05. Hence, Business Support and Micro Insurance are not significant predictors of the Entrepreneurial Success of women using microfinance services.

The p-values for Microcredit, Micro Savings, and Skills Development are less than 0.05. As such, Microcredit, Micro Savings, and Skills Development are significant predictors of the Entrepreneurial Success of women using microfinance services. Further, the variance inflation factor (VIF) values success is less than 5. Hence, there is no problem of multicollinearity. Among the tested variables, Microcredit, Micro Savings, and Skills Development are significant predictors of entrepreneurial success of women using microfinance services, and 44.4% of the variation in Entrepreneurial success (ES) is explained by Microcredit (MC), Micro-savings (MS) and Skills development (SK). The equation can be written as follows:

$$ES = 0.839 + 0.298(MC) + 0.208(MS) + 0.212(SK)$$

Table 7: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.592 <sup>a</sup>	.350	.349	.67474	
2	.645 <sup>b</sup>	.416	.414	.64002	
3	.665 <sup>c</sup>	.442	.438	.62663	1.120

a. Predictors: (Constant), MC      c. Predictors: (Constant), MC, MS, SK  
b. Predictors: (Constant), MC, MS      d. Dependent Variable: ES

The Stepwise Regression of the Entrepreneurial Success upon the Microfinance Service dimensions (Basic Model) is given in Table 7. Microcredit explained 35% of the variation in entrepreneurial success (ES). When variables Micro-savings and Skills development were entered another 6.6% and 2.6% of the variation of the independent variable ES was explained respectively. All three models with p values < 0.001 are significant (Table 8).

Table 8: Results of Analysis of Variance -ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	114.962	1	114.962	252.512	.000 <sup>b</sup>
	Residual	213.523	469	.455		
	Total	328.484	470			
2	Regression	136.779	2	68.389	166.955	.000 <sup>c</sup>
	Residual	191.706	468	.410		
	Total	328.484	470			
3	Regression	145.110	3	48.370	123.184	.000 <sup>d</sup>
	Residual	183.375	467	.393		
	Total	328.484	470			

- a. Dependent Variable: ES  
b. Predictors: (Constant), MC  
c. Predictors: (Constant), MC, MS  
d. Predictors: (Constant), MC, MS, SK

According to this equation; every unit of increase in MC, ES will increase by 0.298 provided MS and SK remained unchanged. Similarly, one unit of increase in MS and one unit of increase in SK will increase 0.208 and 0.212 increase in ES respectively if the other two variables remained unchanged. This means that the highest level of a direct effect on ES was brought by MC and the effect of the other two variables MS and SK brought lesser effect contributing 0,208 and 212.

According to Table 8, the p-values are less than .001 in ANOVA, the overall model appears to be significant with at least one independent variable in the model.

Table 9: The table of Stepwise Regression Coefficients for Entrepreneurial Success (ES) upon Microfinance Services -Final Model

Variables	Unstandardized Coefficients		Standardized Coefficients	t	p-value	Collinearity Statistics VIF
	B	Std. Error	Beta			
(Constant)	.871	.169		5.163	.000	
Microcredit	.311	.052	.290	5.941	.000	2.080
Micro Saving	.247	.047	.257	5.221	.000	2.898
Skills Deve	.223	.048	.218	4.606	.000	3.171

Dependent Variable: Entrepreneurial Success (Only significant predictors are shown in the table)

Table 9 above further confirms that out of five microfinance service variables, only three variables; Microcredit, Micro Savings, and Skills Development are significant contributors in this model, with microfinance making the highest contribution. As such, Microcredit, Micro Savings, and Skills Development are significant predictors of the Entrepreneurial Success of women using microfinance services. Further, the variance inflation factor (VIF) values are less than 5. Hence, there is no problem of multicollinearity. In the residual plot, all the residual values were within plus and minus 3 and were at random. Further distribution of the residual was normal. The R-squared value increased from 0.350 to 0.442. This means 44.2% of the variation in ES can be explained by three service quality dimensions; MC, MS, and SK. According to beta values, microcredit (MC) affects the most on entrepreneurial success (ES) among those three significant variables. The equation can be written as follows:  
 $ES = 0.871 + 0.311(MC) + 0.247(MS) + 0.223(SK)$

### 3.2 The Fitness of the Model with interactions due to the moderating variable (Stepwise Regression)

To test the fitness of the full model with the moderating variables; Level of Education and Ethnicity, a regression model with stepwise selection is employed. The final model summary is shown in Tables 10, 11, and 12.

According to Table 10, 45.3% of the variation in Entrepreneurial Success (ES) is explained by the model. The value Durbin-Watson is 1.51 which is not too far from 2, however, this could indicate a slight autocorrelation.

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
4	.673	.453	.448	.62171	1.1

Table 11: Results of Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
4 Regression	148.853	4	37.213	96.538	.000 <sup>b</sup>
Residual	179.632	466	.385		
Total	328.484	470			

According to Table 11, the p-value is less than .001, which means that at least one of the variables can be used to model Entrepreneurial Success.

Table 12: The table of Regression Coefficients for Entrepreneurial Success (ES) upon Microfinance Services and Moderator variables

Variables	Unstandardized Coefficients		Standardized Coefficients	t	p-value.	Collinearity Statistics
	B	Std. Error	Beta			VIF
(Constant)	.882	.167		5.271	.000	
Microcredit	.314	.052	.292	6.039	.000	1.993
Micro-savings	.240	.047	.249	5.116	.000	2.026
Skills Deve	.218	.048	.213	4.552	.000	1.868
MS_ALplus	.076	.025	.107	3.116	.002	1.007

Dependent Variable: Entrepreneurial Success ( Only significant predictors are shown in the table)

According to Table 12, p-values for Microcredit, Micro-savings, Skills development are less than .001 which confirms our previous results that Microcredit, Micro-savings, and Skills development are significant predictors in explaining the variation in Entrepreneurial success. Further, the p-value moderating effect of the education level of respondents possessing higher than Advanced Level on the relationship between Micro-savings and Entrepreneurial Success is less than .05. Hence, the relationship between Micro-savings and Entrepreneurial success is moderated by educational qualifications higher than GCE Advanced Level. The standardized beta coefficients suggest that microfinance (.292) has the highest contribution in explaining the variation in Entrepreneurial while Micro-savings and Skills development have standardized coefficients .249 and .213 respectively. Since the VIF values are less than 5, there is no issue concerning multicollinearity (Denis, 2011). According to the residual analysis, it is evident that residuals can be assumed to follow a normal distribution. Because histogram appears to be symmetric while the normal probability plots indicate the linearity. The mean of the residuals is also close to zero. The scatter plot between predicted and residual values does not indicate major deviations from the constant variance assumption, except for the unusual behavior on the top right-hand side of the plot, which may be possibly due to the inclusion of the interaction effect on the model. Moreover, the Durbin Watson statistic which is 1.151 indicates a slight autocorrelation in residuals, however, negligible in the presence of a large sample.

The equation can be written as follows:

$$ES = 0.882 + 0.314(MC) + 0.240(MS) + 0.218(SD) + 0.076 (MS\_ALplus)$$

According to the p-value in ANOVA, the overall model appears to be significant with at least one independent variable in the model. In studying the coefficients variables Microcredit (MC). Micro Savings (MS) and Skills Development (SD) are significantly related to Entrepreneurial Success (ES) with positive coefficients. Out of moderating variables identified in this study, the educational level higher than has a significant positive impact on the relationship between Micro Savings and Entrepreneurial Success. None of the other moderating variables have a significant influence on the relationships between microfinance service variables and entrepreneurial success.

### 3.3 Findings of In-depth Interviews and observations

To find out reasons for the exclusion of micro-insurance and business support as significant variables for the entrepreneurial success of women using microfinance services, in-depth interviews were conducted.

#### 3.3.1 Microinsurance

The finding of the in-depth discussions is given in Exhibit-1 & 2. Three such discussions were held in the three geographic locations survey was conducted.

**Exhibit-1: Micro-insurance**

The micro-insurance benefits we as users of microfinance services have experienced, was not for us, our benefit. The objective of the micro-insurance policies was to ensure the repayment of the loan we have obtained to the micro finance organization, in case we find it not possible to re-pay due to an unforeseen incident such as an accident or major disaster in the family, we had to face with. Therefore we do not perceive micro-insurance as a service which would facilitate our entrepreneurial success.

The finding of the in-depth discussions on micro-insurance is given in Exhibit-1. Three such discussions were held in all three geographic locations survey was conducted. All three groups comprising of 8 women in each group who participated in the in-depth interviews expressed the same opinion about their perceptions and feelings about micro-insurance though their expressions were different.

**Business support****Exhibit-2: Business support**

We were given some introductory lessons on how to keep accounts and how to look for business opportunities. Other than these no programs were conducted with the objective of improving the products or services we offer to our clients as micro-entrepreneurs. Further microfinance organization we dealt with do not offer any assistance in disposing our products or finding clients for the services we offer. Therefore, we do not feel that we receive any support in conducting our business from the microfinance organization we were clients of.

The finding of the in-depth discussions on business support is given in Exhibit-2. Three such discussions were held in the three geographic locations survey was conducted. All three groups comprising of 8 women in each group who participated in the in-depth interviews expressed the same opinion about their perception of micro-insurance.

Since the data collection was through “face to face “interviews, it was able to observe the following regarding the influence of microfinance service dimensions on the entrepreneurial activities of women in the sample of women using such services.

Microcredit appears to be the most important service dimension of microfinance which impacts on the expansion of business opportunities and earning capacity. Microcredit had been the main source of setting up new businesses of these women. A vast majority of interviewees had been able to expand their existing businesses and start new ventures in potential areas identified by them. However, it was also observed that most of these women had obtained microcredit from some MFIs increasing their indebtedness. This appears to harm the successful operation of their entrepreneurial activities as they had become over-indebted hence causing delays in the re-payment of the loans they had obtained from MFIs.

According to a majority of respondents, micro-savings had been useful to them as an additional source of funding in the expansion and start of new ventures. Further, these savings had been useful in facing unexpected downturns in their business activities facilitating the risk-taking ability.

As seen in Exhibit 1 and 2, the perception of the usefulness of micro-insurance and business support was poor. However, the women who used microfinance services admitted that they need to improve their basic skills in doing business as most of their education level was low. Our field observations showed that skills development programs conducted by the MFIs had not catered to the needs of these women and not facilitated in developing

their skills. Further our discussions with the officers of MFIs confirmed this view and we also realized that MFIs had not given high priority for conducting skills development programs of these women who were their clients.

#### 4. Discussion

##### *4.1 Microcredit and Entrepreneurial Success.*

An essential component of microfinance services is microcredit which has a positive relationship with the entrepreneurial success of women entrepreneurs according to our study. This complies with the findings of past studies. Roxin (2010); Kabeer (2005) and Ameer (2013) confirmed this finding according to their research studies conducted in Sierra Leone, Pakistan, and Kenya respectively. The recent research studies conducted in countries such as Bangladesh, India, Tanzania, and China confirmed that microfinance services encompass financial and non-financial services. They also point out that many MFIs still focus on microcredit in offering their microfinance services. A research conducted in Pakistan to study the impact of microcredit on poverty reduction of female entrepreneurs supports that there is a positive relationship between these two variables (Hussain & Mahood, 2012). According to studies conducted in Uganda by Morris and Barnes (2005), it was concluded that microfinance had contributed to a reduction in financial vulnerability through diversification of income sources and accumulation of assets. However, there were some opposing results on microcredit according to studies conducted in India, Bangladesh, Nigeria, and Mexico. However, some of these studies had further highlighted the fact that this finding would have been due to implementation and performance-related issues of MFIs rather than connected to the concept of microfinance. Another argument of critiques of microfinance is that microfinance burdens the poor with additional debt rather than reducing their poverty. Microfinance contributes to the generation of employment by way of self-employment, financing setting-up new businesses, and for expanding existing businesses (Tilakeratna & Wickramasinghe, 2005). According to an impact assessment survey conducted by Colombge (2004) in Hambantota and Monaragala districts in Sri Lanka, the business performance of microfinance clients were better than other clients who are non-members of microfinance institutions(those who had not obtained microfinance services).

Although, there were few criticisms about the positive outcome of microcredit in achieving entrepreneurial success the studies conducted in Sri Lanka on microfinance confirmed its' positive contribution in achieving entrepreneurial activities and family wellbeing. Hence The empirical results of this study support and substantiate the first hypothesis H1 confirming a positive and significant relationship between usage of microcredit and entrepreneurial success.

##### *4.2 Micro-savings and Entrepreneurial Success.*

There exists a positive and significant relationship between micro-savings and entrepreneurial success as per the findings of this study. The results are in agreement with many a researcher in Sri Lanka and other countries as well.

The importance of savings can be considered in the client's point of view and that of microfinance institutions. Savings are an effective mechanism to clients for liquidity management (Manzoor & Jalil, 2014) and also savings are a useful tool to MFIs in three ways (a) important source for funds with low cost (b) lower liquidity risk compared to large savings (c) small deposits and savings are steadier capital source than reimbursing it from donor funds (Khurshed *et al.*, 2012). The MFIs are providing loans to their clients not only to increase their entrepreneurial activity but also to mobilize their savings through which the poor can secure their future and feel safe. According to most of the authors, savings would be useful in fulfilling the funding requirements for the expansion of current enterprises and the creation of new ones (Newman, Schwarz & Borgia, 2013). The results of quasi-experimental research conducted in Sri Lanka suggest that overall program participants who had benefited had been pro-poor. According to this study, concerning both household per capita income and savings of participants of the program had a positive impact for all low-income households (De Silva, 2012).

The empirical results of this study support and substantiate the second hypothesis H2, and this relationship is positive and significant according to the results of the regression model.

#### *4.3 Skills Development and Entrepreneurial Success.*

According to the findings of the study, there exists a positive and significant relationship between skills development and entrepreneurial success in Sri Lanka.

Shaw (2004) states that, though the businesses supported through microfinance can have lower barriers to entry, entrepreneurial women would still face financial, social, and cultural barriers to set-up and develop high growth businesses. According to Brixiova (2010), this would suggest a need for training for potential women entrepreneurs. Hence training in business management and networking was found to help promote entrepreneurial skills according to Karlan & Valdivia (2011). Managerial competencies are a set of knowledge, skills, behaviors, and attitudes that contribute to personal effectiveness (Underwood, 2012). Harris (2008) had found that the lack of managerial experience and skills are the main reasons for the failure of new firms. Further, it was pointed out that the lack of education and training had reduced the managerial capacity of new firms (Witboi & Ukpere, 2011). A few empirical studies conducted in Sri Lanka support this view (Attapattu, 2009; Ranasinghe, 2008). Ranasinghe (2008) has identified “competencies” as one of the six factors contributing to the success of women entrepreneurs in Sri Lanka. To develop competencies skills development programs are a requirement. This implies that skills development programs for women in microfinance have a positive impact on entrepreneurial success. The main objective of microfinance programs is the human development that is geared to both the economic and social uplift of their clients. MFIs offer supportive services to borrowers facilitating their human development enhancing their entrepreneurial activity. The objective of these services is to create sustainable changes in the lives and livelihood of the poor, women in particular (BRAC-Annual Report, 2005). No literature was found negating the importance of skills development concerning entrepreneurial success.

The results of this empirical study support and substantiate the fifth hypothesis H5 and this relationship is positive and significant according to the results of the regression.

#### *4.4 Micro-insurance and Entrepreneurial success*

According to the findings of the study, this relationship was not supported by the empirical evidence of this study. Though the scholars have identified micro-insurance as one of the factors of microfinance services, the relationship of this variable to entrepreneurial success had not been empirically tested according to the available literature. Sri Lankan NBFIs have formulated insurance schemes to recover non-payment of loans by the women entrepreneurs in case of a serious eventuality, from the insurer. Hence from women entrepreneurs, micro-insurance appears to have not been perceived as useful for entrepreneurial success. According to previous literature, it was not possible to find any specific findings of the relationship between micro-insurance provided to women in the microfinance sector and the entrepreneurial success of these entrepreneurs. The empirical results of this study do not support and substantiate the third hypothesis H3.

#### *4.5 Business support and Entrepreneurial Success*

According to the findings, the relationship between business support and entrepreneurial success is not significant though according to past researchers external support which includes institutional support has been identified as a contributing factor to entrepreneurial success (Ranasinghe, 2008). This may be due to the varying nature of external support offered by the MFIs in different environmental conditions. Our investigations revealed that some MFIs offer business support to the extent of disposing of the finished products of some of these entrepreneurs while some others offer business support in the form of technological development of products and business opportunity identification. According to the findings of this study, the relationship between business support and entrepreneurial success is not significant though according to past researchers external

support has been identified as a contributing factor to entrepreneurial success. The empirical results of this study do not support and substantiate the fourth hypothesis H4.

The overall results of the multiple regression analysis of the full model and the hypotheses tested are presented in Table 14.

Table 14: Results of Hypotheses tested in the Multiple Regression Model

Hypothesis	Results
H1: There exists a relationship between microcredit and entrepreneurial success of women using these services.	Supported
H2: There exists a relationship between the usage of micro-savings and the entrepreneurial success of women.	Supported
H3: There exists a relationship between the usage of microinsurance and the entrepreneurial success of women.	Not supported
H4: There exists a relationship between the usage of business support and the entrepreneurial success of women.	Not supported
H5: There exists a relationship between the usage of skills development programs and the entrepreneurial success of women.	Supported
H6: Level of Education of women moderate the relationship between usage of microfinance services and entrepreneurial success.	Supported

## 5. Contribution

A measure of entrepreneurial success may lead to the identification of current and future success of ventures and improve public policies facilitating the success of start-ups. In this study, indicators to measure the entrepreneurial success of women in the microfinance sector in Sri Lanka has been developed which predicts variations in the three variables identified for measuring entrepreneurial success namely growth of existing enterprises, creation of new enterprises which was introduced by Newman, Schwarz & Borgja (2013) in their conceptual framework and household/family development of women using microfinance services introduced from this study. This could be considered a major contribution to the theory in the field of microfinance.

The conceptual framework and research propositions developed in this study could be considered another significant contribution as it would be beneficial to researchers, policymakers and providers of microfinance in general as it helps them to understand the mechanisms by which provision of microfinance services can facilitate new enterprise creation, growth of existing enterprises and improve household/family affairs.

This study also fulfills the gap in the literature as researching the relationship of using individual services of microfinance to entrepreneurial success had not been available. As the individual relationship of each of the microfinance services and their significances have been estimated using regression models, service providers in the sector can decide what services are to be given priority in offering their service packages. This will in turn improve the resource utilization of the firms operating in the sector.

## 6. Research Limitations

In keeping with the scope of the research to study women entrepreneurs using microfinance services from commercially oriented organizations (as against non-governmental organizations which provide such services on

“no profit basis”) a survey of women receiving microfinance services from the Non-Bank Financial Institutions (NBFIs) registered by the Central Bank of Sri Lanka was conducted in obtaining data for the study. This decision is taken due to the non-availability of a sample frame to select a sample of women entrepreneurs using microfinance services. However, other than the NBFIs there are many other institutions providing microfinance services on a commercial basis to women entrepreneurs in Sri Lanka hence this can be considered as a limitation of the study.

## 7. Conclusions

According to the empirical results presented in this paper out of the five microfinance service components identified based on previous literature and observations carried out in the microfinance sector in Sri Lanka, usage of only three service dimensions are significant predictors of entrepreneurial success of women. Further, the moderator variable, the level of education was supported. The effect of the moderator variable was significant when women in microfinance have higher qualifications than GCE- Advanced level on the relationship between micro-savings and their entrepreneurial success and it has no impact on other relationships namely between usage of microcredit and entrepreneurial success, usage of skills development and entrepreneurial success.

Another important finding of this study was the determination of appropriate items for each construct representing five independent variables; namely microcredit, micro-insurance, business-support, and skills-development. Also, appropriate items representing entrepreneurial success were identified. These constructs have been tested statistically for their representativeness, validity, and reliability.

From the in-depth interviews, it was evident that statistical findings are supported by the ideas expressed by these women who used microfinance services. Further, it was felt that the differentiation between business support programs and skills development programs were not very much differentiated in the mind of microfinance service users. Further, it was evident that the MFIs have not paid sufficient attention to offering useful programs for developing the entrepreneurial skills of women and the scope of the business development programs had not covered important aspects of business development activities. Micro-insurance policies obtained by MFIs in Sri Lanka do not act as a risk-reducing instrument for women entrepreneurs but rather a safeguard mechanism for MFIs to collect their dues in case of unexpected events which will cause the inability for repayment of loans by the women. In considering the qualitative and quantitative findings both seem to be reinforcing each

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**Appendix 1: Table of frequencies of Demographic factors**

<b>Variable</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age</b>		
less 25	8	1.7
25-30	92	19.5
30-35	122	25.9
35-40	100	21.2
40-45	91	19.3
45-50	30	6.4
More 50	28	5.9
<b>Education</b>		
Up to GCE(OL)	430	91.3
Up to GCE(AL)	34	7.2
Up to Degree	7	1.5
Up to Post Graduate	0	0
<b>Ethnicity</b>		
Sinhalese	239	50.7
Tamil	171	36.3
Muslim	41	8.7
Other	20	
<b>Experience in Microfinance</b>		
1> year	90	19.1
1-2 years	259	55.0
2-3 years	85	18.0
More than 3 years	37	7.9
<b>Marital Status</b>		
Married	346	73.5
Single		
Others	51	10.8
<b>Religion</b>		
	74	15.7
Buddhist	143	30.4
Christian	135	28.7
Islam	64	13.6
Hindu	129	27.3

**Appendix 2: Factor Analysis**

<b>Construct</b>	<b>Measurement Items</b>	<b>Factor Loading</b>	<b>KMO Measure</b>	<b>Bartlett's test of Sphericity</b>
<b>Entrepreneurial Success</b>	Profits of my enterprise increased	0.790	0.928	0.000
	Turnover of my enterprise grew	0.829		
	Employees of my enterprise increased	0.632		
	The products of my enterprise increased	0.834		
	The buyers of my enterprise increased	0.816		
	My household tend to increased	0.764		
	My household assets increased	0.792		
	My household savings increased	0.833		
<b>Microcredit</b>	Interest charged for the loan was reasonable	0.778	0.866	0.000
	The procedure to obtain the loan was simple	0.084		
	The amount of the loan was sufficient	0.880		
	The loan repayment period was sufficient	0.884		
	The loan repayment procedure was easy	0.861		
<b>Micro-savings</b>	Interest on savings were reasonable	0.847	0.821	0.000
	Attractive options were on offer for savings	0.864		
	The procedures for savings were simple	0.851		
	Savings withdrawal was easy	0.838		
<b>Micro-insurance</b>	Benefits offered in insurance policies were effective	0.797	0.846	0.000
	There was a wide selection of insurance policies	0.800		
	It was compulsory to obtain an insurance policy	0.743		
	Premiums charged were reasonable	0.819		
	Insurance claims are paid promptly	0.806		
<b>Business support</b>	Assistance from business support programs for marketing was useful	0.878	0.879	0.000
	Assistance from business support programs for product was adequate	0.862		
	Assistance from business support programs for operating my enterprise was useful	0.861		
	Knowledge given from business support programs to improve product was sufficient	0.845		
	Knowledge given from business support programs on marketing was sufficient	0.850		
<b>Skills development</b>	I benefitted from skills development programs in running my business	0.874	0.880	0.000
	Number of skills development programs were adequate	0.872		
	Skills development programs facilitated me in improving my social status	0.873		
	Skills development programs facilitated in improving my family life	0.816		