Online ISSN: 2249-4588
Print ISSN: 0975-5853
DOI: 10.17406/GJMBR

Global Journal

of Management and Business Research: B

Economics and Commerce



Rate Volatility in Nigeria

Bank Intervention and Exchange

Highlights

Adoption Models at Firm Level

Literature Review of Technology

Discovering Thoughts, Inventing Future

VOLUME 20 ISSUE 6 VERSION 1.0

© 2001-2020 by Global Journal of Management and Business Research, USA

Volume 20 Issue 22 was originally issued as B6

Global Journal of Management and Business Research: B
Economics and Commerce

Global Journal of Management and Business Research: B
Economics and Commerce

Volume 20 Issue 6 (Ver. 1.0)

Open Association of Research Society

© Global Journal of Management and Business Research. 2020.

All rights reserved.

This is a special issue published in version 1.0 of "Global Journal of Science Frontier Research." By Global Journals Inc.

All articles are open access articles distributed under "Global Journal of Science Frontier Research"

Reading License, which permits restricted use. Entire contents are copyright by of "Global Journal of Science Frontier Research" unless otherwise noted on specific articles.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without written permission.

The opinions and statements made in this book are those of the authors concerned. Ultraculture has not verified and neither confirms nor denies any of the foregoing and no warranty or fitness is implied.

Engage with the contents herein at your own risk.

The use of this journal, and the terms and conditions for our providing information, is governed by our Disclaimer, Terms and Conditions and Privacy Policy given on our website http://globaljournals.us/terms-and-condition/menu-id-1463/

By referring / using / reading / any type of association / referencing this journal, this signifies and you acknowledge that you have read them and that you accept and will be bound by the terms thereof.

All information, journals, this journal, activities undertaken, materials, services and our website, terms and conditions, privacy policy, and this journal is subject to change anytime without any prior notice.

Incorporation No.: 0423089
License No.: 42125/022010/1186
Registration No.: 430374
Import-Export Code: 1109007027
Employer Identification Number (EIN):
USA Tax ID: 98-0673427

Global Journals Inc.

*(A Delaware USA Incorporation with "Good Standing"; **Reg. Number: 0423089**)*

Sponsors: Open Association of Research Society
Open Scientific Standards

Publisher's Headquarters office

Global Journals® Headquarters
945th Concord Streets,
Framingham Massachusetts Pin: 01701,
United States of America
USA Toll Free: +001-888-839-7392
USA Toll Free Fax: +001-888-839-7392

Offset Typesetting

Global Journals Incorporated
2nd, Lansdowne, Lansdowne Rd., Croydon-Surrey,
Pin: CR9 2ER, United Kingdom

Packaging & Continental Dispatching

Global Journals Pvt Ltd
E-3130 Sudama Nagar, Near Gopur Square,
Indore, M.P., Pin:452009, India

Find a correspondence nodal officer near you

To find nodal officer of your country, please email us at *local@globaljournals.org*

eContacts

Press Inquiries: *press@globaljournals.org*
Investor Inquiries: *investors@globaljournals.org*
Technical Support: *technology@globaljournals.org*
Media & Releases: *media@globaljournals.org*

Pricing (Excluding Air Parcel Charges):

Yearly Subscription (Personal & Institutional)
250 USD (B/W) & 350 USD (Color)

Editorial Board

Global Journal of Management and Business Research

Dr. John D. Theodore

American Military University
JDT Management Consultants, President.
D.B.A., Business Economy
University of South Africa
Ph.D. Aristotelian University
Business Administration
Ph.D. Administration, University of Kansas
USA

Prof. Moji Moatamedi

Honorary Vice Chair
Ph.D., at The University of Sheffield,
MBA, Manchester Business School
University of Manchester
UK

Dr. R. Allen Shoaf

B.A., M.A., Ph.D. Cornell University
Cornell University, Teaching Assistant in the English Department,
University of Florida, US

Professor Maura Sheehan

Professor, International Management
Director, International Centre
for Management & Governance Research (ICMGR)
Ph.D. in Economics
UK

Dr. Mehdi Taghian

Senior Lecturer
Faculty of Business and Law
BL Deakin Business School
Melbourne Burwood Campus
Australia

Dr. Carl Freedman

B.A., M.A., Ph.D. in English, Yale University
Professor of English, Louisiana State University, US

Dr. Agni Aliu

Ph.D. in Public Administration,
South East European University, Tetovo, RM
Asociater profesor South East European University,
Tetovo, Macedonia

Dr. Tsutomu Harada

Professor of Industrial Economics
Ph.D., Stanford University, Doctor of Business Administration, Kobe University

Dr. Wing-Keung Won

Ph.D., University of Wisconsin-Madison,
Department of Finance and
Big Data Research Center
Asia University,
Taiwan

Dr. Xiaohong He

Professor of International Business
University of Quinnipiac
BS, Jilin Institute of Technology; MA, MS, Ph.D.,.
(University of Texas-Dallas)

Dr. Carlos García Pont

Associate Professor of Marketing
IESE Business School, University of Navarra
Doctor of Philosophy (Management),
Massachussetts Institute of Technology (MIT)
Master in Business Administration, IESE, University of Navarra
Degree in Industrial Engineering,
Universitat Politècnica de Catalunya
Web: iese.edu/aplicaciones/faculty/facultyDetail.asp

Dr. Söhnke M. Bartram

Department of Accounting and Finance
Lancaster University Management School
Ph.D. (WHU Koblenz)
MBA/BBA (University of Saarbrücken)
Web: lancs.ac.uk/staff/bartras1/

Dr. Bassey Benjamin Esu

B.Sc. Marketing; MBA Marketing; Ph.D Marketing
Lecturer, Department of Marketing, University of Calabar
Tourism Consultant, Cross River State Tourism Development Department
Co-ordinator, Sustainable Tourism Initiative, Calabar, Nigeria

Dr. Dodi Irawanto

Ph.D., M.Com, B.Econ Hons.
Department of Management
Faculty of Economics and Business
Brawijaya University
Malang, Indonesia

Dr. Ivona Vrdoljak Raguz

University of Dubrovnik,
Head, Department of Economics and Business Economics,
Croatia

Dr. Yongbing Jiao

Ph.D. of Marketing
School of Economics & Management
Ningbo University of Technology
Zhejiang Province, P. R. China

Dr. Charles A. Rarick

Ph.D.
Professor of International Business
College of Business
Purdue University Northwest
Hammond, Indiana US

Yue-Jun Zhang

Business School,
Center for Resource and Environmental Management
Hunan University, China

Dr. Albrecht Classen

M.A. (Staatsexamen), Ph.D. University of Virginia, German
Director, Summer Abroad Program, Medieval Europe Travel Course

Dr. Brandon S. Shaw

B.A., M.S., Ph.D., Biokinetics, University of Johannesburg, South Africa
Professor Department of Sport and Movement Studies
University of Johannesburg, South Africa

Contents of the Issue

i. Copyright Notice
ii. Editorial Board Members
iii. Chief Author and Dean
iv. Contents of the Issue

1. Literature Review of Technology Adoption Models at Firm Level; Special Reference to E-Commerce Adoption. *1-9*
2. "An Alternative Investment Strategy for Common Man": Invest the Saving in Right Direction. *11-16*
3. Non-Linear Causal Link between Central Bank Intervention and Exchange Rate Volatility in Nigeria. *17-29*
4. Analysis of the Impact of Education on Poverty in Cameroon: An Application of the Nested Logit Model. *31-38*
5. Economic Impact of Public Expenditure in the Gambia. *39-53*

v. Fellows
vi. Auxiliary Memberships
vii. Preferred Author Guidelines
viii. Index

Volume 20 Issue 22
Originally issued as B6

Global Journal of Management and Business Research: B
Economics and Commerce
Volume 20 Issue 6 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Literature Review of Technology Adoption Models at Firm Level; Special Reference to E-Commerce Adoption

By Kapila Fonseka, Dr. Adam Amril Jaharadak, Dr. Murali Raman & Dr. Isuri Roche Dharmaratne

Management and Science University

Abstract- With the onset of the fourth industrial revolution, technology has become a decisive part of human lives, and is used to speed up the processes of individuals and firms. The connected life employing the internet such as the adoption of e-commerce, which is an innovative technology adoption by firms as part of their business strategies is also one of the elements in the fourth industrial revolution, The successful innovative adoption is a critical task for any company and therefore, during the past few decades, the researchers have applied a few technological adoption models for their studies at the firm level.

This paper aims to find-out the technological adoption models which were adopted by the researchers during the recent past for their technology adoption studies at a firm-level, especially on e-commerce adoption and implementation. Hence, this study focused on 50 empirical studies related to the technology adoption in different contexts within the past ten years and identified TOE and DOI theories, which are mostly applied or adopted by the researchers.

Keywords: adoption of e-commerce, e-business, technology adoption, TOE framework, DOI theory.

GJMBR-B Classification: JEL Code: L81



Strictly as per the compliance and regulations of:

© 2020. Kapila Fonseka, Dr. Adam Amril Jaharadak, Dr. Murali Raman & Dr. Isuri Roche Dharmaratne. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Literature Review of Technology Adoption Models at Firm Level; Special Reference to E-Commerce Adoption

Kapila Fonseka [α], Dr. Adam Amril Jaharadak [σ], Dr. Murali Raman [ρ] & Dr. Isuri Roche Dharmaratne [ω]

Abstract- With the onset of the fourth industrial revolution, technology has become a decisive part of human lives, and is used to speed up the processes of individuals and firms. The connected life employing the internet such as the adoption of e-commerce, which is an innovative technology adoption by firms as part of their business strategies is also one of the elements in the fourth industrial revolution, The successful innovative adoption is a critical task for any company and therefore, during the past few decades, the researchers have applied a few technological adoption models for their studies at the firm level.

This paper aims to find-out the technological adoption models which were adopted by the researchers during the recent past for their technology adoption studies at a firm-level, especially on e-commerce adoption and implementation. Hence, this study focused on 50 empirical studies related to the technology adoption in different contexts within the past ten years and identified TOE and DOI theories, which are mostly applied or adopted by the researchers.

Keywords: adoption of e-commerce, e-business, technology adoption, TOE framework, DOI theory.

I. Introduction

In the technology advancement era, Information and Communication Technologies (ICT) have become an integral part of modern humans' lives. People use technology to speed-up their necessary processes (Sigerson, Li, Cheung, and Cheng, 2017). On the other hand, the internet becomes an essential service of every life, and eventually, it was the best innovator, which enhances the lives of many (Garín-Muñoz et al., 2019).

In the new era, a series of innovations that leverage the internet could have a significant impact on the global trades. Currently industries are at the commencing of the fourth industrial revolution. The third industrial revolution was launched in the 1960s and called as a computer or electronic revolution, which used electronics and information technology to automate production. The fourth revolution is building on the third revolution, and it is the fusion of technology (Chinoracký & Čorejová, 2019). The use of Artificial Intelligence (AI), Internet of Things (IoT), Cloud computing, Machine learning (ML), etc. involves speeding up the process and enhancing performance (Syam & Sharmab, 2018). The fourth industrial generation classifies firms into two main segments; wholly digital companies, such as Google, Yahoo, LinkedIn, Facebook, etc. which are purely internet-based business models. Partly digitalized or going-digital are the companies that are different from the existing "brick-and-mortar" businesses that are adopting digital technologies into their existing business (Eden, 2018). The connected life using the internet is also one of the elements in the fourth industrial revolution, such as the adoption of e-commerce (Xu, David, & Kim, 2018). E-commerce is a business strategy and modern trending art of trading goods and services using the internet. Predominantly, there are different types of e-commerce channels that are operating in the global market, and it is the place where all the parties involved in the transaction receive benefits equally. Both parties can make decisions while the occurrence of the transaction (Nair, 2017).

Several technology adoption models that were introduced by diverse researchers' in both perspectives of individual and firm-level of studies.

II. Models of Technology Adoption

The Technology Acceptance Model (TAM) developed by Davis (1986) is widely referred to as the Information System (IS) success model. TAM enables us to comprehend and explain user behavior in IS implementation. The model suggests two factors of "perceived usefulness" and "perceived ease of use" that influence the use and success of the system and address the issue of why users accept and reject the information system. This model is an adaptation of the well-known model of the social psychology domain; the Theory of Reasoned Action (TRA) model by Fishbein and Ajzen (1975) and explains how a person's attitude and subjective norms affect that person's behavioral intention. The Theory of Planned Behavior (TPB) by Ajzen (1985, 1991) is also an extension of TRA. It suggests that behavioral intention is jointly determined

Author α: Ph.D. Candidate, Management and Science University (MSU), Malaysia. e-mail: kapilafonseka@gmail.com
Author σ: Associate Professor, Dean, School of Graduate Studies, Management and Science University (MSU), Malaysia.
Author ρ: Professor, Director, MMU Business School, Multimedia University (MMU), Malaysia.
Author ω: Academic Advisor Ph.D., Management and Science University (MSU), Malaysia.

© 2020 Global Journals

by a person's attitude and subjective norms, like TRA, but with the addition of perceived behavioral control.

The TAM has been continuously studied and expanded. The two upgrades are TAM2 by Venkatesh and Davis (2000) and UTAUT by Venkatesh (2003). TAM2 rationalized the fact that perceived usefulness is depending on other factors, including the user's experience, voluntariness, subjective norm, image, job relevance, and result demonstrability. The theory of Acceptance and Use of Technology (UTAUT) aims to explain a user's intention to use IS and subsequent usage behavior. The theory holds the four constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions. The first three elements influence the behavioral intention, and the fourth element is a direct determinant of user behavior. Gender, age, experience, and voluntariness of use are moderating the impact of the four constructs on usage intentions and behavior.

The Diffusion of Innovations Theory (DOI) was introduced by Rogers (1995), which explained the process of the members of a social system, communicated an innovation through specific channels over time, known as diffusion. The theory explained that the innovation and adoption transpired after going through several stages, including understanding, persuasion, decision, implementation, and confirmation. The Technology, Organization, Environment (TOE) framework was introduced by Tornatzky and Fleischer (1990),which depicts the entire process of innovation, which entrepreneurs adopt and implement those innovations within the context of a firm. Moreover, the TOE framework is an organization-level theory that explains three different elements of the firm, which influence the adoption decisions of technological innovation.

In the recent past, the Integrated model for the adoption of e-commerce among SMEs (IMAES) was introduced by Sanchez-Torres and Juarez-Acosta (2019). This model, integrated with the theory of contingency, DOI, and TAM. Further, the Technology Readiness Index (TRI) was introduced by Parasuraman in 2000. The model contends the tendency of individuals to pursue and utilize new technologies to achieve their goals. TRI measures the readiness of individuals to use new technologies and consists of four dimensions: optimism, innovativeness, discomfort, and insecurity.

Nevertheless, the theories of TAM, TPB, TRA, and UTAUT concentrate primarily on the individual level perception of technology acceptance and DOI, TOE, and IMAES are at the firm level theory of technology adoption. TRI is the combination of individual and companies' level perception of technology readiness.

III. Firm-Level Technology Adoption Models

As described above, there are few firm-level perceptions of technology adoption models.

a) Technological, Organizational, Environmental (TOE) Framework

TOE framework of Tornatzky and Fleischer 1990, identifies three aspects of an enterprise's context, that influence the process of adoption and implementation of technological innovation: The context portrays both the internal and external technologies relevant to the firm. The technological context denotes the internal current practices and equipment of the firm, and available technologies external to the firm. The organizational context refers to the descriptive measures about the organization, such as scope, size, and managerial structure. The environmental context is the arena in which a firm conducts its business, which consists of its industry, competitors, and government involvement.

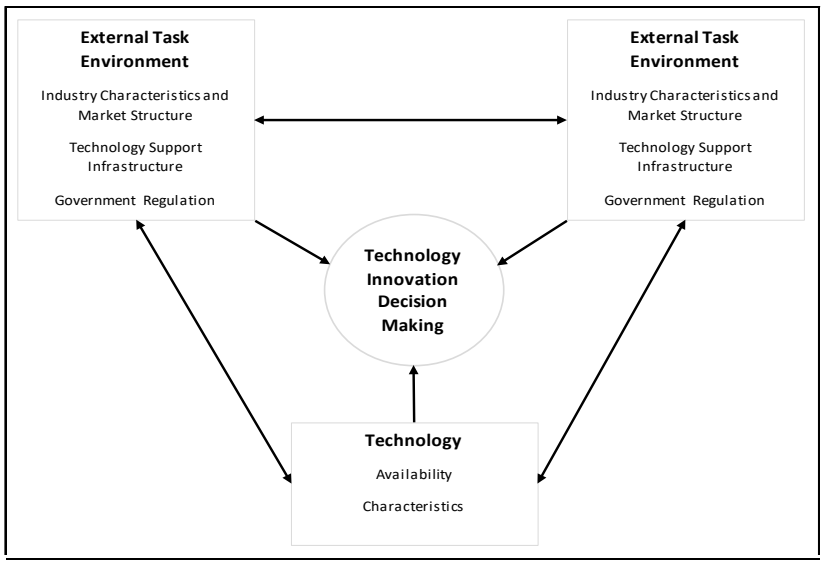


Figure 1: Technological, organizational, and environmental framework (Tornatzky and Fleischer 1990)

© 2020 Global Journals

b) Diffusion of Innovation Theory (DOI)

DOI is a theory of new ideas and technology spread through cultures, operating at the individual and firm-level. DOI theory sees innovations as being communicated through specific channels over time and within a particular social system (Rogers, 1995). Individuals possess different degrees of willingness to adopt innovations. Roger categorized the individuals into five adoption stages, such as innovators, early adopters, early majority, late majority, and laggards.

The innovation process in an organization is more complex. The DOI theory at the firm level is emphasized; the innovativeness is related to three independent variables such as Individual (leader) characteristics describes the leader attitude toward change. The Internal characteristics of organizational structure include; centralization of power and the control in a system are concentrated in the hands of a relatively few individuals, complexity is an organization member possess a relatively high level of knowledge and expertise, formalization is an organization emphasizes its members' following rules and procedures, interconnectedness is the units in a social system linked by interpersonal networks, organizational slack is uncommitted resources are available to an organization and size is the number of employees of the organization. The External characteristics of an organization refer to system openness.

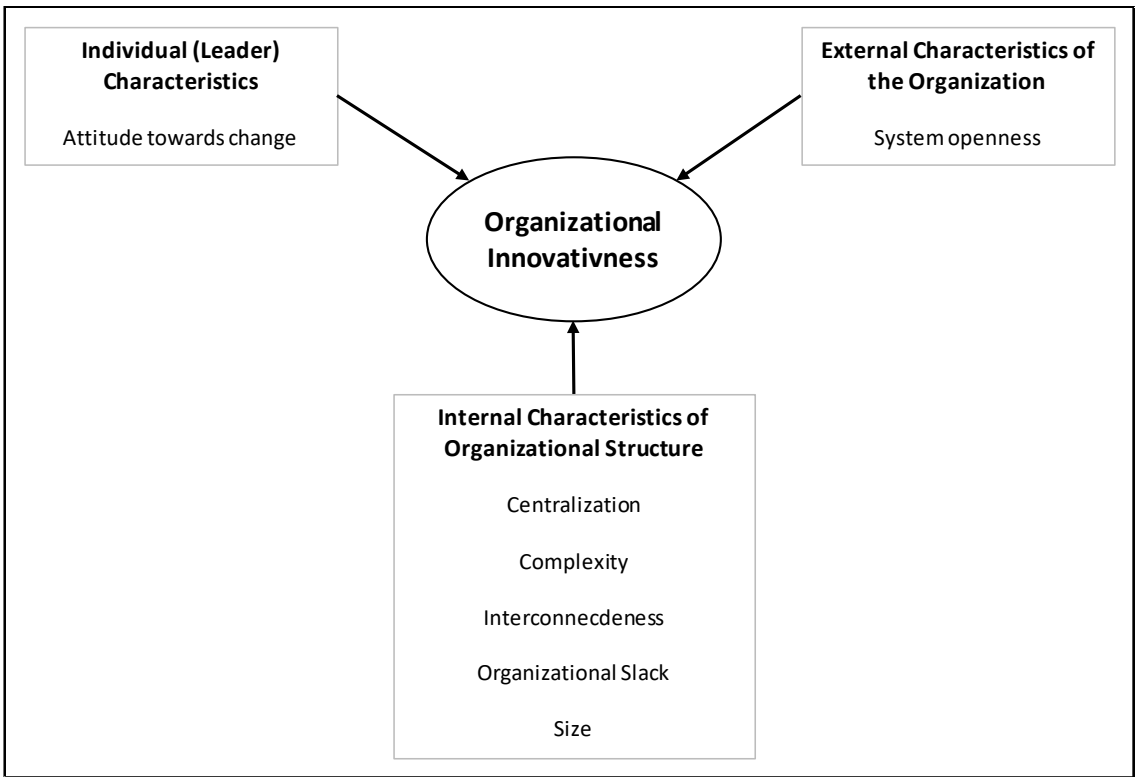


Figure 2: Diffusion of innovations (Rogers 1995)

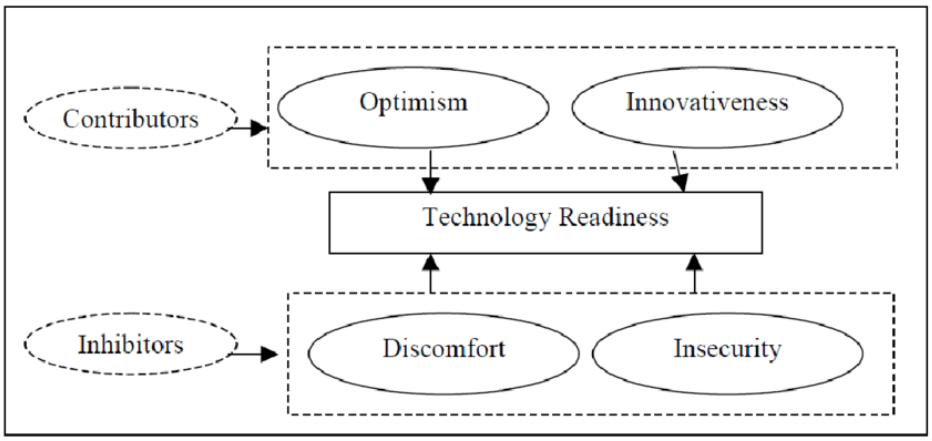
c) Technology Readiness Index (TRI)

TRI was developed by Parasuraman (2000) to measure the beliefs and thoughts of using new technology in general. There are two different perceptions of the use of technology in the individual and firm-level. The positive view consists of optimism and innovativeness, and the negative view consists of discomfort, and insecurity.

The optimism dimension represents a positive perception of the use of technology and its benefits of using technology to improve work efficiency and performance in the workplace and at home. The innovativeness dimension refers to the degree to experiment with technology and be at the forefront of trying out the latest technology-based products or services.

The dimension of discomfort indicates a sense of lack of technological mastery and confidence in using the latest technology. The insecurity dimension refers more to mistrust of technology-based transactions and doubts about the capabilities of the technology.

© 2020 Global Journals



Source: Parasuraman (2000, p. 34)

Figure 3: Technology Readiness Index (Parasuraman, 2000)

IV. Empirical Literature

This study focuses on technology adoption models at firm-level with special emphasis on e-commerce adoption. The researcher reviewed 50 empirical studies from 33 countries, representing nine (09) regions such as Asia, Africa, Middle East, European Union, North America, Central America, South America, Eastern Europe, and Oceania, within the past ten years from 2011 to 2020 and five (05) empirical studies for each year.

Table 1: Number of Countries (Regional-wise) and Studies

World Region	Countries	No of Countries	No of Studies	%
Asia	India, Sri Lanka, Pakistan, Indonesia, Malaysia, Singapore, Taiwan, Thailand, Vietnam, China, Korea	11	20	40%
Middle East	Iran, Iraq, Jordan, Kuwait, Saudi Arabia, UAE	6	12	24%
Africa	Ghana, Morocco, Kenya, Nigeria, Uganda, Zimbabwe, South Africa	7	8	16%
European Union	Greece, Spain, Portugal	3	3	6%
Eastern Europe	Turkey	1	2	4%
North America	USA, North America	2	2	4%
Central America	Mexico	1	1	2%
South America	Botswana	1	1	2%
Oceania	Fiji	1	1	2%
		33	**50**	

Twenty (20) studies from the Asian region were reviewed, which is 40% of the total empirical and twelve (12) studies from the Middle East and eight (08) studies from the African region. 80% of the empirical have found in Asian, the Middle East, and African regions (Table 1).

© 2020 Global Journals

Table 2: List of Empirical Studies and Theory Used

No.	Authors	Year	Country	Type of Study	Theory Used
1	Putra & Santoso	2020	Indonesia	E-Business	TOE
2	Abed	2020	Saudi Arabia	Social Commerce	TOE
3	Yoon, Lim, & Park	2020	Korea	Smart Farms	TOE
4	Ezzaouia & Bulchand-Gidumal	2020	Morocco	IT in Hotels	TOE
5	I. & Sm.	2020	Malaysia	E-Commerce	TOE
6	Oliveira, Martins, Sarker, Thomas, & Popovič	2019	Portugal	SaaS Adoption	TOE
7	Govinnage & Sachitra	2019	Sri Lanka	E-Commerce	TOE and TAM
8	Phiri	2019	Zimbabwe	E-Commerce	DOI and TAM
9	Dahbi & Benmoussa	2019	Morocco	E-Commerce	TOE
10	Yadav & Mahara	2019	India	E-Commerce	TOE
11	Alnaser, Alrawashed, & Saeed	2018	Jordan	E-Commerce	TRA, TPB, TAM and DOI
12	Zaboon, Ganawi, & Dakhil	2018	Iraq	E-Commerce	TOE
13	García-Moreno, Moreno, Nájera-Sanchez, & Pablos-Heredero	2018	Spain	E-Business	TOE
14	Mohamed, Jenal, & Hanawi	2018	Uganda	E-Commerce	TAM
15	Abbas & Abdullah	2018	Pakistan	E-Commerce	TPB
16	Lim, Baharudin, & Low	2017	Malaysia	E-Commerce	TOE
17	Chand & Kumar	2017	Fiji	E-Commerce	TOE
18	Basarir-Ozel & Mardikya	2017	Turkey	E-Commerce	TAM
19	Ismail, Tean, Mohd Sam, & Pei	2017	Malaysia	E-Commerce	TOE
20	Agus & Taufik	2017	Indonesia	E-Commerce	DOI
21	Esmaeilpour, Hoseini, & Jafarpour	2016	Iran	E-Commerce	TAM
22	Awiagah, Kang, & Lim	2016	Ghana	E-Commerce	TOE and TPB
23	Choochinprakarn	2016	Thailand	E-Commerce	TOE and eMICA
24	Al, Al-Masaeed, Al-Qaisi, & Hunaiti	2016	Jordan	E-Commerce	TOE
25	Chatzoglou & Chatzoudes	2016	Greece	E-Business	TOE
26	Rahayu & Day	2015	Indonesia	E-Commerce	TOE
27	Garg & Choeu	2015	South Africa	E-Commerce	TOE and DOI
28	Vargas-Hernández	2015	Mexico	E-Commerce	General
29	Al-Alawi and Al-Ali	2015	Kuwait	E-Commerce	TOE
30	Al-Bakri & Katsioloudes	2015	Jordan	E-Commerce	DOI and TAM
31	Astuti & Nasution	2014	Indonesia	E-Commerce	TRI
32	Alsaad, Mohamad, & Ismail	2014	Jordan	E-Commerce	DOI
33	Lin	2014	Taiwan	Supply Chain Management System	TOE
34	Aboelmaged	2014	UAE	E-Maintenance Readiness	TOE and TRI
35	Cao, Jones, & Sheng	2014	USA	Hospital RFID Patient Tracking	TOE
36	Poorangi, Khin, Nikoonejad, & Kardevani	2013	Malaysia	E-Commerce	DOI
37	Acilar & Karamasa	2013	Turkey	E-Commerce	TOE and DOI
38	Shemi & Procter	2013	Botswana	E-Commerce	TOE
39	Sila	2013	North America	E-Commerce	TOE
40	Triandini, Djunaidy, & Siahaan	2013	Indonesia	E-Commerce	TAM
41	Kenneth, Rebecca, & Eunice	2012	Kenya	E-Commerce	CAT, SM, IAM, TAM and ECBM
42	Ekong, Ifinedo, Ayo, & Ifinedo	2012	Nigeria	E-Commerce	TOE and DOI
43	Li & Xie	2012	China	E-Commerce	TOE
44	Huy, Rowe, Truex, & Huynh	2012	Vietnam	E-Commerce	TOE
45	Wang & Hou	2012	Singapore	E-Commerce	TOE
46	Tarawneh & Allahawiah	2011	Jordan	E-Commerce	TOE
47	Senarathna & Wickramasuriya	2011	Sri Lanka	E-Commerce	TOE
48	Ghobakhloo, Arias-Aranda & Benitez-Amado	2011	Iran	E-Commerce	TOE
49	Alam, Ali, & Jani	2011	Malaysia	E-Commerce	DOI
50	Alghamdi, Drew, & Al-Ghaith	2011	Saudi Arabia	E-Commerce	DOI

© 2020 Global Journals

The majority of technology adoption studies, particularly e-commerce adoption at the firm level, have adopted either TOE or DOI theory or combination of both. Limited studies have found that one of the main theories was adopted with another technology adoption theory (Table 02).

Putra and Santoso (2020) adopted the TOE framework in their study to investigate the interrelationships amongst contextual factors that influence e-business utilization and its impact on the performance of SMEs in Indonesia. Similarly, Yoon, Lim, and Park (2020) investigate the factors affecting the adoption of the smart farm in Korea, using the TOE framework. Ezzaouia and Bulchand-Gidumal (2020) applied the TOE model to examine factors in fluencing the adoption of information technology (IT) in the hotel industry in Morocco.

Oliveira, Martins, Sarker, Thomas, and Popovič (2019) used the TOE framework to understand the SaaS (Software as a service) adoption in Portugal. They further explore the moderating effects of the environmental context in the adoption of SaaS and how it shapes the direct in fluences of the technological and organizational setting of the TOE model. Also, Govinnage and Sachitra (2019) examine the adoption of e-commerce in the retail SMEs sector by using the TOE framework and TAM in the Sri Lankan context.

E-commerce adoption and its impact on customer satisfaction by using TRA, TPB, TAM, and DOI theories were investigated by Alnaser, Alrawashed, and Saeed (2018) in Jordan. Moreover, García-Moreno, Moreno, Nájera-Sanchez, and Pablos-Heredero (2018) used the TOE framework to study the organizational factors impacts on e-business adoption in Spain.

Indeed, Aboelmaged (2014) applied the TOE and TRI theories to analyze the TOE effects on e-maintenance readiness in manufacturing firms in the United Arab Emirates. Furthermore, Lin (2014) used TOE to study the adoption of electronic supply chain management systems in Taiwan, and Cao, Jones, and Sheng (2014) used the TOE framework for the study of the adoption of hospital RFID patient tracking in the USA. DOI theory was adopted by Poorangi, Khin, Nikoonejad, and Kardevani (2013) to examine the e-commerce adoption in practitioner firm SMEs in Malaysia.

Table 3: Number of Empirical for each Theory

Theory	No of Studies	%
TOE	27	54%
DOI	5	10%
TAM	4	8%
TOE and DOI	3	6%
TOE and TAM	1	2%
TOE and TRI	1	2%
TOE and TPB	1	2%
TOE and eMICA	1	2%
DOI and TAM	2	4%
TRI	1	2%
TPB	1	2%
TRA, TPB, TAM and DOI	1	2%
CAT, SM, IAM, TAM and ECBM	1	2%
General	1	2%
	50	

According to the empirical analysis (Table 3), the majority of the studies, 54% (27) have used the TOE framework to examine the technology adoption, and 10% (05) have adopted DOI theory for their studies. Another 8% (04) applied TAM and 6% (03) used TOE and DOI both for their studies.

© 2020 Global Journals

Oliveira and Martins (2010), study reiterates that the majority of firms in 27 countries of the European Union had used the TOE framework for technology adoption studies.

V. Conclusion

The purpose of this review is to identify theoretical models that were commonly adopted by the researchers for the technology adoption studies at the firm level, especially in e-commerce adoption and implementation, in different contexts.

Hence, based on the extensive review of the 50 empirical studies conducted in 33 countries, it is evident that the TOE was the most adopted framework at the firm level of technology adoption studies within the past 10 years. Technological-Organizational-Environmental factors are considered as the fundamental elements of innovative technology adoption in any organization. The DOI theory is the second-largest theory applied by the researchers.

This study helps future researches and recommends them to adopt these commonly tested theories in different contexts in the recent past, especially e-commerce related adoption studies at firm level.

References Références Referencias

1. Abbas, A., & Abdullah, S. (2018). Affecting Factors to Intentions to Adoption of E-Commerce Technologies in SMEs of Pakistan. The Journal of Social Sciences Research, (SPI4). doi: 10.32861/jssr.spi4.147.155.
2. Abed, S. S. (2020). Social commerce adoption using TOE framework: An empirical investigation of Saudi Arabian SMEs. International Journal of Information Management, 53, 102118. doi: 10.1016/j.ijinfomgt.2020.102118.
3. Aboelmaged, M. G. (2014). Predicting e-readiness at firm-level: An analysis of technological, organizational and environmental (TOE) effects on e-maintenance readiness in manufacturing firms. International Journal of Information Management, 34(5), 639–651. doi: 10.1016/j.ijinfomgt.2014.05.002
4. Acilar, A., &Karamasa, Ç. (2013). Factors Affecting E-Commerce Adoption by Small Businesses in a Developing Country. ICT Influences on Human Development, Interaction, and Collaboration, 174–184. doi: 10.4018/978-1-4666-1957-9.ch010.
5. Agus, &Taufik, H. (2017). Adoption Model of E-Commerce from SMEs Perspective in Developing Country Evidence – Case Study for Indonesia. European Research Studies Journal, XX (Issue 4B), 227–243. doi: 10.35808/ersj/887.
6. Al, M., Al-Masaeed, S., Al-Qaisi, L., &Hunaiti, Z. (2016). E-Commerce Adoption at Customer Level in Jordan: an Empirical Study of Philadelphia General Supplies. International Journal of Advanced Computer Science and Applications, 7(11). doi: 10.14569/ijacsa.2016.071125
7. Al-Alawi, A. I., & Al-Ali, F. M. (2015). Factors Affecting e-Commerce Adoption in SMEs in the GCC: An Empirical study of Kuwait. Research Journal of Information Technology, 7(1), 1-21. doi: 10.3923/rjit.2015.1.21
8. Alam, S. S., Ali, M. Y., & Jani, M. F. M. (2011). An Empirical Study of Factors Affecting Electronic Commerce Adoption Among Smes In Malaysia / Veiksnių, TurinčiųĮtakos Elektorine iPrekybai, Studija: MalaizijosPavyzdys. Journal of Business Economics and Management, 12(2), 375–399. doi: 10.3846/16111699.2011.576749
9. Al-Bakri, A. A., & Katsioloudes, M. I. (2015). The factors affecting e-commerce adoption by Jordanian SMEs. Management Research Review, 38(7), 726-749. doi:10.1108/mrr-12-2013-0291
10. Alghamdi, R., Drew, S., & Al-Ghaith, W. (2011). Factors Influencing e-commerce Adoption by Retailers in Saudi Arabia: a qualitative analysis. The Electronic Journal of Information Systems in Developing Countries, 47(1), 1–23. doi: 10.1002/j.1681-4835.2011.tb00335.x
11. Alnaser, A. S. M., Alrawashed, N. H., & Saeed, M. A. (2018). Adoption of E-Commerce by SMEs and Its Impact on Customer Satisfaction. Advanced Social Research, 08(01).
12. Alsaad, A. K., Mohamad, R., & Ismail, N. A. (2014). The Moderating Role of Power Exercise in B2B E-commerce Adoption Decision. Procedia - Social and Behavioral Sciences, 130, 515–523. doi: 10.1016/j.sbspro.2014.04.060
13. Astuti, N. C., & Nasution, R. A. (2014). Technology Readiness and E-Commerce Adoption among Entrepreneurs of SMEs in Bandung City, Indonesia. Gadjah Mada International Journal of Business, 16(1), 69. doi: 10.22146/gamaijb.5468
14. Awiagah, R., Kang, J., & Lim, J. I. (2016). Factors affecting e-commerce adoption among SMEs in Ghana. Information Development, 32(4), 815–836. doi: 10.1177/0266666915571427
15. Basarir-Ozel, B., & Mardikya, S. (2017). Factors affecting E-commerce adoption: A case of Turkey. The International Journal of Management Science and Information Technology, 1-11(23).
16. Cao, Q., Jones, D. R., & Sheng, H. (2014). Contained nomadic information environments: Technology, organization, and environment influences on adoption of hospital RFID patient tracking. Information & Management, 51(2), 225–239. doi: 10.1016/j.im.2013.11.007
17. Chand, S., & Kumar, B. A. (2017). E-Commerce Adoption of Small and Medium Enterprises in Fiji. Fijian Studies, 15(02). Retrieved from https://www.researchgate.net/publication/321849476.

© 2020 Global Journals

18. Chatzoglou, P., & Chatzoudes, D. (2016). Factors affecting e-business adoption in SMEs: An empirical research. Journal of Enterprise Information Management, 29(3), 327-358. doi:10.1108/jeim-03-2014-0033
19. Chinoracký, R., & Čorejová, T. (2019). Impact of Digital Technologies on Labor Market and the Transport Sector. Transportation Research Procedia, 40, 994–1001. doi: 10.1016/j.trpro.2019.07.139
20. Choochinprakarn, N. (2016). Adoption of Electronic Commerce in Thai Travel Small and Medium Enterprises. International Journal of Business and Management, IV (1), 1–23. doi: 10.20472/bm.2016.4.1.001
21. Dahbi, S., & Benmoussa, C. (2019). What Hinder SMEs from Adopting E-commerce? A Multiple Case Analysis. Procedia Computer Science, 158, 811–818. doi: 10.1016/j.procs.2019.09.118
22. Eden, L. (2018). Chapter 1 the Fourth Industrial Revolution: Seven Lessons from the Past. Progress in International Business Research International Business in the Information and Digital Age, 15–35. doi: 10.1108/s1745-886220180000013002
23. Ekong, U. O., Ifinedo, P., Ayo, C. K., & Ifinedo, A. (2012). E-Commerce Adoption in Nigerian Businesses. Small and Medium Enterprises, 840–861. doi: 10.4018/978-1-4666-3886-0.ch041
24. Esmaeilpour, M., Hoseini, S. Y., & Jafarpour, Y. (2016). An Empirical Analysis of the Adoption Barriers of Ecommerce in Small and Medium sized Enterprises (SMEs) with implementation of Technology Acceptance Model. Journal of Internet Banking and Commerce, 21(2).
25. Ezzaouia, I., & Bulchand-Gidumal, J. (2020). Factors influencing the adoption of information technology in the hotel industry. An analysis in a developing country. Tourism Management Perspectives, 34, 100675. doi: 10.1016/j.tmp.2020.100675
26. García-Moreno, M., Moreno, S. M. G., Nájera-Sanchez, J. J., & Pablos-Heredero, C. D. (2018). The impact of organizational factors on-business adoption: An empirical analysis. Journal of Industrial Engineering and Management, 11(3), 466. doi: 10.3926/jiem.2378
27. Garg, A. K., &Choeu, T. (2015). The Adoption of Electronic Commerce by Small and Medium Enterprises in Pretoria East. The Electronic Journal of Information Systems in Developing Countries, 68(1), 1–23. doi: 10.1002/j.1681-4835.2015.tb00493.x
28. Garín-Muñoz, T., López, R., Pérez-Amaral, T., Herguera, I., & Valarezo, A. (2019). Models for individual adoption of ecommerce, eBanking and eGovernment in Spain. Telecommunications Policy, 43(1), 100–111. doi: 10.1016/j.telpol.2018.01.002.
29. Ghobakhloo, M., Arias-Aranda, D. and Benitez-Amado, J. (2011), "Adoption of e-commerce applications in SMEs", Industrial Management & Data Systems, Vol. 111 No. 8, pp. 1238-1269. https://doi.org/10.1108/02635571111170785.
30. Govinnage, D. Y., & Sachitra, K. M. V. (2019). Factors Affecting E-commerce Adoption of Small and Medium Enterprises in Sri Lanka: Evidence from Retail Sector. Asian Journal of Advanced Research and Reports, 1–10. doi: 10.9734/ajarr/2019/v6i230147
31. Huy, Le Van, et al. "An Empirical Study of Determinants of E-Commerce Adoption in SMEs in Vietnam." Journal of Global Information Management, vol. 20, no. 3, 2012, pp. 23–54., doi:10.4018/jgim.2012070102.
32. I., M., & Sm., S. (2020). A Study of the Effectiveness of E-Commerce Adoption among Small and Medium-sized Enterprise (SME) in Postnatal Care Services Industry: a Case Study in Selangor, Malaysia. International Journal of Psychosocial Rehabilitation, 24(1), 779–783. doi: 10.37200/ijpr/v24i1/pr200182
33. Ismail, A. F., Tean, W. S., Mohd Sam, M. F., & Pei, C. S. (2017). E-Commerce Adoption Among Retailing Malaysia's SMEs In Perspective of Technological-Organizational Environmental (TOE) Framework. International Journal of Economics, Commerce and Management, V(12).
34. Kenneth, W., Rebecca, M. N., & Eunice, A. (2012). Factors Affecting Adoption of Electronic Commerce among Small Medium Enterprises in Kenya: Survey of Tour and Travel Firms in Nairobi. International Journal of Business, Humanities and Technology, 2(4).
35. Li, P., & Xie, W. (2012). A strategic framework for determining e-commerce adoption. Journal of Technology Management in China, 7(1), 22–35. doi: 10.1108/17468771211207321
36. Lim, S. C., Baharudin, A. S., & Low, R. Q. (2017). Factors Influence SMEs in Malaysia to Adopt E-commerce: Moderating Roles of Perceived Strategic Value. Journal of Engineering and Applied Science, 12(06).
37. Lin, H.-F. (2014). Understanding the determinants of electronic supply chain management system adoption: Using the technology–organization–environment framework. Technological Forecasting and Social Change, 86, 80–92. doi: 10.1016/j.techfore.2013.09.001
38. Mohamed, A., Jenal, R., & Hanawi, S. A. (2018). The Impact of E-Commerce Adoption for Small and Medium Enterprise in Developing Country: A Case Study Uganda. Theoretical and Applied Information Technology, 96(18).

© 2020 Global Journals

39. Nair, K. S. (2017). Impact of E-Commerce on Global Business and Opportunities - A Conceptual Study. International Journal of Advanced Engineering and Management Research, Vol. 2(2), 2017th ser. Retrieved from https://www.researchgate.net/publication/316191305_Impact_of_E-Commerce_on_Global_Business_and_Opportunities_A_Conceptual_Study.
40. Oliveira, T, and Martins, M, F. (2010) "Firms Patterns of e-Business Adoption: Evidence for the European Union27" The Electronic Journal Information Systems Evaluation Volume 13 Issue 1 2010, (pp 47 - 56), available online at www.ejise.com
41. Oliveira, T., Martins, R., Sarker, S., Thomas, M., &Popovič, A. (2019). Understanding SaaS adoption: The moderating impact of the environment context. International Journal of Information Management, 49, 1–12. doi: 10.1016/j.ijinfomgt.2019.02.009
42. Phiri, A. (2019). Adoption of E-Commerce by the Small Scale Famers in Zimbabwe: An Empirical Analysis. International Journal of Academic Research Business and Social Sciences, 9(4), 32–43. doi: 10.6007/IJARBSS/v9-i4/5815
43. Poorangi, M. M., Khin, E. W., Nikoonejad, S., &Kardevani, A. (2013). E-commerce adoption in Malaysian Small and Medium Enterprises Practitioner Firms: A revisit on Rogers model. Anais Da Academia Brasileira De Ciências, 85(4), 1593–1604. doi: 10.1590/0001-37652013103512
44. Putra, P. O. H., & Santoso, H. B. (2020). Contextual factors and performance impact of e-business use in Indonesian small and medium enterprises (SMEs). Heliyon, 6(3). doi: 10.1016/j.heliyon.2020.e03568.
45. Rahayu, R., & Day, J. (2015). Determinant Factors of E-commerce Adoption by SMEs in Developing Country: Evidence from Indonesia. Procedia - Social and Behavioral Sciences, 195, 142–150. doi: 10.1016/j.sbspro.2015.06.423
46. Senarathna, R., & Wickramasuriya, H. (2011). Organizational Factors Affecting E-commerce Adoption in Small and Medium-sized Enterprises. Tropical Agricultural Research, 22(2), 204. doi: 10.4038/tar.v22i2.2829
47. Shemi, Alice P., and Chris Procter. "Explaining Contextual Factors Affecting e-Commerce Adoption Progression in Selected SMEs: Evidence from Botswana." International Journal of Management Practice, vol. 6, no. 1, 2013, p. 94., doi:10.1504/ijmp.2013.052319
48. Sigerson, L., Li, A. Y.-L., Cheung, M. W.-L., & Cheng, C. (2017). Examining common information technology addictions and their relationships with non-technology-related addictions. Computers in Human Behavior, 75, 520–526. doi: 10.1016/j.chb.2017.05.041.
49. Sila, Ismail. "Factors Affecting the Adoption of B2B e-Commerce Technologies." Electronic Commerce Research, vol. 13, no. 2, 2013, pp. 199–236., doi: 10.1007/s10660-013-9110-7.
50. Syam, N., & Sharmab, A. (2018). Waiting for a sales renaissance in the fourth industrial revolution: Machine learning and artificial intelligence in sales research and practice. Industrial Marketing Management, 69. Retrieved from https://www.sciencedirect.com/science/article/abs/pii/S0019850117302730?via=ihub.
51. Tarawneh, S., & Allahawiah, S. (2011). Factors affecting e-commerce adoption in Jordanian SMEs. European Journal of Scientific Research, 64(4), 497–506.
52. Triandini, E., Djunaidy, A., &Siahaan, D. (2013). Factors Influencing E-Commerce Adoption by SMEs Indonesia: A Conceptual Model. Lontar Komputer, 4(3).
53. Vargas-Hernández, J. G. (2015). Strategies for the Adoption of E-commerce. Journal of Global Economics, 03(04). doi: 10.4172/2375-4389.1000157.
54. Wang, H., & Hou, J. (2012). Factors Affecting E-commerce Adoption and Implementation in Small and Medium-Sized Enterprises. International Journal of Digital Content Technology and Its Applications, 6(7), 167–173. doi: 10.4156/jdcta.vol6.issue7.21.
55. Xu, M., David, J. M., & Kim, S. H. (2018). The Fourth Industrial Revolution: Opportunities and Challenges. International Journal of Financial Research, 9(2), 90. doi: 10.5430/ijfr.v9n2p90
56. Yadav, R., &Mahara, T. (2019). Factors Affecting E-Commerce Adoption by Handicraft SMEs of India. Journal of Electronic Commerce in Organizations, 17(4), 44–57. doi: 10.4018/jeco.2019100104
57. Yoon, C., Lim, D., & Park, C. (2020). Factors affecting adoption of smart farms: The case of Korea. Computers in Human Behavior, 108, 106309. doi: 10.1016/j.chb.2020.106309
58. Zaboon, A. A., Ganawi, N. K., & Dakhil, A. A. (2018). The Role of E-commerce Industry in the Sustainable Economic Development of Iraq. International Journal of Entrepreneurship, 22(Special Issue).

© 2020 Global Journals

This page is intentionally left blank

© 2020 Global Journals

Global Journal of Management and Business Research: B
Economics and Commerce
Volume 20 Issue 6 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

"An Alternative Investment Strategy for Common Man": Invest the Saving in Right Direction

By Dr. Anil Jain & Dr. Apurva Sarupria
Pacific Academy of Higher Education & Research University

Abstract- Exceptional alternative investments are compatible with investments other than public real estate, equity and debt. It includes investments from private property, hedge funds and managed futures, water equity, and real property and natural resource cooperation. In addition, the alternative investment industry starts fast - it grows and expands its ability to provide long term investment strategies, thereby attracting interest from a growing number of investors.

Investments other than these three traditional assets: cash, bonds and stocks are known as separate investments. This investment comes with the promise of greater returns, however, it is risky. The dangerous nature of these goods can be tied to the fact that they are not regulated, unlike the classes of traditional goods.

On the other hand, alternative investments can be classified as tangible and intangible investments. Some examples of tangible investments others are Wine, Stamps, Fine Art, Antique, Jewellery. examples of intangible investments are Hedge funds, Independent equity, Venture capital, Cryptocurrency & Derivative contracts. This paper provides an overview of a few examples of alternative investments.

Keywords: *alternative investment, strategies, modernization, risk.*

GJMBR-B Classification: *JEL Code: E22, E00*



Strictly as per the compliance and regulations of:

© 2020. Dr. Anil Jain & Dr. Apurva Sarupria. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

"An Alternative Investment Strategy for Common Man": Invest the Saving in Right Direction

Dr. Anil Jain [α] & Dr. Apurva Sarupria [σ]

Abstract- Exceptional alternative investments are compatible with investments other than public real estate, equity and debt. It includes investments from private property, hedge funds and managed futures, water equity, and real property and natural resource cooperation. In addition, the alternative investment industry starts fast - it grows and expands its ability to provide long term investment strategies, thereby attracting interest from a growing number of investors.

Investments other than these three traditional assets: cash, bonds and stocks are known as separate investments. This investment comes with the promise of greater returns, however, it is risky. The dangerous nature of these goods can be tied to the fact that they are not regulated, unlike the classes of traditional goods.

On the other hand, alternative investments can be classified as tangible and intangible investments. Some examples of tangible investments others are Wine, Stamps, Fine Art, Antique, Jewellery. examples of intangible investments are Hedge funds, Independent equity, Venture capital, Cryptocurrency & Derivative contracts. This paper provides an overview of a few examples of alternative investments.

Keywords: alternative investment, strategies, modernization, risk.

I. Introduction

India has been a nation of saviours. We were able to spend less on our money and save a higher amount of regular income for our future. This also means postponing current consumption for a better future.

Perhaps, we have not learned to invest our money wisely, over the years - as bank statistics are about to tell us. However, we have been doing well, relaxing for retirement, mainly because of this "saving" culture.

Investment is important because in today's world, earning money is not enough. You work hard to earn the money you earn. But that may not be ready for you to continue a comfortable lifestyle or achieve your dreams and goals. To do that, you need to make your money work hard for you. This is why you are investing. Making money by not working on your bank account is a missed opportunity. You have to invest that money wisely in order to get the best out of it.

Author α: Associate Professor, Faculty of Management, Pacific Academy of Higher Education & Research University, Udaipur.
e-mail: jainanil1986@gmail.com
Author σ: Research Assistant, Indian Institute of Management, Udaipur.

Other investments may be cash-related assets that do not fall into one common category of assumptions. Standard components include stocks, bonds and cash. Many of the other investment assets are owned by institutional or accredited investors, high-cost individuals because of their complex nature, lack of regulation, and risk level.

- Another investment could be a money related resource that does not drop into one of the common categories of value / pay.
- Private reserves or trade reserves, fence stores, genuine property, commodities, and intangible resources are cases of partitioned ventures.
- A few offline funds in the SEC.
- Several investments tend to be in some form.
- While customarily for organization speculators and licensed financial specialists, choices can be sold to financial specialists with alt stores, ETFs and shared reserves that make up portfolios of other commodities.

Various investments include business investments, private equity, hedge funds, property investment, real estate and sale of assets such as precious metals, alternative finance, alcohol and art. These assets typically operate with minimal links to stocks and bonds, are difficult to master and are more common than traditional investments. (Other liquid options include asset class and ETFs and publicly traded funds that have been developed over the years and are capable of performing a single phase of asset planning or strategy.

Alternatively, only authorized investors can directly invest in the above assets. This limitation exists because most fund managers rely on private registration exemptions that restrict the number of their investors to experienced investors. This investment will increase in popularity as institutional investors invest in pensions and invest in options as they realize the long-term profitability of this asset class.

II. Research Problem

The research problem in the current study is as follows: "Different financial management differs from traditional asset management in many ways. First, it varies depending on the two strategic objectives - it is intended to achieve full functionality, regardless of the nature of the underlying market - and its strategies, in

© 2020 Global Journals

particular, to exploit financial inefficiencies in the management of financial assets by opportunity and portfolio selection. It also varies depending on the financial strategies used, e.g. general use of profits, receivables and short sales, and certain investment vehicles used (ad agencies such as consolidated funds not bound by common law in the form of traditional investment vehicles). These factors, coupled with the fact that the alternative investment environment is different, make it difficult to measure the risk of a fund or the performance of a fund manager. Therefore, other measurement tools are needed, which are different from those widely used in traditional asset management. Over the past few years, alternative, varied and fast-growing investment management, has enjoyed surprising improvements, evidenced by the high cost of management and increased traffic offered by a broad investor base. . By looking at the specific type of fund managers that will be used by another approach, the development of a separate investment sector raises questions about its effects depending on financial stability. It also creates new problems with respect to the division of roles between market participants and senior management in the organization and employment of the asset management industry.

III. Research Method Applied

Review of literature and secondary data.

Research Questions:

1. How will investment make money?
2. How could investment potentially lose money?
3. How does investment fit in with everything else common man own?

An Introduction to Alternative Investments

(Jain, 2014) argue that alternative investment strategies are related to investments other than government buildings, equities and debt. This includes investments in private real estate, hedge funds and managed futures, alternative water equity disparities and real property and natural resource partnerships. In addition, the alternative investment industry is booming - it is expanding and expanding its ability to offer long-term investment strategies, attracting interest from an increasing number of investors. This paper provides an overview of some examples of alternative investments.

Traditional Investments vs. Alternative Investments

(Vinay, 2010) analysed that, more options ... more flexibility ... These terms are often used to describe the benefits of multiple investments and so-called financial engineering products. But for newcomers, the first words that probably come to mind are - they are more confusing. This article is designed to determine what the future of investment in India might be? Whether Indian investors will still invest in traditional investments such as public stocks such as stocks, bonds and currencies, or will change their minds as their western counterparts in Financial Engineering Products.This paper also provides an insight into what Alternative Investing is and how the potential investor can make the most out of the most stable market environment and many other factors. Not too complicated. Not very basic. Enough information to help you ask the right questions to start using these markets for your own benefit.

The Role of Other Investments in Collective Investment

(Management, 2013) stated that past performance does not guarantee future results. Diversity does not guarantee profit or prevent loss. The index is not regulated and is not available for direct investment. Investors should focus on each fund's investment objectives, risks, costs and expenses before investing. These and other details are the essence of a hope or hope. For an idea or summary of the trust, contact your Baird financial advisor or fund company directly.

Investment Management for Serious Savers

(Tuchman, 2013) revels, Different investments are different from the traditional or traditional type of investment, traditional investments include stocks and bonds and the alternative investments do not include stocks, bonds and contain hedges, capital investment, private equity, fund sold, assets, cash, based finance, investment in art, antique, precious metals, gold and silver, investments in wine, stamps etc. Investments in other commodities require constantly updated information about the market, and ordinary investors do not invest in such protection.

Growth of Alternative Investment Funds in India

(YADAV, 2014) analysis, This paper is a work on knowledge of the growth and viability of alternative investments in India, it officially launched in June 2012 and the author sought to know from a human perspective the new investment vehicle available in various options in India. The findings of this paper are based on a number of regression analyzes to examine the correlations between the various variables that depend on each other respectively.

Alternative Investment Method, focusing on Private equity

(Leeds University Business School, n.d.) The findings of this study helped to determine the importance of management team quality, company market attractiveness, internal rate of return, growth potential, attractive product or service, and information quality found to be the most important factor in determining application funding. Further investigations indicate a lack of interaction between these processes. As a result, this paper helps contribute to the sector by directing private firms, as well as those with a desire for capital, to make better decisions about the analysis and development of equity investments.

Other Investment in Institutional Fund

(Schneeweis, n.d.) review that the benefits of hedge funds and regulated futures are not sensitive to

© 2020 Global Journals

changes in shares and liabilities. The high correlation between the international stock market and the international bond markets, particularly the fluctuating market cycles, leads to the risk (and potential return) of secure portfolio investments and the adoption of futures accepted in most of the traditional real estate market. In addition, individual investment vehicles should be replaced with other futures / futures regulated and hedge fund products to achieve maximum risk and return on the benefit of other investment products. However, the interest rate depends on the nature of the current market and the level of the natural market.

Gold as a safe investment

(C.V., 2017) analysis shows that "gold" is very popular as an investment along with other precious metals. Why is this? Luxury goods not only differentiate themselves, but also offer competitive returns compared to major monetary resources. The current research analyses gold as a 'safe investment' in the face of other investment strategies such as 'stocks and bonds' in view of its risks. Risk analysis and asset recovery in the classroom are best studied for its rigor. The current research uses the daily prices of gold, Nifty 50 stocks & Indian government bonds. To degree time series fluctuations, the generalized autoregressive terms heteroskedasticity GARCH (1,1) results indicate that the risk is 0.970124 (<1) compared to the rise in gold prices (0.956541 (<1)) and bonds (1.003183 (> 1) risk. 'Value 0.8308). Investors reported their decision to choose gold as an investment opportunity.

Contribute towards Quality Life

Investment and direct investment are a great way to generate future income. Next time we are unemployed, we need a regular fund. So, every month we have to save the right amount of wealth development and invest this savings in other investments every month so that the corpus can grow faster.

First we need to understand the effectiveness of the investment because it only determines our end and how to achieve the required corpus at the right time.

- Safe planting
- Investing in risk
- Risk Investment

We can choose by age. As we grow older, our ability to take risks decreases. We have to figure out what kind of investment is free, and sometimes investing in risky investment options can create psychological distress.

All three types of investments offer different types of returns. The greater the risk, the greater the return. When we started investing at an early age, the risky investment option is the best one because we've lost some money.

Safe planting

Secure investments are those that can be invested where the returns are low but the investment is secure. At the end of the investment period you will receive a refundable investment and a safe investment where the returns are very high. A little sum beginning from Rs 500 / - can too be contributed in secured venture plans. There are few safe investment options such as under which the investment is almost protected.

- Bank Fixed deposits (Nationalised & Reputed private banks).
- Public Provident fund (PPF).
- Provident Fund (PF).
- Bank recurring deposit (Nationalised & Reputed private banks).
- RBI Bonds.
- Post office recurring deposit.
- Post office National Saving Scheme (NSC).
- Other post office schemes.

There are few speculation plans such as PPF, PF where constrained stores can be distributed and few are open to restricted speculation. In our monthly income we are able to contribute a certain sum of money and some of the money can be invested in programs where unlimited savings can be invested.

Investing in risk

Medium risk investing where there is less risk but it yields higher returns than safe investment options.

- Mutual Fund – They are less risky than investing directly to the stock market. In mutual funds, fund managers invest in thousands of shares and the average income they distribute to mutual fund investors.
- Small Bank Deposits – Most small and cooperative banks offer high interest rates on fixed deposits. It is safe to a certain degree based on the performance of the bank. Before investing in small banks you should check the credentials and invest a certain amount in these banks.
- Corporate Bonds – Most large companies sell their bonds to raise funds to invest in their businesses. These bonds offer high interest rates for a fixed period. Before investing in corporate bonds, one must check the credibility, credibility, performance and most importantly, the rating of the company. However, these are precautionary measures that can reduce risk.
- Property – Property is a good investment but requires a large amount of investment. The chances of investing in a small amount are very low. Furthermore, it is long term and it takes time to invest in such investments. Property investment in flats, plots, bungalows, agricultural land, commercial offices / shops.

Risk Investments

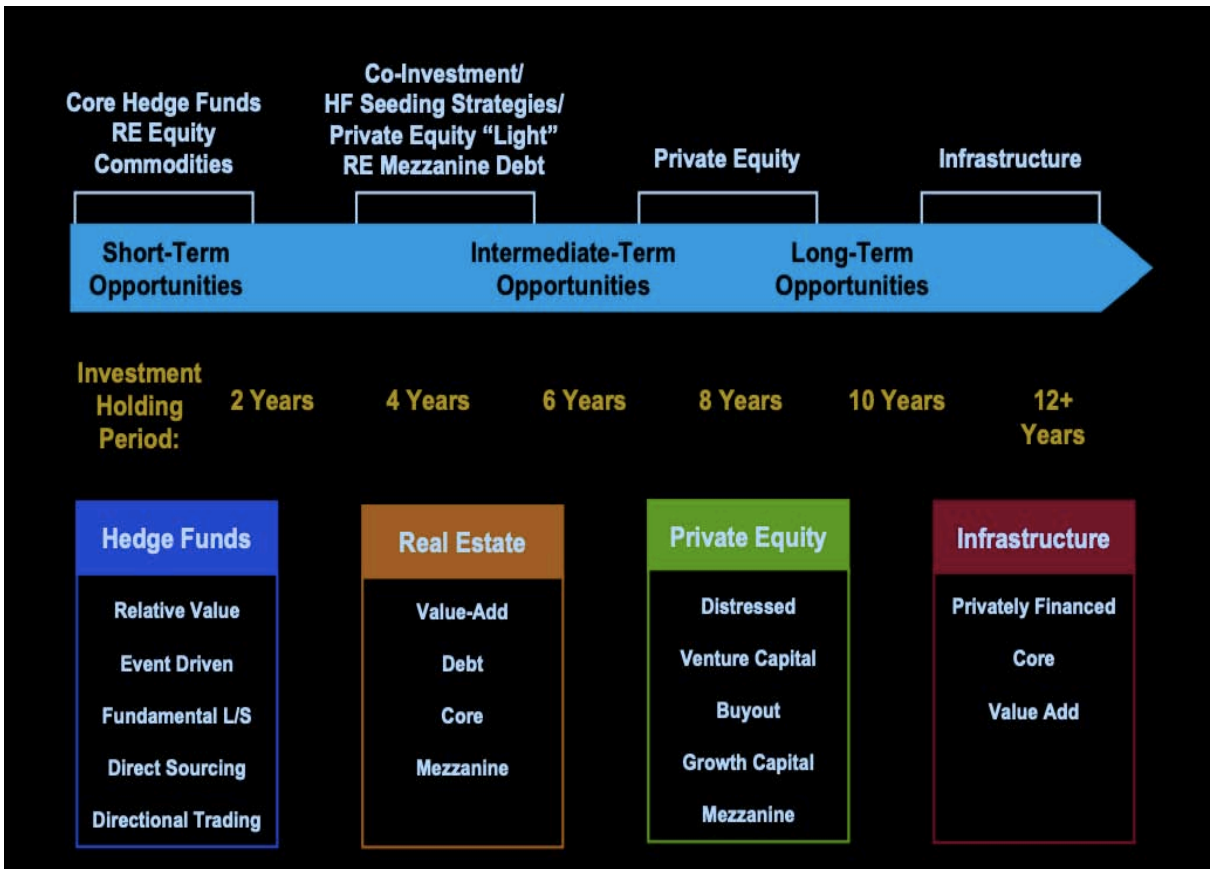
Risk investing is where risk is huge, but it can generate the best returns and increase investment very

© 2020 Global Journals

quickly, but at the same time the entire investment is also at risk.

- Stock Market – The stock market is one of the most expensive options, but at the same time the chances of making money are very high. The stock market offers intraday trading and general trading. Stocks can be traded and traded on the same day in intraday trading. Shares can be bought and kept in the general trade and sold in the future. The stock can be purchased in demat form by opening a demat account. Banks or Shares, Banks or Institutions that operate in commercials such as Motilal Oswal. The stock market is out of our control, so investing money is at greater risk, which can hinder our hard-earned money. Money. It is therefore recommended to invest in limited amounts.
- Lending to a person – We can lend to a reputable person or friends who can timely repay the money with an agreed interest. Since these types of loans are short-term, the returns are high, but most of the time the loans are lent without documentation. Most business people in the business market are looking for such a loan on a short-term basis that they use for their business. If we have reliable people looking for this type of loan, then we can offer 3-4 times the best interest in bank interest. Creating the basis of such a group will yield the best returns. But money is always in danger. So you can invest less.
- Investing in Other Businesses – Most people have a good business idea that can make a good profit but there is no money to invest. If we invest in their venture, it will be very profitable. Profit sharing conditions should be determined at an early stage and should be properly documented so as to minimize risk.
- Start your own business – To start your own business requires investment and your time. Businesses are a little risky because we need to invest early and we need more investment to meet the monthly overhead in a few months. In business we usually invest well at an early stage to meet monthly overheads. Once there, quitting will lose some of your bug money. Therefore, for those who start a business, the total risk can be determined when a failure occurs.

Most of us should see that investment is good because most of us are desperate to lose money. A secure investment or medium hazard investment choice is the most excellent alternative if you are not comfortable. Compounding a safe investment interest over a long period of time, such as 20-25 years, creates a good amount of funds for financial freedom. It gives us mental peace.



Source: Blackrock

© 2020 Global Journals

Golden Rule of Investing in Right Direction

Investment is not sustainable. There is a big difference between savings and investment. The short term is that as long as you want to earn money for a few days, a few months, or for many years, it is economical to keep it safe. Depending on where you are investing, you may not be interested and it is up to you in the event of an emergency or purpose. Investing is the process of using your money to do your job. If done correctly, it can make you more money than interest earned on a good account, saving interest or a certificate of deposit. But with reward comes risk. Even if you make bad decisions when things go wrong with your control, you lose money. It may not be for you in an emergency.

If you remember that "you can never invest what you lose" and that the law is not broken, you should not worry about eating a cat during retirement or when you lose your job or become ill. It's too bad to be there. Investing is worse than investing before earning your savings, you have to fulfill some obligations, which can be very damaging. It is a natural tendency for a person to run away, make more money than buy, and then give away and shout for more money. This practice is often abandoned; A man who loves money. She hopes the problems with the jackpot will end. Most poor people play the lottery, but most managers don't put their money on tickets.

You just don't see your portfolio as an Eagle. There are many portfolios - your emergency cash, your insurance, your retirement accounts, your real estate, and the professional skills you need to have money to get started and to start when you lose your job. You can prevent the damage we call a refrigerator problem by keeping the clock in great trouble. The same people who spend many weeks reading consumer report ratings on a new stove or other refrigerator can sometimes put all their money in stock or other money, without real money.

Your first priority should always be to avoid a major loss:

- Don't be greedy
- be patient
- Seek the advice of trained and well-regarded counsellors
- Keep your costs low

Diversified Fund Portfolio

(What is a highly diversified investment portfolio?) An entirely different portfolio implies balancing social security markets.

- Methods for the construction of various different portfolios should not be optional in one decision or another - if you don't buy the entire global market with a wallet or virtual bag, your low-quality whole-market set of random options may be the same. As a "dumping duck" on the weight saving page. This means that each security has the potential to be included in a larger size portfolio. Until this random selection scenario is completed, the purpose of creating a very different portfolio will be affected, as you have distorted one option or one of your options.
- Basic product indicator options for investment have recently attracted attention- related to capital expenditures such as full market liquidity and full-market marketing, as well as experienced investor talk about the pros and cons of industry and financial journals. A kind of understanding. Stock market related ETFs. The basic criteria of the "new" indicator depend on various measures, such as the company's financial impact, earnings, dividends, book value, number of employees and more.
- Value Stock produces stocks that exceed long periods of value-your investment portfolio should include "value" and "comparable growth", and there has been much debate over this latest discussion of "basic" indicators. However, the current tax structure associated with the creation of basic market investment indicators may reduce its risk adjustment benefits - in part or in whole. There is a wide market with very limited markets with large market value and the ETF is available with an annual operating fee. .2% per annum and total cost per year.
- Private equity investors' investment portfolio has become a futile proposition compared to investments in equity index indices and ETFs.

IV. Conclusion

Every investment is risk-related. Its presence and diversification among the various types of investments is one of the leading trends in the formation of the capital market. Risk has also led to the emergence and development of alternative investments. The increased volatility of this market segment is also influenced by the occasional financial crisis, which was the result of a volatility that will allow for the conversion of the investment portfolio and may also provide opportunities for profitability, even when the price drops. Differential investments are an effective tool for risk diversification, however, they are not suitable for all investors.

Alternative investments offer small investors and institutions the opportunity to diversify their portfolio. Instead of relying solely on money, stocks, bonds, and consumer-dependent investments, investors can also make good money using these other classes of assets. However, each of these investments has its own risk level, which investors should be aware of.

Bibliography

1. Vinay. (2010, june 26). Traditional Investments vs. Alternative Investments.

© 2020 Global Journals

2. Jain, S. (2014, march 13). An Introduction to Alternative Investments. SSRN, p. 13.
3. Management, B. P. (2013). The Role of Alternative Investments in a Diversified Investment Portfolio.
4. Tuchman. (2013, 2013). Investment Mahangement for Serious Savers.
5. YADAV, C. (2014, july). Growth of Alternative Investment Funds in India. International Journal for Research in Management and Pharmacy.
6. Leeds University Business School. (n.d.). Retrieved from http://resources.library.leeds.ac.uk/final-chapter/dissertations/lubs/3345example5.pdf
7. Schneeweis, T. (n.d.). Alternative Investments in the Institutional Portfolio. Retrieved from http://www.altavra.com/docs/thirdparty/alternative-investments-institutional-portfolio.pdf
8. C.V., S. (2017). A STUDY ON GOLD AS A SAFER INVESTMENT ALTERNATIVE AMONG SMALL AND MEDIUM INVESTORS WITH SPECIAL REFERENCE TO KOZHIKODE DISTRICT. Internatinal Journal of research - Granthaalayah.
9. What is a Well-Diversified Investment Portfolio? (n.d.). Retrieved from Personal Financial Planing: http://www.theskilledinvestor.com/wp/what-is-a-well-diversified-investment-portfolio-164.htm
10. https://seekingalpha.com/article/891401-3-questions-for-alternative-investments
11. https://economictimes.indiatimes.com/analysis/indias-savings-culture-is-its-saving-grace/articleshow/6609789.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst
12. https://economictimes.indiatimes.com/analysis/indias-savings-culture-is-its-saving-grace/articleshow/6609789.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst
13. https://cleartax.in/s/investments
14. https://www.investopedia.com/terms/a/alternative_investment.asp
15. http://investforqualitylife.com/2019/09/investing-money-in-right-direction/
16. https://www.thebalance.com/the-most-important-rule-of-investing-357325.

© 2020 Global Journals

Global Journal of Management and Business Research: B
Economics and Commerce
Volume 20 Issue 6 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Non-Linear Causal Link between Central Bank Intervention and Exchange Rate Volatility in Nigeria

By Ali Umar Ahmad, Suraya Ismail, Siba Dayyabu, Ahmad Azrin Adnan, Ibrahim Sambo Farouq, Aminu Hassan Jakada & Umar Aliyu Mustapha
Universiti Sultan Zainal Abidin

Abstract- The continued volatility of the Naira / USD exchange rate has attracted the attention of Nigeria's Central Bank (CBN) to engage in the foreign exchange market. This study aims to examine the long-run relationship between interventions on the foreign exchange market and the Naira / USD exchange rate. Regarding four variables, the analysis uses annual data, namely the: Naira / USD exchange rate, money supply, net foreign assets, and interest rates from 1980-2018. This research also used non-linear unit root, cointegration and causality testing approach. The non-linear unit root tests for stationarity by KSS and Breitung showed that the variables employed were stationary at the first difference. Besides, nonlinear Breitung cointegration tests showed the existence of the long-term relationship between foreign market interventions and the Naira / USD exchange rate.

Keywords: *breitung cointegration test; central bank interventions, diks, and panchenko causality test, exchange rate volatility.*

GJMBR-B Classification: *JEL Code: E58*



Strictly as per the compliance and regulations of:

© 2020. Ali Umar Ahmad, Suraya Ismail, Siba Dayyabu, Ahmad Azrin Adnan, Ibrahim Sambo Farouq, Aminu Hassan Jakada & Umar Aliyu Mustapha. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Non-Linear Causal Link between Central Bank Intervention and Exchange Rate Volatility in Nigeria

Ali Umar Ahmad [α], Suraya Ismail [σ], Siba Dayyabu [ρ], Ahmad Azrin Adnan [ω], Ibrahim Sambo Farouq [¥], Aminu Hassan Jakada [§] & Umar Aliyu Mustapha [χ]

Abstract- The continued volatility of the Naira / USD exchange rate has attracted the attention of Nigeria's Central Bank (CBN) to engage in the foreign exchange market. This study aims to examine the long-run relationship between interventions on the foreign exchange market and the Naira / USD exchange rate. Regarding four variables, the analysis uses annual data, namely the: Naira / USD exchange rate, money supply, net foreign assets, and interest rates from 1980-2018. This research also used non-linear unit root, cointegration and causality testing approach. The non-linear unit root tests for stationarity by KSS and Breitung showed that the variables employed were stationary at the first difference. Besides, nonlinear Breitung cointegration tests showed the existence of the long-term relationship between foreign market interventions and the Naira / USD exchange rate. Similarly, non-parametric Diks and Panchenko causality tests verified the existence of a causal relation between net foreign assets and money supply and the Naira / USD currency exchange rate respectively. Hence, foreign market interference by the CBN is non-sterilized. As a result, Nigeria's central bank will ensure that it sterilizes all the amounts of currency used during intervention operations. This will avoid the impact of non-sterilized foreign-currency interventions on the Naira / USD exchange rate.

Keywords: breitung cointegration test; central bank interventions, diks, and panchenko causality test, exchange rate volatility.

I. Introduction

In most of the emerging markets and advanced economies, Central Banks intervene in the foreign exchange market to correct misalignment in their exchange rate, stabilize the volatility in their currency, accumulate a reasonable amount of foreign reserves and ensure the efficiency of the foreign exchange market by supplying foreign currencies. (Guimaraes and Karadacag, 2004). Furthermore, the issue on the effectiveness of the Central Bank interventions have remained a matter of debate in the previous literature-some believed that the action of the Central Banks in the foreign exchange market is effective (Pattanaik and Saho, 2003; Schmidt and Wollmerschauser, 2004; Dominguez, 2006; Fatum and Hutchison, 2006; Behera et al. 2008; Fatum 2009; Newman et al. 2011; Reitz and Taylor, 2012; McKibbin and Wanaguru, 2012; Mijiyama and Montoro, 2013; De Roure et al. 2013), some emphasized that the Central Bank intervention is ineffective (Beine et al. 2002; Simatele, 2003; Fatum and Hutchison, 2004; Simwaka and Mkandawire, 2012; Mehdi et al. 2012) while some have found mixed results in their empirical works (Guimaraes and Karadacag, 2004; Domac and Mendoza, 2004; Disyaatat and Galati, 2007; Mwansa, 2009). Over two decades ago, the Central Bank of Nigeria had been intervening in the foreign exchange market frequently to support and stabilize the value of Naira/US Dollar exchange rate, although the effectiveness of the intervention is temporary and short-lived (Sanusi, 2004; Adebiyi, 2007; Omojolaibi and Gbadebo, 2014). Even though the CBN provides timely intervention in the foreign exchange market, the previous empirical works on Nigeria are limited. This is due to the absence of publicly available data on CBN interventions (Adebiyi, 2007: Omojolaibi and Gbadebo, 2014). As a result, most of the empirical works on Central bank interventions were conducted in advanced economies (Guimaraes and Karadacag, 2004). In line with this, this study aims at examining the long-run relationship between foreign exchange market interventions and the Naira/USD exchange rate in Nigeria. The remaining parts of the paper are structured as follows. Section two is an overview of Nigerian Foreign Exchange Management in Nigeria. In Section three, theoretical and empirical evidence is presented and evaluated. In section four, the analytical method of data analysis is presented. Results and discussions of empirical findings follow in Section Five, the summary of the findings, and the conclusion of the entire work are presented. Lastly, the study provides some significant recommendations based on the findings.

II. Literature Review

a) Overview of Exchange Rate Management in Nigeria

In the 1970s, Nigeria had experienced a windfall that was followed by years of the budget deficit. This led to the emergence and implementation in 1986 of the Structural Adjustment Program (SAP), as recommended by the International Monetary Fund (IMF) and the World

Author α σ ρ ω ¥ χ §: Faculty of Business and Management Universiti Sultan Zainal Abidin 21300 Kuala Terengganu, Malaysia.
e-mail: aliumarah@unisza.edu.my

© 2020 Global Journals

Bank as a means to restore and boost the growth and development of a given economy (Oyinbo and Rekwot, 2014). Among SAP's conditions was that naira must be devalued and allowed to float freely on the (deregulated) foreign exchange market; its value was to be decided by market forces. Since then, the Central Bank of Nigeria (CBN) has engaged in foreign exchange transactions, as Adebiyi (2007) opined. While Naira's value was fairly stable before 1986, the introduction of the Second-Tier Foreign Exchange Market (SFEM) as one of the International Monetary Fund (IMF) conditions in July 1986 continued to depreciate naira: naira, for example, was traded at 0.99=$1 in 1985. Nevertheless, with the implementation of SFEM in 1986, the merger of First and Second Tier Foreign Exchange Management policy in 1987 and the implementation of Interbank Rate in 1988 caused Nigerian Naira's value to depreciate to just $1.75=$1.00, sometimes $1.00, and sometimes $7.36=$1.00 (CBN, 2014). In its efforts to stabilize the Naira exchange rate, the Nigerian government established Guided Deregulation Policy, which in 1994 connected Naira to the US dollar at around 21,886. In 1999, the re-introduction of the interbank foreign exchange (AFEM) market-led Naira to further depreciate to $1.00 = $1.00. Another scheme, Whole Dutch Auction System, was implemented in 2006; as a result, in December 2007, Naira further depreciated $117.97=$1.00. Around the same time, there was a worldwide financial crisis in 2008, popularly known as the "Global Economic Meltdown." The result revealed that the value of Naira was further depreciated to $131.5=$1.00. Naira / dollar exchange rates stood at $1142.00 = $1.00 by February 2009 (Aliyu, 2009). In 2013, policymakers in Nigeria came up with Retail Dutch Auction in another attempt to achieve a stable value for the Naira. The strategy also caused Naira, sadly, to further depreciate to $157.31=$1.00 (CBN, 2014). The continuous weakening of the Naira / US dollar exchange rate has a close connection with the domestic goods and services rates. This relationship between the depreciation of the exchange rate and inflation was discussed in detail in the literature (see Leflache, 1996; Adebiyi, 2007; Mohamed, 2009; Aliyu et al., 2009). As such, any work aiming to stabilize Nigeria's domestic exchange rate is of paramount importance given the impact of the exchange rate on the domestic price of goods and services. Figure 1 below shows how the exchange rate expressed in Naira / US dollars has been gradually increasing (depreciation) at a higher and sustained rate since the implementation of the Structural Adjustment Program up to 2018.

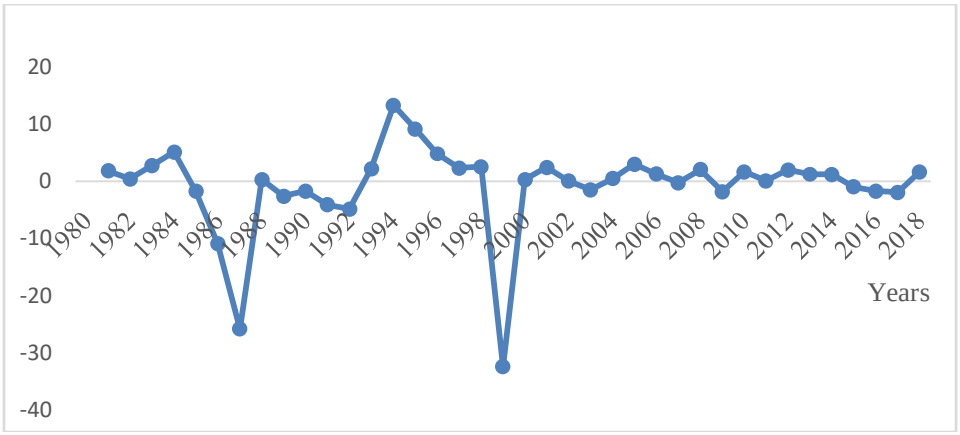


Figure 1: Percentage Change of Naira Exchange Rate from 1980-2018

b) Empirical Evidences

The methods use, and the usefulness of official foreign-exchange intervention as a policy framework for achieving price and exchange-rate convergence is a topic of divisive disputes (Schmidt and Wollmerschauser 2004). This is because of the inconclusive results of the previous studies (Edison, 1993; Sarno and Taylor, 2001; Dominguez, 2003). Dominguez (1998) employing the GARCH (1, 1) Model observed that the Federal Reserve of America's hidden foreign market intervention raised the volatility of the US dollar while the broadcasted intervention resulted in confusion and disorder on the foreign exchange market. This finding did not substantiate the Bonser-Neal et al. (1998) analysis, although the later used different approaches. Furthermore, Bonser-Neal et al. (1998) introduced the Event-Study Model and reported that intervention on the foreign exchange market by the Federal Reserve is necessary and successful in stabilizing the value of the US Dollar. In Japan, Kurihara (2011), Reitz and Taylor (2012), Seerattan (2012), and Hillebrand and Schnabl (2008) claimed that the Bank of Japan's (BoJ) foreign market intervention was successful and its role in stabilizing Japanese Yen's value. Their report, however, did not support that of Frenkel et al., (2004). From another research conducted with the support of GARCH (1, 1), Simwaka (2006) discovered that Reserve Bank of Malawi's (RBM) official

© 2020 Global Journals

participation in the forex market influenced Kwacha, very insignificant and yet significant in decreasing the unwanted volatility of their exchange rate. He inferred that RBM's net sales of dollars devalued the value of Kwacha rather than appreciated.

Adebiyi (2007) method using Autoregressive Distributed Lag (ARDL) hypothesized that the correlation between intervention variables and exchange rates was not reliable. Consequently, the role of the Nigerian central bank in the currency market is sterilized. This is attributed to insufficient intervention financing due to reduced economic reserve generation, the incoherence of intervention policies with macroeconomic strategies as well as regular involvement by politicians in the policymaking process. Looking objectively at the studies of Dominguez (1998), Hillebrand and Schnabl (2008), Guimaraes and Karadacag (2004), Domac and Mendoza (2004), Simwaka and Mkwandawire (2006), Kurihara (2011) and Reitz and Taylor (2012), they all use the GARCH (1, 1) model in their investigations. However, for the model to be statistically relevant, it takes many years of regular data. Nevertheless, their results from the GARCH (1, 1) model are less accurate, due to the insufficient data of interventions in the country's understudies coupled with the lack of real intervention data in some countries. Another drawback of GARCH (1, 1) is that its results are focused on the scale of the motions between the variables being examined and not on the direction of causality.

Lahura and Vega (2013) examined the correlation between undisclosed intra-daily data, the inter-bank exchange rate, and the dollar amount bought and sold using the Structural Vector Autoregressive (VAR) model. They noticed that foreign exchange intervention in Peru affected the exchange rate in the right direction, but marketing interventions were noticed to be more successful than simply purchase interventions. Omojolaibi and Gbadebo (2014) analyze the impact of foreign exchange market intervention on naira exchange rate stability. They employed the strategy of autoregressive distributed lag (ARDL) on four annual time series data from 1970 until 2006. The data include the money supply, total foreign net assets, accumulated foreign private inflow, actual gross domestic product (GDP) and structural breakdown. The findings indicated that the central bank has a long-term equilibrium relationship between the intervention of central banks in the foreign exchange market and the factors in the money supply.

Consequently, the process of CBN interference is considered non-sterilized. Even though this study is among Nigeria's earliest empirical work (second to Adebiyi, 2007), the researchers also refused to provide the exchange rate parameter that is the key focus of foreign exchange intervention. However, the approach they used (i.e., ARDL) was criticized for having a low degree of freedom while evaluating an equation with amassive number of regressors. This means that ARDL could not display more than one balance link in a model (Mehdi et al., 2012). Based on the above-mentioned empirical data, there is no consensus on the efficacy of foreign exchange interventions in foreign exchange markets. However, earlier studies have argued that the most regular, prevalent, and overlapping interventions appear to be more successful than broad one-off interventions (Seerattan, 2012); sales intervention is more successful than interventions bought (Lahura and Vega, 2013); Political meddling and monetary competition tend to influence the efficiency of intervention measures (Adebiyi, 2007; Hillebrand and Schnabl, 2008) and most of the literature that found the effectiveness of foreign-exchange interventions in curbing exchange rate volatility and chaotic market use of SVAR and VAR Markov-Switching Models (Seerattan, 2012).

III. Methodology

The study employed non-linear cointegration and causality test approaches to investigate the long-term relationship and causal link among foreign exchange market intervention and the exchange rate of Naira / US Dollar.

a) Data

The research employed data from 1980-2018 on an annual secondary time sequence. The data were mainly collected from the Statistical Bulletin of the United Nations and the Statistical Bulletin of the Central Bank of Nigeria (CBN). For this research, the non-parametric cointegration and causality tests of Breitung (2001) and Diks and Panchenko are used to examine the non-linear long-run and causal relationship between the CBN interventions in foreign exchange market interventions and the Naira / US dollar exchange rate. The study used four variables that set the Naira / US Dollar exchange rate as a function of net foreign assets, money supply and interest rate as written in the following equation:

$$\underset{+}{EXR_t} = f(\underset{+}{NFA_t}, \underset{+}{M2_t}, \underset{-}{IR_t}) \quad (1)$$

Where EXR represents the Naira exchange rate per US Dollar, NFA stands for net foreign assets (the proxy of foreign exchange market intervention variable), M2 represents the money in the Nigerian economy (proxy as the money supply variable), IR representing the interest rate variable. The t-sign denotes the time trend. The variables are converted into natural logarithms and composed in an econometric form in equation (2) below. Thus, the variables are separated from heteroskedasticity and their values can be presented as elasticity.

© 2020 Global Journals

$$lnEXR_t = \alpha_0 + \varphi_1 lnNFA_{t-1} + \varphi_2 lnM2_{t-1} + \varphi_3 lnIR_{t-1} + \mu_t \quad (2)$$

From equation (2) above, α_0 is the constant term, φ_1, φ_2 and φ_3 are the slope coefficients and μ_t is the error term respectively.

b) Econometrics Procedures

i. *BDS Independence Test*

BDS test was first invented by W.A. Brock, W. Dechert, and J. Scheinkman in 1987 (Brock, Dechert & Scheinkman, 1987). BDS is one of the powerful tools for identifying serial dependence in time series. The BDS test is employed to test for the presence of the non-linear dependency in the continuing series measured after establishing the fitness of the ARIMA model (the Chu, 2001). The test statistic follows the normal distribution asymptotically. The null hypothesis of the BDS test assumes that the residuals are independently and identically distributed against the alternative hypothesis that the increments assume several deviations that make their level of dependency non-linear. The basic concept of the BDS test is built based on the integral correlation that estimates the frequency within which the spatial patterns are repeated in the series. The BDS test relies only on the signs of the successful return, without interest in their dimensions and does not need any assumptions about the distribution of the returns. A sequence of too many or too few runs suggests that the sample is not random (the Chu, 2001). The BDS test is initially developed by Brock, Dechert, Scheinkman and LeBaron (1996) and extensively applied in the Brock, Hsiech, and LeBraron (1991). Intuitively the correlation integral estimates the probability that any two m-dimensional points are within a distance of each other. The underlying assumption of the BDS test is that, let x_t be a random series data such that $x_t = x_1, x_2 \ldots\ldots\ldots\ldots x_3$ Also x_t is assumed to be a univariate series which is assumed to be iid. The BDS test is based on the following assumption:

$$H_0 : p_m = p_1^m$$

$$H_1 : p_m \neq p_1^m$$

The null hypothesis of iid is usually rejected at the 5% significance whenever the $p_m > 1.96$

$$I_t = 1 \; if \; |x - y| < \in \; \ldots\ldots\ldots \quad (3)$$

Likewise, the BDS test also relies on the value of the correlation integral as follows:

$$C(m, \in, T) = \frac{I[(t,s): \|X_t^m - X_s^m\| < \in]}{T^2} \quad (4)$$

Where $X_t^m = (x(t) \ldots\ldots\ldots, x(t-m+1)), \|.\|$ Is the l_∞ norm on R^m, and $I[.]$ indicates the number of elements subject to only modest regularity conditions as $T \to \infty, C(m, \in, T)$ has limit $C(m, \in)$ such that if $\{x(t)\}$ is iid, it then follows:

$$C(m, \in) = C(1 \; \in)^m \quad (5)$$

The reasoning motivates for the BDS test statistics are:

$$W(m, \in, T) = \sqrt{N} \frac{[C(m, \in, T) - C(1, \in, T)^m]}{\check{\sigma}(m, \in, T)} \quad (6)$$

Where $C(m, \in, T)$ stand as the correlation function that measures the probability between the dimensions of the series, $\check{\sigma}(m, \in, T)$ is the estimate of the non-parametric standard deviation of the $C(m, \in, T) - C(1, \in, T)^m$ The BDS test shows convergence in the distribution that $T(0,1)\; as \; T \to \infty$, respectively. In general, the BDS test statistic is the known asymptotic distribution under the null hypothesis of whiteness. The test provides a direct statistical test for randomness against general dependence, which comprises both the non-white linear and the non-white non-linear dependence.

ii. *Advanced Unit Root Test with a Nonlinearity*

Like the Augmented Dickey-Fuller and Phillips-Perron, several economists have questioned the use and implementation of conventional unit root stationarity test This is due to their failure to 'differentiate around unit-root and close unit root' tests (Campbell and Perron, 1991; DeJong et al., 1992; Tang and Chua, 2009). For this purpose, this research applied the unit root test widely known as stationary unit root test Breitung (2002) and newly developed unit-root ESTAR worked out by Kapetanios et al. (2003). Breitung (2002) developed a

© 2020 Global Journals

system for performing the unit root test commonly known as the Breitung unit root stationarity test. The method can be defined below by using equation (7):

$$\hat{\rho}N = \frac{N^{-4}\sum_{t=1}^{N}\hat{\mu}_t^2}{N^{-2}\sum_{t=1}^{N}\hat{\varepsilon}_t^2} \quad \ldots\ldots\ldots (7)$$

where $\hat{\varepsilon}_t$ is the ordinary Least Squares (OLS) residuals from equation (4) below:

$$y_t = x_t - \hat{\gamma}' d_t + x_t \quad \ldots\ldots\ldots (8)$$

Where d_t stands for the deterministic function of the constant and trend, x_t are the stochastic terms respectively.

$\widehat{\mu_t}$ is the partial sum such that $\hat{\mu}_t = \hat{\varepsilon}_1 + \cdots + \hat{\varepsilon}_t$. In the event, if x_t is integrated at the level I(0), the test statistic $\hat{\rho}N$ converges to zero (0). Meanwhile, Breitung presented simulation proof that the non-parametric test of unit root outperforms the traditional parametric tests. The Breitung non-parametric unit-root test is constructed based on the null hypothesis that the sequence is stationary. Recently, the increasing consensus between researchers on the nonlinear method, which may describe money supply, interest, net foreign asset rate and exchange rate, has led to the development of nonlinear stationary tests. This research used the newly evolved unit-root tests of the ESTAR, developed by Kapetanios et al. (2003) to examine if money supply, interest, net foreign asset rate and exchange rate are stationary or not. The nonlinear unit root test of KSS is centered on a unit root's null hypothesis against such an alternative hypothesis of the nonlinear yet internationally stationary phase of exponential STAR (ESTAR). Suggest the following sequence: ESTAR:

$$\Delta f_t = \rho f_{t-1} + \sigma f_{t-1}\{1 - \exp\{-\varphi(\sigma f_{t-1} - r)^2\} + \omega_t \quad (9)$$

Where f_t is the series of examined variables, $\omega_t \sim iid$ (zero mean, constant variance), r location parameter is set to zero, and $\theta \geq 0$ is the smoothness parameter that governs the speed of transition. The null hypothesis here will be $Ho: \theta = 0$ versus the alternative of $\theta > 0$.

$$\Delta f_t = \pi + \delta f_{t-1}^3 + \sum_{i=1}^{k} a\Delta f_{t-1} + \omega_t, \qquad t = 1,2,\ldots\ldots\ldots T \quad (10)$$

In Equation (10) if $Ho: \delta = 0$, then f_t contains a unit root and hence is non-stationary, while if $Ho: \delta < 0, f_t$ is non-linear stationery with the ESTAR process.

iii. *Cointegration Test*

The concept of cointegration refers to the econometrics term used to show the probability of the non-stationary variables to have a long-run relationship. Thus, there is the possibility that these non-stationary variables can walk together in the long-run (Balke and Fomby, 1997; Engle and Granger, 1987; Stigler, 2010). Time series analysts have developed and used different methods in the estimation of the long-run relationships and nature of their interactions.

a. *Breitung Rank Tests for Cointegration*

Breitung (2001) suggests a time series conversion co-integration test as an option to linear residual-based long-run tests that are incompatible with non-linear processes. The justification for using the non-linear rank test of Breitung (2001) is a result of the high rate of Naira / USD exchange rate volatility and CBN's continued attempts to protect Naira against further depreciation to the US Dollar, leading in non-linear occurrences.

Specifically, Breitung (2001) establishes the following test statistics to test for (nonlinear) cointegration among two-time series yt and xt:

$$\hat{\varepsilon}_t = \hat{g}(\hat{y}_t) - \hat{f}(\hat{x}_t) \quad (11)$$

Where $\hat{g}(\hat{y}_t) \sim I(1), \hat{f}(\hat{x}_t) \sim I(1)$, and $\hat{\varepsilon}_t \sim I(1)$.

The cointegration tests implemented in the previous studies were generally built based on the premise that $\hat{f}(\hat{x}_t)$ is a linear function of $\hat{x}_t$. For some groups of non-linear functions, Breitung (2001) has already illustrated that residual-based linear co-integration tests are contradictory. To overwhelm this problem, Breitung proposed a cointegration test based on the time series rank transition. Such a transformation of rank helps one to avoid the fundamental functional aspects of the co-integrating association. Su (2011) claimed that the Breitung (2001) rank tests' significant attribute is that it helps scholars to get out of the essential functional nature of the cointegration correlation. Furthermore, there is no precondition for being clear about the precise functional structure of the non-linear cointegrating association. The Breitung rank test (2001) is based on a calculation of the modified gap between the graded sequence.

© 2020 Global Journals

The accompanying test statistics were developed by Breitung (2001), in which $\hat{y}_t$ and $\hat{x}_t$ are assumed to be random walks connected in series:

$$\hat{\rho}N = \frac{N^{-4}\sum_{t=1}^{N}\hat{\mu}_t^2}{N^{-2}\sum_{t=1}^{N}\hat{\varepsilon}_t^2} \tag{12}$$

Where $\hat{u}_t =$ R($\hat{y}_t$)-R($\hat{x}_t$), for R($\hat{w}_t$)=Rank of $\hat{w}_t$ among $\hat{w}_1, \hat{w}_2, \ldots, \hat{w}_T$), and $\hat{w}=\{\hat{y}, \hat{x}\}$.Breitung (2001) articulates the cointegration rating test hypothesis as:

H_0: Such series are not cointegrated

H_1: Such series are cointegrated

Other than that, the null hypothesis of no co-integration across exogenous and indigenous factors is rejected once the test statistics assume a value lower than the acceptable critical value, thus providing proof against the null hypothesis of no co-integration and in favor of the alternative hypothesis of co-integration, mainly because,throughout this scenario, over time, the variables shift closely together, and not that much break off. Such a test decides whether the graded series shift over time into a long-run co-integrating equilibrium, which can either be linear or non-linear.

b. *Causality Test*

The Diks and Panchenko non-parametric Granger causality test can be explained thus: Let assume the two-stationary series X_t and Y_t to represent the CBN's foreign market interventions and the Naira/US Dollar exchange rate, respectively. In the non-parametric causality tests, the null hypothesis is the same as the conditional independence of the Y_t on the $X_{t-1}, \ldots, X_{t-\ell_x}$, given the$Y_{t-1}\ldots,\ Y_{t-\ell_y}$; that is to say.

$$\mathrm{H}_0: Y_{t+1}\left|\left(X_t^{\ell_x}; Y_t^{\ell_x}\right) \sim Y_{t+1}\right|Y_t^{\ell_x}, \tag{13}$$

For each vector (x, y, z) in support of (X, Y, Z) Diks and Panchenko further show that the null hypothesis implies $X_{t-1}^{\ell_x} = (X_{t-\ell_x}, \ldots, X_{t-1})$ and $Y_{t-1}^{\ell_y} = (Y_{t-\ell_y}, \ldots, Y_{t-1})$ so the null hypothesis is the tentative statement about the invariant distribution of the $(\ell_x + \ell_y + 1)$-dimensional vector $W_t = (X_{t-1}^{\ell_x}, Y_{t-1}^{\ell_y}, Z_t)$, where $Z_t = Y_t$. For notation, assume that $\ell_x = \ell_y = 1$ and the drop time index. Then under the null hypothesis, the conditional distribution of Z given $(X, Y) = (x, y)$ is the same as that of Z given $Y = y$, and the joint probability density function $f_{X,Y,Z}(x, y, z)$Moreover, it's marginal must be consistent with:

$$\frac{f_{X,Y,Z}(x,y,z)}{f_Y(y)} = \frac{f_{X,Y,Z}(x,y)}{f_Y(y)} \cdot \frac{f_{Y,Z}(y,z)}{f_Y(y)} \tag{14}$$

For each vector (x, y, z) in support of (X, Y, Z) Diks and Panchenko further show that the null hypothesis implies:

$$q \equiv E\left[f_{X,Y,Z}(X,Y,Z)f_Y(Y) - f_{X,Y}(X,Y)f_{Y,Z}(Y,Z)\right] = 0 \tag{15}$$

If $\acute{f}_W(W_i)$ is a local density estimator of a d_W-variate random vector W at W_{is} defined by $\acute{f}_W(W_i) = \frac{(2\epsilon_n)^{-d_W}}{n-1}\sum_{j,j\neq i} I_{ij}^W$ where $I_{ij}^W = I\left(\left\|W_i - W_j\right\| < \epsilon_n\right)$, with $I(.)$ is an indicator function, and ϵ_n is the bandwidth, the estimator of q simplifies to

$$T_n(\epsilon_n) = \frac{n-1}{n(n-2)}\sum_i \left(\acute{f}_{X,Y,Z}(X_i,Y_i,Z_i)\acute{f}_Y(Y_i) - \acute{f}_{X,Y}(X_i,Y_i)\acute{f}_{Y,Z}(Y_i,Z_i)\right) \tag{16}$$

For $\ell_x = \ell_y = 1$, if $\epsilon_n = cn^{-\delta}$ with $c > 0$ and $\delta\ \epsilon\left(\frac{1}{4}, \frac{1}{3}\right)$, this test statistics satisfy

$$\sqrt{n}\frac{T_n(\epsilon_n)^{-q}}{S_n} \xrightarrow{D} N(0,1) \tag{17}$$

Where$\xrightarrow{D}$ indicates convergence in the distribution and S_n is the asymptotic variance of $T_n(\epsilon_n)$.

IV. Results and Discussions

a) Descriptive Statistics

The majority of data from the economic time series are highly classified as distorted (non-normal). The primary explanation for this is the presence of many outliers along with the trend. To test the normality of the sequence, the Jarque-Bera test is applied from table 1 below. The analysis uses skewness and kurtosis coefficients based on the mean to test the normality of variables within our model. Skewness refers to the tilt in the distribution, and for the sequence to be normally distributed, it should be within the range between 0 and + 3. On the other hand, for the series to be normally

© 2020 Global Journals

distributed, Kurtosis refers to the peakedness of the distribution and is therefore supposed to lie within the range 0 and + 3. The null hypothesis employed in the normality test suggests that the sequence is usually distributed against the alternative non-normality hypothesis. If the likelihood value is below the 5 percent significance point of the Jarque-Bera normality test, then the series is not normally distributed. It is seen from Table 1 below that the series are far from being regular. Jarque-Bera's mean coefficients indicate that the sequence is not normally distributed. The standard deviation in the frequency distributions, on the other hand, insisted that the variables are far from natural. The standard deviation values in Table 1 below indicate that net foreign assets (a variable intervention proxy), money supply, exchange rates, and imports are highly volatile compared with interest rates. Also, the effects of the Pearson correlation matrix for the sequence are further represented in table 1.

Table 1: Descriptive Statistics and Correlation Matrices

	lnEXR	lnNFA	lnM2	lnIR
Mean	3.880	6.044	6.552	2.927
Median	4.602	6.577	6.469	2.924
Maximum	5.098	11.473	9.659	3.551
Minimum	0.001	0.095	3.261	2.202
Std. Dev.	1.380	2.650	2.005	0.241
Skewness	-1.082	-0.424	-0.041	-0.689
Kurtosis	2.909	2.214	1.776	4.884
		Correlation Matrices		
lnEXR	1.000			
lnNFA	0.888* (0.000)	1.000		
lnM2	0.879* (0.000)	0.233* (0.000)	1.000	
lnIR	0.149 (0.127)	-0.017 (0.855)	-0.011 (0.901)	1.000

b) BDS Linearity Test based on VAR Estimates

The BDS test is used to detect the non-linearity in the time series data. Correctly, the test is applied to the residuals data series made from the ARIMA models (Dorina and Simina, 2007). The test was named after the famous econometricians; Brock, Dechert and Schneinkman. The test is built on the hypothesis that the series exhibit randomness or whiteness among the series within the model against the alternative hypothesis that the series is asymmetric. The result of the BDS test is shown in table 2 below. From the table, it is shown that the null hypothesis in all dimensions is rejected at a 1% level of significance. This confirms that the model is non-parametric.

Table 2: BDS Linearity Test based on VAR Estimates

Embedded Dimension	Statistics	Standard error	z-statistics
2	0.092*	0.007	11.469
3	0.169*	0.013	13.210
4	0.214*	0.013	13.964
5	0.235*	0.016	14.646
6	0.249*	0.016	16.036

Note: the asterisks (*), (**), and (***) denotes the 1%, 5% and 10% level of significance respectively

c) Results of Unit root Test

The nature of the time series data used in the research necessitates the use of the non-linear unit root test. Meanwhile, the research uses the Breitung unit root test to prove that the series is non-linear. From column 3 of Table 3 below, the Breitung test and ESTAR test of stationarity failed to reject the null hypothesis of linearity of the series at a level and rejected the alternative hypothesis at the first difference. This indicated that all the variables were stationary at first difference.

© 2020 Global Journals

Table 3: Nonlinear Unit Root Test

VARIABLES	KSS	Breitung
lnEXR	2.534	0.077
lnNFA	3.152	0.095
lnM2	2.487	0.091
lnIR	3.182	0.012
ΔlnEXR	-4.623*	0.000*
ΔlnNFA	-3.671**	0.000*
ΔlnM2	-3.840**	0.003*
ΔlnIR	-3.614**	0.004*

*Note: the asterisks *, **, and *** denotes the 1%, 5%, and 10% level of significance respectively. The Δrepresented the variables in the first difference.*

d) Results of Cointegration Test

The majority of linear cointegration tests are built based on many unattainable and questionable assumptions that are hard to meet when it comes to the empirical application (Onour, 2008). This is due to the use of logarithmically transformed data in performing such tests. Onour (2008) further argued that it is only the non-linear cointegration test that can estimate the accurate long-run co-movements between the time series data. For over three decades, many studies have shown that the adjustment mechanism, as well as long run co-movements between the time series data, are more of non-linear (asymmetry) than linear (symmetry) approach (Enders and Siklos, 2001). For this reason, the study applies the Breitung (2002) non-linear cointegration test. The result of the Breitung non-linear cointegration test is presented in Tables 5 and 6. While table 5 reported the Breitung non-parametric test without the presence of drift; on the other hand, table 6 presented the Breitung non-linear cointegration test with the presence of drift respectively. The Breitung non-linear cointegration testis built based on the null hypothesis that the series are not cointegrated. The decision on whether to accept or reject the null hypothesis requires the study to compare the test statistics in column 3 with the critical values in columns 4 and 5 in table 5 and table 6 respectively. Frequently, the null hypothesis is rejected if the test statistics are more significant than the critical values at 5% and, or 10% level of significance.

Based on the above hypothesis, the study rejected the null hypothesis of no cointegration in both tables 5 and 6 at a 5% level of significance. The result is in line with studies ofAdebiyi (2007), Kohlscheen (2013), Omojolaibi and Gbadebo (2014) and De Roure et al. (2015). The justification here is that, by looking critically at the pattern of CBN intervention operations in the foreign exchange market in recent years, its primary aim is to defend Naira from further depreciation against foreign currencies (Alawiye, 2013; Nweze, 2015; Komolafe, 2015). As a result, the CBN's intervention is lopsided on the purchase rather than sales interventions. In its efforts to stabilize the Naira/US Dollar exchange rate, Nigerian monetary authority (the CBN) has been employing various exchange rates management policies such as AFEM, RDAS, WDAS, and IFEM. Probably, this is the reason for having cointegration in the presence of drift.

Table 5: Breitung cointegration test without Drift

H_0	H_1	Test statistics	10% critical value	5% critical value	Simulate p-values
r = 0	r > 1	17665.400*	1200.000	1360.000	0.000
r = 1	r > 2	5895.410*	627.800	741.100	0.000
r = 2	r > 3	705.800*	261.000	329.900	0.001

Note: r indicates the number of cointegration vector—asterisk (*) denotes rejection of the null hypothesis at the 1% level of significance respectively.

Table 6: Breitung Cointegration Test with Drift

H_0	H_1	Test statistics	10% critical value	5% critical value	Simulate p-values
r = 0	r > 0	24573.380*	1972.000	2184.000	0.000
r = 1	r > 1	11876.910*	1158.000	1330.000	0.000
r = 2	r > 2	2265.530*	596.200	713.300	0.000
r = 3	r > 3	471.620*	222.400	281.100	0.007

Note: r indicates the number of cointegration vector—asterisk (*) denotes rejection of the null hypothesis at the 1% level of significance respectively.

© 2020 Global Journals

e) Diks and PanchenkoNon-Parametric Causality Test

The study employed the Diks and Panchenko (2006) non-parametric causality test to examine the nature of the causal link between the variables within the model. Table 7 shows the Diks and Panchenko non-parametric causality test. The tests were conducted using the lag values of $\ell x = \ell y$ selected to be two based on the Akaike Information Criterion. The bandwidths (ε-value) are adjusted to be 0.5 for the entire period of the series. For example, considering the 0.5 bandwidths (or ε-values) from table 7 below, a non-linear unidirectional causal relationship is found running from the net foreign asset (i.e., the intervention variable) to the Naira exchange rate at 1% level of significance. This means that the CBN's intervention operation in the foreign exchange market is capable of altering the volatility of the Naira/US Dollar exchange rate at a 1% significance level. This result is consistent with the studies of Holub (2004); Akinci et al. (2005). On the other hand, the result is also contrary to the findings of Sahadevan (2002) in India.

Moreover, the money supply and exchange rate are found to have a non-linear causal link with the money supply having unidirectional causality with the exchange rate at a 1% level of significance. The result is inconsistent with the findings of Sahadevan (2002) in India. Also, non-linear unidirectional causality running from the net foreign asset to the money supply is found at a 1% level of significance. Both unidirectional causalities from the net foreign asset (i.e., intervention variable) to the money supply and from the money supply to the Naira/US Dollar exchange rate confirmed that the CBN's intervention in the foreign exchange market increase (decrease) the volume of Naira in the foreign exchange market. Meanwhile, an increase (decrease) in the intervention funds increases (decrease) the volume of money in circulation. As a result, this leads to the depreciation (appreciation) of the Naira/US Dollar exchange rate in the world currency market. As a result, the central bank intervention in Nigeria is, therefore, non-sterilized. This result confirms the central idea of the monetary theory of exchange rate determination, as argued by (Frenkel, 1984; Dominguez, 1998). Also, the result is inconsistent with the findings of Adebiyi (2007).

Additionally, unidirectional causality is found running from the lending rate (i.e., the proxy for intervention) to the net foreign asset at a 10% level of significance. Lastly, based on the non-parametric Diks and Panchenko (2006) causality test presented in Table 7 below, no causal link is found to exist from the money supply to the interest rate. In contrast, the money supply is found to granger cause interest rate also at a 1% level of significance. The implication here is because of the high rate of the Naira volatility which makes the foreign investors lose confidence in the local currency. The high rates of Naira misalignment violate one of the significant characteristics of the money. Meanwhile, money must be a durable item such that one Naira today is one Naira tomorrow and any other day. As a result, the volatility in the value of the Naira/USD exchange rate could make foreign investors incur even if no single transaction takes place.

Table 7: Diks and Panchenko Non-linear Causality Test

lnEXR −/→ lnNFA	lnNFA−/→ lnEXR	Direction
1.054	3.400*	Unidirectional
(0.146)	(0.000)	
lnEXR −/→ lnM2	lnM2−/→ lnEXR	
1.130	4.372*	Unidirectional
(0.158)	(0.000)	
lnEXR −/→ lnIR	lnIR−/→ lnEXR	
0.939	0.914	No causality
(0.173)	(0.180)	
lnNFA −/→ lnM2	lnM2−/→ lnNFA	
2.391*	0.832	Unidirectional
(0.008)	(0.202)	
lnNFA −/→ lnIR	lnIR−/→ lnNFA	
1.222	1.081	No causality
(0.110)	(0.139)	
lnM2 −/→ lnIR	lnIR−/→ lnM2	
0.598	0.650	No causality
(0.274)	(0.257)	

Note: the asterisks,**, and *** denotes the 1%, 5% and 10% level of significance the test was conducted bases on Akaike lag length criterion which suggested two lags (i.e. $\ell_x = \ell_y = 2$) respectively. The "ε-value" band-with of the sequence is 0.5. The values in the parenthesis are the p-values.*

V. Conclusions and Recommendations

KSS and Breitung unit root tests of stationarity were employed to test for the degree of stationarity of the variables. Interestingly, the results of the unit root test showed that the variables are not stationary at level. Interestingly, they become stationary after converting

© 2020 Global Journals

them to the first difference. To test whether the model can be considered as a non-linear model, the BDS test is employed. The result of the BDS test of linearity confirmed the non-linearity of the model. The study used non-linear unit root tests of stationarity cointegration test to test for the long-run equilibrium relationship to avoid the misleading conclusion of linear models. Meanwhile, Breitung non-parametric cointegration approach was used to detect the presence of a non-linear long-run equilibrium relationship between the series in the model. Interestingly, the non-linear test of cointegration confirmed the presence of a long-run relationship between the foreign exchange market interventions and the Naira/USD exchange rate.

Disks and Panchenko non-parametric causality tests have also detected the unidirectional causality running from lnM2 to lnEXR, from lnLR (Interest rate variable) to lnEXR and from lnNFA to lnM2 respectively. Furthermore, Diks and Panchenko causality test established the existence of unidirectional causal link running from foreign market intervention to exchange rate. This emphasizes that the CBN's intervention operation is correct, non-sterilized. Besides, the monetary approach to exchange rate determination highlighted that non-sterilized foreign market interventions affect the value of the domestic currency through its effect on the money supply. Nigeria's Central Bank (CBN) has been involved in the foreign exchange market since 1986 (Sanusi, 2004; Adebiyi, 2007), but Naira has also been dreadfully losing its value on the foreign exchange market (Nweze, 2015; Komolafe, 2015). Therefore, the CBN has little or no impact on stabilizing Naira's value. The primary explanation for this is the CBN's incapacity to sterilize the amount of money used during the operation. These have resulted in a gradual rise in the price of domestic goods and services through the pass-through exchange rate (Aliyu, 2009; Zubair et al. 2015). However, CBN needs to accumulate and retain a sufficient amount of foreign reserves for intervention operations to be efficient and profitable. Foreign reserves are used to intervene in the foreign exchange market in most countries. Moreover, countries with high foreign reserve rates continue to draw international investors than they would otherwise.

For this reason, the Central Bank Management Board's policy formulation should be free of any political influences. This will require the board of directors to have skilled staff who will formulate and enforce effective policies to restore and sustain a competitive and stable Naira. Central Bank of Nigeria will ensure sterilization of all the amounts of currency used during intervention operations. It is well known that non-sterilized measures are related to the increase in the circulating volume of money. This contributes to inflation, and it also negatively impacts economic growth. The monetary and fiscal policies and intervention policies should be harmonized. This will improve the efficiency of all initiatives as they seek and aim to accomplish the same purpose. This will guarantee a stable and reasonably affordable Naira. Central Bank of Nigeria should establish a parity band of exchange rates above which Naira is not permitted to depreciate or appreciate as the case may be. The exchange office and the parallel markets should be appropriately monitored and regulated. The primary explanation for this is the vast difference between the official Naira / USD exchange rate and the Bureau de Change's Naira / USD exchange rate and the black marketers. The foreign exchange market deregulation should be tracked carefully and with utmost caution. That can be achieved by embarking on operations of strategic measures (such as handling pegging) that will stabilize and restore the Naira value. Besides, Nigeria's central bank will cease providing foreign exchange to importers of inessential commodities. This will reduce the volume of importation and will also act as a protectionist policy for local industries. Furthermore, domestic Commercial Banks should stop accepting deposits in all sorts of foreign currencies. Lastly, the policymakers should implement strategies for diversifying the Nigerian economy. This will discourage the massive importation of inessential goods and services into the economy.

References Références Referencias

1. Adebiyi, M.A. (2007). An Evaluation of Foreign Exchange Intervention in Nigeria (1986-2003), MPRA Paper No 3817.
2. Akinci, O., Culha, O. Y., Özlale, Ü. & Şahinbeyoğlu, G. (2005). Causes and effects of foreign exchange interventions for the Turkish economy. Central Bank of the Republic of Turkey Research Department Working Paper, 5(05).
3. Alawiye, A. (2013, November 8). CBN Defend Naira with $18.7bn. *Punch. Retrieved from* http://www.punchng.com/business/business-economy/cbn-defends-naira-with-18-7bn/
4. Aliyu, S. U. R. (2009). Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation (No. 16319). University Library of Munich, Germany.
5. Ardalan, K. (2004). The Monetary Approach to Balance of Payments: A Review of the Seminal Long- Run Empirical Research. Journal of Economics and Economic Education Research, 6(1), 37.
6. Balke, N. S., & Fomby, T. B. (1997). Threshold Cointegration. *International Economic Review*, 38(3), 627-645.
7. Basu, K., & Varoudakis, A. (2013). How to move the exchange rate if you must: The diverse practice of foreign exchange intervention by central banks and a proposal for doing it better. World Bank Policy Research Working Paper (6460).

© 2020 Global Journals

8. Behera, H., Beine, M., Lahaye, J., Laurent, S., Neely, C. J., & Palm, F. C. (2007). Central Bank Intervention and Exchange Rate Volatility, It is Continuous and Jumps Components. *International Journal of Finance & Economics*, 12(2), 201-22.
9. Bonser-Neal, C., Roley, V. V., & Sellon, Jr, G. H. (1998). Monetary Policy Actions, Intervention, and Exchange Rates: A Reexamination of the Empirical Relationships Using Federal Funds Rate Target Data*. The Journal of Business, 71(2), 147-177.
10. Breitung, J. (2002). Nonparametric Tests for Unit Roots and Cointegration. *Journal of Econometrics*, 108(2), 343-363.
11. Campbell, J. Y., & Perron, P. (1991). Pitfalls And Opportunities: What Macroeconomists Should Know About Unit Roots. *In NBER Macroeconomics Annual 1991(6), (141-220). MIT Press.*
12. Central Bank of Nigeria Bullion Publication. (2006). Vol. 30. No. 3. Pp. 1-9.
13. Central Bank of Nigeria Statistical Bulletin (Various years).
14. De Roure, C., Furnagiev, S., & Reitz, S. (2015). The Microstructure of Exchange Rate Management: FX Intervention and Capital Controls in Brazil. *Applied Economics*, 47(34-35), 3617-3632.
15. DeJong, D. N., Nankervis, J. C., Savin, N. E., & Whiteman, C. H. (1992). The power problems of unit root test in time series with autoregressive errors. *Journal of Econometrics*, *53*(1), 323-343.
16. Diks, C., & Panchenko, V. (2006). A new statistic and practical guidelines for nonparametric Granger causality testing. *Journal of Economic Dynamics and Control*, *30*(9), 1647-1669.
17. Disyatat, P., & Galati, G. (2007). The Effectiveness of Foreign Exchange Intervention in Emerging Market Countries: Evidence from the Czech koruna. *Journal of International Money and Finance*, 26(3), 383-402.
18. Domaç, I., & Mendoza, A. (2004). Is There Room for Foreign Exchange Interventions under an Inflation Targeting Framework? Evidence from Mexico and Turkey. Evidence from Mexico and Turkey (April 22, 2004). *World Bank Policy Research Working Paper* (3288).
19. Dominguez, K. M. (1998). Central Bank Intervention and Exchange Rate Volatility. Journal of International Money and Finance, 17(1), 161-190.
20. Dominguez, K. M. (2003). The Market Microstructure of Central Bank Intervention. Journal of International Economics, 59(1), 25-45.
21. Edison, J.H. (1993). The Effectiveness of Central Bank Intervention: A Survey of Literature after 1982, Special Papers in International Economics, International Finance Section, Department of Economics Princeton University, Princeton, New Jersey, USA.
22. Enders, W., & Siklos, P. L. (2001). Cointegration and Threshold Adjustment. *Journal of Business & Economic Statistics*, 19(2), 166-176.
23. Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: representation, estimation, and testing. Econometrica: journal of the Econometric Society, 251-276.
24. Fatum, R. (2009). Official Japanese Intervention in the JPY/USD Exchange Rate Market: Is It Effective and Through Which Channel Does It Work? *EPRU Working Paper Series* (2009-02).
25. Fatum, R., & Hutchison, M. (2006). Effectiveness of Official Daily Foreign Exchange Market Intervention Operations in Japan. *Journal of International Money and Finance,* 25(2), 199-219.
26. Frankel, J. A. (1984). Tests of Monetary and Portfolio Balance Models of Exchange Rate Determination. In *Exchange Rate Theory and Practice* (pp. 239-260). University of Chicago Press.
27. Frenkel, M., Pierdzioch, C., & Stadtmann, G. (2005). The effects of Japanese foreign exchange market interventions on the yen/US dollar exchange rate volatility. International Review of Economics & Finance, 14(1), 27-39.
28. Fry-McKibbin, R. A., & Wanaguru, S. (2013). Currency intervention: A Case Study of an Emerging Market. *Journal of International Money and Finance*, C (37), 25-47.
29. Guimaraes, Roberto F., and Cem Karacadag, 2004, "The Empirics of Foreign Exchange Intervention in Emerging Market Countries: the Cases of Mexico and Turkey," *IMF Working Paper* 04(123), (Washington: International Monetary Fund).
30. International Financial Statistics (IFS).
31. Johansen, S. (1988). "Statistical Analysis of Cointegrating Vectors," Journal of Economic Dynamics and Control, 12(2/3): 231-254.
32. Johansen, S. (1991). "Estimation and Hypothesis Testing of Cointegrating Vectors in Gaussian Vector Autoregressive Models," Econometrica, 59: 1551-1581.
33. Johansen, S., and Juselius, K. (1990). „Maximum Likelihood Estimation and Inference on Cointegration-with applications to the demand for money, "Oxford Bulletin of Economics and Statistics, 52(2): 169-210.
34. Kaminsky, G. L., & Lewis, K. K. (1996). Does foreign exchange intervention signal future monetary policy? Journal of Monetary Economics, 37(2), 285-312.
35. Kohlscheen, E. (2013). Long-Run Determinants of the Brazilian Real: A Closer Look at Commodities. *Working Papers (314), Central Bank of Brazil, Research Department.*
36. Komolafe, B. (2015, April 13). CBN Spends $4.7bn to Defend Naira. *Vanguard. Retrieved from*

© 2020 Global Journals

http://www.vanguardngr.com/2015/04/cbn-spends-4-7bn-to-defend-naira/
37. Kurihara, Y. (2011). Intervention in the Foreign Exchange Market and Exchange Rates in Japan. **経営総合科学**, (96), 85-91.
38. Lahura, E., & Vega, M. (2013). Asymmetric effects of FOREX intervention using intraday data: evidence from Peru (No. 430). Bank for International Settlements.
39. Liew, V. K. S. (2004). Which lag length selection criteria should we employ? Economics Bulletin, 3(33), 1-9.
40. Mehdi, M. N. J., Iqbal, W., Sheikh, J., & ul Deen, S. (2012). Central Bank Intervention in the Foreign Exchange Market and Exchange Rate Volatility: Evidence from Pakistan. *Interdisciplinary Journal of Contemporary Research in Business,*3(12), 506-525.
41. Miyajima, K., & Montoro, C. (2013). Impact of Foreign Exchange Interventions on Exchange Rate Expectations*. BIS Papers Chapters*, 73, 39-54.
42. Mohamad, S., (2009) in Yussof, I et al. (2009). Malaysia"s Economy: Past, Present, and Future, 1st edition, Malaysian Strategic Research Centre, Kuala Lumpur, Malaysia.
43. Mussa, M. L. (1984). The Theory of Exchange Rate Determination, in Exchange Rate Theory and Practice (pp. 13-78). University of Chicago Press.
44. Mwansa, K. (2009). The Impact of Central Bank's intervention in the foreign exchange market on the Exchange Rate: The case of Zambia (1995-2008)*(Doctoral dissertation, Munich Personal RePEc Archive (MPRA).*
45. Newman, V., Potter, C., & Wright, M. (2011). Foreign Exchange Market Intervention. *RBA Bulletin*, 67-76.
46. Nweze, C. (2015, February 24). The battle to save Naira may be extended, Complex. *The Nation. Retrieved from* http://thenationonlineng.net/new/saving-the-naira-at-all-cost/
47. Obadan, M.I. (2006). Overview of Exchange Rate Management in Nigeria from 1986 to Date. *Bullion Publication of the Central Bank of Nigeria* (30)3, 1-9.
48. Omojolaibi, J. A., & Gbadebo, A. D. (2014). Foreign Exchange Intervention and Monetary Aggregates: Nigerian Evidence. International Journal of Economics, Commerce, and Management United Kingdom Vol. II, Issue 10, PP, 1-21.
49. Onour, Ibrahim (2008): Financial Integration of GCC Capital Markets: Evidence of Nonlinear Cointegration. *Published in: Afro-Asian Journal of Finance and Accounting*, 1(3), 251-265.
50. Oyinbo, O., & Rekwot, G. Z. (2014). Econometric Analysis of the Nexus of Exchange Rate Deregulation and Agricultural Share of Gross Domestic Product in Nigeria. AGRIS on-line Papers in Economics and Informatics, 6(1).
51. Pattanaik, S., & Sahoo, S. (2001). The Effectiveness of Intervention in India: An Empirical Assessment. *Reserve Bank of India Occasional Papers*, 22(1-3), 21-52.
52. Reitz, S., & Taylor, M. P. (2012). FX intervention in the Yen-US dollar market: a coordination channel perspective. International Economics and Economic Policy, 9(2), 111-128.
53. Sanusi, J. O. (2004). Exchange Rate Mechanism: The Current Nigerian Experience. A Luncheon Organised By Nigerian-British Chamber of Commerce.
54. Sarno, L., & Taylor, M. P. (2001). Official Intervention in the Foreign Exchange Market: Is It Effective and, If So, How Does It Work? Journal of Economic Literature, 39, 839-868.
55. Schmidt, R., & Wollmershäuser, T. (2004). Sterilised Foreign Exchange Market Interventions in a Chartist-Fundamentalist Exchange Rate Model. (50). *Würzburg Economic Papers, University of Wurzburg, Institute for Economic Research.*
56. Schnabl, G., and Hillebrand, E. (2008). A Structural Break in the Effects of Japanese Foreign Exchange Intervention on yen/dollar Exchange Rate Volatility. Journal of International Economic Policy. Vol. 5, Pp. 389-401.
57. Seerattan, D. A. (2012). The Effectiveness Of Central Bank Interventions in the Foreign Exchange Market, *Doctoral Dissertation, School Of Social Sciences Theses, Brunel University, Brunel*.
58. Seerattan, D., & Spagnolo, N. (2009). Central Bank Intervention and Foreign Exchange Markets. *Applied Financial Economics*, 19(17), 1417-1432.
59. Shafer, J. R., & Loopesko, B. E. (1983). Floating Exchange Rates after Ten years. *Brookings Papers on Economic Activity*, 14(1), 1-86.
60. Simatele, M. (2003). Financial Sector Reforms and Monetary Policy in Zambia, *Ph.D. Thesis, University of Goteborg, Sweden.*
61. Sims, C. A. (1972). Money, Income, and Causality. *The American Economic Review*, 62(4), 540-552.
62. Simwaka, K. (2006). The Effectiveness of Official Intervention in Foreign Exchange Market In Malawi. *MPRA* (1123).
63. Simwaka, K., & Mkandawire, L. (2011). The Efficacy of Foreign Exchange Market Intervention in Malawi. *African Journal of Economic Policy*, 15(1).
64. Simwaka, K., & Mkandawire, L. (2012). The Efficacy of Official Intervention in the Foreign Exchange Market in Malawi. *African Development Review*, 24(2), 125-136.
65. Spolander, M. (1999). Measuring Exchange Market Pressure and Central Bank Intervention. *Bank of Finland Studies Working Paper* No. E, 17.
66. Stigler, M. (2010). Threshold Cointegration: Overview and Implementation in R. *Working paper*.

© 2020 Global Journals

67. Su, C. W. (2011). Non-linear causality between the stock and real estate markets of Western European countries: Evidence from rank tests. *Economic Modelling*, *28*(3), 845-851.
68. Tang, C. F., & Chua, S. Y. (2009). The savings-growth nexus in Malaysia: Evidence from the nonparametric analysis. *ICFAI Journal of Financial Economics*, 7(3), 1-12.
69. Taylor, M.P. (1995). The Economics of Exchange Rates, Journal of Economic Literature, Vol. 33, pp. 13-47. http://unstats.un.org/unsd/tradeserv/default.htm.
70. Vargas, H., González, A., & Rodríguez, D. (2013). Foreign exchange intervention in Colombia. Csaba Balogh, Áron Gereben, Ferenc Karvalits and György Pulai.....155 Intervention in foreign exchange markets: the approach of the Reserve Bank of India, 95.
71. Waheed, M. (2010). Foreign exchange intervention and sterilization: an investigation of State Bank of Pakistan"s Reaction Function (No. 33161). University Library of Munich, Germany.
72. Zubair, A.; G. Okorie and A. R. Sanusi (2013), "Exchange Rate Pass-Through to Domestic Prices in Nigeria: An Empirical Investigation," Economic and Financial Review, Volume 51, Number 1, March.

© 2020 Global Journals

This page is intentionally left blank

© 2020 Global Journals

Global Journal of Management and Business Research: B
Economics and Commerce
Volume 20 Issue 6 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Analysis of the Impact of Education on Poverty in Cameroon: An Application of the Nested Logit Model

By Nadège Ngah Otabela & Patrick Marie Nga Ndjobo
University of Maroua

Abstract- This paper re-examine the relationship between human capital and poverty. Using data from the Third National Household Survey in Cameroon (ECAM 3), and a nested logit model, this study shows that education alleviates poverty of people living close to the poverty line in Cameroon. Conversely, when the poor fall far below the poverty line the cost associated with education acquisition process tends to have a negative impact on their abilities to meet their basic needs for households in Cameroon. These results suggest that financially support the education of the poorest will lift them out of poverty.

Keywords: *education, well-being, poverty, nested logit model.*

GJMBR-B Classification: *JEL Code: O10*



Strictly as per the compliance and regulations of:

© 2020. Nadège Ngah Otabela & Patrick Marie Nga Ndjobo. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Analysis of the Impact of Education on Poverty in Cameroon: An Application of the Nested Logit Model

Nadège Ngah Otabela [α] & Patrick Marie Nga Ndjobo [σ]

Abstract- This paper re-examine the relationship between human capital and poverty. Using data from the Third National Household Survey in Cameroon (ECAM 3), and a nested logit model, this study shows that education alleviates poverty of people living close to the poverty line in Cameroon. Conversely, when the poor fall far below the poverty line the cost associated with education acquisition process tends to have a negative impact on their abilities to meet their basic needs for households in Cameroon. These results suggest that financially support the education of the poorest will lift them out of poverty.

Keywords: education, well-being, poverty, nested logit model.

I. Introduction

The aim of this paper is to contribute to the literature given the role played by human capital in the well-being of households. The point is about demonstrating that education has a meaningful impact on poverty alleviation. Findings thus show that education determines the poverty level of people in Cameroon and that it has far more impact alleviating poverty on those close to the poverty line.

According to Davis and Sanchez-Martinez (2015), the definitions of poverty adopted over time have reflected a shift in thinking, from a focus on monetary aspects to wider issues such as political participation and social exclusion. Especially, the analysis of the determinants of poverty has been intensively studied after the seminal researches that have been done within the classical and neoclassical economics perspectives by Smith (1776), Ravallion and Chen 2008), and Becker (1995). The latter suggests that there is a very close relationship between investment in human capital and poverty reduction. Subsequently, the primary determinant of a country's standard of living is how well it succeeds in developing and utilizing the skills, knowledge, health, and habits of its population. As a matter of fact, well-being/ poverty tends to be positively impacted by many determining factors prominent among which are the main sources of human capital namely education and health or, these determining factors associated with others for instance access to loan, social security, etc., have an impact on people's well-being.

However, a deep analysis of the existing relationship between human capital and poverty has been made using other theoretical approaches that are either extension, or questioning of the neoclassical traditional theoretical approach. For example, the Keynesian/neo-liberal schools according to which poverty is considered largely involuntary and caused mainly by unemployment.

These theoretical foundations do not always agree on the meaning that should be given to the relationship between human capital and poverty. Factually, albeit not a general rule, human capital acquisition improves households' economic well-being. To drive home this point, education is often sacrificed on the altar of child labour especially in poor households whereas children from better-off households do not work. As a result, Baland and Robinson (2000) brings out the contrast between poverty reduction goals and children education at least for poor households. By contrast, other kinds of evidence support inference that human capital greatly fosters economic well-being and reduces poverty.

According to Becker (1975) expenses on inter alia education, training, medical care are investments in human capital. They are referred to as human capital because no one can ever be unyoked from their knowledge, skills, health, or values as it may be the case with their financial assets and property. Education is one of the most important investment in human capital. Poverty has customarily been related to income. People are therefore said to be living in poverty when they have no income and other resources necessary for better living conditions (an adequate diet, property, facilities, goods and services) that enable them to play their parts, perform their duties and get involve in their society (Townsend, 2006).

As a matter of fact, poverty leads to dearth and exclusions. Many countries around the world particularly Sub-Saharan African countries (SSA) are faced with the huge challenge of maintaining or improving people's well-being and therefore promote comprehensive public policies especially those pertaining to the generation of human capital, and thus education.

Author α σ: Faculty of Economics and Management, University of Maroua, Cameroon. e-mail: ngah_nadege@yahoo.fr

© 2020 Global Journals

In fact, according to Nga Ndjobo and Abessolo (2017), human capital investors motivations are essentially of three kinds: first and foremost, when the State earmarks budget to upgrade education in a bid to enhance development; secondly, when employers take on responsibilities for the training of their employees and expect growth in productivity; and lastly, when people are willing to devote time and money to education and training to increase their wage on the job market.

However, since most developing countries are often have fatal flaws in their labour market (expressed by inadequate wages, high unemployment rates as well as the downgrading of graduates), it is sometimes noticed that education acquisition does not systematically lead to poverty alleviation.

However, it can be assumed that if education acquisition means poverty reduction for some, it is not always the case for others. In fact, it has been shown that the standard of living of households has a positive and meaningful impact on the acquisition and the returns of the education (Psacharopoulos and Patrinos, 2018). Thus, the less someone is poor, the more they acquire education in quality and quantity; better still, they are able to enter the labour market. Meanwhile, the poor are not expected to value that much the quality of education but to the quantity. So, hypothetically, it can be assumed that this type of education does not always allow the poor to get out of their state of poverty.

The contribution of education for the betterment of households' well-being and reduction of poverty seems to be mitigated, not to say differentiated. In such a context it is possible that people who spent the same number of years receiving education end up having different results in terms of getting out of the trap of poverty. Hence the question on whether the acquisition of education leads to poverty reduction in a uniform manner regardless of the person's level of poverty.

Given all the aforementioned, this paper aims to review the relationship between human capital and economic well-being (as well as poverty) in a bid to highlight the place of education in the continuous efforts made to stamp out poverty. We tapped in ECAM III (CNIS, 2007) database to reach two main objectives. Firstly, we assessed the role played by education in poverty in Cameroon based on whether the person is close or far below the poverty line and secondly, we assessed the share of education in poverty reduction based on how close or how far below people are from the poverty line.

Our analysis provides new avenues for understanding the phenomenon of poverty, and therefore contribute to the literature on economic well-being. Our results show that education plays multiple roles in poverty. It determines people's poverty level, it also contributes in reducing the poverty level of those close to the poverty line and when it comes to people far below the poverty line, education tends to have a significantly negative effect on poverty reduction in Cameroon.

These results show how indispensable it is for the government to provide financial assistance in the field of education targeting those who fall far below the poverty line and by so doing, their education expenses could be spared and earmarked for meeting other basic needs. What's more, the said financial assistance should enable them to receive high standard education in order to give them the opportunity to enter the labour market and get out of poverty. Other factors like income play a key role in poverty alleviation. Our findings end up showing that, it is detrimental when a given level of education is not reached, for, the less people spend years receiving education the more negative impacts it has on poverty reduction. Conversely, the more they spend years receiving education, the greater the positive, significant and meaningful impact it has on poverty reduction.

The rest of the paper is organized as follows. Section 2 presents and describes data used and shows the empirical model and the estimation method, in section 3 results are discussed. Finally section 4 concludes.

II. Methodology of The Study

a) Data and Variables

i. Data

Data used in this study are primary data from the ECAM III database (Third Cameroon Household Survey)[1]. This survey was carried out over the period May - July 2007. The ECAM III which covered the national territory of Cameroon is a survey carried out by the Government, through the National Institute of Statistics (CNIS). The main objective of ECAM III is to update the poverty profile and the different indicators of households' living conditions established in 2001 and to evaluate the impact of the main programs and policies implemented within the framework of the fight against poverty (CNIS, 2008). That said, the statistical unit of ECAM III is the private household[2] and its observation units are both household[3] and individuals[4]. Finally, ECAM III targeted a sample of 12,000 households, of which 11,391 were actually visited (CINS, 2008).

ii. Definition of variables

For the purpose of this study, poverty refers to people living below the poverty line. The model thus developed here required the use of dependent variables and two types of explanatory variables:

[1] The first and second ECAM (Cameroon Household Survey) were realized respectively in 1996 (ECAM I) and in 2001 (ECAM II).
[2] By opposition to the collective households: boarding schools, barracks, hospitals, convents, etc.
[3] Accommodation, housing, inseparable spending of the household, etc.
[4] Demographic characteristics, individual spending, etc.

© 2020 Global Journals

- A "type" variable, dependent on the equation of the first level of choice or top level. It identifies the alternatives for this level of choice, that is the possibility somebody has to choose between poverty and non-poverty
- A dependent variable "poverty line", of the equation of the second level of choice or bottom-level. A "state of poverty" variable that identifies the various alternatives people have, once they are identified as poor.

a. *Variables pertaining to people's position regarding poverty*

The explanatory variables of the alternatives to poverty or non-poverty (first level of choice or top level). These variables are basically related to demography and people's social and family context. These are variables specific to people as individuals which are individual-specific variables.

Within the framework of this study, individual-specific variables include: The age that corresponds to the number of completed years of the person ranging from 15 to 64, the square age (divided by 100) [5], the gender, the marital status, the area of residence and the size of the household in which they dwell.

b. *Variables pertaining to the various states of poverty*

Explanatory variables of the different states of poverty (second level of choice or bottom-level). These variables mainly deal with characteristics (taken separately) of the state of poverty to which the person belongs. They occur after people have been identified as poor or non-poor. They will maximize their utility. These variables are specific to different states of poverty. They refer to the number of years somebody spent receiving education (they represent successful years of schooling), the person's number of years of education squared (divided by 100) [6], the average number of hours of work for the people of each state of poverty and per region and lastly to the imputed income. The latter refers to the income that people may expect from their participation in different segments of the labour market. Here, it corresponds to the average income level[7] as applied in the different segments of the labour market and by region.

b) Empirical Specification and Estimation Approach

The use of the econometric approach chosen in this study is in agreement with the classical economic traditions according to which individuals are largely responsible for their own destiny, choosing in effect to become poor (Davis and Sanchez-Martinez, 2015). Indeed, this econometric approach implies that somebody irrespective of their age is faced with a problem of "choice" regarding the two-level poverty line. They can be either above the poverty line (non-poor) or below (poor). In the latter case, two main alternatives can also be identified, either the person is poor but close to the poverty line, or is poor and far below the poverty line. This hierarchical structure of the model[8] can be better understood in the form of a decision tree (see Figure 1 in Appendix). In this latter structure, poverty and non-poverty are dealt with differently for people's reactions to poverty are not the same.

i. *Identification Strategy and Model Selection*

The nested logit model is a combination of standard logit models that differs from the latter by the fact that the components of the alternative choice error do not necessarily need the same distribution. Moreover, the nested logit model admits more general substitution frameworks. The idea of this model lies with a grouping of similar alternatives within subsets or subgroups, in order to create a hierarchical structure of alternatives (Ben-Akiva and Lerman, 1985; Train, 2003). Alternative errors terms are correlated to each other within (the same) subset, while those of alternatives in different subsets are not correlated. Thus, the IIA assumption is maintained within each subset, but the variance may differ between the different subsets. The nested logit model process thus accommodates a partial violation or release of the IIA property (Kamgnia, 2007; Silberhorn et al., 2006).

Besides, the rational for its use is based on the likelihood-ratio test[9] and the Hausman-McFadden (1984) test that we do. Parameter *IV* (Inclusive Value) can be used to test the IIA hypothesis. Indeed, a test of the null hypothesis $IV = 1$ is an effective test of the relevance of the latter in the multinomial logit model.

ii. *Position to the poverty line model*

People's position to the poverty line is represented by a Random Utility Model (RUM) estimated by the conditional logit technique initiated by McFadden (1973). The Random Utility Theory (RUT) is consistent with this model. In fact, the RUM approach assumes that somebody "selects" one option from several alternatives. We assume that the person "chooses" the alternative that gives him the highest utility.

[5] The division by one hundred allows to avoid certain inconveniences bound to the size effects.
[6] The division by one hundred allows to avoid certain inconveniences bound to the size effects.
[7] In this study, the income is approximated by per capita expenditures.
[8] The situation which we define here is obvious. However, when it is not the case, it is possible to tidy up the alternatives in subgroups. So, when the hypothesis of IIA holds between two alternatives, these can be tidied up in the same subset or the subgroup.
[9] This test is proposed by McFadden, Train and Tye (1977).

© 2020 Global Journals

Thus, one of the subgroups in the nested logit model is the model for deciding or identifying a case of poverty or non-poverty. In this case, we assume that the utility levels associated with the choice or identification of poverty or non-poverty are respectively:

$$U_i(poverty) = \gamma^P X_i + \vartheta_i^P$$

$$U_i(non-poverty) = \gamma^{NP} X_i + \vartheta_i^{NP}$$

In the model of decision or identification of poverty, the vector X contains the characteristics of the person. The probability of identification of the person *i* with respect to the poverty line is thus:

$$Prob(i\ poverty) = \frac{\exp(\gamma^P X_i)}{(1+\exp(\gamma^P X_i)+\exp(\gamma^{NP} X_i))} \quad (1)$$

The same therefore goes for non-poverty. It is a standard multinomial logit equation.

iii. *Various states of poverty Model*

The other subgroup in the nested logit model is the model of "choice" or identification of people's states of poverty. Explicitly, tapping from Greene (1997) formulation, the model assumes that if the person *i* chooses to live in a state of poverty or is identified in a state of poverty, or else decides to be a poor or is identified as being a poor, they will be classified among *j* poverty alternatives. The utility of this person can be expressed as:

$$U_i^P(state\ of\ poverty\ J) = \beta^P Z_{ij} + \varepsilon_{ij}^P, \quad j = 1, \dots, J \quad (2)$$

Where Z is the state of poverty characteristics vector. If we observe that the person *i* chooses a state of poverty or is identified in a state of poverty *k*, it will imply that $U_i^P(states\ of\ poverty\ \ k) > U_i^P(states\ of\ poverty\ \ j) \quad \forall\, j \neq k$.

More so, it is assumed that individual-specific error terms $\varepsilon_{i1}^P, \varepsilon_{i2}^P \ \dots\dots\ \varepsilon_{iK}^P$ are random and have, in the stochastic utility function, independent GEV (Generalized Extreme-Value)[10] distributions. McFadden (1973) shows that under these conditions, the probability that the person *i* chooses the state of poverty or be identified in the state of poverty *j* is given by:

$$Prob\ (i\ chooses\ or\ is\ identified\ in\ the\ state\ of\ poverty\ \ j) = \frac{\exp(\beta^P Z_{ij})}{\sum_{j=1}^{J} \exp(\beta^P Z_{ij})} \quad (3)$$

The estimate of equation *(3)* produces a single vector of parameters β^P, which shows that the effect of the characteristics of the state of poverty *Z* on the probability that the person who has already been identified as poor, lies in the state of poverty *j*. It should be noted that there is a similar equation for a state of non-poverty. In addition, the variable "education" is included in the "identified as poor" sub-group because it varies from one state of poverty to another, and also from one person to another.

iv. *Combining decision or identification of position to the poverty line and the various states of poverty*

To jointly estimate the models of situation with respect to the poverty line and people various states of poverty, the nested logit model combines *(1)* and *(3)* as shown below. The unconditional probability that the person *i* "chooses" or is in the state of poverty *j* is:

$$Prob(choosing\ a\ state\ of\ poverty\ j) = Prob(i\ chooses\ j \mid i\ poor) * Prob(i\ \ poor)$$

Or by using equations *(1)* and *(3)*

$$Prob(i\ chooses\ j\ poverty) = \left[\frac{\exp(\beta^P Z_{ij})}{\sum_{j=1}^{J} \exp(\beta^P Z_{ij})}\right]\left[\frac{\exp(\gamma^P X_i + \sigma^P I_i^P)}{(1+\exp(\Phi^P X_i + \sigma^P I_i^P) + \exp(\gamma^{NP} X_i + \sigma^P I_i^P))}\right] \quad (4)$$

Equation *(4)* is the multiple of equations *(1)* and *(3)*, except for the appearance of the parameter σ^P and the variable I^P, called inclusive value and defined as:

[10] Gumbel distribution, for example.

© 2020 Global Journals

$$I_i^P = \log\left(\sum_{j=1}^{J} \exp\left(\beta^P Z_{ij}\right)\right) \quad (5)$$

Inclusive value represents the utility associated with choosing states of poverty. If the coefficient of the inclusive value, σ^P is zero, equation *(4)* then turns to be the probability of choosing the state of poverty *j* multiplied by the probability of being identified as poor. In other words, if σ^P is equal to zero, there is no classification of alternatives by subgroups. In this case, the identification as poor or non-poor is independent of the value of the utility of the options in the subgroup of poverty alternatives, and there is no need estimating decisions jointly.

Thus, the coefficient σ^P provides a relevant statistical test for the opportunity of classifying decisions by subgroups[11].

Having specified the probabilities of choices or identifications observed in equation *(4)*, and in the corresponding equation for non-poverty, we can established a likelihood function as we usually do.

The parameters β^P, β^{NP}, γ^P, γ^{NP}, σ^P and σ^{NP} are then estimated by the usual techniques of maximum likelihood[12].

III. Results and Discussions

The results of our different estimates are shown in Table 1 in the Appendix. The following are crucial information unveiled by the results:

1. Education determines the level of poor people;
2. Among the poor, education contributes to further reduce poverty of those of them who are close to the poverty line;
3. When poor people are far below the poverty line, education tends to have a negative and weighty impact on poverty reduction in Cameroon.

As a result, poverty is widely spread. Our results come from the estimate of the nested logit model for people of working age, through which equations of poverty and choice or identification of states of poverty are estimated simultaneously. The likelihood ratio test for IIA hypothesis (LR test for IIA) clearly rejects the null hypothesis of parameter IV (inclusive value) equal to the unit. Similarly, the dissimilarity parameter of "poverty" is included in the unit interval. This corresponds to a correlation of the error terms of about 0.1918, implying that the unobserved factors that lead people to poverty also affect the choice or identification of their state of poverty.

These main results found ultimately show that when the number of years spent receiving education is below a certain threshold of quantity and quality, education has a negative impact on poverty reduction. In this case, the acquisition of education is simply the result of the absorption of the scarce resources available to the poorest. The latter can only receive little education given the limited resources available to them. On the other hand, the more the number of years spent receiving education, the greater the role of education in reducing poverty. In this case, education plays a significant, positive and meaningful role.

In fact, the non-poor or the not-so-poor are able to disburse considerable amounts of money for the purpose of education, without however sacrificing their well-being. The accumulation of human capital represents for them a privileged source of spending. These results are consistent with those in the literature which suggest that acquiring human capital in general and education in particular, helps to improve the well-being of people and can be considered as a reducing risk element of high poverty (Mihai et al., 2015). Similarly, this acquisition and accumulation which follows to be profitable it must be widespread among the poorest. For that purpose, Zhang (2014) shows that educational costs cause poverty and deprivation for low- and middle-income families.

Poverty is characterised by a lack of or insufficient resources of all sorts for alternative use. Given that poor people, like anybody else, have unlimited needs they often consider that the opportunity cost associated with the time spent receiving education is really substantial not to say unbearable and must therefore be substituted by the profit guaranteed by a paid activity that requires few qualifications. The issue of (direct and indirect) cost of education should thus be the gist of the analysis and the crux of the matter of economic policies relating to poverty in countries severely affected by this phenomenon such as Cameroon, insofar as education allows to improve the well-being of people but unfortunately, is very difficult to access.

Our findings consequently, show how indispensable it is for the government to provide financial assistance in the field of education targeting the poorest so that their education expenses could be spared and used for other purposes on the one hand and on the other, the said financial assistance should enable them to receive high standard education in order to give them the opportunity to enter the labour market and get out of poverty. Other factors like income play a key role in poverty alleviation.

[11] When the IIA hypothesis (independence of irrelevant alternatives) holds (or is well applied) within two alternatives, they can be classified in the same sub-set or sub-group.

[12] The full information maximum likelihood.

© 2020 Global Journals

IV. Conclusion

This paper dwells on human capital and household well-being in Cameroon. Results from nested logit model estimates indicate that education have a significant impact on poverty alleviation. Moreover, our findings show that education determines the poverty level of people in Cameroon, and that education contributes to poverty reduction and this is particularly true for those who are close to the line of poverty.

The findings of this study ultimately suggest that when the number of years spent receiving education is below a certain threshold of quantity and quality, education has a negative impact on poverty reduction. Meanwhile, the more the number of years spent receiving education, the greater the role of education in reducing poverty for it is significant, positive and meaningful.

This paper has some relevant policy implications. It is crucial for the poorest to receive financial support from the government to cover education expenses so they may strive to meet other needs (housing, clothing, etc.). The said financial assistance should equally enable them to receive high standard education in order to give them the opportunity to enter the labour market of the society to which they belong, get out of poverty and definitely put an end to this vicious circle.

References Références Referencias

1. Baland, J.-M. and J. A. Robinson. 2000. "Is Child Labor Inefficient?" *Journal of Political Economy, vol. 108, N°4*, pp. 663-679.
2. Becker, G. S. 1975. *Human Capital: A theoretical and empirical analysis, with special reference to education.* (2nd ed.). National Bureau of Economic Research. New York, NY: Columbia University Press.
3. Becker, G. S. 1995. "Human Capital and Poverty Alleviation". *Human Resources Development and Operations Policy Working Paper N°. 52*, The World Bank. Washington DC.
4. Ben-Akiva, M. and S.R. Lerman. 1985. *Discrete Choice Analysis: Theory and Application to Travel Demand*, sixth printing 1994 edn. The MIT Press, Cambridge/Massachusetts.
5. Cameroon's National Institute of Statistics. 2007. *Third Cameroon Household Survey*, Cameroon.
6. Cameroon's National Institute of Statistics. 2008. *Living conditions of the populations and the profile of poverty in Cameroon in 2007 – Main Report of the ECAM 3*, December 2008, Cameroon.
7. Cameroon's National Institute of Statistics. 2008. *Third Cameroon Household Survey: Trends, profile and determinants of the poverty in Cameroon 2001-2007*, June 2008, Cameroon.
8. Davis, P. E. and M. Sanchez-Martinez. 2015. Economic Theories of Poverty. *Joseph Rowntree Foundation Report*.
9. Greene, W. 1997. *Econometric Analysis*, 3rd ed., Prentice Hall.
10. Hausman, J. and D. McFadden. 1984. "Specification Tests for the Multinomial Logit Model", *Econometrica*, vol. 52, issue 5, 1219-1240.
11. Kamgnia, D. B. 2007. "Compensating the Poor out of Traditional Healing in Cameroon: A Nested Logit Analysis". *Applied Econometrics and International Development, vol. 7-2*, pp. 163-170.
12. McFadden, D. 1973. "Conditional Logit Analysis of Qualitative Choice Behavior". *In P. Zarembka, ed., Frontiers in Econometrics,* New York: Academic Press.
13. McFadden, D. 1984. "Econometric Analysis of Qualitative Response Model". In *Handbook of Econometrics, vol. 2, Z. Griliches and M. D. intriligator (eds), Elsevier Science Publishers*.
14. McFadden, D., K. Train and W. Tye. 1977. "An Application of Diagnostic Tests for the Independence of Irrelevant Alternatives Property of the Multinomial Logit Model". *Transportation Research Record*, *637*, pp. 39-46.
15. Mihai, M., Titan, E. and D. Manaea. 2015. "Education and Poverty". *Procedia Economics and Finance*, vol. 32, pp 855-860.
16. Nga Ndjobo, P. M. and Y. A.Abessolo.2017. Analyse de l'impact de l'éducation sur le comportement de l'offre de travail au Cameroun : une application du modèle logit emboîté. *African Integration and Development Review, Vol. 10*.
17. Psacharopoulos, G. and H. A. Patrinos. 2018. "Returns to Investment in Education: a Decennial Review of the Global Literature". *Education Economics*, DOI: 10.1080/09645292.2018.1484426.
18. Ravallion, M. and S. Chen. 2008. "The developing World is poorer than we thought, but not less successful in the fight against poverty". *Policy Research Working Paper Series, N° 4703*, The World Bank. Washington DC.
19. Silberhorn, N., Boztuğ, Y. and L. Hildebrandt. 2006. "Estimation with the Nested Logit Model: Specifications and Software Particularities", *SFB 649 Discussion Paper 2006-017*, Institute of Marketing, Humboldt-Universität zu Berlin, Germany.
20. Smith, A. 1776. An enquiry into the nature and causes of the wealth of nations. London: Methuen & Co., Ltd.
21. Townsend, P. 2006. "What is Poverty? An Historical Perspective". In *Poverty in Focus/UNDP International Poverty Centre (IPC)*.
22. Train, K. E. 2003. *Discrete Choice Methods with Simulation*. Cambridge University Press.

© 2020 Global Journals

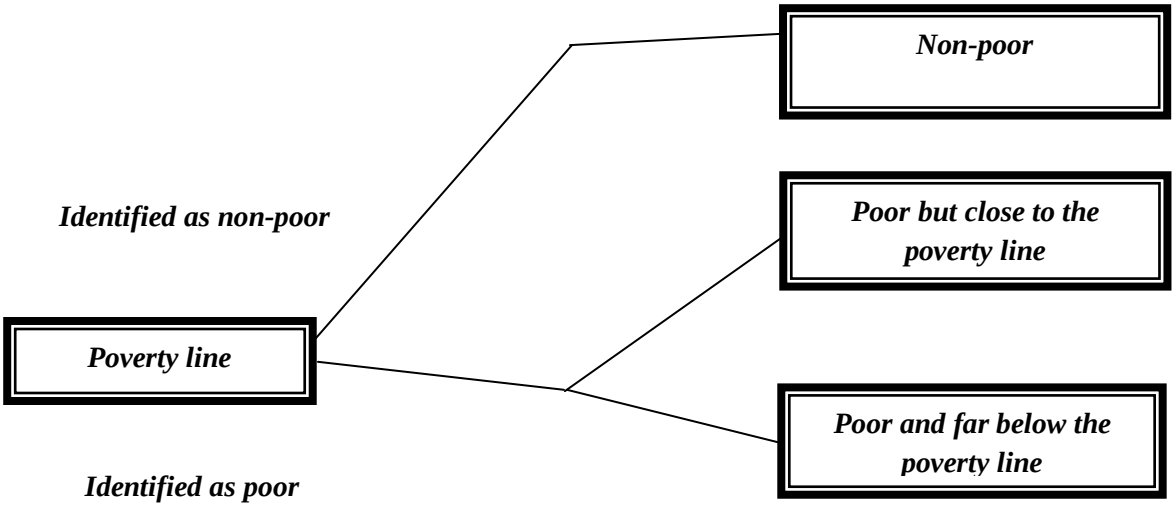
23. Zhang, H. 2014. "The Poverty Trap of Education: Education-Poverty Connections in Western China". *International Journal of Educational Development*, vol. 38, pp 47-58.

Table 1: Estimators from the estimates of the nested LOGIT model of poverty in Cameroon

VARIABLES	
Dependent variables of the equation of the second level of choice or bottom-level	
Poverty Line State of poverty	
Independents Variables	
Average of successful years of education	-0.438*** (0.032)
Square average of successful years of education (divided by 100)	4.099*** (0.236)
Log of the average imputed income	0.783*** (0.083)
Log of the average worked hours	-1.526*** (0.211)
Dependent Variable of the equation of the first level of choice or top level	
Type	
Independent Variables	
Potential age	0.006 ^{ns} (0.004)
Potential age squared (divided by 100)	-0.014 *** (0.005)
Gender (Male = 1 or else 0)	0.577 *** (0.063)
Household size	-0.311*** (0.010)
Marital status (married or living in a de facto union =1 or else 0)	-0.362 *** (0.066)
Area of residence (urban = 1 or else 0)	1.592*** (0.050)
Control Variable	
Type	
$\lambda_{non_poor} = 1$	1 (constraint)
λ_{poor}	0.1918 (0.0253)
Number of observations = 32412 Number of cases = 10804 Alternatives per case: Minimum = 3 Average = 3.0 Maximum = 3 Wald chi2(10) = 2540.69 Log likelihood = -6373.3667 Prob > chi2 = 0.0000 Test LR for IIA (tau = 1): chi2(1) = 261.62 Prob > chi2 = 0,0000	

*Notes: standard errors are in parentheses, *** p<0.01, ** p<0.5, * p<0.1.*
Source: author based on ECAM III database (CNIS, 2007).

© 2020 Global Journals



Step 1 of the decision-making process: Step 2of the decision-making process:

Non-poor *or poor i = 1, 2* *State of poverty close to or far below the poverty line j = 1, 2*

Source: Author.

Figure 1: Structure of the decision-making model

© 2020 Global Journals

Global Journal of Management and Business Research: B
Economics and Commerce
Volume 20 Issue 6 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Economic Impact of Public Expenditure in The Gambia

By Thomas Roberts, François J. Cabral & Samuel Maxime Coly
Cheikh Anta Diop University

Abstract- The impact of public expenditure on the productive sectors (agriculture, industry, and service) in The Gambia, is analyzed within the framework of a Dynamic Computable General Equilibrium (DCGE) model. The model is applied and calibrated to assess the impact of a 10% increase in public expenditure on economic growth and welfare over five years. The results indicate an increase in GDP and value-added, mainly as a result of growth in the service sector. Also, an expansion of the service sector leads to the migration of jobs to the rural areas, which will consequently enhance rural labour income. A significant finding is that general public expenditure on agriculture may not get the desired result for poverty reduction, specifically in rural areas. As a result, public agricultural spending should be targeted across various agriculture sub-sectors, such as, irrigation, among others. The Government of The Gambia (GoTG) should also prioritize investment in the service sector, given that it has immense potentials in enhancing the livelihoods of Gambians in rural areas.

Keywords: *CGE model, government expenditure, poverty, economic growth, inequality.*

GJMBR-B Classification: *JEL Code: O10*



Strictly as per the compliance and regulations of:

© 2020. Thomas Roberts, François J. Cabral & Samuel Maxime Coly. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Economic Impact of Public Expenditure in The Gambia

Thomas Roberts [α], François J. Cabral [σ] & Samuel Maxime Coly [ρ]

Abstract- The impact of public expenditure on the productive sectors (agriculture, industry, and service) in The Gambia, is analyzed within the framework of a Dynamic Computable General Equilibrium (DCGE) model. The model is applied and calibrated to assess the impact of a 10% increase in public expenditure on economic growth and welfare over five years. The results indicate an increase in GDP and value-added, mainly as a result of growth in the service sector. Also, an expansion of the service sector leads to the migration of jobs to the rural areas, which will consequently enhance rural labour income. A significant finding is that general public expenditure on agriculture may not get the desired result for poverty reduction, specifically in rural areas. As a result, public agricultural spending should be targeted across various agriculture sub-sectors, such as, irrigation, among others. The Government of The Gambia (GoTG) should also prioritize investment in the service sector, given that it has immense potentials in enhancing the livelihoods of Gambians in rural areas.

Keywords: CGE model, government expenditure, poverty, economic growth, inequality.

I. Introduction

Due to the poverty and inequality-related challenges in The Gambia and many African countries, the Gambian Government and the international community have intensified their efforts to increase and redirect public resources to ensure that countries benefit from an economic development that is socially inclusive and environmentally sustainable. For instance, in Maputo, Mozambique, in 2003, the Gambian Head of State and other African Heads of State approved the establishment of CAADP. In 2014, at Malabo, Equatorial Guinea, African Heads of State reaffirmed their commitments to end hunger and halve poverty by 2025, through inclusive agricultural growth and productivity. They also reiterated their commitment to enhancing resilience in livelihoods and production systems to climate change-related shocks; a commitment to 10% of public investment to agriculture; among others (AUC, 2014).

Author α ρ: Researcher at the Research Laboratory for Institutions and Growth (LINC), and he holds a PhD Economics from Cheikh Anta Diop University of Dakar. e-mails: thomascolbe.roberts@ucad.edu.sn, colberoberts@live.com

Author σ: Professor of Economics at the Faculty of Economics and Management, Cheikh Anta Diop University of Dakar. He is also Director of the Research Laboratory for Institutions and Growth (LINC).
e-mail: joecabral7@gmail.com

Moreover, it is worthy to note that Governments in developing countries struggle to fund productive sectors like agriculture. For instance, most developing countries have a large informal sector and inefficiencies in tax administration, which implies lower than average tax-to-GDP rations. Also, increasing Government tax revenues may significantly undermine private sector savings and investments in the economy (Sennoga and Matovu, 2010).

African leaders have signed and committed to various other Charters that demand public funds of considerable size. For instance, the 2001 Abuja Declaration called for Governments to spend 15% of their national budget in the health sector. Also the '2007 Year of Science and Technology' demanded that Governments spend 1% of GDP on science and technology. These commitments (among others) may, therefore, stretch the capacity of African Governments to consistently dedicate at least 10% of their expenditure to agriculture (Benin, 2015). Brüntrup (2011) and Mahalambe (2009) have, therefore, vigorously asserted that the 10% public agriculture expenditure commitment is highly arbitrary and indifferent to country-specific contexts.

Notwithstanding, one cannot neglect the fact that agriculture has a crucial role in contributing to Africa's inclusive and sustainable growth, given that almost two-thirds of the continent's population rely on agricultural income for a living—and the consumption expenditure of approximately three-quarters of the poorest African households is spent on food (Goyal and Nash, 2017). Moreover, targeting Government expenditure to reduce poverty is not enough. Public expenditure should equally stimulate economic growth.

Studies have shown that Government spending on agricultural R&D, irrigation and infrastructure (including roads and electricity) targeted to the rural poor have contributed to a reduction of rural poverty and growth in agricultural productivity (but in different variations) (Fan et al., 2000). Benin and Yu (2013) also emphasized that Government spending on growth-inducing agricultural R&D takes time to show results.

The financing of public capital spending through external or internal indebtedness, among others, would significantly discourage (or crowd-out) private investment from profitable sectors. This ineffective financing method is mostly the case in many developing countries where there is a weak structural

© 2020 Global Journals

private financial system (Niels and Censink, 2001 and Ramirez, 1996). The concept of crowding-out the private sector has a long history of debate in macroeconomic theory. For instance, it was known to Keynes as 'diversion' (Buiter, 1977). Barro (1989) later asserted that public investment tends to be positively correlated to private investment. The relationship between public investment and private expenditure is either one of 'crowding-in' or 'crowding-out'. In order words, when public expenditure crowds-in (or attracts private investment), it is seen as productive—and when the latter occurs, it undermines growth. Generally, private capital, when stimulated by public capital can have the required economic growth and poverty reduction impacts through these pathways: technology advancing, human capital enhancing, transaction cost-reducing and crowding-in private capital (Benin, 2015).

Public expenditure also has an impact on Total Factor Productivity (TFP). The literature on the effect of public expenditure on TFP vary. For instance, the heterogeneity of TFP between regions was discussed in Destefanis and Sena (2005), as well as Ascariand Di Cosmo (2005). In these studies, public capital had a positive impact on TFP. On the other hand, Hansson and Henrekson (1994) did not notice a positive impact of general public spending on TFP in selected Organization for Economic Co-operation and Development (OECD) countries. However, the evidence from Bronzini and Piselli (2009) illustrates that public spending on infrastructure in one country can have a spillover effect on the TFP of a neighboring country.

Although the intended outcomes of public expenditure is not always realized, the rationale for public expenditure should not be ignored. The justification for public expenditure (underpinned by neoclassical economic theory) is categorized into twofold. Firstly, market failures and economic inefficiencies in an economy can be corrected through public sector involvement, especially via public investment in agricultural R&D, subsidization, or regulations. Secondly, there is a view that the challenge of inequality and the undesirably low material welfare among the poorest in society, can be addressed through public policy or public investment. This supposition is based on the fact that social inequalities are promoted because of the biased distribution of goods and services against the majority of people that reside in rural areas (Mogues et al., 2012 and Benin, 2015).

Moreover, studies on economic growth and income inequality started several decades ago, to address the issues of market inefficiencies, income inequality, poverty, among others. For instance, the Kuznets' hypothesis (Kuznets, 1955 and Kuznets, 1963) was one of the first studies to dominate the discussions on economic growth and income inequality. Kuznets founded an inverted U-shaped relation between income inequality and Gross National Product (GNP) per capita, using a time series and cross-country data. This simply implied that in the process of industrialization, there would be an initial increase in income inequality due to rural-urban migration. However, inequality will subsequently decrease after industries would have attracted a huge fraction of the rural labour force. Adelman and Morris (1973)[1] refuted Kuznets' hypothesis of a trickling down of benefits of economic growth to the poorest segment of people in low-income countries. In contrary, their study supported the Marxian view that economic structure (not income levels or economic growth) determined the patterns of income distribution.

Kuznets' hypothesis relatively explained the dynamics of growth in the USA and other developed countries, up to the 1970s, where inequality facilitated growth, and growth in-turn reduced inequality. However, this was not the case in the 20th Century. For instance, in the 1980s, the ratio of the 90th to the 10th percentile of the male wage distribution increased by 27% in the UK and 18% in the USA. (Aghion, 1999; Bourguignon and Morisson, 1992 and OECD, 1993). The evidence in this inequality in wages was, therefore, completely different from Kuznets' assertion.

Given that the Kuznets' theory may not be fully applicable in developing countries in the 21st Century, there is, therefore, the need to explore new economic theories that explain core factors that may affect income inequality and income redistribution in the developing world. In recent years, some significant findings supported by various authors suggest that economic growth in rural areas has a substantial effect on reducing poverty, than economic growth in urban areas. Also, it is indicated that the poverty-reducing impact of economic growth is more impactful if initial inequality is lower, and if the status of rural development and human resource development is more favorable (Ravallion and Datt, 1996; Ravallion, 1997; Lofgren and Robinson, 2008; and Timmer, 1997).

In the same way, Dollar and Kraay (2000) also explained the relationship between economic growth and poverty. In their study where they analyzed cross-country data set of 80 countries (over forty years) using regression, they discovered that on average, the income of poor people rises one-to-one with overall economic growth. Given that there is a one-to-one relationship between economic growth and the income of the poor, it is therefore crucial to understand the impact of certain public expenditure policies on the rural poor and economic growth in The Gambia—also considering that Krugman (1994) argued that economic growth ought to be driven by the gains in productivity (rather than capital accumulation and the quality of labour), as seen in the East Asian miracle.

[1] The book review of this study was conducted by Due (1975).

© 2020 Global Journals

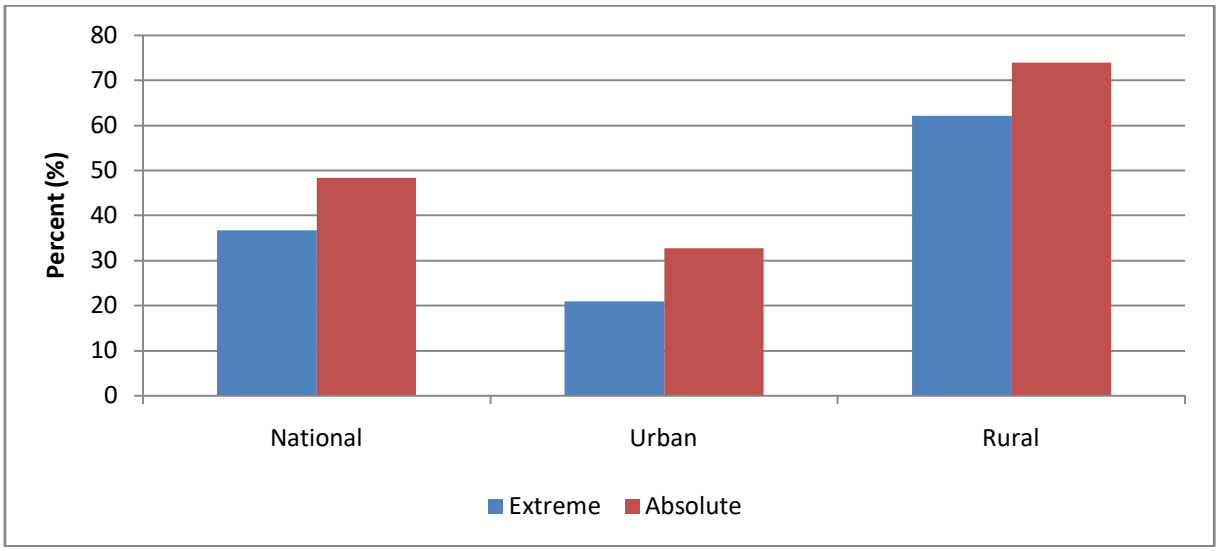
According to Cabral (2017), when inducing policy shocks for economy-wide impacts, Dynamic Computable General Equilibrium (DCGE) models[2] are the best models to be utilized. These models take into account the effect of shocks on sectoral supply and demand; factor returns and income; household consumption; among others. It is also temporal in scope, and it takes into account the heterogeneity of households.

In light of the significance of public expenditure in economic development (even though a consistent 10% commitment by African Governments may be challenging), it will be essential to assess the economic and welfare impact of a 10% budget allocation in the three major sectors of the Gambian economy over a medium-term period. This type of study has not been conducted in The Gambia—and as a result, the question regarding which economic sector has the utmost possibility of enhancing economic growth and welfare (with a 10% public expenditure commitment) still lingers. The CAADP agenda is focused on agriculture, and it has not explored other sectors that could equally have a positive impact on the Gambian population. Therefore, this study will contribute to the literature by particularly assessing the impact of a 10% commitment (over five years in agriculture, service and industry sectors) on GDP growth; value-added growth; rural and urban labour demand; rural and urban income; rural and urban consumer prices; and rural and urban welfare. The study will serve as a pointer for Gambian policy makers to consider the sector that most effectively maximizes the gains of public expenditure, in order to attain an equitable growth and ensure the country graduates into a middle-income country.

The first section of the paper will serve as an introduction. The second section will provide a brief overview of The Gambia's poverty profile. The third section will discuss the methodology. Finally, the fourth and fifth sections will discuss the results and conclusion, respectively.

II. Brief Overview of the Gambia's Poverty Profile

According to the 2010 Integrated Household Survey, using the upper national poverty line, the total headcount 'absolute' poverty rate was at 48.4% (see Figure 1). This meant that about 795,885 people in The Gambia were considered poor and unable to meet their basic food and non-food needs. The extreme poverty rate, which is measured using the lower national poverty line, meant that 36.7% of Gambians (that is, about 603,492 people) were not able to meet their basic food supply.



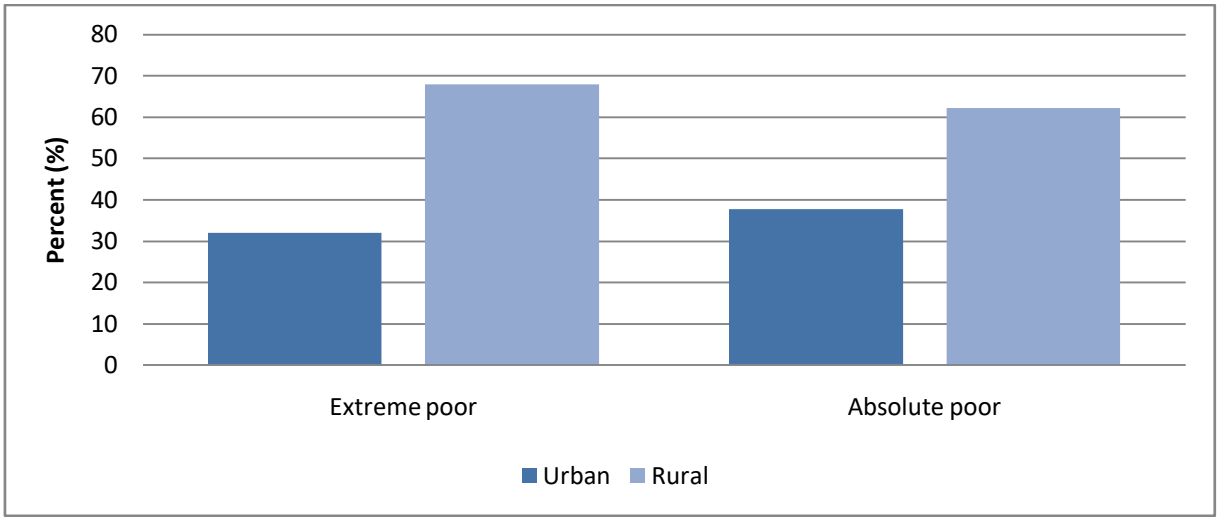
Source: Integrated Household Survey, 2010

Figure 1: Poverty Headcount of the population in The Gambia, 2010

It is also worthy to note that the incidence of rural poverty more than doubled urban poverty, for both absolute and food poverty. Approximately 1,215,205 people in rural areas are suffering from absolute poverty, in comparison to 537,716 people in the urban areas. Likewise, 1,021,126 people in rural areas are food poor, while 345,322 people in urban areas are food poor. The distribution of the poor in The Gambia (as seen in Figure 2) indicates that 68% of the food poor reside in rural areas, and 62.2% of the absolute poor reside in urban areas.

[2] The models are generally designed to capture the linkages between sectoral and national economic growth. Production-side linkages are influenced by sectors' technologies, and backward production linkages arise when producers demand intermediate inputs. The models can also be used to assess household incomes and poverty (Lofgren et al., 2003 and Diao and Thurlow, 2012).

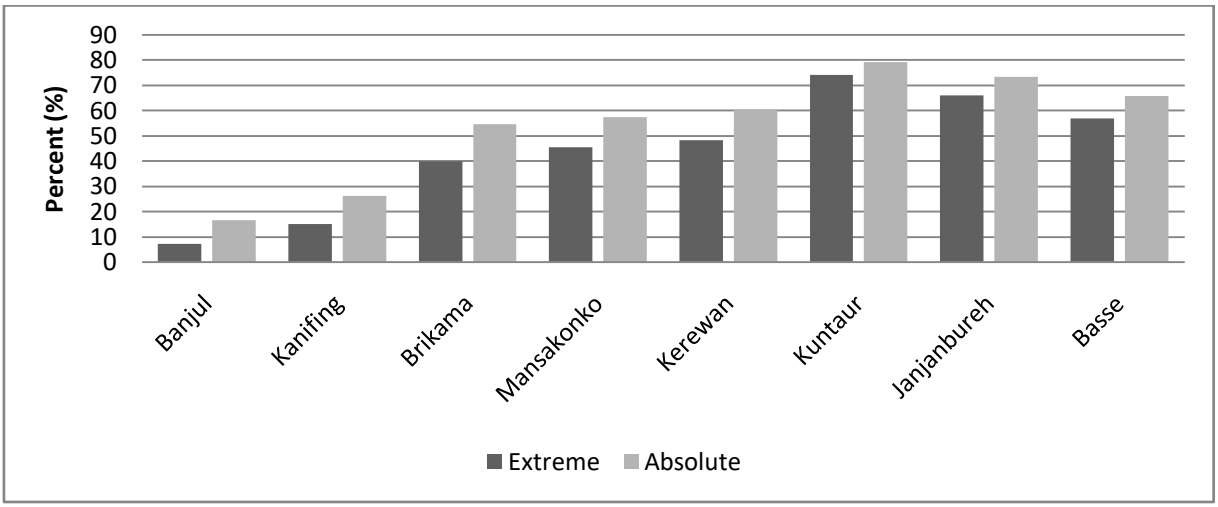
© 2020 Global Journals



Source: Integrated Household Survey, 2010

Figure 2: Distribution of the urban and rural poor in The Gambia, 2010

This LGA characterization of poverty will also assist in explaining the regional incidence of the poor. The Gambia has 8 LGAs, of which Banjul and Kanifing are considered the urban LGAs. Figure 3 shows that Kuntaur, Janjanbury, Basse and Kerewan have the highest poverty headcount for both absolute and food poverty. Due to the high amount of food insecurity in these four areas, UN-OCHA (2014) indicated that they have the highest prevalence of malnutrition in the country. Kuntaur, Janjanbureh and Basse specifically have the higher global acute malnutrition rates above the 10% WHO 'serious' threshold—and Kuntaur has the highest proportion of severely stunted children, at 8.2%. Also, the highest number of underweight women are found in Janjanbureh (at 20.9%) and Kuntaur (at 20.3%), while Banjul is the least affected area, at 11.5%.



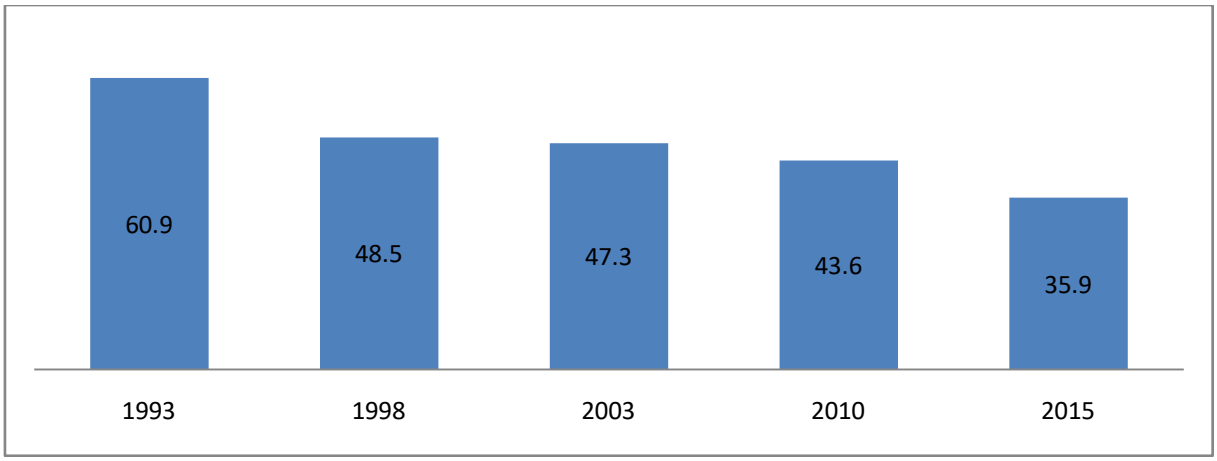
Source: Integrated Household Survey, 2010

Figure 3: Incidence of poverty according to LGAs in The Gambia, 2010

This large disparity between poverty in urban and rural areas is mainly as a result of the sub-standard agricultural systems in The Gambia. As previously noted by Goyal and Nash (2017), most of the consumption expenditure of the poorest household in Africa is utilized for food. As a result, developing the agricultural system in rural areas may have a positive impact on the income of poor rural households, which will enable them to meet their basic food and non-food needs.

Historically, in The Gambia, the highest level of decrease in income inequality was between 1993 and 1998 (see Figure 4). In those five years, the Gini coefficient decreased by about 20%, from 60.9 in 1993 to 48.5 in 1998. From 1998 to 2015, income inequality has generally reduced in the country, but at a slower rate.

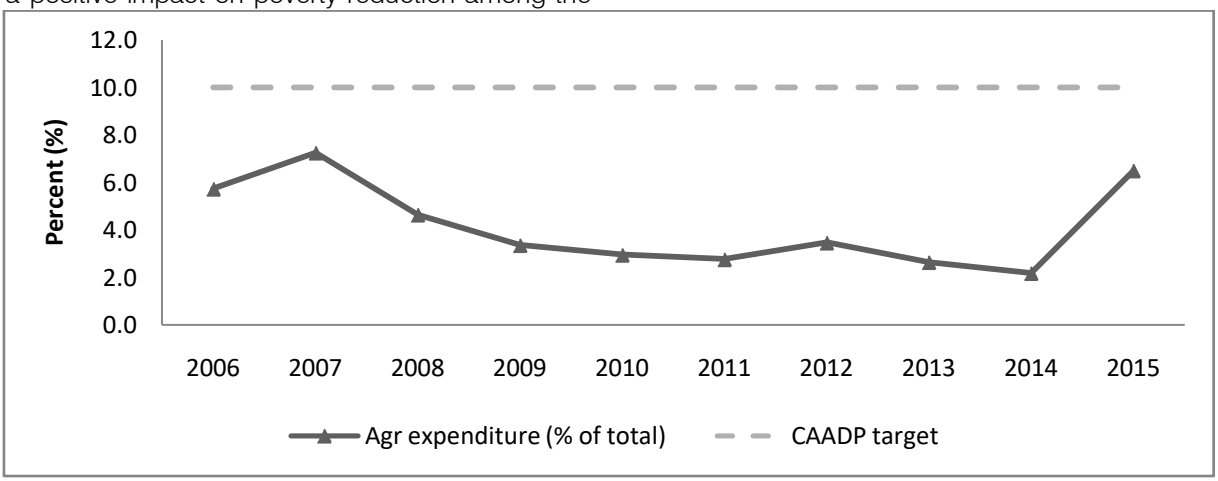
© 2020 Global Journals



Source: WDI (World Bank) and the World Income Inequality Database

Figure 4: Income inequality (Gini coefficient), The Gambia

As previously alluded to by various post-Kuznets scholars, rural economic growth has a greater effect on reducing rural poverty. In order words, one can assume that development of the rural economy in The Gambia (which is mainly driven by agriculture) could have a positive impact on poverty reduction among the poorest people. The formation of the CAADP is equally grounded on this premise. However, Figure 5 shows that the Gambian Government's disbursement of agriculture expenditure between 2006 and 2015 was below the CAADP target of 10%.



Source: Re SAKSS and WDI (World Bank)

Figure 5: CAADP target and Government agriculture expenditure in The Gambia, 2006 - 2015

III. Methodology

The model used in this study is a DCGE model, and the data is an updated version of the 2009 SAM of The Gambia developed by IFPRI. The underlying principle of a SAM is the concept of circular flow of the economy (Mainar-Causapé et al., 2018), and CGE model provide an overview of the channels of transmission of the effects of policies on the economy. The economic and social impacts of the policy scenarios (external shocks; policy changes and changes in socio-economic structures) can also be assessed using DCGE models. Moreover, the model used in this study is the same model used in Cabral et al. (2017).

a) Model specification

The structure of the production

The structure of the production is common in CGE models. Equations 1 and 2 represent the top level of the structure. The total aggregate output of industry j ($XST_{j,t}$), is a combination of value-added of industry j ($VA_{j,t}$) and total intermediate consumption of industry j ($CI_{j,t}$) in fixed shares, which is strictly complementary and follows a Leontief production function for value-added (v_j) and intermediate consumption (io_j). The time script or period is represented by t:

$$VA_{j,t} = v_j XST_{j,t} \quad (1)$$

© 2020 Global Journals

$$CI_{j,t} = io_j XST_{j,t} \quad (2)$$

Equation 3 represents the second level, where an industry's value-added consist of composite capital for industry *j* ($KDC_{j,t}$) and composite labour for industry *j* ($LDC_{j,t}$). The value-added is a constant elasticity of substitution (CES) function: (B_j^{VA})—scale parameter; (β_j^{VA})—share parameter; and (ρ_j^{VA})—elasticity parameter ($-1 < \rho_j^{VA} < \infty$):

$$VA_{j,t} = B_j^{VA}\left[\beta_j^{VA} LDC_{j,t}^{-\rho_j^{VA}} + \left(1-\beta_j^{VA}\right)KDC_{j,t}^{-\rho_j^{VA}}\right]^{\frac{1}{\rho_j^{VA}}} \quad (3)$$

On the intermediate consumption side of the same level, equation 4 illustrates that aggregate intermediate consumption of commodity *i* is a combination of various goods and services ($DI_{i,j,t}$). Also, it is assumed that intermediate inputs follow a Leontief production function and are perfectly complementary. The input-output coefficient is: ($aij_{i,j}$):

$$DI_{i,j,t} = aij_{i,j} CI_{j,t} \quad (4)$$

At the bottom level, equation 5, equation 6, equation 7, as well as equation 8 are represented—and their parameters follow a CES function. In equation 5, the various categories of labour are combined following a CES technology, and there is imperfect substitutability among the different types of labour. Equation 6 shows that labour demand of each type ($LD_{l,j,t}$) derives from a first-order condition of cost minimization by enterprises. The wage rate paid by industry *j* for type labour *l* is represented by: ($WTI_{l,j,t}$). As in the case of labour, different categories of capital are imperfect substitutes (equation 7), and demand for each type of capital ($KD_{k,j,t}$) is as a result of cost minimization (equation 8). The rental rate paid by industry *j* for capital type *k* is represented by ($RTI_{k,j,t}$):

$$LDC_{j,t} = B_j^{LD}\left[\beta_{l,j}^{LD} LD_{l,j,t}^{-\rho_j^{LD}}\right]^{\frac{-1}{\rho_j^{LD}}} \quad (5)$$

$$LD_{l,j,t} = \left[\frac{\beta_{l,j}^{LD} WC_{j,t}}{WTI_{l,j,t}}\right]^{\sigma_t^{LD}} \left[B_j^{LD}\right]^{\sigma_t^{LD}-1} LDC_{j,t} \quad (6)$$

$$KDC_{j,t} = B_j^{KD}\left[\beta_{k,j}^{KD} LD_{k,j,t}^{-\rho_j^{KD}}\right]^{\frac{-1}{\rho_j^{KD}}} \quad (7)$$

$$KD_{k,j,t} = \left[\frac{\beta_{k,j}^{KD} RC_{j,t}}{RTI_{k,j,t}}\right]^{\sigma_t^{KD}} \left[B_j^{KD}\right]^{\sigma_t^{KD}-1} KDC_{j,t} \quad (8)$$

It is also important to note that some assumptions of an exogenous growth rate are set for variables such as Government expenditure, labour supply and transfers. One of the advantages of this dynamic model specification is the ability to be able to assess structural changes in the economy, as well as evaluate the impact of shocks in the medium and long term. The model is applied to a country like The Gambia, where the prices of factors, goods and services are given (that is, a price-taking behaviour). Also, cost minimization by enterprises ensures that they employ labour and capital where the value of marginal product of each product is equal to its price.

The model includes four sectors, namely: agriculture, industries, private service and non-tradable Service. It is important to note that the 10% shock was not applied to the non-tradable sector, because the scope of this study is to understand the impact of the productive sectors on economic development in The Gambia. However, the simulation results will show the impact our shocks will have on public service. The specificity of the model is discussed in greater detail below.

Total factor productivity

In order to be able to effectively access the impact of the 10% shock on the Gambian economy, the model was modified to include a total factor productivity function, which comprised of human capital, physical investment, and research and demand.

The productivity factor $\left(B_j^{VA}\right)$ is a function of human capital $\left(KH_{j,t}\right)$; research and development $\left(RD_{j,t}\right)$; physical investment $\left(IP_{j,t}\right)$; the ratio of overall

© 2020 Global Journals

public capital to private sector capital $\left(\frac{KDpubG_t}{KDpriv_{j,t}}\right)$; with these respective elasticities: (τk), (τr) and (τi). The global stock of public capital $(KDpubG_t)$ creates for each productive activity a positive externality that affects the total factor productivity in the sector. The productivity factor will thus be affected by the distribution of the public investment flow between human capital $(KH_{j,t})$, research and development $(RD_{j,t})$ and physical investment $(IP_{j,t})$, but also by the magnitude of externalities the sector benefits, as well as the elasticity of productivity:

$$B_j^{VA} = \overline{B}_{j,t}\left[\left(KH_{j,t}\right)^{\varepsilon_k}\left(RD_{j,t}\right)^{\varepsilon_r}\left(IP_{j,t}\right)^{\varepsilon_i}\left(\frac{KDpubG_t}{KDpriv_{j,t}}\right)^{\varepsilon_k}\right] \quad (9)$$

Dynamic model

The end-of-period for private sector capital stock $(KD_{k,j,t+1})$ is equal to the start of stock period $(KD_{k,j,t})$, and net of fixed capital consumption (or depreciation) of the period at a rate $\delta_{k,j}$, which is added to the volume of capital accumulated during the period $(IND_{k,j,t})$:

$$KD_{k,j,t+1} = KD_{k,j,t}\left(1-\delta_{k,t}\right) + IND_{k,j,t} \quad (10)$$

Public investment demand is the product of the average price of public capital and the sum of investment demand from the public sector (and the same applies to the private investment demand):

$$IT_t^{PUB} = PK_t^{PUB}\sum_{k,pub} IND_{k,pub,t} \quad (11)$$

$$IT_t^{PRI} = PK_t^{PRI}\sum_{k,bus} IND_{k,bus,t} \quad (12)$$

The average price of capital (public or private) is a weighted sum of consumer prices—the weighting coefficient being the relative share of demand for good or service *i* in aggregate investment demand (by origin):

$$PK_t^{PUB} = \frac{1}{A^{K-PUB}}\prod_i\left(\frac{PC_{i,t}}{\gamma_i^{INVPUB}}\right)^{\gamma_i^{INVPUB}} \quad (13)$$

$$PK_t^{PRI} = \frac{1}{A^{K-PRI}}\prod_i\left(\frac{PC_{i,t}}{\gamma_i^{INVPRI}}\right)^{\gamma_i^{INVPRI}} \quad (14)$$

The sector accumulation rate of private capital $\left(\frac{IND_{k,bus,t}}{KD_{k,bus,t}}\right)$ of period *t* is an increasing function of the cost-benefit ratio of capital $\left(\frac{R}{U}\right)$ in the same period, but the rate of increase of the rate of accumulation, under the effect of this ratio decreases:

$$\frac{IND_{k,bus,t}}{KD_{k,bus,t}} = \varphi_{k,bus}\left[\frac{R_{k,bus,t}}{U_{k,bus,t}}\right]^{\sigma_{k,bus}^{INV}} \quad (15)$$

The cost of usage of capital in a sector is equal to the average price of capital (PK) that multiplies the sum of the interest rate (IR) and the depreciation rate (δ_k):

$$U_{k,pub,t} = PK_t^{PUB}\left(\delta_{k,pub} + IR_t\right) \quad (16)$$

$$U_{k,bus,t} = PK_t^{PRI}\left(\delta_{k,bus} + IR_t\right) \quad (17)$$

© 2020 Global Journals

Equilibrium and closure rules

The supply of the composite product (Q) is the sum of the final consumption of households (C), public expenditure, intermediate demand (DIT), private investment (INV), stock changes (STK) and margins (MRGN):

$$Q_{i,t} = \sum_h C_{i,h,t} + CG_{i,t} + INV_{i,t} + VSTK_{i,t} + DIT_{i,t} + MRGN_{i,t} \quad (18)$$

Labour supply equals labour demand:

$$\sum_j LD_{l,j,t} = LS_{l,t} \quad (19)$$

Supply of capital and demand for capital are equal:

$$\sum_j KD_{k,j,t} = KS_{k,t} \quad (20)$$

The sum of total investment and inventories in value is equal to the sum of savings of households (SH), firms (SF), Government (SG), and the rest of the world (SROW) (valued in local currency):

$$IT_t = \sum_h SH_{h,t} + \sum_f SF_{f,t} + SG_t + SROW_t \quad (21)$$

$$IT_t^{PRI} = IT_t - IT_t^{PUB} - \sum_i PC_{i,t} VSTK_{i,t} \quad (22)$$

Supply of local products and demand for local products in the domestic market are equal:

$$\sum_j DS_{j,i,t} = DD_{i,t} \quad (23)$$

Supply of export products and the demand for export products are equal:

$$\sum EX_{j,i,t} = EXD_{i,t} \quad (24)$$

b) SAM of The Gambia

The first SAM developed in The Gambia was developed by Jabara et al. (1992) in 1990. The SAM was built from the bottom-up using the 1989/1990 household income and expenditure survey of The Gambia, conducted by the Cornell Food and Nutrition Policy Programme (CFNPP) Africa Economic Project funded by the United States Agency for International Development (USAID). This approach was mainly due to the fact that there was no input-output table available for The Gambia. Moreover, there is a vast amount of literature that articulates the processes involved in developing SAMs—Pradhan et al. (2006), Van Leeuwen and Nijkamp (2009), Pyattand Round (1977), Kjosev and Novkovska (2017), Keuning and De Ruuter (1988), Pyatt (1991), Round (2003), and Thiele and Piazolo (2002).

Due to the changes in the socio-economic characteristics since the development of the 1990 SAM, Fofana et al. (2014) updated the 1990 SAM to a 2009 SAM based on the 'top-down' approach, using data from The Gambia Bureau of Statistics (GBOS), and data from regional and international institutions. The SAM featured the private institutions (households and corporations) account, Government account, rest of the world account, and a capital account split into GFCF and change in inventories.

Moreover, in order to be more useful for research, the 2009 SAM was updated based on the method in ibid, using data from Food and Agriculture Organization, African Statistical Yearbook, The Gambia Integrated Household Survey, and The Gambia Bureau of Statistics. The new 2015 SAM (see Annex 1) has been disaggregated into four activities and commodities accounts (agriculture, industries, private service and non-tradable Service); five factors of production accounts (rural labour, urban labour, public capital, private capital and land); and five accounts of institutions, namely: urban households, rural households, firms, government and the rest of the world.

IV. Simulations and Results

a) Simulations

In order to assess the impact of the 10% increase of public expenditure on economic growth and

© 2020 Global Journals

welfare in The Gambia over five years—three different scenarios were simulated—one for agriculture, one for service, and the final for industry. This helped to understand the impact of public investment increases in all these three areas, as it relates to GDP, sectoral value-added, nominal income (in urban and rural households), consumer prices (in urban and rural households), welfare (in urban and rural households) and labour demand (urban and rural areas).

In the dynamic model, the economy grows, even without the existence of a shock. This will provide the baseline or business as usual (BAU) scenario, which will be used in calculating the simulation results. In the first simulation, a 10% increase in the service industry was introduced. Thereafter, the BAU results were subtracted from the simulation results, in order to capture the variation caused by the 10% shock in the service sector. The same process was repeated for the other two productive sectors of the Gambian economy.

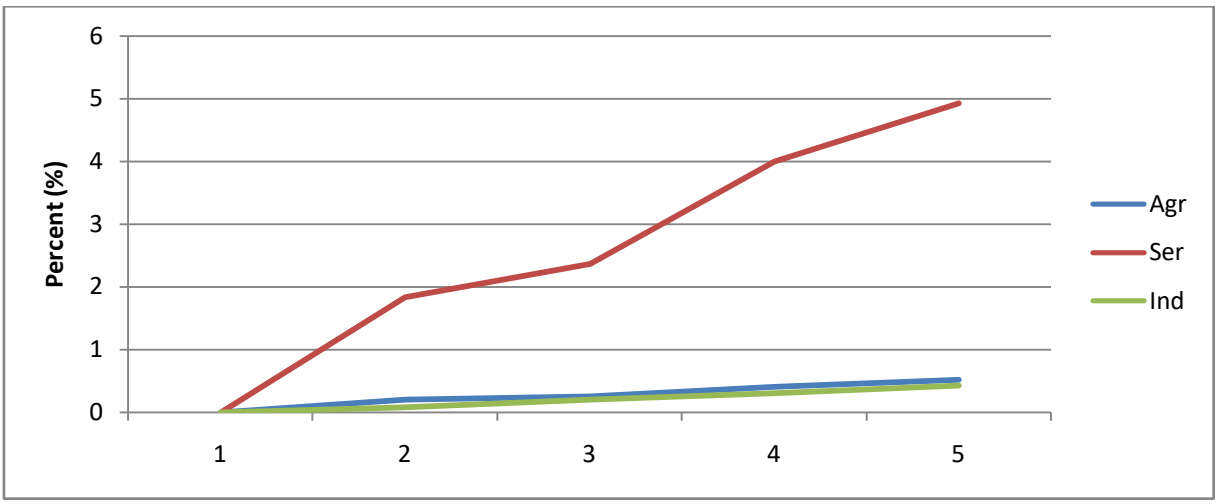
b) Results

The dynamic effects of the implementation of a 10% increase in Government budget allocation across agriculture, industry and service sector was simulated. This model assessed the impact of the shock on economic growth, welfare, and other development indicators in the urban and rural areas.

Impact on GDP

Due to the expansion of service production as a result of the increase in TFP, there was an increase in GDP by 4.9% (see Figure 6), after the 10% shock was introduced in the service sector. Baumol (1967) indicated that an increase in the proportion of the service sector leads to productivity change in the service sector alone, which will negatively affect total productivity or economic growth. However, this has been the contrary in The Gambia (also see the impact of the service sector shock on value-added).

The 10% expenditure in the industry and agriculture sector does not contribute much to GDP, because both sectors are input-intensive. Agriculture is the most labour-intensive sector in the rural area (at 89%), and industry is the most labour-intensive sector in the urban areas (64%). Their contribution to GDP is also minimal[3].



Source: Authors' simulation results

Figure 6: Change in GDP (%), 2015-2019

Impact on value-added

The 10% increase in the service expenditure leads to a value-added growth across all sectors. By the fifth year, value-added for service increased by 5.5%; industry by 3.8%; agriculture by 1.4% and non-tradable service by 5.7%. This shows the there is a strong linkage between service sector and the other sectors, and it, therefore, has the potential to become the main driver of sustainable growth in the Gambian economy. Evidence from Beck et al. (2000) also notes that financial development improves economic growth. This could be an opportunity for The Gambia, given that financial service and communications sub-sector is about 10% of the overall Gambian GDP (GBOS, 2015). In the case of agriculture, a 10% increase in agricultural expenditure benefits the agriculture sector more. This shows that the agriculture value chain in the country is not fully developed. There is a slower value-added growth across the other sectors (see Table 1). For the industry sector, the 10% shock did not have any significant impact on the agriculture sector. This shows a weak link between two major labour-intensive sectors in the country.

[3] This labour-intensity calculation is based on calculations from the 2015 SAM of The Gambia.

© 2020 Global Journals

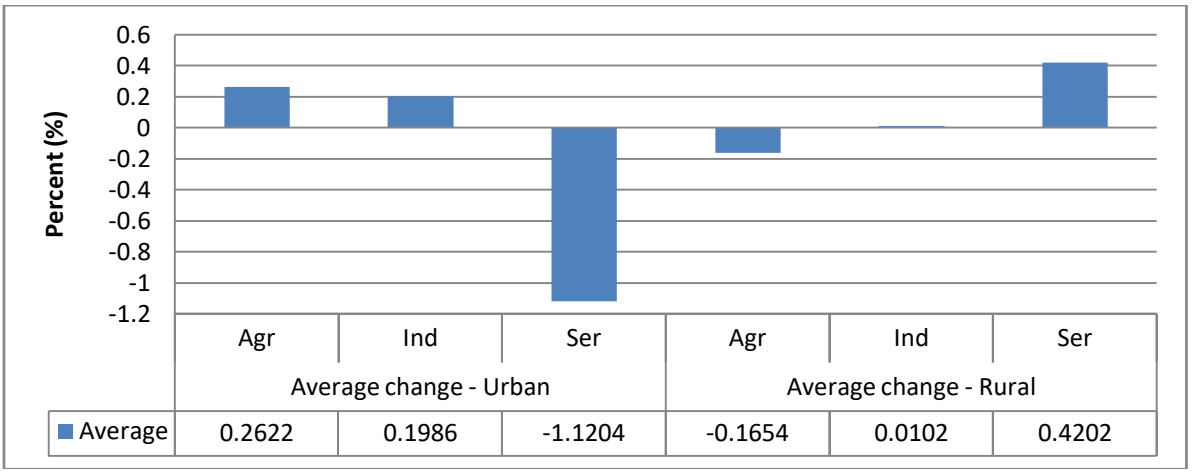
Table 1: Change in value-added (%), 2015-2019

	10% increase in agriculture expenditure				10% increase in service expenditure				10% increase in industry expenditure			
	Agr	Ind	Ser	NtSer	Agr	Ind	Ser	NtSer	Agr	Ind	Ser	NtSer
2015	0	0	0	0	0	0	0	0	0	0	0	0
2016	0.402	0.226	0.179	0.116	0.525	2.15	1.932	2.001	0.008	0.392	0.051	-0.064
2017	0.845	0.151	0.214	0.053	0.765	1.991	2.598	2.651	0.02	0.892	0.146	-0.085
2018	1.351	0.233	0.347	0.085	1.166	3.603	4.364	4.552	0.025	1.37	0.214	-0.14
2019	1.898	0.2	0.433	0.049	1.423	3.883	5.456	5.747	0.031	1.908	0.299	-0.182

Source: Authors' simulation results

Impact on labour demand

At present, the labour-intensity of the service sector in rural areas is 10%. However, the increase in the service expenditure will increase the opportunity for more employment in rural areas by an average of 0.4% in five years. This will be helpful to the rural population, given that the wages in the service sector may be higher than the wages from agriculture, which is seasonal, due to its dependence on rainfall. The low wages; lack of security in agricultural jobs; and job availability in the service sector will cause rural households to seek employment in service-related jobs. The introduction of these types of jobs in rural areas will also be helpful, because it will expose rural households to new forms of employment, and therefore develop their skills in order to be more employable. Additionally, it is important to note that the migration of jobs to rural areas will decrease the demand for service-related jobs in urban areas by 1.1% (see Figure 7). On the other hand, a 10% increase in the industry expenditure will increase rural labour demand by 0.01% (on average), in comparison to a 10% increase in agricultural expenditure which will decrease rural labour demand by 0.16% on average.



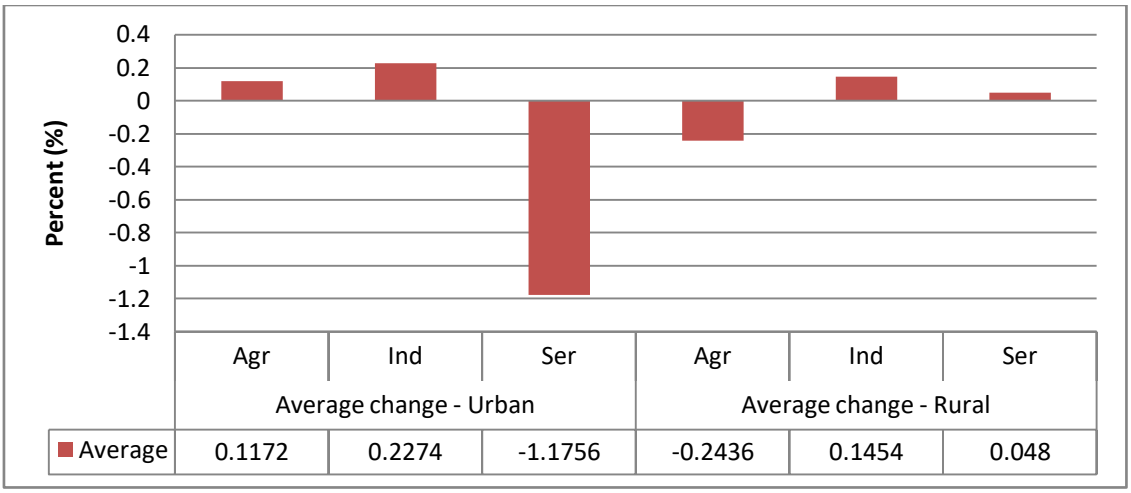
Source: Authors' simulation results

Figure 7: Average change in labour demand (%), 2015–2019

Impact on nominal income

The pattern of nominal income closely follows the labour demand pattern. A decrease in urban labour demand leads to a reduction in urban income, while an increase in rural labour demand leads to an rise in rural income. Generally, an average decrease of 1.1% urban labour leads to an average of 1.1% decrease in urban income, and the same trend is applicable to the industry and agriculture sectors (see Figures 7 and 8).

© 2020 Global Journals

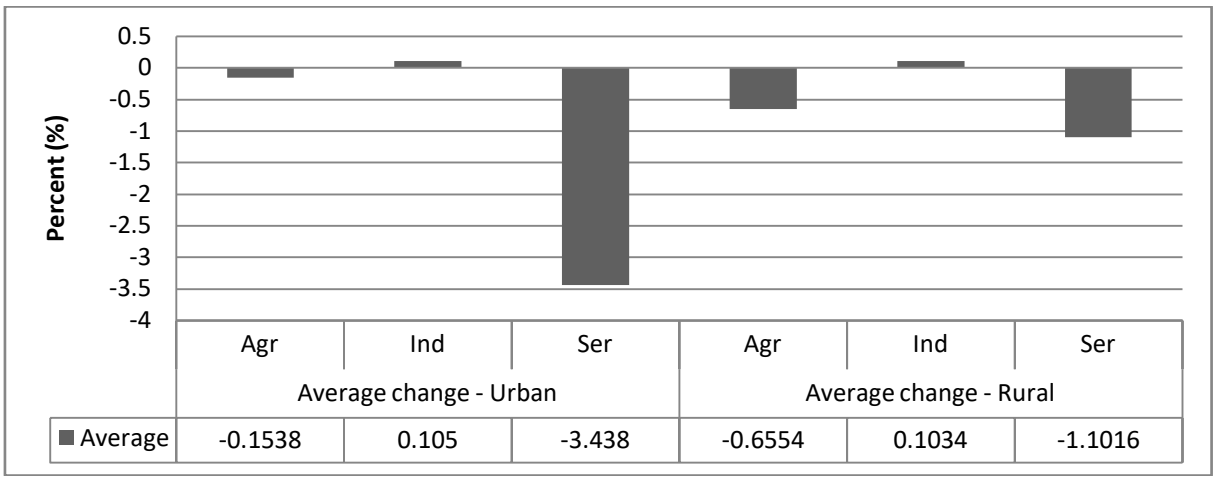


Source: Authors' simulation results

Figure 8: Change in nominal income (%), 2015-2019

Impact on consumer prices

An expansion of the service sector through the 10% increase in expenditure will lead to a higher decrease in the prices of services which both urban and rural households depend on. However, given that the consumption basket of rural households has less service-related items than urban areas, there is a higher decrease in average urban consumer prices at 3.4%, compared to 1.1% in rural areas. With regards to the 10% shock in agriculture, consumer prices reduced more in rural areas (see Figure 9). This is mainly due to the fact that rural household's consumption basket mostly contains food products. After the 10% shock in the industry sector, consumer prices increased in both urban and rural areas.



Source: Authors' simulation results

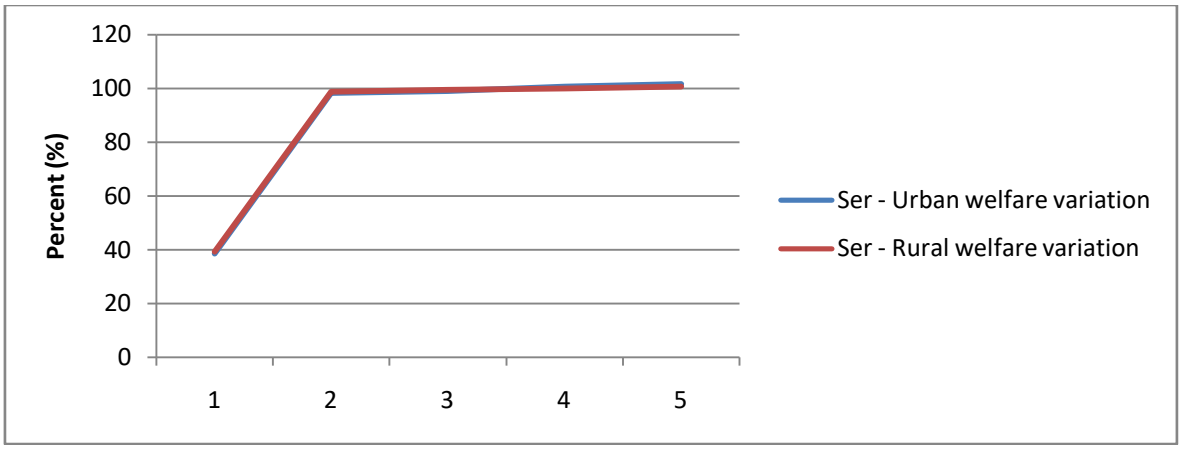
Figure 9: Change in consumer prices (%), 2015-2019

Impact on welfare

The results of the various simulations for service, industry and agriculture has varying impacts on household welfare. For the service sector[4], it could be seen that the welfare of both urban and rural households increased in the second year. An important point to note is that the growth in the welfare of the urban and rural areas is more equitable. The shock in the industry sector shows that more people in urban areas will experience an increase in welfare, from the 10% increase in Government expenditure. After the 5th year, it is clear that there will be a higher level of inequality between the urban and rural populations. The simulation for agriculture shows that there will be a welfare increase of about 1% for the rural population, while the increase in welfare of the urban population will be about 50% less than the rural area.

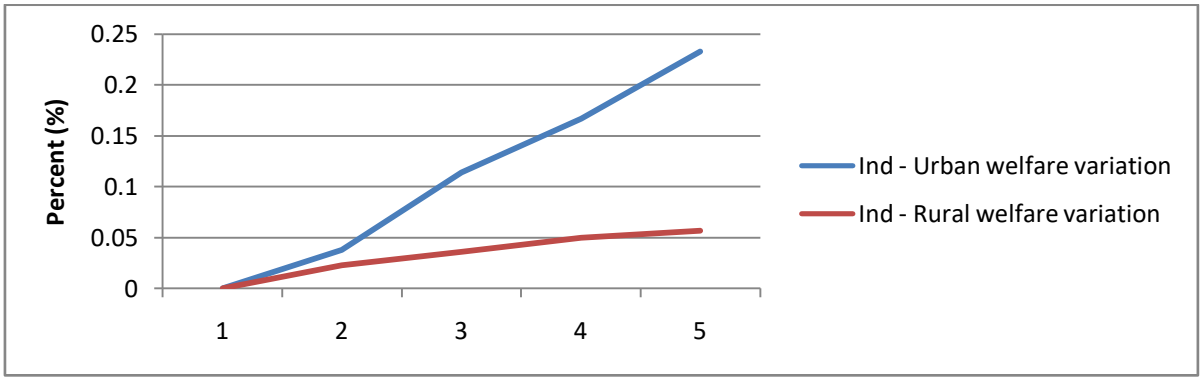
[4] Note that the high indices of the service sector's simulation are as a result of the high share of value-added of service in comparison to the other sectors of the Gambian economy.

© 2020 Global Journals



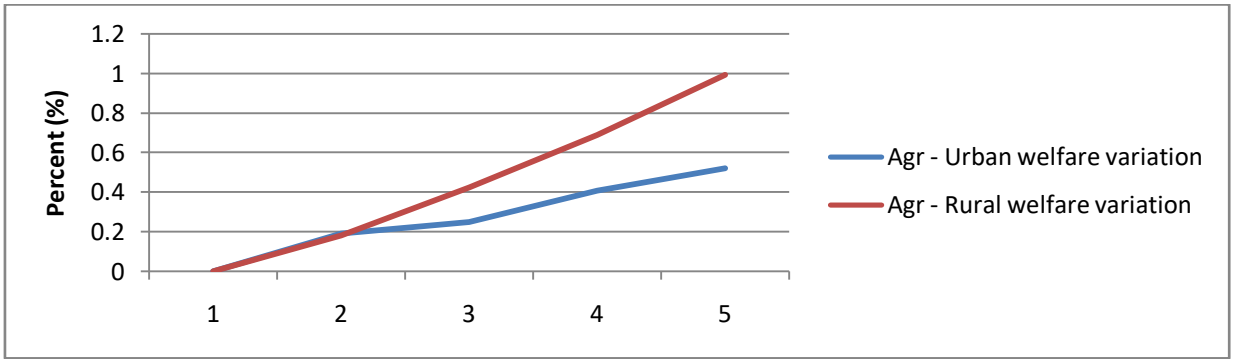
Source: Authors' simulation results

Figure 10: Service sector, change in welfare (%), 2015-2019



Source: Authors' simulation results

Figure 11: Industry sector, change in welfare (%), 2015-2019



Source: Authors' simulation results

Figure 12: Agriculture sector, change in welfare (%), 2015-2019

V. Conclusion

The importance of public intervention in ensuring economic equality in a country cannot be over-emphasized. Public expenditure has a great potential of facilitating growth, and the decision by African countries to agree to commit 10% percent of public expenditure on agriculture to facilitate inclusive economic growth is a laudable project. However, before this study, the impact of that 10% public expenditure increase on various sectors of the Gambian economy, was yet to be understood. The results show that the sector that can most promote economic growth, as well as increase welfare in both urban and rural areas, is the service sector.

With regards to GDP and value-added, the study shows that an increase of 10% in public expenditure on the service sector has a greater impact

© 2020 Global Journals

on GDP than any other sector. As a result, if the Government of The Gambia wants to increase its GDP, it should increase its spending in the service sector. Compared to the other sectors, the service sector also has the potential to pull along the agriculture sector and industry sector. In order words, when the service sector expands, industry and agriculture will also expand, due to its value chain linkages. The same does not apply to the industry and agriculture sectors.

In addition, considering that the service sector is technology-driven—a 10% increase in service expenditure will increase the rural labour demand, but decrease urban labour demand. Rural households will benefit from the increase in new types of jobs, and a positive impact on rural income and welfare will be experienced where the poorest people in The Gambia reside. Given that there will be a negative impact on urban areas, the Gambian Government should create policies to ensure that some of the jobs in the service sector remain in the urban area.

The consumer prices also decreased (in both urban and rural areas), as a result of the 10% shock in the service sector, as compared with a similar shock in any other industry. This shows that the service sector has a huge potential to reduce prices in the consumption basket of the country.

The fact that general public agriculture investments did not out-perform the service sector in our analysis sheds light on the point that even if The Gambia had met its 10% CAADP commitment between 2006 and 2015, the gains on economic growth and welfare would have been more positive through investments in the service sector.

The results of this study also reaffirm the assertion of Fan et al. (2000), that targeted agricultural spending in specific sub-sectors has a greater poverty-reduction impact on rural households. In The Gambia, general public expenditure on agriculture may not get the desired result for poverty reduction, specifically in rural areas. In order to get the desired result, public agricultural spending should be targeted across various agriculture sub-sectors like irrigation, among others.

References Références Referencias

1. Adelman, I. and Morris, C. T. 1973. Economic Growth and Social Equity in Developing Economies. Stanford: Stanford University Press.
2. African Union Commission (AUC). 2014. Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods.
3. Aghion, P., Caroli, E. and García-Peñalosa, C. 1999. Inequality and Economic Growth: The Perspective of the New Growth Theories. Journal of Economic Literature 37 (4) (December), pp 1615–1660.
4. Ascari, G. and Di Cosmo, V. 2005. Determinants of Total Factor Productivity in the Italian Regions, Scienze Regionali, pp 27–50.
5. Barro, Robert J. 1989. A Cross-Country Study of Growth, Savings, and Government. National Bureau of Economic Research (2855): 55.
6. Baumol, W. J. 1967. Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis, American Economic Review, Vol. 57, Issue 3, pp 415–426.
7. Beck, R., Levine, R. and Loayza, N. 2000, Finance and the Sources of Growth, Journal of Financial Economics, Vol. 58 (January), pp 261–300.
8. Benin, S., and Yu, B. 2013. An International Food Policy Research Institute (IFPRI) Complying with the Maputo Declaration Target: Trends in Public Agricultural Expenditures and Implications for Pursuit of Optimal Allocation of Public Agricultural Spending. ReSAKSS Annual Trends and Outlook Report.
9. Benin, S. 2015. IFPRI Discussion Paper 01491 Returns to Agricultural Public Spending in Africa South of the Sahara.
10. Bronzini, R. and Piselli, P. 2009. Determinants of Long-Run Regional Productivity with Geographical Spillovers: The Role of R&D, Human Capital and Public Infrastructure, Regional Science and Urban Economics 39, pp 187–199.
11. Brüntrup, M. 2011. The Comprehensive Africa Agriculture Development Programme (CAADP)—An Assessment of a Pan-African Attempt to Revitalize Agriculture. Quarterly Journal of International Agriculture 50, No. 1: pp 79–106.
12. Buiter, W. H. 1977. 'Crowding Out' and the Effectiveness of Fiscal Policy. Journal of Public Economics 7(3).
13. Cabral, F.J. 2017. Rainfall Fluctuations and Economic Growth: Evidence from Senegal. Review of Agricultural and Applied Economics (RAAE), 20(1340-2018-5163), pp 12.
14. Cabral, F. J., Cissé, F., Diagne, A., and Msangi, S. 2017. Global Biofuel Production and Poverty in Senegal. Economics Bulletin 37(3).
15. Destefanis, S. and Sena, V. 2005. Public Capital and Total Factor Productivity: New Evidence from the Italian Regions, 1970-98, Regional Studies 39, pp 603–617.
16. Diao, X. and Thurlow, J. 2012. A Recursive Dynamic Computable General Equilibrium Model in Diao, X., Thurlow, J., Benin, S., And Fan, S., Eds. Strategies and Priorities for African Agriculture: Economywide Perspectives from Country Studies. Washington, D.C.: IFPRI. Chapter 2. pp 17–50.
17. Dollar, D. and Kraay, A., 2002. Growth is Good for the Poor. Journal of Economic Growth, 7(3), pp 195–225.

© 2020 Global Journals

18. Due, J.M. 1975. Economic Growth and Social Equity in Developing Economies by Irma Adelman and Cynthia Taft Morris. ASA Review of Books, Vol. 1, pp 115–121.
19. Fan, S., Hazell, P. and Thorat, S. 2000. Government Spending, Growth and Poverty in Rural India." American Journal of Agricultural Economics 82(4): pp 1038–1051.
20. Fofana, I., Balma, L., Traore, F. and Kane, D. 2014. Social Accounting Matrices for The Gambia, Liberia, Mauritania and Sierra Leone. AGRODEP Data Report. 03. Washington, DC: International Food Policy Research Institute (IFPRI).
21. The Gambia Bureau of Statistics (GBOS), 2015. Integrated Household Survey.
22. Goyal, A. and Nash, J. 2017. Reaping Richer Returns: Public Spending Priorities for African Agricultural Productivity Growth.
23. Hansson, P. and Henrekson, M. 1994. A New Framework for Testing the Effect of Government Spending on Growth and Productivity, Public Choice 81(3-4).
24. Jabara, C., Lundberg, M. and Jallow, A. 1992. Social Accounting Matrix for The Gambia. Working Paper No. 20. Cornell University, Cornell Food and Nutrition Policy Program, Ithaca, N.Y.
25. Keuning, S.J. and De Ruuter, W.A. 1988. Guidelines to the Construction of a Social Accounting Matrix. Review of Income and Wealth, 34(1), pp 71–100.
26. Kjosev, S. and Novkovska, B. 2017. Developing Social Accounting Matrix for Macedonia: A Challenge Ahead. Croatian Review of Economic, Business and Social Statistics, 3(2), pp 10–19.
27. Krugman, P. 1994. The Myth of Asia's Miracle, Foreign Affairs, Vol. 73 (November/December), pp 62–78.
28. Kuznets, S. 1955. Economic Growth and Income Inequality. The American Economic Review, 45(1), pp 1–28.
29. Kuznets, S. 1963. Quantitative Aspects of the Economic Growth of Nations: VIII. Distribution of Income by Size. Economic Development and Cultural Change, 11(2, Part 2), pp 1–80.
30. Lofgren, H. and Robinson, S., 2008. Public Spending, Growth, and Poverty Alleviation in Sub-Saharan Africa: A Dynamic General Equilibrium Analysis. Paper Prepared for Presentation at the Seventh Annual Conference on Global Economic Analysis, Trade, Poverty, and the Environment, World Bank. Washington D.C.
31. Lofgren, H., Robinson, S. and El-Said, M., 2003. Household Approach. The Impact of Economic Policies on Poverty and Income Distribution.
32. Mahalambe, N. 2009. Five Out of Ten? Assessing Progress towards the AU's 10% Budget Target for Agriculture. Actionaid.
33. Mainar-Causapé, A.J., Ferrari, E. and Mcdonald, S. 2018. Social Accounting Matrices: BasicAspects and Main Steps for Estimation, Eur 29297 En, JRC Technical Reports. Publications Office of the European Union, Luxembourg.
34. Mogues, T., Benin, S. and Woldeyohannes, S. 2012. Public Expenditures in Agriculture in Mozambique. International Food Policy Research Institute (IFPRI).
35. Niels, H. and Censink, R. 2001. Fiscal Policy and Private Investment in Less Developed Countries. UNWIDER (February).
36. Pradhan, B.K., Saluja, M.R., Singh, S.K. and Singh, S.K. 2006. Social Accounting Matrix for India: Concepts, Construction and Applications. Sage.
37. Pyatt, G., 1991. Fundamentals of Social Accounting. Economic Systems Research, 3(3), pp 315–341.
38. Pyatt, G. and Round, J.I., 1977. Social Accounting Matrices for Development Planning. Review of Income and Wealth, 23(4), pp 339–364.
39. Ramirez, M.D. 1996. Public and Private Investment in Mexico and Chile: An Empirical Test of the Complementarity Hypothesis. Atlantic Economic Journal 24(4), pp 301–320.
40. Ravallion, M. 1997. Can High-Inequality Developing Countries Escape Absolute Poverty? Economics Letters, Vol. 56, pp 51–57.
41. Ravallion, M. and Datt, G. 1996. How Important to India's Poor is the Sectoral Composition of Economic Growth? The World Bank Economic Review, 10(1), pp 1–25.
42. Round, J., 2003. Constructing SAMS for Development Policy Analysis: Lessons Learned and Challenges Ahead. Economic Systems Research, 15(2), pp 161–183.
43. Sennoga, E. B, and Matovu, J. M. 2010. Public Spending Composition and Public Sector Efficiency: Implications for Growth and Poverty Reduction in Uganda. (66), pp 1–32.
44. Timmer, P. 1997. How well do the Poor Connect to the Growth Process? CAER Discussion Paper No. 178, Harvard Institute for International Development (HIID), Cambridge, MA.
45. Thiele, R. and Piazolo, D., 2002. Constructing a Social Accounting Matrix with a Distributional Focus—the Case of Bolivia.
46. UN-OCHA, 2014. 2014-2016 Strategic Response Plan of The Gambia.
47. Van Leeuwen, E.S. and Nijkamp, P., 2009. Social Accounting Matrices: The Development and Application of SAMS at the Local Level.

© 2020 Global Journals

Annex 1: 2015 Social Accounting Matrix (SAM) of The Gambia

	Rural Labor	Urban Labor	Public Capital	Private Capital	Land	Rural households	Urban households	Entreprise	Government	Rest of the world	Govt direct tax	Govt sales tax	Govt import tax	Agriculture	Industries	Private services	Non-tradable Services	Agriculture	Industries	Private services	Non-tradable Services	Agriculture	Industries	Private services	Gross FCF	Total
Rural Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	6589	1243	1803	20	0	0	0	0	0	0	0	0	9655
Urban Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	621	3213	12475	318	0	0	0	0	0	0	0	0	16627
Public Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	170	476	3822	371	0	0	0	0	0	0	0	0	4839
Private Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	27	75	599	59	0	0	0	0	0	0	0	0	760
Land	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	22
Rural households	9655	0	0	0	22	0	648	1351	64	1009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12749
Urban households	0	16627	0	0	0	0	0	1029	355	648	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18659
Entreprise	0	0	4839	760	0	0	0	0	1024	644	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7267
Government	0	0	0	0	0	0	0	0	0	1226	1320	2116	1504	0	0	0	0	0	0	0	0	0	0	0	0	6166
Rest of the World	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	932	11440	132	0	0	0	0	0	12504
Govt direct tax	0	0	0	0	0	0	307	1013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1320
Govt sale tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	578	159	1379	0	0	0	0	0	2116
Govt import tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	1390	0	0	0	0	0	0	1504
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12493	0	0	0	414	0	0	0	12907
Industries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	747	0	0	0	6488	0	0	7235
Private services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26870	0	0	0	96	0	26966
Non-tradable Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3396	0	0	0	0	3396
Agriculture	0	0	0	0	0	7286	1556	0	0	0	0	0	0	4247	6	1022	0	0	0	0	0	0	0	0	0	14117
Industries	0	0	0	0	0	1974	2610	0	0	0	0	0	0	545	183	1321	289	0	0	0	0	0	0	0	6814	13736
Private services	0	0	0	0	0	3149	12873	0	0	0	0	0	0	686	2039	5924	2339	0	0	0	0	0	0	0	1371	28381
Non-tradable Services	0	0	0	0	0	0	0	0	3197	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199	3396
Agriculture	0	0	0	0	0	0	0	0	0	414	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	414
Industries	0	0	0	0	0	0	0	0	0	6488	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6488
Private services	0	0	0	0	0	0	0	0	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96
Gross FCF	0	0	0	0	0	340	665	3874	1526	1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8384
Total	9655	16627	4839	760	22	12749	18659	7267	6166	12504	1320	2116	1504	12907	7235	26966	3396	14117	13736	28381	3396	414	6488	96	8384	

© 2020 Global Journals

Global Journals Guidelines Handbook 2020

www.GlobalJournals.org

Memberships

Fellows/Associates of Management and Business Research Council

FMBRC/AMBRC Memberships



Introduction

FMBRC/AMBRC is the most prestigious membership of Global Journals accredited by Open Association of Research Society, U.S.A (OARS). The credentials of Fellow and Associate designations signify that the researcher has gained the knowledge of the fundamental and high-level concepts, and is a subject matter expert, proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice. The credentials are designated only to the researchers, scientists, and professionals that have been selected by a rigorous process by our Editorial Board and Management Board.

Associates of FMBRC/AMBRC are scientists and researchers from around the world are working on projects/researches that have huge potentials. Members support Global Journals' mission to advance technology for humanity and the profession.

FMBRC

Fellow of Management and Business Research Council

FELLOW OF MANAGEMENT AND BUSINESS RESEARCH COUNCIL is the most prestigious membership of Global Journals. It is an award and membership granted to individuals that the Open Association of Research Society judges to have made a 'substantial contribution to the improvement of computer science, technology, and electronics engineering.

The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Fellows are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Fellow Members.

Benefit

To the institution

Get letter of appreciation

Global Journals sends a letter of appreciation of author to the Dean or CEO of the University or Company of which author is a part, signed by editor in chief or chief author.



Exclusive Network

Get access to a closed network

A FMBRC member gets access to a closed network of Tier 1 researchers and scientists with direct communication channel through our website. Fellows can reach out to other members or researchers directly. They should also be open to reaching out by other.

Career | Credibility | Exclusive | Reputation



Certificate

Certificate, LoR and Laser-Momento

Fellows receive a printed copy of a certificate signed by our Chief Author that may be used for academic purposes and a personal recommendation letter to the dean of member's university.

Career | Credibility | Exclusive | Reputation



Designation

Get honored title of membership

Fellows can use the honored title of membership. The “FMBRC” is an honored title which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., FMBRC or William Walldroff, M.S., FMBRC.

Career | Credibility | Exclusive | Reputation

Recognition on the Platform

Better visibility and citation

All the Fellow members of FMBRC get a badge of "Leading Member of Global Journals" on the Research Community that distinguishes them from others. Additionally, the profile is also partially maintained by our team for better visibility and citation. All fellows get a dedicated page on the website with their biography.

Career | Credibility | Reputation

© Copyright by Global Journals | Guidelines Handbook

Future Work

Get discounts on the future publications

Fellows receive discounts on future publications with Global Journals up to 60%. Through our recommendation programs, members also receive discounts on publications made with OARS affiliated organizations.

Career | Financial



GJ Account

Unlimited forward of Emails

Fellows get secure and fast GJ work emails with unlimited forward of emails that they may use them as their primary email. For example,
john [AT] globaljournals [DOT] org.

Career | Credibility | Reputation



Premium Tools

Access to all the premium tools

To take future researches to the zenith, fellows receive access to all the premium tools that Global Journals have to offer along with the partnership with some of the best marketing leading tools out there.

Financial

Conferences & Events

Organize seminar/conference

Fellows are authorized to organize symposium/seminar/conference on behalf of Global Journal Incorporation (USA). They can also participate in the same organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent. Additionally, they get free research conferences (and others) alerts.

Career | Credibility | Financial

Early Invitations

Early invitations to all the symposiums, seminars, conferences

All fellows receive the early invitations to all the symposiums, seminars, conferences and webinars hosted by Global Journals in their subject.

Exclusive



Publishing Articles & Books

Earn 60% of sales proceeds

Fellows can publish articles (limited) without any fees. Also, they can earn up to 70% of sales proceeds from the sale of reference/review books/literature/publishing of research paper. The FMBRC member can decide its price and we can help in making the right decision.

Exclusive | Financial

Reviewers

Get a remuneration of 15% of author fees

Fellow members are eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get a remuneration of 15% of author fees, taken from the author of a respective paper.

Financial

Access to Editorial Board

Become a member of the Editorial Board

Fellows may join as a member of the Editorial Board of Global Journals Incorporation (USA) after successful completion of three years as Fellow and as Peer Reviewer. Additionally, Fellows get a chance to nominate other members for Editorial Board.

Career | Credibility | Exclusive | Reputation

And Much More

Get access to scientific museums and observatories across the globe

All members get access to 5 selected scientific museums and observatories across the globe. All researches published with Global Journals will be kept under deep archival facilities across regions for future protections and disaster recovery. They get 10 GB free secure cloud access for storing research files.

ASSOCIATE OF MANAGEMENT AND BUSINESS RESEARCH COUNCIL

ASSOCIATE OF MANAGEMENT AND BUSINESS RESEARCH COUNCIL is the membership of Global Journals awarded to individuals that the Open Association of Research Society judges to have made a 'substantial contribution to the improvement of computer science, technology, and electronics engineering.

The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Associate membership can later be promoted to Fellow Membership. Associates are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Associate Members.

To the institution

Get letter of appreciation

Global Journals sends a letter of appreciation of author to the Dean or CEO of the University or Company of which author is a part, signed by editor in chief or chief author.



Exclusive Network

Get access to a closed network

A AMBRC member gets access to a closed network of Tier 2 researchers and scientists with direct communication channel through our website. Associates can reach out to other members or researchers directly. They should also be open to reaching out by other.

Career | Credibility | Exclusive | Reputation



Certificate

Certificate, LoR and Laser-Momento

Associates receive a printed copy of a certificate signed by our Chief Author that may be used for academic purposes and a personal recommendation letter to the dean of member's university.

Career | Credibility | Exclusive | Reputation



Designation

Get honored title of membership

Associates can use the honored title of membership. The “AMBRC” is an honored title which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., AMBRC or William Walldroff, M.S., AMBRC.

Career | Credibility | Exclusive | Reputation

Recognition on the Platform

Better visibility and citation

All the Associate members of ASFRC get a badge of "Leading Member of Global Journals" on the Research Community that distinguishes them from others. Additionally, the profile is also partially maintained by our team for better visibility and citation. All associates get a dedicated page on the website with their biography.

Career | Credibility | Reputation

© Copyright by Global Journals | Guidelines Handbook

Future Work

Get discounts on the future publications

Associates receive discounts on the future publications with Global Journals up to 60%. Through our recommendation programs, members also receive discounts on publications made with OARS affiliated organizations.

Career | Financial



GJ Account

Unlimited forward of Emails

Associates get secure and fast GJ work emails with 5GB forward of emails that they may use them as their primary email. For example, john [AT] globaljournals [DOT] org..

Career | Credibility | Reputation



Premium Tools

Access to all the premium tools

To take future researches to the zenith, fellows receive access to almost all the premium tools that Global Journals have to offer along with the partnership with some of the best marketing leading tools out there.

Financial

Conferences & Events

Organize seminar/conference

Associates are authorized to organize symposium/seminar/conference on behalf of Global Journal Incorporation (USA). They can also participate in the same organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent. Additionally, they get free research conferences (and others) alerts.

Career | Credibility | Financial

Early Invitations

Early invitations to all the symposiums, seminars, conferences

All associates receive the early invitations to all the symposiums, seminars, conferences and webinars hosted by Global Journals in their subjec.

Exclusive



Publishing Articles & Books

Earn 60% of sales proceeds

Associates can publish articles (limited) without any fees. Also, they can earn up to 30-40% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.

Exclusive | Financial

Reviewers

Get a remuneration of 15% of author fees

Fellow members are eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get a remuneration of 15% of author fees, taken from the author of a respective paper.

Financial

And Much More

Get access to scientific museums and observatories across the globe

All members get access to 2 selected scientific museums and observatories across the globe. All researches published with Global Journals will be kept under deep archival facilities across regions for future protections and disaster recovery. They get 5 GB free secure cloud access for storing research files.

© Copyright by Global Journals | Guidelines Handbook

Associate	Fellow	Research Group	Basic
$4800 **lifetime designation**	$6800 **lifetime designation**	$12500.00 **organizational**	APC **per article**
Certificate, LoR and Momento **2** discounted publishing/year **Gradation** of Research **10** research contacts/day **1 GB** Cloud Storage **GJ** Community Access	**Certificate,** LoR and Momento **Unlimited** discounted publishing/year **Gradation** of Research **Unlimited** research contacts/day **5 GB** Cloud Storage **Online Presense** Assistance **GJ** Community Access	**Certificates,** LoRs and Momentos **Unlimited** free publishing/year **Gradation** of Research **Unlimited** research contacts/day **Unlimited** Cloud Storage **Online Presense** Assistance **GJ** Community Access	**GJ** Community Access

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template.zip

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

Authorship Policies

Global Journals follows the definition of authorship set up by the Open Association of Research Society, USA. According to its guidelines, authorship criteria must be based on:

1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

Copyright

During submission of the manuscript, the author is confirming an exclusive license agreement with Global Journals which gives Global Journals the authority to reproduce, reuse, and republish authors' research. We also believe in flexible copyright terms where copyright may remain with authors/employers/institutions as well. Contact your editor after acceptance to choose your copyright policy. You may follow this form for copyright transfers.

Appealing Decisions

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

Declaration of funding sources

Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.



Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



© Copyright by Global Journals | Guidelines Handbook

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.
Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.



© Copyright by Global Journals | Guidelines Handbook

- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.



© Copyright by Global Journals | Guidelines Handbook

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

Criterion for Grading a Research Paper (Compilation) by Global Journals

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

INDEX

B

Breitung · 17

C

Chaotic · 19
Cointegration · 17, 19, 22, 23, 24, 27, 29
Cornell · 51, 59

D

Deficit · 17

E

Explicitly · 37

H

Heteroskedasticity · 13, 19

L

Leontief · 47, 48

P

Panchenko · 17

R

Residual · 22

V

Venture · 13, 14
Volatility · 15, 17, 18, 19, 22, 28, 30





Global Journal of Management and Business Research

Visit us on the Web at www.GlobalJournals.org | www.JournalofBusiness.Org
or email us at helpdesk@globaljournals.org



ISSN 9755853

© Global Journals