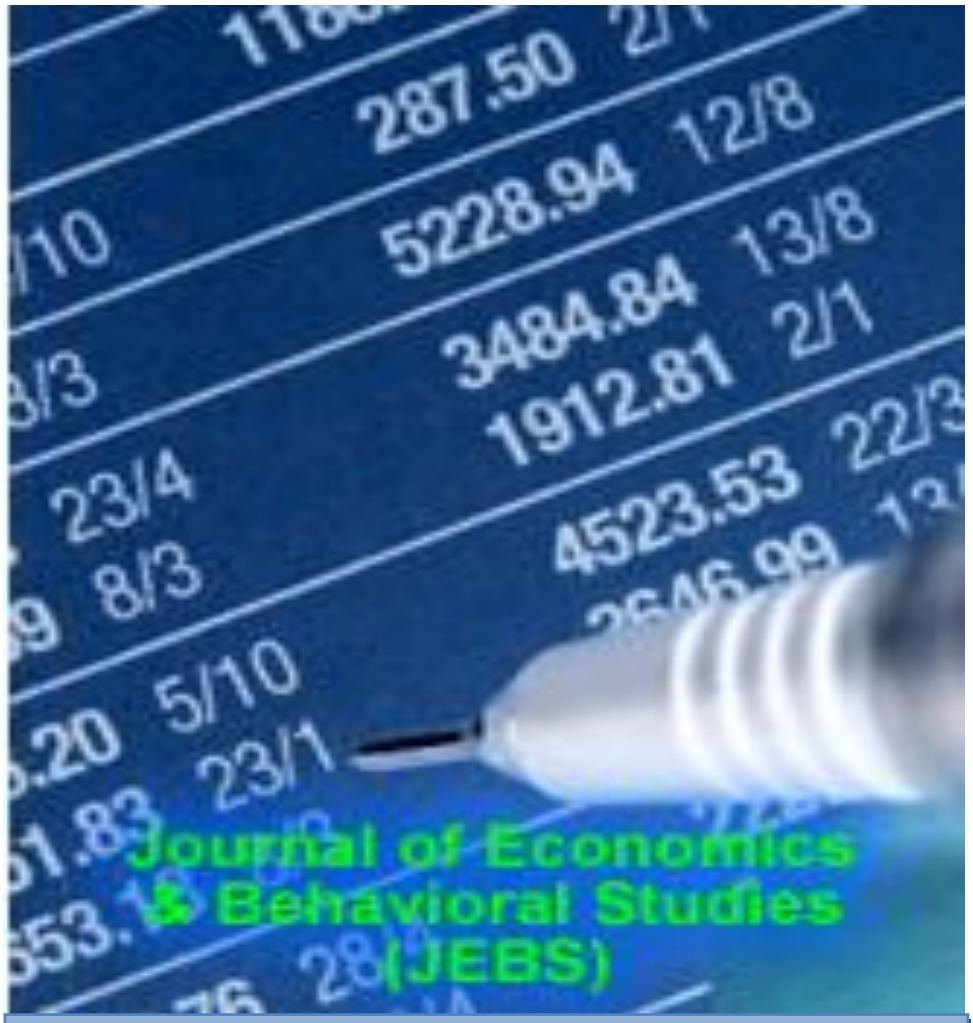

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Editorial

Journal of Economics and Behavioral Studies (JEBS) provides distinct avenue for quality research in the ever-changing fields of economics & behavioral studies and related disciplines. Research work submitted for publication consideration should not merely limited to conceptualization of economics and behavioral developments but comprise interdisciplinary and multi-facet approaches to economics and behavioral theories and practices as well as general transformations in the fields. Scope of the JEBS includes: subjects of managerial economics, financial economics, development economics, finance, economics, financial psychology, strategic management, organizational behavior, human behavior, marketing, human resource management and behavioral finance. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal and that all listed authors approve its submission to JEBS. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. Journal received research submission related to all aspects of major themes and tracks. All submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer-reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance, and clarity of the purpose. The current issue of JEBS comprises papers of scholars from Uganda, USA, Nigeria, Indonesia, Zimbabwe and South Africa. Economic Growth and Socioeconomic Sustainability in BRICS Countries, Money Illusion in Charitable Giving in the Absence of Market Price Resistance, Self-Destructive Work Behavior Management for Socio-Economic Emancipation, Strengthening the Competitiveness of Indonesia's Loser Sector Products, An Evil to be Extinguished or a Resource to be harnessed-Informal Sector in Developing Countries and Business Succession in Indian Family Businesses were some of the major practices and concepts examined in these studies. The current issue will therefore be a unique offer where scholars will be able to appreciate the latest results in their field of expertise and to acquire additional knowledge in other relevant fields.

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PAPERS

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Economic Growth and Socioeconomic Sustainability in BRICS Countries: a Vector Error Correction Modeling Approach

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Abstract: A major problem to the BRICS goal of achieving sustainable economic growth for members is the increasing level of socioeconomic inequality in the bloc. Consequently, the purpose of this study is to understand the influence of economic growth on socio-economic sustainability in the BRICS countries**,** using a yearly dataset from 1990 to 2019**.** A multivariate co-integration technique by Johansen and Juselius and Granger causality test were used to establish the relationships. Findings confirmed co-integration and short-run causal relationships. The most interesting results were the negative influence of economic growth on socio-economic inequality, tacit support for the resource curse hypothesis. The paper concluded that a common policy option was not possible and that for the block to pursue its economic prosperity goals without compromising individual countries' needs for socioeconomic sustainability, varied policy options were inevitable. The policy implications and recommendations are straightforward: the radical legal basis for the transition from natural resource export, as well as, sweeping regulation for the sustainable usage of natural resources protection, strict penalties on violations of environment-related laws and policies to enhance, general country-wide support. In addition, there may be an urgent need to define the active role of NGOs and other independent institutions in promoting socioeconomic equality (sustainability) practices and concepts at both local and national levels, enhanced social programs; market development, Integration of existing policies and creation of societal culture. Consequently, to the best of the researcher's knowledge, no study has investigated comprehensibly (along with multiple determinants) the sustainability of growth policy options within BRICS with an aim to proposing socioeconomic sustainability and growth policy options.

Keywords: *Socioeconomic inequality, economic growth, Cointegration, Vector Error Correction Modeling, BRICS.*

1. Introduction

Sustainable development is anchored on three dimensions; however, for this development to bring about balanced wellbeing, this paper focuses on one dimension, the socio-economic dimension of sustainability in BRICS countries (Awolusi & Mbonigaba, 2020; Zha et al., 2019; Younsi & Bechtini, 2018). Socio-economic inequality is therefore our proxy for socio-economic sustainability. Over the past few decades, the interaction of economic growth and socio-economic sustainability has been a subject of interest among policymakers (Hussin, Muhammad, Abu & Awang, 2012**;** Jamel & Maktouf, 2017; Agrawal, 2015). Many studies often emphasize two intertwined levels in the relationship between economic growth and socio-economic inequality in that "economic growth may negatively alter the distribution of capital and resources in an economy", which many referred to as "resource curse" (Awan, 2013; Menon, 2017; Agarwal & Khan, 2011; Gur, 2015). BRICS (Brazil, Russia, India, China and South Africa) as a bloc is also not immune to the above problem.

Specifically, after nearly two decades of its existence, sustainability of economic growth in the BRICS (Brazil, Russia, India, China and South Africa) countries has been documented. As a major problem given the diverse nature of socio-economic characteristics in the group, especially, as some members of the group change status from emerging economies to developed economies (Awolusi & Mbonigaba, 2020; Younsi & Bechtini, 2018; Javeria et al., 2017; Jamel & Maktouf, 2017; Agrawal, 2015). Therefore, understanding the knowledge of how economic growth would affect the socio-economic sustainability of individual countries is important in solving this problem (Menon, 2017; Gur, 2015). Consequently, the main objective of this study is to assess the influence of economic growth on socioeconomic inequalities in the BRICS countries**,** based on a yearly dataset from 1990 to 2017. This paper seeks to provide this evidence to provide policy options in case economic growth leads to different effects of socio-economic inequalities in component countries.

Specifically, to compare evidence on the influence of economic growth on socio-economic sustainability measured in terms of socio-economic inequality in individual BRICS countries the study seeks to understand. The short and long-run connection between economic growth and socio-economic inequalities (proxy for socio-economic sustainability) in the BRICS countries**,** via multivariate co-integration analysis. This involved testing for Granger-causality within a Vector Error-Correction Modeling (VECM) framework (Younsi & Bechtini, 2018; Javeria et al., 2017; Hussin et al., 2012). Although the ARDL model was introduced by Pesaran to incorporate I(0) and I(1) variables in the same estimation since OLS can only regress stationary variables that are I(0), the VECM (Johanson Approach) is preferred in this paper since all our variables may not be stationary at I(1) (Menon, 2017; Aregbesola, 2014).

2. Review of Related Literature

Conceptual and Theoretical Frameworks: "Sustainability" in this study means putting scientific, technical, economic, social and ecological resources to ensure the maintenance of equilibrium state for some giving space and time (Younsi & Bechtini, 2018; Odunlami & Awolusi, 2015). Hence, "socio-economic sustainability" is defined as maintaining a stable level of social contacts, training, social security, education, income, communication and participation (known as core microelements/ level of socio-economic sustainability), as well as, steady circulation of assets and income (known as the core macro perspective of socio-economic sustainability) for some time and in space (Younsi & Bechtini, 2018; Ogasawara, 2018; Spangenberg, 2004). Socio-economic sustainability is therefore posited as the maintenance of social capital (Odunlami & Awolusi, 2015; Spangenberg, 2004). "Socio-economic sustainability" and "economic growth" analysis usually involve solving complex diagnostic problems, owing to its focus on long-run processes, a mix of varied sustainability theories and models can help in addressing these complexities over time (Menon, 2017). Consequently, the theoretical framework for this study is built largely on the classical theory of economic growth and the neoclassical growth theory (Pistorius, 2004; Wilhelms, 1998).

Many studies have severally put forward the positive linkages between socioeconomic sustainability and economic growth. As well as, the notion of "limits" on socioeconomic-sustainability activities that would spur sustainable development (Zha et al., 2019; Hofkes, 2017; Menon, 2017). Specifically, Younsi & Bechtini (2018) study posited that issues arising from increasing socioeconomic inequalities and uneven wealth distribution throughout the world have often questioned the objective of continued growth in the past three decades (Hofkes, 2017; Menon, 2017). Although socioeconomic sustainability was seen as an offshoot of the various critiques of growth proposed by the neoclassical corpus theorists, Solow's model, as somewhat modified, is still the main neoclassical theory's response to the lingering debates on sustainability (Zha et al., 2019; Younsi & Bechtini, 2018). Consequently, previous studies often developed neoclassical growth models with technical progress as an exogenous variable, along with labor, capital, and a non-renewable resource in the same production function (Younsi & Bechtini, 2018). Neoclassical economists maintained that the main objective of any economic growth and socioeconomic sustainability should always consider the need to maintain steady and high economic well-being over time in the society, as well as, an extension of the same economic well-being to future generations (Menon, 2017; Hamilton, 2015).

Hence, Neoclassical economists defined sustainability as the "non-decline," well-being of individuals over time, probably measured by the level of individual consumption, income, and utility (Gur, 2015; Fan & Zheng, 2013). Consequently, with high savings rates in capital stocks and production capacity (like knowledge, amenities, educations and training, skills, and natural resources) over time, socioeconomic sustainability could be achieved in the BRICS countries (Zha et al., 2019). Hence, "natural capital" was considered by the neoclassical theorists' as a particular form of capital. However, neoclassical theorists insist on "substitutability" (that increase in generated capital by societies should compensate for any decrease in "natural capital") between these different forms of capital in an attempt to ensure a steady, productive capacity and well-being over time (Younsi & Bechtini, 2018; Menon, 2017). The neoclassical growth theory can, therefore, be used to explain the problem of diversity in the level of socioeconomic sustainability in the BRICS countries, which is probably because many BRICS countries pursue their interests that are counter-productive to the interests of other members and therefore against the common interest of the bloc (Javeria et al., 2017). Specifically, the neoclassical theory views growth as arising from strategic accretion of factors of production and the growth in total factor productivity (Pistorius, 2004).

The neoclassical growth theory assumed that growth is automatic, cost-free and inevitable, as well as, the fact that growth is bound to continue in the future at the same rate as the past ("the trend"). Since the incoming generations are expected to be richer and better equipped to afford the cost of repairing the present environmental damages (Javeria et al., 2017; Ayres et al., 2007). The theory also conditioned the attainment of socioeconomic sustainability and economic growth on the bargaining power of the host nation. It also conditioned it on the willingness to provide socioeconomic sustainability-induced policies and infrastructures relative to the availability of labor, capital, and technology (Onuonga, 2020; Bese & Kalayci, 2019; Fedderke & Romm, 2005). Consequently, many studies (Zha et al., 2019; Younsi & Bechtini, 2018) advised that any socioeconomic sustainability-induced policies should also consider other arms of sustainability, namely, institutional development and environmental protection (Javeria et al., 2017).

3. Methodology

This study is an attempt to compare evidence on the influence of economic growth on socio-economic, sustainability in individual BRICS countries. Hence we established the short and long-term equilibrium relationships, as well as, establishing the joint effect and the direction of Granger causality between economic growth and socio-economic sustainability (proxy by socio-economic inequalities) within individual BRICS economies.

Econometric Model: Time-series data of the five BRICS countries, from 1990 to 2017, was utilized in this study.

Derivation of Vector Error-Correction Modeling (VECM): The econometric model for this study was derived from the basic production function (El-Wassal, 2012). Consequently, to analyze the effect of economic growth on socio-economic inequalities, the basic Coub-Douglas Production Function was extended (Oladipo, 2008; El-Wassal, 2012). Therefore:

$Y_t = \beta_0 + \lambda\varepsilon_{t-1} + \beta_1 X_t + \mu + \varepsilon_t$ ……Equation 2.1

Where Y_t is the socio-economic inequality; X_t is the relevant explanatory socio-economic-economic growth variables; μ represents our country-specific time-invariant effects, and ε_t is the error term. According to El-Wassal (2012), by relaxing the strict exogeneity assumption, Equation 2.1 can be translated to Equation 2.2 in order to remove the country-specific effect:

$G_t - G_{t-1} = \eta(G_{t-1} - G_{t-2}) + \beta(X_t + X_{t-1}) + (\varepsilon_t + \varepsilon_{t-1})$ ……Equation 2.2

Based on this method, Equation 2.2 automatically controls for the association between $\varepsilon_t - \varepsilon_{t-1}$ (new error term) and $G_{t-1} - G_{t-2}$ (lagged dependent variable). Therefore, using the Bundell-Blond approach (El-Wassal, 2012) and its basic assumptions, in addition to the introduction of some vector (X^1) of some controls perceived to affect socio-economic inequality, the resultant socio-economic model for this study is shown in Equation 2.3:

$INQ_t = \{lnHEALTH_t, lnEDU_t, lnFIN_t, lnINST_t, lnGDP_t, lnTO_t, lnCO2_t, lnEC_t\}$ ……Equation 2.3

However, the VECM model provides long-term relationships, as well as, short-term dynamics of the endogenous variables, which we expect to converge to their co-integrated relations in the long run (Awolusi, 2019; Lee and Tan, 2006). Specifically, VECM shows the attainment of long-term equilibrium, as well as, the rate of change in the short term to achieve equilibrium (Akinola & Bokana, 2017). Based on a methodology from Jamel and Maktouf (2017) and Maryam et al. (2017): Where Z represents the various dependent variables, The study posits the following:

$Z_{1,t} = \beta_{1,1} Z_{1,t-1} + \beta_{1,2} Z_{2,t-1} + \epsilon_{1,t}$ ……Equation 2.4

$Z_{2,t} = \beta_{2,1} Z_{1,t-1} + \beta_{2,2} Z_{2,t-1} + \epsilon_{2,t}$ ……Equation 2.5

So

$Z_{1,t} - Z_{1,t-1} = (\beta_{1,1} - 1) Z_{1,t-1} + \beta_{1,2} Z_{2,t-1} + \epsilon_{1,t}$ ……Equation 2.5.1

$\Delta Z_{1,t} = (\beta_{1,1} - 1) Z_{1,t-1} + \beta_{1,2} Z_{2,t-1} + \epsilon_{1,t}$ ……Equation 2.5.2

Given that $(\beta_{1,1} - 1) = \phi_1$; $\beta_{1,2} = -\phi_1 \lambda$

we can then generate:

$\Delta Z_{1,t} = (\beta_{1,1} - 1) Z_{1,t-1} + \beta_{1,2} Z_{2,t-1} + \epsilon_{1,t}$ ……Equation 2.5.3

$\Delta Z_{1,t} = \phi_1 Z_{1,t-1} - \phi_1 \lambda Z_{2,t-1} + \epsilon_{1,t}$ ……Equation 2.5.4

$\Delta Z_{1,t} = \phi_1 (Z_{1,t-1} - \lambda Z_{2,t-1}) + \epsilon_{1,t}$ ……Equation 2.5.6

Consequently, Equation 2.3, an offshoot of Equation 2.5.6 can be transformed to Equation 2.6:

$\Delta GDP_t = \{\Delta lnHEALTH_t, \Delta lnEDU_t, \Delta lnFIN_t, \Delta lnINST_t, \Delta lnINQ_t, \Delta lnTO_t, \Delta lnCO2_t, \Delta lnEC_t\}$……..Equation 2.

As a result, based on econometric form (matrix), the VECM model for the study can be represented in Equations 2.7 to 2.15:

$INQ_t = a_1 + a_2 HEALTH_t + a_3 EDU_t + a_4 FIN_t + a_5 INST_t + a_6 GDP_t + a_7 TO_t + a_8 CO2_t + a_9 EC_t + \varepsilon$……Equation 2.7

$HEALTH_t = b_1 + b_2 GDP_t + b_3 EDU_t + b_4 FIN_t + b_5 INST_t + b_6 INQ_t + b_7 TO_t + b_8 CO2_t + b_9 EC_t + \varepsilon$.. Equation 2.8

$EDU_t = c_1 + c_2 GDP_t + c_3 HEALTH_t + c_4 FIN_t + c_5 INST_t + c_6 INQ_t + c_7 TO_t + c_8 CO2_t + c_9 EC_t + \varepsilon$…Equation 2.9

$FIN_t = d_1 + d_2 GDP_t + d_3 HEALTH_t + d_4 EDU_t + d_5 INST_t + d_6 INQ_t + d_7 TO_t + d_8 CO2_t + d_9 EC_t + \varepsilon$.. Equation 2.10

$INST_t = e_1 + e_2 GDP_t + e_3 HEALTH_t + e_4 EDU_t + e_5 FIN_t + e_6 INQ_t + e_7 TO_t + e_8 CO2_t + e_9 EC_t + \varepsilon$.. Equation 2.11

$GDP_t = f_1 + f_2 INQ_t + f_3 HEALTH_t + f_4 EDU_t + f_5 FIN_t + f_6 INST_t + f_7 TO_t + f_8 CO2_t + f_9 EC_t + \varepsilon$……Equation 2.12

$TO_t = g_1 + g_2 GDP_t + g_3 HEALTH_t + g_4 EDU_t + g_5 FIN_t + g_6 INST_t + g_7 INQ_t + g_8 CO2_t + g_9 EC_t + \varepsilon$.. Equation 2.13

$CO2_t = h_1 + h_2 GDP_t + h_3 HEALTH_t + h_4 EDU_t + h_5 FIN_t + h_6 INST_t + h_7 INQ_t + h_8 TO_t + h_9 EC_t + \varepsilon$.. Equation 2.14

$EC_t = i_1 + i_2 GDP_t + i_3 HEALTH_t + i_4 EDU_t + i_5 FIN_t + i_6 INST_t + i_7 INQ_t + i_8 TO_t + i_9 CO2_t + \varepsilon$……..Equation 2.15

However, since socio-economic inequality (includes income inequality, gender inequality, racial or ethnic inequality, age inequality, and inequalities in health) is broader than income inequality and poverty, in that it is defined over the entire population, and does not only focus on the poor, hence a broader measure of socio-economic inequality is recommended in the literature (Younsi & Bechtini, 2018; Jamel & Maktouf, 2017). Consequently, by applying the principal component technique on the five important proxies of socio-economic inequalities, namely, Gini coefficient-income inequality (ranges from 0-perfect equality- to 1-perfect inequality-), Atkinson index-a family of income inequality measures, Ratio of female to male labor force participation rate (%) (Modeled ILO estimate), Unemployment, total (% of the total labor force) (modeled ILO estimate), and refugee population by country or territory of origin, a composite socio-economic inequality index was constructed (see Appendix A) to generate our measure of trends in socioeconomic inequalities within the BRICS countries using a dataset from 1990 to 2019 (Younsi & Bechtini, 2018; Jamel & Maktouf, 2017). In Equations 7 to 15, GDP represents real per capita GDP (proxy for economic growth), HEALTH stands for total government expenditure on health (proxy for health development), and EDU is the weighted average of government expenditure in primary and secondary and tertiary education (proxy for educational development). Again, INST is institutional fitness, as represented by aggregations of economic, political and institutional indexes (Licumba, Dzator & Zhang, 2016; Eggoh, Houeninvo & Sossou, 2015; Adelowokan, 2012). FIN represents financial development, TO, is trade openness, C02 is environmental pollution, and EC represents Energy consumption.

The "ε' represents the disturbance, while a1…a9 represents the unknown population parameters. The various measures of constructs are shown in Appendix E. However, socio-economic inequality (includes income inequality, gender inequality, racial or ethnic inequality, age inequality, and inequalities in health) is broader than income inequality and poverty. In that, it is defined over the entire population and does not only focus on the poor, hence a broader measure of male labor force participation rate (%) (modeled ILO estimate), Unemployment, total (% of the total labor force) (modeled ILO estimate), and refugee population by country or territory of origin, a composite socio-economic inequality index was constructed (see Appendix 2A) to

generate our measure of trends in socioeconomic inequalities within the BRICS countries using a dataset from 1990 to 2019 (Younsi & Bechtini, 2018; Jamel & Maktouf, 2017). Specifically, the construction of the composite socio-economic inequality index for all the countries was done by applying principal component analysis (PCA) on our five measures of socio-economic inequality (Younsi & Bechtini, 2018).

The PCA as a multivariate statistical technique is usually used for analyzing the inter-correlation by linking several quantitative variables (Younsi & Bechtini, 2018; Adelowokan, 2012; Strittmatter & Sunde, 2011). For each dataset with '*p*' quantitative variables, we can evaluate at most *p* principal components (PC) by descending order of the eigenvalues, with each '*p*' representing a linear combination of the original variables, and the coefficients equal to the eigenvectors of the correlation covariance matrix (Younsi & Bechtini, 2018; Jamel & Maktouf, 2017). The results of the constructed composite socio-economic index for the five BRICS countries, as depicted in Appendix 2A, shows the PC analysis for Brazil, Russia, India, China, and South Africa with the highest first PC explains about 58.13%, 57.34%, 60.42%, 64.69%, and 70.93% of the standardized variance in each of the countries, respectively; hence, were selected to compute the socio-economic index (Younsi & Bechtini, 2018). This was based on the premise that the first PC is a linear combination of the whole five measures of socio-economic sustainability index with the respective weights represented by the first eigenvector (Younsi & Bechtini, 2018). Consequently, 78.34%, 78.52%, 39.67%, 41.45% and 32.15% individual contributions for each of the GCII; AI, RFMLF, UNEMP, and RPOP respectively were further used to construct the socio-economic index for Brazil.

After rescaling to the standardized variance of the first PC (Younsi & Bechtini, 2018; Jamel & Maktouf, 2017; De Bruyn et al., 1998). Again, the same interpretations of results were seen to be true for the other four countries in our analysis (Russia, India, China and South Africa). One major assumption for the study was the fact that all explanatory variables are expected to have fixed values in repeated samples; we also expected each (ε) disturbance to be normally distributed, while we also posit the absence of perfect multicollinearity (Asteriou & Hall, 2007). Consequently, the joint effect of all determinants on socio-economic inequality was tested via Equation 2.7 (Lee & Tan, 2006; Akaike, 1974). Additionally, based on a methodology adopted in Jamel & Maktouf (2017) and Maryam et al. (2017), our last model (Equation 2.15) also seeks to confirm/refute the following hypotheses: Neutrality Hypothesis (of no causality - in either direction - between energy consumption and economic growth), Energy Conservation Hypothesis (of evidence of unidirectional causality running from economic growth to energy consumption), Growth Hypothesis (of energy consumption drives economic growth), and Feedback Hypothesis (of a bidirectional causal relationship between energy consumption and economic growth). Consequently, the following steps were followed:

Assumptions and Diagnostics Tests: After satisfying with the level of measurement and sample size, we tested for conformity with the assumptions of normality, linearity independence of errors and homoscedasticity. Again, collinearity (testing for multicollinearity) and casewise diagnostics (to identify outliers) were also tested. There is also a need to check for spurious results where the Durban Watson Statistic is less than the R-square of the model (Maktouf, 2017).

Unit Root Test: A unit root test is usually conducted to identify non-stationarity, that is, the presence of unit-roots. This was performed via the Standard ADF Test, Phillips-Perron (PP) Test, and KPSS-Kwiatkowski-Phillips-Schmidt-Shin Test at various differenced series (Awolusi, 2019; Asteriou & Hall, 2007). The ADF hypothesis both null hypothesis (Ho: Model has a Unit Root) and an alternative hypothesis (H_1: Model has no Unit Root). If the critical value is greater than the computed result, then, the null hypothesis rejects, signifying the absence of unit root (Maktouf, 2017). Similarly, in the PP test, the null hypothesis (Ho: Model has a Unit Root) is rejected if the critical value (in absolute value) than the computed result (Hussin et al., 2012). Alternatively, *KPSS*-Kwiatkowski-Phillips-Schmidt-Shin Test merely hypothesizes a null hypothesis that the model is stationary (Ho: Model is stationary) and an alternative hypothesis (H_1: Model is not stationary).

Multivariate Co-Integration Analysis: After establishing the stationarity of our variables, we proceeded to test the extent of cointegration, using the Johansen Multivariate Cointegration test (Johansen's Trace and Max Eigenvalue tests) at various level of significance (Hussin et al., 2012; Asteriou & Hall, 2007). Out of the two Johansen's Trace and Max Eigenvalue tests, the ranking was dependent on the Trace test results, due to the

fact that trace test often shows more robustness to both excess kurtoses in the residual and skewness (Hussin et al., 2012). Appropriately, the test provided information on whether socio-economic inequality and economic growth are tied together in the long run (Hussin et al., 2012).

Vector Error Correction Model-VECM: VECM was then performed to show the route/direction of causality (Lee & Tan, 2006). While the short term Granger causal relationship was observed through the Wald test (F statistics), our long-run Granger causal relationship was determined based on the value of error correction term-ECT-1 to identify the existence and nature of the causality relationship between the variables (Younsi & Bechtini, 2018; Javeria et al, 2017; Awosusi & Awolusi, 2014). After selecting the appropriate models using Hussin et al.'s (2012) criterion, the optimal lag length was determined next. Unfortunately, automatic lag length selection is not possible in E-Views software, hence, we estimated the models for a few lags and later, reduced down to check for the SBC and AIC optimal value (Asteriou & Hall, 2007). However, since co-integration merely indicates the absence or presence of Granger-causality, without showing the route of causality, hence, the direction was decided via VECM (Hussin et al., 2012; Lee & Tan, 2006).

4. Presentation and Discussion of Results

Similar to previous studies (Younsi & Bechtini, 2018; Jamel & Maktouf, 2017), this study tested for validity and reliability of our data sets by ascertaining conformity with few diagnostic tests and assumptions of multiple regression via Equation 2.7, with socio-economic inequality as dependent variables, economic growth as the independent variable, while holding other variables (FIN, Health, EDU, INST, TO, CO2, EC) as control variables. First, we ran the script to test for normality of our dependent variable (log of inequality) and obtained a skewness and kurtosis of -0.093 and -0.677 with all satisfying the criteria for a normal distribution (between -1.0 and +1.0) (Adelakun, 2011; Akinola & Bokana, 2017). The same goes for other independent and control variables. Secondly, we ran various scripts to test linearity assumptions between (1) dependent variable and independent variables (2) dependent variable and our control variables.

For the linearity test between the log of socio-economic inequality and economic growth variables, we obtained statistically significant values ($r= 0.577$, $p<0.001$), meaning a linear relationship exists between these variables (Adelakun, 2011; Akinola & Bokana, 2017). Moreover, our test for homogeneity of variance assumption via the Levene test showed that the probability associated with the test (0.712) was $p=0.477$, greater than the 0.01 level of significance required to test the assumption (Agrawal, 2015; Akinola & Bokana, 2017). Hence, the null hypothesis of equal variances was not rejected (Akinola & Bokana, 2017). Finally, all major diagnostic tests: collinearity diagnostics for testing multicollinearity, casewise diagnostics to identify outliers and Durbin-Watson statistics to test for serial correlation showed a minimum/maximum standardized residuals of -2.772 (fell in the acceptable range of +- 3.0), Durbin-Watson statistic of 1.983 (which falls within the acceptable range since the residuals are not correlated at statistics, approximately 2) (Adelakun, 2011; Adelowokan, 2012; Agrawal, 2015).

Unit Root Test: The Augmented Dickey-Fuller (ADF) test was conducted for unit roots in both first difference and levels for all the selected countries (Awolusi & Mbonigaba, 2020; Kautsiro & Awolusi, 2020). The result of this analysis is reported in Appendix 2B(i). The result showed consistency by not accepting the null hypothesis at the 1%, 5% and 10% levels of significance. Similar to our ADF results, the PP test was also conducted for unit roots in both first difference and levels for all the selected countries, and the results also, as reported in Appendix 2B(ii) also assumed stationarity of the series by the rejection of the null hypothesis, when the test statistic is less than the 1%, 5% and 10% levels of significance (Hussin et al., 2012). Lastly, the KPSS-Kwiatkowski-Phillips-Schmidt-Shin Test (as shown in Appendix 2Biii) for each of the selected countries, also conducted in the levels and first difference via the Newey-West bandwidth method (Lee & Tan, 2006), however, rejected the null hypothesis only at levels unlike previous tests (ADF and PP tests). This test (KPSS) further confirmed the level of integration for all variables (Maktouf, 2017).

Results for Multiple Co-Integrating Vectors: The long-run equilibrium relationships among socio-economic inequality, economic growth and other determinants in all the selected countries were tested using multivariate co-integration (Zha et al., 2019; Johansen & Juselius, 1990). The results as shown in Appendix 2C were extracted using the likelihood ratio test, after a series of selection processes with a 1 through 4 lag

length. The results basically posit the existence of co-integrating vectors in all the models. Specifically, there were 3 vectors in the Brazilian, Russian, Chinese and South African systems (at a lag interval of 1 to 2), while four co-integrating vectors were experienced in India's models (lag length of 1 to 3) (Asteriou & Hall, 2007). This implied that while the variables in Brazil, Russia, China and South Africa have long-run equilibrium relationships and were adjusting via three identified channels in the short-run, our model for India's variables did the same adjustment through four channels (Maktouf, 2017; Asteriou & Hall, 2007). However, since it is common in literature for the estimated test statistics to show different results, the ranking was done based on the Trace test results due to the robustness of the Trace test results to both skewness and excess kurtosis (Maktouf, 2017; Hussin et al., 2012; Asteriou & Hall, 2007).

Result of Vector Error Correction Modelling via Granger Causality: The Granger causality test was conducted to test the short-term effect of economic growth on socio-economic inequality within the BRICS countries. VECM was conducted for each system (country) and the various null hypotheses (H_0: There is no impact of 'X' on 'Y') was tested at different constants and levels of significance (1%, 5%, and 10%) - for both the explanatory variables and the 'group' long-run error terms (ECT $_{t-1}$ terms). The results of this analysis for each of the five BRICS countries are reported in Tables 1 to 5.

Table 1: VECM Results for Brazil (p=2)

Variable-Dependent	Variables-Independent [Wald Test Chi-Square (Significance level)]									
	ΔINQ	**ΔHEALTH**	**ΔEDU**	**ΔFIN**	**ΔINST**	**ΔGDP**	**ΔTO**	**ΔCO2**	**ΔEC**	**ECT $_{t-1}$**
ΔINQ	---------	15.0223*	3.30401	1.602915	4.367073	0.8171**	16.0864*	16.0864*	16.0864*	-16.06*
	1.0354	(0.0005)	(0.1917)	(0.4487)	(0.1126)	(0.6648)	(0.0011)	(0.0011)	(0.0011)	-(0.011)
ΔHEALT	(0.596)	----------	1.59562	16.0791*	13.2220*	1.931848	13.6919*	13.6919*	13.6919*	1.8691
	6.98**		(0.4503)	(0.0003)	(0.0013)	(0.3806)	(0.0034)	(0.0034)	(0.0034)	(0.3424)
ΔEDU	(0.031)	22.4327*	----------	14.4409*	2.127338	7.9077**	25.1157*	25.1157*	25.1157*	25.115*
	5.531**	(0.0001)		(0.0007)	(0.3452)	(0.0192)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
ΔFIN	(0.062)	0.881048	3.33351	----------	5.4197***	2.1841**	1.611708	1.611708	1.611708	11.60**
	16.090*	(0.6437)	(0.1889)		(0.0665)	(0.3453)	(0.6567)	(0.6567)	(0.6567)	(0.0167)
ΔINST	(0.003)	5.666654***	20.280*	11.4211*	----------	2.732798	8.26675**	8.26675**	8.26675**	8.266**
	4.470**	(0.0588)	(0.0001)	(0.0033)		(0.2550)	(0.0408)	(0.0408)	(0.0408)	(0.0408)
ΔGDP	(0.356)	2.278973	4.359217	4.678***	5.907***	----------	15.2218*	15.2218*	17.4544**	1.4221
	1.5315	(0.3200)	(0.1131)	(0.0964)	(0.0521)		(0.0016)	(0.0016)	(0.0016)	(0.3456)
ΔTO	0.3629)	5.531**	5.531**	(0.1131)	(0.1131)	1.611708	----------	1.611708	1.611708	1.61170
	1.0902	(0.0629)	(0.0629)	(0.0629)	(0.0629)	(0.6567)		(0.6567)	(0.6567)	(0.6567)
ΔCO2	(0.343)	16.090*	16.090*	16.090*	16.090*	16.090*	8.26675**	----------	8.26675**	1.2667
	11.20**	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0408)		(0.0408)	(0.5408)
ΔEC	(0.003)	9.4670*	9.4670*	9.4670*	9.4670*	2.3870	15.2218*	15.2218*	----------	13.221*
		(0.0088)	(0.0088)	(0.0088)	(0.0088)	(0.4367)	(0.0016)	(0.0016)		(0.0022)

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%.

The Brazilian, Russian, Chinese and South African systems consist of three co-integrating vectors. Consequently, a Wald test (joint) was carried out on each of the three error correction terms. However, the Indian model exhibited four co-integrating vectors; consequently, a Wald test (joint) was also carried out on each of the four error correction terms (Younsi & Bechtini, 2018; Javeria et al., 2017). The Wald test Chi-Square result for all the five countries showed a causal effect in the short run. These effects were both running bi-directionally and unidirectionally for all the countries.

Table 2: VECM Results for Russia (p=2)

Variable-Dependent	Variables-Independent [Wald Test Chi-Square (Significance level)]									
	ΔINQ	ΔHEALTH	ΔEDU	ΔFIN	ΔINST	ΔGDP	ΔTO	ΔCO2	ΔEC	ECT $_{t-1}$
ΔINQ	-----	8.207869**	1.961350	18.30197*	1.622662	5.350815	19.9355*	19.9355*	19.9355*	-19.355*
		0.0419	0.5805	0.0004	0.6543	0.1478	0.0002	0.0002	0.0002	-0.0044
ΔHEALT	3.8608	---------	1.510704	16.92722*	2.403152	5.888746	24.9819*	24.9819*	24.9819*	2.9819
	0.22365		0.6798	0.0007	0.4930	0.1172	0.00001	0.00001	0.00001	0.43201
ΔEDU	1.54305	6.59030***	--------	3.373826	8.3045**	10.526**	10.526**	10.526**	10.526**	10.526**
	0.6724	0.0862		0.3375	0.0401	0.0146	0.0146	0.0146	0.0146	0.0146
ΔFIN	48.721*	9.798834**	9.3608**	--------	24.7488*	8.5058**	13.8349*	13.8349*	13.8349*	13.8349*
	0.00001	0.0204	0.0249		0.00001	0.0366	0.4321	0.4321	0.4321	0.4321
ΔINST	0.66981	8.644371**	4.853424	20.29062*	-------	9.9160**	37.0155*	37.0155*	37.0155*	37.0155*
	0.8805	0.0344	0.1829	0.0001		0.0193	0.0001	0.0001	0.0001	0.0001
ΔGDP	5.45319	9.565928**	3.713398	17.45746*	2.028492	-------	28.5783*	28.5783*	25.53764**	2.5783
	0.1414	0.0226	0.2941	0.0006	0.5665		0.0001	0.0001	0.00121	0.4321
ΔTO	48.771*	48.7271*	48.7271*	48.7271*	48.7271*	48.7271*	----------	13.8349*	13.8349*	1.8349
	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001		0.4321	0.4321	0.1321
ΔCO2	0.66981	0.668981	0.668981	0.668981	0.668981	0.668981	37.0155*	----------	37.0155*	3.01343
	0.8805	0.8805	0.8805	0.8805	0.8805	0.8805	0.0001		0.0001	0.23481
ΔEC	5.45319	5.454319	5.454319	5.454319	5.454319	15.4256**	28.5783*	28.5783*	---------	28.5783*
	0.1414	0.1414	0.1414	0.1414	0.1414	0.00054	0.0001	0.0001		0.0001

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%.

In Tables 1 to 5, we observed that for the Brazilian, Russian, and Chinese models, respectively, the influence of economic growth on socio-economic inequality was insignificant. Surprisingly, these results are somewhat different from previous results in the BRICS region (Younsi and Bechtini, 2018; Menon, 2017; Javeria et al., 2017; Jamel & Maktouf, 2017).

Table 3: VECM Results for China (p=2)

Variable-Dependent	Variables-Independent [Wald Test Chi-Square (Significance level)]									
	ΔINQ	ΔHEALTH	ΔEDU	ΔFIN	ΔINST	ΔGDP	ΔTO	ΔCO2	ΔEC	ECT $_{t-1}$
ΔINQ	-----	9.34586**	2.22230	13.45197*	1.98733	3.42335	20.3455*	20.3455*	20.3455*	-20.355*
		0.0487	0.4564	0.0034	0.6653	0.2333	0.0032	0.0032	0.0032	-0.0032
ΔHEALT	9.2222**	---------	4.456704	15.722*	2.43332	5.565446	22.4419*	22.4419*	22.4419*	24.5519*
	0.0555		0.3566	0.0347	0.3478	0.1567	0.0011	0.0011	0.0011	0.0011
ΔEDU	1.678945	9.76530**	--------	3.567826	9.3045**	10.526**	11.236**	11.236**	11.236**	13.346**
	0.7895	0.08062		0.3564	0.0444	0.0433	0.0246	0.0246	0.0246	0.0246
ΔFIN	38.5671*	10.798876**	9.5558**	--------	24.7488*	8.5058**	51.335*	51.335*	51.335*	21.565*
	0.00331	0.03456	0.0256		0.00331	0.0455	0.00221	0.00221	0.00221	0.00221
ΔINST	0.54381	9.78971**	4.65544	21.3462**	-------	9.9160**	27.0995*	27.0995*	27.0995*	27.0995*
	0.6645	0.0454	0.1829	0.0331		0.0373	0.00101	0.00101	0.00101	0.00101
ΔGDP	3.35625	12.8765**	3.54398	19.4576**	2.78692	-------	22.3443*	22.3443*	21.2345**	2.3443
	0.36257	0.0245	0.2561	0.0236	0.5555		0.00122	0.00122	0.00134	0.4382
ΔTO	38.5671*	38.5671*	38.5671*	38.5671*	38.5671*	38.5671*	----------	51.335*	51.335*	1.43675
	0.00331	0.00331	0.00331	0.00331	0.00331	0.00331		0.00221	0.00221	0.3421
ΔCO2	0.54381	0.54381	0.54381	0.54381	0.54381	0.54381	27.0995*	----------	27.0995*	-2.0995
	0.6645	0.6645	0.6645	0.6645	0.6645	0.6645	0.00101		0.00101	-0.2301
ΔEC	2.48999	2.48999	2.48999	2.48999	2.48999	3.5374	22.3443*	22.3443*	----------	22.3443*
	0.2544	0.2544	0.2544	0.2544	0.2544	0.34653	0.00122	0.00122		0.00122

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%.

Table 4: VECM Results for India (p=2)

Variable-Dependent	Variables-Independent [Wald Test Chi-Square (Significance level)]									
	ΔINQ	**ΔHEALTH**	**ΔEDU**	**ΔFIN**	**ΔINST**	**ΔGDP**	**ΔTO**	**ΔCO2**	**ΔEC**	**ECT** $_{t-1}$
ΔINQ	------	1.34503	11.2456*	8.45682**	11.6264**	2.3418**	23.444*	23.444*	23.444*	23.444*
		0.7775	0.00231	0.0734	0.0339	0.4448	0.0034	0.0034	0.0034	0.0034
ΔHEALT	3.47675	-------	15.2405*	23.3435*	13.446*	11.443**	25.288*	25.288*	25.288*	2.6588
	0.2347		0.00221	0.00491	0.00227	0.0476	0.00341	0.00341	0.00341	0.45241
ΔEDU	2.498794	19.4442*	------	17.34511***	2.13333	9.999***	20.9914*	20.9914*	20.994*	20.994*
	0.43877	0.0028		0.0567	0.4534	0.0766	0.00331	0.00331	0.00331	0.00331
ΔFIN	2.99743	1.45294	4.34551	------	4.24226	1.56774	4.62592	4.62592	4.62592	14.622**
	0.6490	0.45382	0.3456		0.2432	0.3431	0.4481	0.4481	0.4481	0.00481
ΔINST	10.348**	2.45633	23.345*	11.5667*	--------	15.111*	22.961*	22.961*	22.961*	22.234*
	0.0652	0.3429	0.00231	0.00347		0.00447	0.00341	0.00341	0.00341	0.00245
ΔGDP	13.4258**	12.3451**	2.34535	2.45674	8.554***	--------	15.665*	15.665*	15.665*	15.665*
	0.02353	0.0420	0.4349	0.4564	0.0779		0.0036	0.0036	0.0036	0.0036
ΔTO	2.99743	2.99743	2.99743	2.99743	2.99743	2.99743	----------	4.62592	4.62592	4.62592
	0.6490	0.6490	0.6490	0.6490	0.6490	0.6490		0.4481	0.4481	0.4481
ΔCO2	10.348**	10.348**	10.348**	10.348**	10.348**	10.348**	22.961*	----------	22.961*	2.9623
	0.0652	0.0652	0.0652	0.0652	0.0652	0.0652	0.00341		0.00341	0.34341
ΔEC	11.348**	11.448**	11.3448**	11.3448**	11.348**	1.344	15.665*	15.665*	----------	15.665*
	0.0443	0.0443	0.0443	0.0443	0.0443	0.63587	0.0036	0.0036		0.0036

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%.

Unfortunately, our study observed a unidirectional causality between economic growth and socio-economic inequality in both India and South Africa. However, unlike our estimates from Brazil, India and South Africa's models (reverse causality), findings from the Granger causality test depict a unidirectional causality from financial developments to income inequality. These interesting results may be likened to a seemly presence of the "resource curse" in the two countries, as opposed to previous studies on BRICS countries (Younsi & Bechtini, 2018; Javeria et al., 2017; Jamel & Maktouf, 2017).

Table 5: VECM Results for South Africa (p=2)

Variable-Dependent	**Variables-Independent [Wald Test Chi-Square (Significance level)]**									
	ΔINQ	**ΔHEALTH**	**ΔEDU**	**ΔFIN**	**ΔINST**	**ΔGDP**	**ΔTO**	**ΔCO2**	**ΔEC**	**ECT** $_{t-1}$
ΔINQ	----------	18.5623**	2.234124	2.45665	3.457073	2.7896**	21.564**	21.564**	21.564**	21.564**
		(0.0345)	(0.2945)	(0.6687)	(0.1566)	(0.6234)	(0.03311)	(0.03311)	(0.03311)	(0.03311)
ΔHEALT	1.234449	----------	1.67827	16.0744*	13.2560*	2.76848	13.8909*	13.8909*	13.8909*	1.56389
	(0.54544)		(0.4785)	(0.0343)	(0.0015)	(0.4506)	(0.0067)	(0.0067)	(0.0067)	(0.25367)
ΔEDU	7.5667**	20.3478*	----------	14.4766*	2.567558	7.4567**	25.1157*	25.1157*	25.1157*	25.1157*
	(0.0345)	(0.00451)		(0.0099)	(0.35672)	(0.0166)	(0.01101)	(0.01101)	(0.01101)	(0.01101)
ΔFIN	15.34***	16.4854**	18.456**	----------	7.417***	22.574**	21.579**	21.579**	21.579**	21.569**
	(0.0559)	(0.0035)	(0.03489)		(0.0575)	(0.0333)	(0.01877)	(0.01877)	(0.01877)	(0.01877)
ΔINST	14.0458*	9.63489**	21.3455*	21.4871*	----------	2.75688	9.9675**	9.9675**	9.9675**	9.9675**
	(0.0093)	(0.0577)	(0.0034)	(0.0056)		(0.45600)	(0.0466)	(0.0466)	(0.0466)	(0.0466)
ΔGDP	9.6530**	2.456673	3.45617	5.678**	8.987***	----------	15.4568*	15.4568*	15.4568*	1.4568
	(0.0333)	(0.3455)	(0.1341)	(0.0988)	(0.0556)		(0.0019)	(0.0019)	(0.0019)	(0.3429)
ΔTO	21.579**	21.5679**	21.579**	21.579**	21.579**	21.579**	----------	21.579**	21.679**	2.43579
	(0.0177)	(0.01877)	(0.01877)	(0.01877)	(0.01877)	(0.01877)		(0.01877)	(0.01877)	(0.01877)
ΔCO2	1.9675	9.96675**	9.96675**	9.96675**	9.9675**	9.9675**	9.9675**	----------	9.9675**	9.9675**
	(0.3336)	(0.0466)	(0.0466)	(0.0466)	(0.0466)	(0.0466)	(0.0466)		(0.0466)	(0.0466)
ΔEC	15.4568*	15.4568*	15.4568*	15.4568*	15.4568*	1.4348	15.4568*	15.4568*	----------	15.4568**
	(0.0019)	(0.0019)	(0.0019)	(0.0019)	(0.0019)	(0543)	(0.0019)	(0.0019)		(0.0019)

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%

In all our models, educational development, financial development, institutional fitness, and energy consumption seem to contribute to socio-economic inequality in all the BRICS countries. However, due to the strong unidirectional causal relationships between economic growth and socio-economic inequality in Brazil, India and South Africa, it is interesting to know that poor institutional fitness, education, financial development and energy consumption may have altered the influence of economic growth in the three countries over the years (Younsi & Bechtini, 2018; Javeria et al., 2017; Jamel & Maktouf, 2017). Additionally, our study also confirmed the following hypotheses: Neutrality Hypothesis of no causality - in either direction

- between energy consumption and economic growth (None); Energy Conservation Hypothesis of evidence of unidirectional causality running from economic growth to energy consumption (In all the models); Growth Hypothesis of energy consumption drives economic growth (In the model of Russia), and Feedback Hypothesis (of a bidirectional causal relationship between energy consumption and economic growth.

Lastly, the short term Granger Causal relationship was observed through the Wald test (F statistics) on a group, of the related coefficients, and we observed that most variables of EDU (educational development), FIN (financial development), INST (institutional fitness) and EC (energy consumptions) are the short term Granger cause for INQ (socio-economic inequality). This means the levels of socio-economic inequalities in the short term are mainly influenced by the levels of educational development, financial development, institutional fitness and energy consumptions whereas other variables do not exhibit significant relationships. This finding is also somewhat similar to previous research findings (Younsi and Bechtini, 2018; Menon, 2017; Bittencourt, 2010; Giri and Sehrawat, 2015; Hye, 2011; Odhiambo, 2010), both on the effect of economic growth on socio-economic sustainability (inequality), as well as, the negative influence of poor financial development and low energy consumption as the short term Granger cause for socio-economic inequality (Azevedo et al., 2018; Younsi & Bechtini, 2018). Specifically, Younsi and Bechtini (2018) study on the relationships between economic growth and socio-economic inequality in BRICS countries using annual panel data covering the period 1995-2015 also confirmed a long-run cointegration relationship between economic growth and income inequality in the BRICS countries. While estimates from fixed effects results posit the positive and significant influence of economic growth on income inequality, the coefficient of its squared term depicts a significant negative effect.

Similar to what the present study observed in Brazil, India and South Africa estimates. But there was no reversed causal relationship between income inequality and economic growth in Younsi and Bechtini's (2018) study. Consequently, mixed policy options aimed at reducing inequality in the BRICS bloc could be achieved through improvements in taxation and financial system policies (Younsi and Bechtini, 2018; Menon, 2017). In addition, similar to the present study, while emphasizing the role of economic growth on socio-economic redistribution in many developing economies, Menon's (2017) study also established negative trends in the estimates for South Africa but differed based on our improved estimates for China. Consequently, South Africa should concentrate on enacting policies to reduce inflation via proper monitoring of monetary control and domestic products (Menon, 2017). Furthermore, our estimated results for both China and Russia on the influence of economic growth on socio-economic sustainability in the BRICS countries can also be demonstrated by the Kuznets hypothesis, which posits for an increase in income disparities arising from the first phase of economic growth, while the same economic growth in a later phase, given redistribution mechanisms, tends to contribute to the attainment of an egalitarian pattern of income distribution in a welfare state (Fan & Zheng, 2013; Omer, 2008; Spangenberg, 2004).

Robustness Checks: Our main robustness check was to consider the inclusion of additional variables, such as exchange rate volatility and inflation risk, and then re-estimated Equation 7 via GMM estimators and pooled ordinary least square (POLS) (Akinola & Bokana, 2017; Menon, 2017; Blundell and Bond, 1998; Arellano and Bond, 1991). Similar to a study by Blundell and Bond (1998) and Arellano and Bond (1991), we selected two specific diagnostic tests, Hansen test and the second-order autocorrelation AR (2) test, to test for any probable over-identifying restrictions and serial correlations of the error terms, respectively. The results of our GMM estimators are shown in Appendix 2D. Estimates of the GMM and POLS largely attested to the robustness of our main preferred results due to the unchanged signs and level of significance (mostly 1 and 5 percent). Again, the results of both the GMM and POLS in the new samples (with additional regressors) are similar to the main finding of this study, which concluded that the influence of economic growth on socio-economic inequality was largely insignificant. Specifically, in our GMM results, the Hansen test for over-identification indicates the acceptance of the null hypothesis, while the AR (2) test estimate also indicates the presence of a second-order serial correlation in our mode (Menon, 2017). Hence, a validation of our instruments and seemly uncorrelated with the error term (Akinola & Bokana, 2017). In particular, the robustness analysis posits similarity in sign and magnitude as in our main results in Tables 1 - 5.

5. Conclusion and Implications of Study

Conclusion: This paper examined the influence of economic growth on socio-economic inequality within the BRICS countries from 1990 to 2019. The long-run equilibrium relationships were tested via a multivariate co-integration technique by Johansen and Juselius (Johansen & Juselius, 1990). Our results confirmed the existence of co-integrating vectors in all the models of all the selected BRICS countries. Specifically, estimates from the models of Brazil, Russia, China and South Africa posit a long-run equilibrium relationship with each other but did the adjustment in the short-run via three established channels. On the other hand, variables in the models of India also exhibit the same adjustment via four identified channels. Unfortunately, since the presence of cointegrating vectors in any system merely assumed the existence and/or nonexistence of causality, this, however, often failed to specify the route of causality among the systems. Consequently, the outcome of the estimated causality test detected both unidirectionally and bidirectionally causal effects in the short run for all the variables. Our study, therefore, concluded that the long-run equilibrium relationships between economic growth and socio-economic inequalities in the BRICS countries vary from one country to another, but were largely insignificant. Specifically, we observed that for the Brazilian, Russian, and Chinese models, respectively, the influence of economic growth on socio-economic inequality was insignificant.

Surprisingly, our study observed a unidirectional causality between economic growth and socio-economic inequality in both India and South Africa. These interesting results may be likened to a seemly presence of a "resource curse" in the two countries, as opposed to previous studies in the same bloc (Younsi & Bechtini, 2018; Javeria et al., 2017; Jamel & Maktouf, 2017). In conclusion, the present study found that common policy options were not possible and that for the block to pursue its economic prosperity goals without compromising individual countries' needs for socioeconomic sustainability, varied policy options were inevitable. Additionally, although our study failed to confirm Neutrality Hypothesis, we, however, confirmed the presence of the Energy Conservation Hypothesis (In all the models); Growth Hypothesis (In the model of Russia), and Feedback Hypothesis (In the model of Russia). Lastly, the study observed that in the short term Granger Causal relationships, variables of educational development, financial development, institutional fitness and energy consumption are majorly the short term Granger cause for socio-economic inequality. Finally, all the variables in each model adjusted to equilibrium in the long run, except for trade openness and C02 emissions in virtually all the BRICS systems. This proves that trade openness and C02 emissions are not valid variables to predict changes in socio-economic inequality in the BRICS countries.

Policy Implications and Recommendations: Our findings have shown that socio-economic inequality (sustainability) has not been adequately supported, while there are variations in the impact of economic growth on socio-economic inequalities within the BRICS bloc. Our findings seem to be tacit support for the "resource course" problem in the three countries (Brazil, India, and South Africa). Consequently, this study posits for a more radical policy mix to reduce the negative impact of economic growth on socioeconomic inequality in the three (Brazil, India and South Africa) countries. The policies should focus more on radical law reforms and independent organizations; population growth control, speedy poverty alleviation and basic education; enhanced social programs; market development; Integration of existing policies and creation of societal culture. To achieve any radical legal basis for the transition from natural resource export, as well as sweeping regulation for the sustainable usage of natural resources protection. Strict penalties on violations of environment-related law. General country-wide support should be implemented in Brazil, India and South Africa. In addition, there may be an urgent need to define the active role of NGOs and other independent institutions in promoting socioeconomic equality (sustainability) practices at both local and national levels. Specifically, in South Africa, adequate Corporate Social Responsibility (CSR) guidelines should be implemented as a veritable way of encouraging corporations.

To monitor their contributions to socio-economic sustainability at both local and national levels. Special enforcement mechanism, such as "Green Scorpions" should be adequately empowered by the coordinating ministry (Ministry of Environment and Tourism), in an effort to step up their monitoring, assessment and enforcement roles. There is also a need to have a national standard for reporting CSR by corporations and civil society organizations (CSOs). In addition, the increasing trends in socioeconomic inequalities in Brazil, India, and South Africa require a radical policy mix on population growth control, inclusive and basic education for all citizens, as well as, swift poverty alleviation programs. There is an urgent need for improved

transparency and participation of media organizations in this regard. The establishment and promotion of nationwide social standards and corporate social responsibility guidelines will also go a long way in reducing the increasing level of socioeconomic inequalities in the three countries. Specifically, South Africa should prioritize the radical provision of social security and services to assist the poor. This could be achieved via an improved implementation of the present accelerated growth strategy to encourage public redistribution of resources and investment in critical infrastructures. On education, content-related coordination for education policy should be encouraged.

By designing programs that are capable of integrating learning methods and materials on socioeconomic sustainability into an agreed percentage of all classrooms curricula in all post-secondary schools in the three countries. This study acknowledges the fact that economic growth alone cannot solve the increasing income inequalities in Brazil, however, strategic radical policies should be formulated to demand better social standards from multinational companies operating in the country. Most importantly, Brazil must shift from the present dominance of the "industrialist paradigm", which tends to prioritize mainly the economic dimension of sustainability. There is also an urgent need to invigorate the present income transfer program, as well as, transparent land reform to increase the present level of disposable income needed by the poor and disadvantaged citizens in Brazil. Similar to the successful regional policies in Russia, Brazil may need to focus more on the creation of protected areas, indigenous people's settlements, as well as, special economic zones. In India, there is a need for an objective and transparent poverty alleviation program to reduce the increasing socioeconomic inequalities during the study period.

Unfortunately, due to the limited capacity of government to mobilize resources needed to accelerate the level of development, there is an urgent need to increase the level of cooperation with the organized private sector, via Public-Private Partnerships initiatives. To assist the poor and the increasing level of socioeconomic inequalities in South Africa, the Reconstruction and Development Programme (RDP) should be reinvigorated based on a long-term framework that is efficient and coherent in addressing targeted socioeconomic sustainability issues. There is also a need to prioritize the concept of nation-building, basic human needs, peace and security, and people-driven, growth processes in many Reconstruction and Development Programme (RDP) initiatives. Lastly, to improve the declining level of socioeconomic inequalities in Brazil, India and South Africa countries, the government will have to create a societal culture that is favorable to socioeconomic sustainability in each country. However, to achieve this noble objective, government institutions must work harmoniously with both civil society and business sectors. The creation of a societal culture that is favorable to socioeconomic sustainability can also be created through local level's promotion of best practices, increase in consumers' demand for sustainable clean services and products, transparent corporate reporting, as well as, required political will on the part of the government.

To provide the necessary funding, institutional support and other incentives. Despite the giant stride recorded by China and Russia in reducing socioeconomic inequalities over the study period, this study is unmindful of the necessity to improve the current challenges in the area of unemployment, uneven distribution of political and financial power, as well as, regional disparities, especially, in China. This is on the premise that it is only through even development strategies and viable interactions between the private sector, general public and government that can engender the formulation of transparent and equitable policies needed for the much desired sustainable economic growth in the BRICS. On the social dimension, the more advanced group in the bloc (China and Russia) could also emulate. Germany's "greying society" strategy of decoupling economic growth from socioeconomic inequalities and environmental pollution due to the probable increase in average age and decrease in size. In addition, China and Russia should also move further by integrating socioeconomic sustainability into their export/ trade policies. Most importantly, it is imperative for BRICS countries to understand that economic growth might not necessarily result in socio-economic equality; rather, it may lead to an unprecedented increase in socio-economic inequalities, financial, institutional and market risks (Younsi & Bechtini, 2018; Javeria et al., 2017).

Lastly, to improve the declining level of socioeconomic inequalities in Brazil, India and South Africa countries, government, will have to create a societal culture that is favorable to socioeconomic sustainability in each country. However, to achieve this noble objective, government institutions must work harmoniously with both civil society and business sectors. The creation of a societal culture that is favorable to socioeconomic

sustainability can also be created through the local level's promotion of best practices, increase in consumers' demand for sustainable clean services and products, transparent corporate reporting. As well as, required political will on the part of the government to provide the necessary funding. Institutional support and other incentives. Despite the giant stride recorded by China and Russia in reducing socioeconomic inequalities over the study period, this study is unmindful of the necessity to improve the current challenges in the area of unemployment, uneven distribution of political and financial power, as well as, regional disparities, especially, in China. This is on the premise that it is only through even development strategies and viable interactions between the private sector.

The general public and government can engender the formulation of transparent and equitable policies needed for the much desired sustainable economic growth in the BRICS bloc. On the social dimension, the more advanced group in the bloc (China and Russia) could also emulate Germany's "greying society" strategy of decoupling economic growth from socioeconomic inequalities and environmental pollution due to the probable increase in average age and decrease in size. In addition, China and Russia should also move further by integrating socioeconomic sustainability into their export/ trade policies.

Managerial and Theoretical Contributions/ Implications: By investigating the short and long-run equilibrium relationships, as well as, estimating the joint effect among the socio-economic sustainability and economic growth variables have both managerial/ societal and theoretical implications/ contributions. First, the study provides a tool to understand the sustainability of BRICS and the achievement of its goals (Sesay et al. 2018; Agrawal, 2015; Awan, 2013). In line with a recent gap positioned in the literature and also to aid socio-economic sustainability and economic growth policy options, the main essence of establishing the relationships between socio-economic sustainability objectives and economic growth in the BRICS countries is to derive socio-economic criteria for economic growth to be sustainable (Hofkes, 2017; Hamilton, 2015; Fan & Zheng, 2013; Spangenberg, 2004). Consequently, to the best of the researcher's knowledge, no study has investigated comprehensibly (along with multiple determinants) the sustainability of growth policy options within BRICS with an aim to proposing socioeconomic sustainability and growth policy options. Moreover, due to the strategic importance of BRICS countries in enhancing global economic growth and socioeconomic equality (sustainability), the paucity of studies on a trending issue, like the nexus between economic growth and socio-economic sustainability.

The bloc has been described as a major concern in literature (Younsi & Bechtini, 2018). Consequently, the present study has been able to provide new empirical evidence concerning the aforementioned relationships. Additionally, in a deviation from previous studies that used a singular measure of socioeconomic sustainability, part of the novelty of this paper was the development of an aggregated composite index of socioeconomic inequality of a number of socioeconomic sustainability variables that have been used in the literature. Constructing the index comprising variables depicting various dimensions of socioeconomic sustainability was crucial as a single index might not give a strong measure of socioeconomic sustainability in the bloc, as well as, its capacity to correct past contradictory results in the literature. To the best of the researcher's knowledge, there has not been any study using an index whilst investigating sustainability in BRICS. In addition, many empirical works on socio-economic sustainability-economic growth nexus are often seen as confusing and contradictory, probably due to the use of singular measure and estimation techniques (Zha et al., 2019; Hofkes, 2017; Hamilton, 2015; Fan & Zheng, 2013; Spangenberg, 2010).

Limitations and Suggestions for Further Studies: The first limitation, akin to most empirical studies on socio-economic inequality-economic growth relationships using cross-country data from most developing countries, is the probable presence of periods and country-specific omitted variables (Azevedo et al., 2018; Menon, 2017). Consequently, this study provides novel cross-validation of estimation techniques and robustness checks in response to many gaps in literature (Zha et al., 2019; Hofkes, 2017). Again, the output of this study will be beneficial to policymakers in the BRICS countries not only in estimating the achievement of many BRICS goals but also will serve as a "double-edged" tool for monitoring the BRICS' progress towards the attainment of the United Nations SDGs by the year 2030 (World Bank Group, 2018 Agrawal, 2015; Awan, 2013). This is usually due to poor data collection by relevant government agencies (World Bank Group, 2018; Pereira et al., 2018). Secondly, another "inevitable" flaw in many regression results is the constructs/specifications used to measure our variables (Menon, 2017). In addition, there may be problems

of endogeneity (Anyanwu, 2012; Hailu, 2010). This is based on the premise that most of the explanatory variables may probably be jointly endogenous with socio-economic inequality (Agrawal, 2015). This may lead to biases from simultaneous or reverse causation, since each of the socio-economic inequality determinants may cause higher inequalities as opposed to the opposite (Younsi & Bechtini, 2018). However, the use of the VECM approach is a deliberate attempt to address any potential endogeneity (El-Wassal, 2012).

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Appendix

Appendix 2A: Construction of Socio-economic Inequality Index for BRICS Countries

Brazil				Eigenvalues (Sum = 5, Average = 1)			Eigenvectors (loadings				
Number	**Value**	**Difference**	**Proportion**	**Cumulative value**	**Cumulative proportion**	**Variable**	**PC 1**	**PC 2**	**PC3**	**PC4**	**PC5**
1	2.9046	1.7518	0.5813	2.90646	0.5813	GCII	0.7845	-0.0343	-0.4664	-0.8636	0.0637
2	1.1546	0.56031	0.2309	4.06112	0.8122	AI	0.7825	0.0452	0.5665	-0.6263	0.0785
3	0.5945	0.3956	0.1189	4.65547	0.9311	RFMLF	0.3966	0.7474	0.5646	0.0375	0.0335
4	0.2885	0.23297	0.0578	4.94422	0.9889	UNEMP	0.4143	0.6577	0.6544	0.0475	0.0485
5	0.0558	--------	0.0111	5.00000	1.0000	RPOP	0.3210	-0.7751	0.6070	0.0777	0.0877
Russia											
1	2.8674	1.52187	0.5734	2.86754	0.5734	GCII	0.6004	-0.0051	-0.4634	0.6529	0.6569
2	1.3457	1.05229	0.2691	4.21321	0.8425	AI	0.6019	0.0731	-0.2708	-0.7439	-0.7689
3	0.2938	0.00995	0.0587	4.50659	0.9012	RFMLF	0.2945	0.7671	0.5318	0.1081	0.1781
4	0.2833	0.07345	0.0566	4.79002	0.9578	UNEMP	0.3243	0.8564	0.6567	0.2653	0.2983
5	0.2098	--------	0.0422	5.00000	1.0000	RPOP	0.4366	-0.7168	0.6559	0.0586	0.0566
India											
1	3.0215	1.99689	0.6042	3.02145	0.6042	GCII	0.5835	-0.0108	-0.6143	0.5303	0.5563
2	1.0246	0.56809	0.2049	4.04601	0.8091	AI	0.5862	0.0370	-0.1331	-0.7983	-0.7673
3	0.4567	0.20462	0.0913	4.50248	0.9004	RFMLF	0.3730	0.7514	0.5188	0.2035	0.2565
4	0.2515	0.00618	0.0504	4.75433	0.9504	UNEMP	0.3905	0.8664	0.6785	0.3542	0.3785

5	0.2457	---	0.0492	5.00000	1.0000	RPOP	0.4194	-0.6505	0.5792	0.1963	0.1233
China											
1	3.2347	2.28894	0.6469	3.23457	0.6469	GCII	0.5493	-0.0423	-0.5873	-0.5914	-0.5764
2	0.9453	0.58020	0.1891	4.1802	0.8360	AI	0.5465	-0.2625	-0.2499	0.7706	0.7786
3	0.3653	0.08907	0.0731	4.54563	0.9091	RFMLF	0.3593	0.9672	0.2072	0.0623	0.0873
4	0.2766	0.09835	0.0553	4.82199	0.9644	UNEMP	0.4125	0.9742	0.3557	0.1234	0.0763
5	0.1781	-------	0.0356	5.00000	1.0000	RPOP	0.5199	-0.3697	0.7414	-0.2275	-0.2875
South Africa											
1	3.5464	2.28875	0.7093	3.54654	0.7093	GCII	0.5653	-0.0850	-0.7854	-0.2457	-0.2687
2	1.2885	1.21230	0.2578	4.83529	0.9671	AI	0.5681	-0.1347	0.5922	-0.5615	-0.5655
3	0.07645	0.02002	0.0153	4.91174	0.9824	RFMLF	0.5721	-0.1281	0.1800	0.7916	0.7566
4	0.0563	0.02460	0.0113	4.96817	0.9937	UNEMP	0.6753	0.1334	0.2654	0.8343	-0.8784
5	0.03183	--------	0.0063	5.00000	1.0000	RPOP	0.17250	0.92454	0.02487	0.01725	0.02355

Note: GCII**=** Gini coefficient-income inequality; AI= Atkinson index; RFMLF= Ratio of female to male labor force participation rate; UNEMP= Unemployment, total; RPOP= Refugee population by country or territory of origin.

Appendix 2B(i): ADF-Augmented Dickey-Fuller Test Results

Variables	**Level Constant without Trend**	**Constant with Trend**	**First Difference Constant without Trend**	**Constant with Trend**
Brazil				
HEALTH	-2.122692	-2.245592	-5.190527*	-5.110880*
EDU	4.333768	0.697322	-3.199933**	-4.325263*
FIN	-1.440994	-2.572330	-7.200976*	-7.096229*
INST	2.932019	-0.662914	-4.238610*	-5.174591*
GDP	1.843983	-0.778404	-4.414912*	-4.963164*
TO	1.492769	-1.215579	-4.902542*	-5.428332*
CO2	3.856019	-0.665514	-3.567710*	-6.434591*
EC	2.565383	-0.234404	-4.543612*	-4.543464*
INQ	2.665349	-1.653449	-4.566462*	-5.354632*
Russia				
HEALTH	-1.144648	-2.945136	-4.788712*	-4.709925*
EDU	3.714916	0.791333	-1.521439	-5.965081*
FIN	1.021374	1.505314	0.607969	-4.552479*
INST	2.720547	-1.191821	-3.302965**	-3.907973**
GDP	1.908789	-0.216484	-3.788318*	-4.137955**
TO	2.645126	-2.572635	-4.555648*	-4.852589*
CO2	2.456787	-1.453521	-3.455565**	-3.455343**
EC	1.764349	-0.345584	-3.453348*	-4.344455**
INQ	3.645556	-2.542435	-4.334458*	-4.564669*
India				
HEALTH	2.124335	-0.309808	-3.145541**	-3.361598***
EDU	2.514984	1.442281	-3.301828**	-3.687529**
FIN	2.993062	-0.704361	-5.639046*	-6.088482*
INST	1.172443	-3.352558	-6.807686*	-6.722904*
GDP	-1.282022	-0.737150	-4.567816*	-4.563187*

TO	1.268557	-0.224709	-5.805208*	-6.405380*
CO2	2.665547	-1.566421	-3.355665**	-3.554563**
EC	1.564389	-0.256684	-3.756418*	-4.455355**
INQ	0.567746	-2.572667	-4.545668*	-4.564689*
China				
HEALTH	-1.176535	1.287363	-4.3838827*	-2.222880*
EDU	3.275633	0.838877	-3.8376673**	-4.376747*
FIN	-2.986794	-2.848493	-7.238377*	-4.383773*
INST	1.345519	-2.774647	-3.238610*	-3.1444441*
GDP	1.324583	-1.884474	-3.414912*	-4.943334*
TO	1.238569	1.487436	-2.302542*	-3.467462*
CO2	2.756667	-1.191821	-3.302965**	-3.907973**
EC	1.908789	-0.216484	-3.788318*	-4.137955**
INQ	0.645654	-2.572635	-4.555648*	-4.852589*
South Africa				
HEALTH	1.8878748	1.9773736	3.3737412*	-3.456925*
EDU	3.494894	0.8984783	-1.374649**	-5.687771*
FIN	2.099894	1.2833838	0.333949*	-3.533459*
INST	2.298934	-1.239399	-3.302934**	-4.907333**
GDP	1.988473	-0.393948	-3.788345*	-5.333955**
TO	1.998887	-2.388489	-4.522299**	-5.333589*
CO2	2.756447	-1.134521	-3.3345965**	-3.675473**
EC	1.678789	-0.245684	-3.564318*	-4.135565**
INQ	0.645675	-2.545635	-4.557648*	-4.453689*

Note: *, ** and *** implies 1%, 5% and 10% levels of significance, respectively.

Appendix 2B(ii): Phillips-Perron (PP) Test Results

	Level		First Difference	
Variables	**Constant without Trend**	**Constant with Trend**	**Constant without Trend**	**Constant with Trend**
Brazil				
HEALTH	-1.201432	-2.245592	-5.144889*	-5.057306*
EDU	3.924001	0.725865	-3.135526**	-4.07412**
FIN	-1.275166	-2.664606	-7.202274*	-7.096805*
INST	2.822786	-0.738637	-4.232497*	-5.174591*
GDP	1.976495	-0.852797	-4.400720*	-4.860987*
TO	1.571491	-1.210226	-4.900783*	-5.407357*
CO2	2.345566	-0.756437	-4.435697*	-5.567791*
EC	1.453675	-0.845367	-4.445320*	-4.845687*
INQ	1.234561	-1.342576	-4.923483*	-5.476557*
Russia				
HEALTH	-1.120844	-1.745726	-2.89435***	-2.801947
EDU	3.588824	1.024137	-5.627780*	-6.489557*
FIN	1.384242	-1.832620	-6.052339*	-7.737240*
INST	2.266872	-0.929186	-3.302965**	-3.89165**
GDP	1.908789	-0.076366	-3.954526*	-4.380714*
TO	1.175334	-1.470557	-3.455271**	-4.975931*
CO2	2.345686	-0.745337	-4.345497*	-5.176591*
EC	1.564695	-0.844397	-4.405630*	-4.867887*
INQ	1.452491	-1.345226	-4.906743*	-5.473975*

India				
HEALTH	0.439370	-0.148130	-2.65569***	-2.604309
EDU	2.320468	0.972072	-3.30182**	-3.74274**
FIN	1.763926	0.704361	-5.641124*	-6.086636*
INST	0.018424	-2.356968	-6.769487*	-6.689742*
GDP	-0.809650	-1.275888	-4.613034*	-4.607808*
TO	1.599318	-0.295587	-5.888616*	-6.383675*
CO2	2.452786	-0.453637	-4.256397*	-5.156491*
EC	1.453495	-0.453797	-4.453720*	-4.845387*
INQ	1.556491	-1.554926	-4.567783*	-5.445357*
China				
HEALTH	-1.736632	1.245592	-4.345889**	-3.789306*
EDU	2.787301	0.725865	-4.134526*	-4.789412**
FIN	1.776866	2. 978606	-5.778274**	-5.45505*
INST	2.444486	-0.738637	-3.666497*	-5.986791*
GDP	1.097695	-1.374797	-4.345720*	-4.845787*
TO	2.354671	-1.447226	-3.456783*	-4.448957*
CO2	2.456886	-0.453537	-4.567897*	-5.123491*
EC	1.965495	-0.564997	-4.543720*	-4.345987*
INQ	1.534591	-1.453826	-4.645783*	-5.345357*
South Africa				
HEALTH	1.475844	1.456726	-3.894354**	-3.801947
EDU	2.846824	1.566137	-4.634559***	-6.489557*
FIN	-1.384672	-1.433620	-6.056789*	-2.737240*
INST	2.264645	-0.929445	-4.302365*	-3.89165**
GDP	2.908748	-0.878774	-2.444526*	-3.380714*
TO	1.364734	-1.577373	-2.345271**	-3.975931*
CO2	2.867586	-0.345637	-4.567497*	-5.156491*
EC	1.976897	-0.657797	-4.454630*	-4.856487*
INQ	1.576754	-1.256426	-4.678983*	-5.456757*

Note: *, ** and *** implies 1%, 5% and 10% levels of significance, respectively.

Appendix 2B (iii): Kwiatkowski-Phillips-Schmidt-Shin (KPSS) Test Results

	Level		**First Difference**	
Variables	**Constant without Trend**	**Constant with Trend**	**Constant without Trend**	**Constant with Trend**
Brazil				
HEALTH	0.569937**	0.075514	0.062453	0.060117
EDU	0.690808**	0.213009**	0.192955	0.103680
FIN	0.766940*	0.208883**	0.263632	0.169095**
INST	0.710045**	0.183612**	0.435652	0.063018
GDP	0.699347**	0.165347**	0.119382	0.098581
TO	0.683356**	0.155069**	0.266995	0.091497
CO2	0.5674045**	0.185672**	0.453652	0.076518
EC	0.5678347**	0.156437**	0.234582	0.045381
INQ	0.7654356**	0.155649**	0.265495	0.076597
Russia				
HEALTH	0.325089**	0.14051***	0.293300	0.158950**
EDU	0.507892**	0.14550***	0.195006	0.178243**
FIN	0.745004*	0.13006***	0.315861	0.117715
INST	0.736431**	0.072152	0.116336	0.105210

GDP	0.414510**	0.112198	0.173065	0.133714
TO	0.648086**	0.14437***	0.321293	0.109837
CO2	0.564045**	0.072152	0.345652	0.078618
EC	0.453347**	0.115674	0.234582	0.087681
INQ	0.678356**	0.145377***	0.456995	0.076897
India				
HEALTH	0.587939**	0.234516	0.127752	0.048479
EDU	0.689880**	0.345127*	0.267364	0.048745
FIN	0.540484**	0.374647*	0.064848	0.049589
INST	0.714983**	0.364731**	0.164947	0.054477
GDP	0.8498370**	0.4784886**	0.113487	0.061457
TO	0.0984806**	0.1494944**	0.455836	0.057547
CO2	0.675045**	0.453652	0.543652	0.087618
EC	0.567347**	0.145398	0.567382	0.089781
INQ	0.456356**	0.564737***	0.345995	0.098597
China(C)				
HEALTH	0.3454937**	0.485859	0.344453	0.160117
EDU	0.5564808**	0.254858**	0.846955	0.149980
FIN	0.3455440*	0.258595**	0.646532	0.169044
INST	0.7347665**	0.148585**	0.847452	0.063456
GDP	0.6099585**	0.222284**	0.147482	0.094555
TO	0.6846747*	0.484949**	0.276487	0.093455
CO2	0.564045**	0.564152	0.564652	0.089718
EC	0.567347**	0.564198	0.546382	0.097861
INQ	0.567356**	0.56437***	0.345995	0.099987
South Africa				
HEALTH	0.8747748**	0.140457***	0.294674	0.158954
EDU	0.5489333*	0.1458595**	0.195006	0.178553**
FIN	0.7454857*	0.135586***	0.347484	0.117456
INST	0.5958474**	0.075859*	0.348496	0.557810
GDP	0.4147585**	0.154575	0.149847	0.157614
TO	0.6458990**	0.194859**	0.347567	0.475847
CO2	0.678045**	0.456152	0.567652	0.065678
EC	0.789347**	0.453198	0.564382	0.097681
INQ	0.345356**	0.45637***	0.345995	0.098997

Note: *, ** and *** implies 1%, 5% and 10% levels of significance, respectively.

Appendix 2C: Test Results for Multiple Co-Integrating Vectors

Co-integration Order		**Trace**		**Maximum Eigenvalue**	
Null	**Alternative**	**Statistics**	**C. V. (0.05 level)**	**Statistics**	**C.V (0.05 level)**
Brazil Variables (INQ, HEALTH, EDU, FIN, INST, GDP, TO, CO2, EC) (*P*=2)					
r = 0.0	r ≥ 1.0	166.5710*	95.75366	65.30743*	40.07757
r ≤ 1.0	r ≥ 2.0	101.2635*	69.81889	49.73640*	33.87687
r ≤ 2.0	r ≥ 3.0	51.5271*	47.85613	30.32430*	27.58434
r ≤ 3.0	r ≥ 4.0	21.2028	29.79707	16.33669	21.13162
r ≤ 4.0	r ≥ 5.0	4.8661	15.49471	4.86385	14.26460
r ≤ 5.0	r ≥ 6.0	0.0022	3.841466	0.0022	3.84146
r ≤ **6**.0	r ≥ 7.0	21.2028	29.79707	16.33669	21.13162
r ≤ 7.0	r ≥ 8.0	4.8661	15.49471	4.86385	14.26460
r ≤ 8.0	r = 9.0	0.0022	3.841466	0.0022	3.84146
Russia Variables (INQ, HEALTH, EDU, FIN, INST, GDP, TO, CO2, EC) (*P*=2)					
r = 0.0	r ≥ 1.0	222.2631*	117.7082	84.79768*	44.49720

r ≤ 1.0	r ≥ 2.0	137.4654*	88.80380	49.46550*	38.33101
r ≤ 2.0	r ≥ 3.0	87.99988*	63.87610	45.30567*	32.11832
r ≤ 3.0	r ≥ 4.0	42.69420	42.91525	20.74261	25.82321
r ≤ 4.0	r ≥ 5.0	21.95160	25.87211	14.83326	19.38704
r ≤ 5.0	r ≥ 6.0	7.118341	12.51798	7.118341	12.51798
r ≤ **6**.0	r ≥ 7.0	42.69420	42.91525	20.74261	25.82321
r ≤ 7.0	r ≥ 8.0	21.95160	25.87211	14.83326	19.38704
r ≤ 8.0	r = 9.0	7.118341	12.51798	7.118341	12.51798
South Africa Variables (INQ, HEALTH, EDU, FIN, INST, GDP, TO, CO2, EC) (*P*=2)					
r = 0.0	r ≥ 1.0	144.4510*	91.34566	75.30734*	48.07757
r ≤ 1.0	r ≥ 2.0	122.4565*	61.87589	59.73667*	34.87687
r ≤ 2.0	r ≥ 3.0	56.4571*	44.45413	40.32445*	24.58434
r ≤ 3.0	r ≥ 4.0	34.5628	24.45507	19.34566	20.13162
r ≤ 4.0	r ≥ 5.0	6.5461	11.45571	6.86543	17.26460
r ≤ 5.0	r ≥ 6.0	0.4526	6.56546	2.4522	6.84146
r ≤ 6.0	r ≥7.0	34.5628	24.45507	19.34566	20.13162
r ≤ 7.0	r ≥ 8.0	6.5461	11.45571	6.86543	17.26460
r ≤ 8.0	r = 9.0	0.4526	6.56546	2.4522	6.84146
China Variables (INQ, HEALTH, EDU, FIN, INST, GDP, TO, CO2, EC) (*P*=2)					
r = 0.0	r ≥ 1.0	143.2456*	127.45682	76.73578*	47.98350
r ≤ 1.0	r ≥ 2.0	122.4453*	98.80789	44.46320*	35.35461
r ≤ 2.0	r ≥ 3.0	81.9994*	73.67610	40.38997*	36.56772
r ≤ 3.0	r ≥ 4.0	43.69456	49.34525	23.43261	20.48721
r ≤ 4.0	r ≥ 5.0	22.95450	29.55211	15.56326	12.36704
r ≤ 5.0	r ≥ 6.0	9.345441	10.44798	6.668341	5.56798
r ≤ **6**.0	r ≥ 7.0	43.69456	49.34525	23.43261	20.48721
r ≤ 7.0	r ≥ 8.0	22.95450	29.55211	15.56326	12.36704
r ≤ 8.0	r = 9.0	9.345441	10.44798	6.668341	5.56798
India Variables (INQ, HEALTH, EDU, FIN, INST, GDP, TO, CO2, EC) (*P*=2)					
r = 0.0	r ≥ 1.0	230.45014 *	121.4572	127.8795*	54.34560
r ≤ 1.0	r ≥ 2.0	193.8974 *	84.34570	78.37895*	38.54561
r ≤ 2.0	r ≥ 3.0	142.6645 *	61.85677	55.84343*	29.14332
r ≤ 3.0	r ≥ 4.0	86.5671 *	47.93467	38.98754*	21.84561
r ≤ 4.0	r ≥ 5.0	29.57466	29.87243	19.23451	16.23704
r ≤ 5.0	r ≥ 6.0	6.543152	11.33498	8.45715	9.45798
r ≤ **6**.0	r ≥ 7.0	86.56717	47.93467	38.98754	21.84561
r ≤ 7.0	r ≥ 8.0	29.57466	29.87243	19.23451	16.23704
r ≤ 8.0	r = 9.0	6.543152	11.33498	8.45715	9.45798

Note: r denotes no. of co-integrating vectors; and (*) denotes rejection @ 95% critical value (CV).

Appendix 2D: Robustness check: POLS and GMM

Variables	**Dependent Variable: INQ**					
	POLS			**GMM**		
	Coeff.	**t-stats.**	**p-value**	**Coeff.**	**t-stats.**	**p-value**
ln_GDP	0.72539	13.62	.0562535	0.56257	9.33	.097649
ln_INST	0.12363	2.43	-.014223**	0.56875	4.73	-.043256**
ln_C02	0.86353	10.97	-.012552	-12.453	1.56	-.164746
ln_FIN	0.62452	11.43	.153363	0.65743	2.67	.1863635
ln_HEALTH	0.46252	15.33	-.001636	0.76533	5.62	-.012536
ln_EDU	-0.6353	-7.67	-.043525**	-0.17654	-14.41	-.076363**
ln_TO	-0.1535	5.73	.0065363	-0.16543	-6.67	.0156373***
ln_EC	0.85363	11.34	.166333	0.77543	12.64	.1673353
ln_EXR	0.43353	3.66	-.0013636**	0.43554	5.34	-.003425**

ln_INF	-0.13852	-5.54	-.0012636**	-0.65749	-7.36	-.0015262**
Constant	5.25257	6.73	0.00101*	4.43573	4.17	0.00102*
Obs.	140			140		
R^2	0.7386			0.6833		
Adj. R^2	0.7963			0.7154		
F Statistics	0.001**					
AR(2)	-------			0.301		
Hansen Test	-------			0.169		

Note: * and ** denotes statistical significance at 1% and 5% respectively.
Source: Authors Computation.

Appendix 2E: The Measure of Constructs (Dependent and Explanatory Variable)

Variable	Measure	Author	Source of Data
INQ	Composite social inequality index	**Author's construction**	World Bank's World Development Indicators; International Monetary Fund, International Financial Statistics and data files
GDP	Real level of GDP per capita (constant 2005 US$) (proxy for economic growth)	Agrawal, 2015; Akintunde & Satope, 2013; Kurt, 2015;	World Bank's World Development Indicator Database
Health	Total government expenditure on Health	Eggoh et al., 2015; Adelowokan, 2012; Strittmatter & Sunde, 2011	World Bank's World Development Indicator Database
EDU	Weighted average of government expenditure in primary and secondary and tertiary education	Younsi & Bechtini, 2018; Jamel & Maktouf, 2017	World Bank's World Development Indicators
FIN	composite financial sector development index	Younsi & Bechtini, 2018; Maryam et al., 2017	International Monetary Fund, International Financial Statistics and data files; World Bank's World Development Indicators
INSTFIT	Aggregations of economic, political and institutional indexes (proxy for institutional fitness)	Eggoh, Houeninvo & Sossou, 2015; Adelowokan, 2012; David., Bloom, & Canning, 2008; Strittmatter & Sunde, 2011; Licumba., Dzator & Zhang, 2016	World Bank Databases (World Governance Index-WGI-).
TO	Total Trade (% of GDP)	Jamel & Maktouf, 2017; Eggoh et al., 2015	World Bank's World Development Indicators; OECD National Accounts data files
CO_2	CO2 emissions (metric tons per capita)	Jamel & Maktouf, 2017; Maryam et al., 2017; Eggoh et al., 2015	World Bank's World Development Indicators
EN	Energy consumption (in kilotons)	Jamel & Maktouf, 2017; Maryam et al., 2017; Eggoh et al., 2015	World Bank's World Development Indicators

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Money Illusion in Charitable Giving in the Absence of Market Price Resistance

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Abstract: Money illusion occurs when individuals fail to differentiate nominal from real values when making financial and economic decisions. As a consequence, they do not adjust their consumption behavior according to real variables. We report an economic experiment to study whether money illusion appears in a very simple setting. It is very important to mention that the experiment was conducted in the context of charitable giving. Our experimental results showed the absence of money illusion among the participants. Our study suggests that money illusion is not present in the absence of price stickiness (market price resistance). This finding supports Shafir et al. (1997). The main objective of our study is to develop a better understanding of economic agents' charitable giving behaviors as influenced by perceptions of nominal income. Charitable institutions could build fundraising strategies based on behavioral tendencies to the perception of income in nominal or real terms.

Keywords: *Experimental Economics, Economic Attitudes, Financial Decisions, Money Illusion, Game Theory.*

1. Introduction

Whether or not money illusion exists on the part of an economic decision-maker is important for economic analysis. For example, while the Keynesian perspective asserts the existence of money illusion and is supported by empirical studies (Orland & Roos, 2013), Monetarists argued that people were fully rational beings (Lane, 2001; Stockhammer, 2008) accounting for fluctuations in the nominal value of goods and services due to inflation, (even though money illusion is instrumental to Milton Friedman's version of the Phillips curve, as cited in Nelson & Schwartz, 2008). If money illusion existed, people would have the tendency not to account for changes in the nominal values of goods and services (Eisenhuth, 2017). Shafir et al. (1997) showed that money illusion contributes to price stickiness because nominal prices adjust slower compared to real prices. The Keynesian school argues that money illusion and price stickiness cause a misalignment between nominal prices and real prices (Argitis, 2013). This misalignment causes inflation and allows for the inverse relationship between the inflation rate and the unemployment rate to exist. Kooreman, Faber, and Hofman (2004) identified the presence of money illusion in donations to charities during the introduction of the Euro. They exploited the exogenous replacement of the Guilder by the Euro in the Netherlands. Kooreman et al. compared the revenues of a house-to-house collection for a charity before and after the introduction of the euro collected during 1999, 2000, and 2001 in Guilders to the revenues collected during 2002 and 2003 in Euros.

Kooreman et al. assumed that if there was not a strong presence of money illusion, revenues collected before and after the introduction of the Euro should be about the same in real terms. Kooreman et al. found strong evidence of money illusion, which supported the Keynesian perspective and supplemented the earlier econometric, experimental, and survey evidence. Researchers argued that if a person was subject to money illusion in decision-making, the market might correct such suboptimal behavior after some experience (Fehr & Tyran, 2007). This is possible in some environments. Researchers assumed that where people engaged in speculation on prices and sought to maximize arbitrage opportunities, they might be immune from money illusion. Nevertheless, empirical evidence showed that nominal variables could influence real activity (Cohen, Polk, & Vuolteenaho, 2005) in the economy, particularly showing that the three largest stock markets trade at a higher premium when inflation is low compared to when it is high. This aspect aligned with Modigliani and Cohn (1979), who indicated that stock prices showed discounting of future cash flows in nominal terms, rather than with real discount rates. Another concept to take into account is the numerosity effect, which describes how numerical denominations can influence the decision-making process of an individual (see Amado et al., 2007; Gamble, Gärling, Charlton, & Ranyard, 2002; Raghubir & Srivastava, 2002). The introduction of the Euro in 2002 translated into a nominal shock at all levels in the economy. Kooreman et al. (2004) and Cannon and Cipriani (2006) showed ways in which donations to charities experienced an increase during the first years when the Euro was introduced.

British economist A.W. Phillips discovered the Phillips Curve (as cited in Forder, 2015). Phillips studied the annual wage inflation and seasonally adjusted unemployment rates in the United Kingdom from 1860 to 1957 (Blanchard, 2016). His analysis showed an inverse relationship between wage inflation and unemployment. Worldwide, many other economists conducted the same analysis and arrived at similar curves, showing the inverse and stable relationship between these two variables.

2. Experimental Design, Subject Pool, and Background Data and Donations

The experiment followed a simple structure and was designed to identify whether individuals made decisions regarding nominal rather than real variables. There are two treatments. Both are equivalent in terms of real variables but differ in terms of nominal variables. Please refer to Appendix B for the procedures adhered to in converting nominal terms to real variables. The experiment was conducted using 81 subjects over eight sessions, approximately 10 subjects for each session. The sessions took place in March and April 2017. They were conducted at the School of Business – the Behavioral Laboratory University of Alberta, in Edmonton, Canada in the spring of 2017. The duration of the study was approximately 30 minutes for each group and participants were compensated for their participation. All participants were volunteers from the University of Alberta's student body. There were two treatments. In the first treatment, called Low Denomination, each individual was endowed with 120 tokens. Tokens were convertible to Canadian dollars at a conversion rate of 8.5 tokens per dollar. In the second treatment, called High Denomination, the endowment was 12,000 tokens, and the conversion rate was 850 tokens per dollar. Participants were required to make a decision on whether to donate part or the entire endowment to a charity. The same request applied to both groups, and the same charities were listed in the form the participants completed.

Those charities included (a) Canadian Red Cross, (b) Habitat for Humanity Canada, (c) Canadian Cancer Society, (d) SickKids Foundation, (e) Animal Rescue Network, and (f) others. Under option (f), participants could write in another charity of their preference. Therefore, depending on the ways in which participants decided to divide the nominal amount, they were compensated for up to 14 Canadian dollars (approximately $10 US dollars). It was not possible for a participant to lose money in the experiment. Some information about the treatments and the demographic characteristics of participants is given in Table 1. Forty students participated in the Low Denomination treatment, and 41 partook in High Denomination. Out of the 40 participants playing Low Denomination, 25 (62.5%) were females, and 15 (37.5%) were males. Of the total number of students playing High Denomination, 22 (54%) were females, and 19 (46%) were males. Seventy-three percent of participants in Low Denomination were majoring in economics or business, while 51% of students participating in High Denomination were majoring in economics or business. Given the standard deviation of donations (as a percentage of endowment) in our entire data, which was equal to 0.34 compared to a mean of 0.53, the likelihood of detecting an effect of ¼ standard deviation is 35%, and of detecting an effect equal to ½ of the standard deviation is 89%. These power calculations showed that the sample size was large enough to identify a substantial effect when one exists.

Table 1: Treatments and Characteristics of Participants

Treatment	Token Endowment	Conversion Rate	# of Subjects	# Females	# Economic/ Business Majors
Low Denomination	120	8.5 Tokens per Dollar	40	25	29
High Denomination	12,000	850 Tokens Per Dollar	41	22	21

We made the donations on May 31st, 2017. Donations followed the will of the participants precisely whenever possible. A total of CAD 583.02 was allocated for donations to the charities listed below. Table 2 displays the amount donated to each charity. The interaction between treatment and major is included because it may be the case that students of economics and business are less susceptible to nominal reasoning. Donations were made via the respective charities' web pages using a credit card for payment. Subjects chose a few charities that did not have a working and easily accessible website or mechanism for collecting donations. These entities included Barcelona F.C. (which was not a charity in any case) and Independent Projects for Social Empowerment (see Table 2).

Table 2: Donations Allocations by Participants (in Canadian Dollars)

	Treatment		
	Low Denomination 120/8.5	High Denomination 12000/850	Total
a. Canadian Red Cross	$54.24	$73.36	$127.59
b. Habitat for Humanity Canada	$16.47	$21.18	$37.65
c. Canadian Cancer Society	$58.82	$53.02	$111.84
d. SickKids Foundation	$52.82	$61.18	$114.00
e. Animal Rescue Network	$66.12	$57.88	$124.00
f. Others:	$18.82	$49.12	$67.94
Church Celebration Edmonton	$2.35		
Barcelona F.C.	$2.35		
Doctors without Borders	$14.12		
Plan Canada International	$14.12		
Edmonton Hispanic Bilingual Association	$14.12		
Independent Projects for Social Empowerment	$11.76		
Botswana SOS	$9.12		
Total to Other Non-Profit	$67.94		

Overall Totals $403.18 $315.73 $583.02.

3. Results and Discussion

Under the Low Denomination treatment, 15% of participants kept their entire endowment, and 20% donated all the money. The average donation in the Low Denomination treatment was 50% of the endowment. In the High Denomination treatment, 7% kept all the money, and 24% donated it all. The average for this treatment was 56%. Figures 1 and 2 illustrate the frequency distribution of donated dollars by deciles in each treatment. Both figures show some areas of concentration in the distribution of both Low Denomination and High Denomination donations. The averages showed relatively minor differences between the two groups that could not substantiate solidly the existence of money illusion. On the contrary, and in support of the monetarist perspective, the value of each monetary unit did not make a difference in participants' decisions.

Figure 1: Histogram of Donation Decisions in the Low Denomination Condition

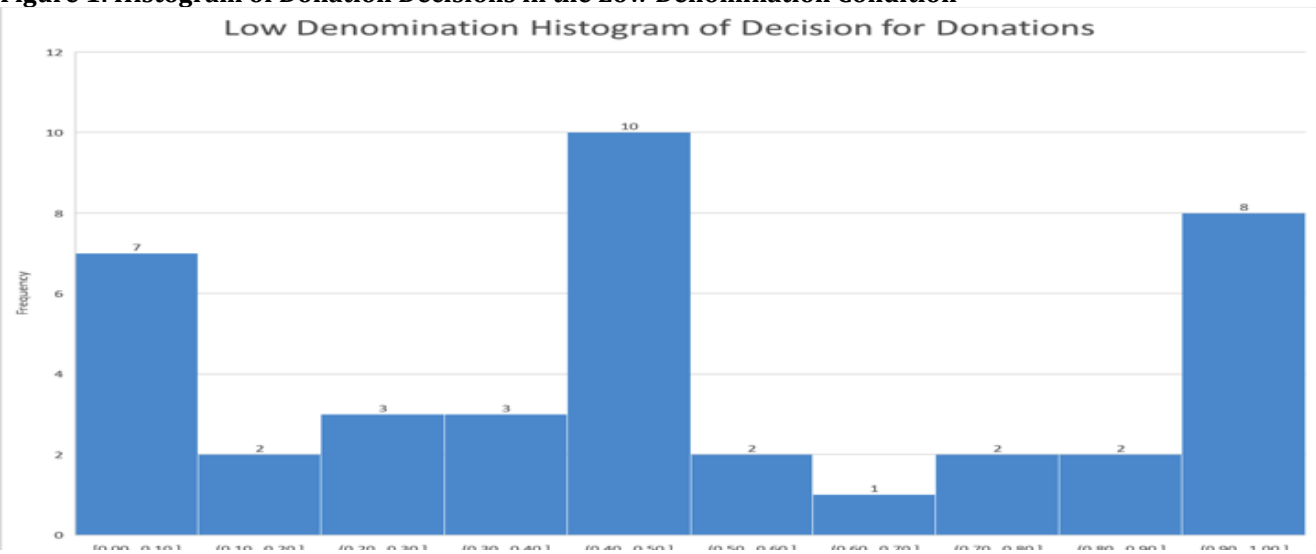

Figure 2: Histogram of Decisions in the High Denomination Condition

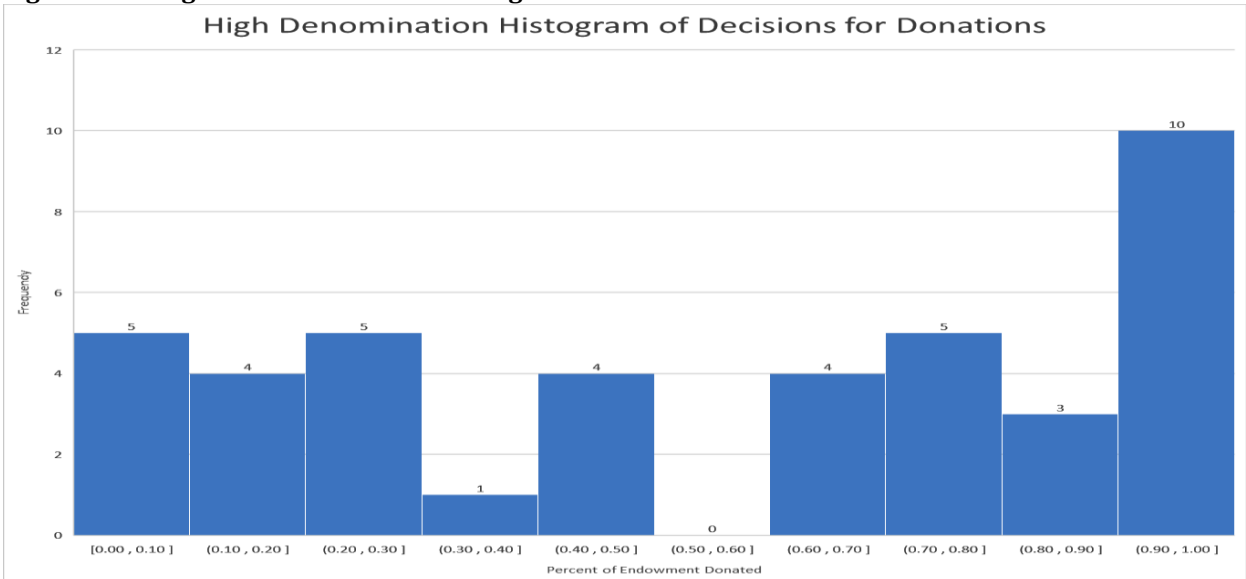

Table 3: Donation by Group and Condition

	N	Mean	Std. Deviation	Std. Error Mean
Males	34	0.56	0.37	0.06
Females	47	0.40	0.32	0.05
Low Denomination	40	0.50	0.34	0.05
High Denomination	41	0.43	0.35	0.05
Business Major	50	0.47	0.35	0.05
Non Business Major	31	0.46	0.34	0.06

Table 4: Results of t-test of Differences in Percentage Kept between Treatments, Genders, and whether Subjects were Business Majors

	T-test for Equality of Means						
						95% Confidence Interval of the Difference	
	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Gender	2.085	79	0.040(*)	0.159	0.076	0.007	0.312
Treatment	0.843	79	0.402	0.065	0.077	-0.089	0.219
Bus Major	0.014	79	0.989	0.001	0.080	-0.158	0.160

Note: (*) p<0.05; (**) p<0.01; Gender: Males=1, Females=0; Treatment: Low Denomination = 1 and High Denomination = 0; Business/Economic Majors: 1, Others: 0.

This finding is supported by *t*-tests (see Table 4). A *t*-test of the hypothesis that the difference in the average percentage of endowment donated between the two treatments showed that the differences were insignificant ($t(79) = 0.843$, $p = .402$). However, a *t*-test of the hypothesis that women and men donate the same amount on average showed a significant difference in the average percentage of endowment donated between the two genders ($t(79) = 2.085$, $p = .04$). The null hypothesis that business majors and those that were not business major others donate the same amount was not rejected since the results of the *t*-test showed an insignificant difference ($t(79) = .014$, $p = .989$) in the amount donated between these two samples. We also conducted a regression analysis, with donations as the main variable of interest, and controlling for (a) treatment, (b) gender (male/female), (c) major (economic-business/other), and (d) treatment*major.

The regression analysis is reported in Table 5. In Table 5, Column 1 shows the regression analysis of donations as a function of treatment. Column 2 shows the regression analysis when controlling for treatment and gender. Column 3 contains the estimates for a specification consisting of treatment, gender, Business major, and treatment*major. The interaction between treatment and major is included because it may be the case that students of economics and business are less susceptible to nominal reasoning. The analysis showed no statistical significance, except for gender. Table 5 presents regression estimates. Donations are the dependent variable. When controlling only for treatment, in equation (1), the regression analysis did not show any statistical significance. In other words, the data showed no indication of the existence of the money illusion effect between the two treatments. When controlling for gender in equation (2), the regression analysis showed that treatment did not have any statistically significant effect on the amount donated. The regression analysis did not show any significant presence of money illusion as treatment remains insignificant.

In specification (3), we, also controlled for gender, treatment, business/economics major, and interaction effect of treatment * business. As with the prior results, the data showed that gender was statistically significant, which remained consistent with prior studies? Overall, none of the other variables of treatment, business/economics major and interaction effect of treatment * business, showed any significance towards explaining the relationship between the dependent variable (donations) and the independent variables (treatment, business/economics major, and treatment * business/economics majors). There is a significant positive effect on females on the amount donated. A *t*-test also shows a significant difference in the average percentage of endowment donated between the two gender groups (t=2.085, p = .040). Furthermore, running the auxiliary regressions for males and females separately, as reported in Table 6, showed no effect of treatment, business/economics major, and interaction effect of treatment * business on the amount donated.

Table 5: Determinants of Donations

	(1) **Donation**	**(2)** **Donation**	**(3)** **Donation**
Gender		.167 (*) (.077)	.167 (*) (.078)
Treatment	.065 (.077)	0.080 (.076)	-.120 (.129)
Business/Economics Major			-.007 (.107)
Treatment*Business/ Economics Major			-.057 (0.107)
Constant	.568 (***) (.054)	.645(***) (.064)	.649 (***) (.084)
R^2	.009	.065	.068
Observations	81	81	81

Note: (*) p<0.05; (**) p<0.01; Gender: Males=1, Females=0; Treatment: Low Denomination = 1 and High Denomination = 0; Business/Economic Majors: 1, Others: 0; Treatment/Business: 1, Others: 0.

Table 6: Determinants of Donations – Auxiliary Regressions for Males and Females Separately

	For Males Donation	For Females Donation (2)
Treatment	.120 (225)	.096 (.155)
Business/Economics Major	-.154 (.172)	.117 (.137107)
Treatment*Business/ Economics Major	.041 (.278)	.028 (0.198)
Constant	.337 (.394)	.379 (.271)
R^2	.061	.046
Observations	33	46

Note: (*) p<0.05; (**) p<0.01; Gender: Males=1, Females=0; Treatment: Low Denomination = 1 and High Denomination = 0; Business/Economic Majors: 1, Others: 0; Treatment/Business: 1, Others: 0.

Discussion

The discussion regarding whether money illusion influences individuals' decision-making and consumer behavior remain vigorous (Nelson & Schwartz, 2008; Stockhammer, 2008). However, the effect of money illusion on consumers' decision-making and behavior is difficult to distinguish from other factors with non-experimental data due to the dynamic changes typically occurring in an individual's decision environment. The results of the experiment were straightforward and showed minimal to non-existent money illusion among the participating individuals. It might seem that the results support the Monetarist school of thought, and participants understood clearly the difference between nominal and real variables, thereby adjusting their consumption behavior accordingly (in the short run). This is consistent with Shafir et al.'s (1997) intuition that money illusion influenced consumers' behavior through price stickiness, occurring because people fail to anticipate and then to account for price changes (Maloney, 2011; Stockhammer, 2008). In this particular experiment, there were no price changes since prices were varied between-subject, and money illusion was not observed. The experiment shows that the denomination of monetary units used for decision-making does not have any effect on decisions. There was no evidence of any numerosity effect. The minor differences in decisions between the two treatments were not statistically significant. We observed that participants were attentive to requests of dividing the tokens and calculating the equivalent amount in dollars. We found several calculations on participants' scratch paper utilizing the conversion rate from tokens to dollars. In addition, there were many inquiries about ways in which the donations would be made to the agency of their choice.

Such observations support the idea that our subjects thought rationality to arrive at an informed decision (Cárdenas, De Roux, Jaramillo, & Martinez, 2014). As we stated earlier, central to the argument of the Phillips Curve is the existence of the money illusion effect, in which individuals make decisions based on nominal rather than real variables. This influences consumer behavior through wage or price stickiness, insufficient adjustment of prices and wages to the growth of the money supply. For example, if nominal wages remain the same, even though real wages fall, consumers may spend as much as before, but not realize that they actually have a less real income. The money illusion effect, though price stickiness, is one of the factors contributing to the slow adjustment of consumer behavior to real price changes in the market, as consumer behavior and demand do not adjust automatically with price fluctuations. Price inertia is also the mechanism underlying the persistence of shocks and business cycles in New Keynesian Dynamic Stochastic General Equilibrium models. In other words, the tendency of prices to remain constant, despite changes in the cost of producing and selling a product, can cause general inflationary pressure in the market. Above all, the experiment rendered clear results that did not show a significant indication of money illusion, which did not have any

impact on individuals' decision-making in terms of charity giving. There was no indication of money illusion in our one-shot task (one treatment), where there could be no role for price stickiness in generating money illusion. This suggests that a previous history of decision-making and some inertia in these decisions are the key factors leading to money illusion.

4. Conclusion and Recommendations

Our experimental results revealed the absence of money illusion among the participants. Our study showed that in an environment where price stickiness was not possible, money illusion was not observed, perhaps suggesting a relationship of causality. Such observation is congruent with the findings of Shafir et al. (1997), who argue that money illusion can only be observed when there is price stickiness. The conjecture that is suggested from this study is that money illusion arises only as a consequence of inertia in decision making when real, but not nominal variables, change. One recommendation would be to incentivize researchers to engage in multi-treatment long-term experiments to better gauge economic agents' behavioral and financial decisions over time. A one-shot task may provide a limited glimpse of the economic attitudes and financial decisions with respect to charitable giving. During our one-shot economic experiment, participants did not exhibit money illusion characteristics because there was no price stickiness; nevertheless, participants responded to the experiments based on their own prior experiences and cultural biases. A second recommendation would be for future researchers to expand on the limitations on economic agents' charitable giving behaviors as influenced by perceptions of nominal income. This information is important since one of the objectives of this analysis is to determine a way of motivating economic agents to participate actively in charitable giving. As indicated earlier, charitable institutions could build fundraising strategies based on behavioral tendencies in response to the perception of income in nominal or real terms.

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Appendix A1. Low Denomination - Instructions to Subjects

Instructions for the Experiment: Today you will participate in an economic experiment where you get to decide on how to split 120 tokens between yourself and a charity. The conversion rate is 8.5 tokens per dollar. You can keep the entire amount, donate a portion and keep the rest, or donate the entire amount. If you decide to donate a portion or the entire amount, the researcher will donate the amount to the agency/organization you have chosen or you can keep the entire amount. If you decide to keep a portion or the entire amount, the researcher will give you the money in cash at the end of this session. You can choose from 5 charities that we have indicated in options a) – e) below

Please write your decision:
Tokens to be kept: _____ Tokens to be donated: _____

Please choose by circling the agency/organization that you would like to donate to:
a) Canadian Red Cross
b) Habitat for Humanity Canada
c) Canadian Cancer Society
d) SickKids Foundation
e) Animal Rescue Network
f) Other: Please fill in the blank _____

This concludes the experiment. Thank you for your participation.

Appendix A2. High Denomination - Instructions to Subjects

Instructions for the Experiment: Today you will participate in an economic experiment where you get to decide on how to split 12000 tokens between yourself and a charity. The conversion rate of tokens to dollars is 850 tokens per dollar. You can keep the entire amount, donate a portion and keep the rest, or donate the entire amount. If you decide to donate a portion or the entire amount, the researcher will make a donation in the amount to the agency/organization you have chosen or you can keep the entire amount. If you decide to keep a portion or the entire amount, the researcher will give you the money in cash at the end of this session. You can choose from 5 charities that we have indicated in options a) – e) below

Please write your decision:
Tokens to be kept: _____ Tokens to be donated: _____

Please choose by circling the agency/organization that you would like to donate to:
a) Canadian Red Cross
b) Habitat for Humanity Canada
c) Canadian Cancer Society
d) SickKids Foundation
e) Animal Rescue Network
f) Other: Please fill in the blank _____

This concludes the experiment. Thank you for your participation.

Appendix B1: Raw Data – Low Denomination

120 Tokens - 8.5 Tokens per Dollar						
Participant	Tokens		Money			
	Kept	Donated	Kept	Donated	Gender	Major
1	0	120	$ -	$ 14	F	Arts
2	90	30	$ 11	$ 4	F	Psychology
3	20	100	$ 2	$ 12	F	Management
4	48	72	$ 6	$ 8	F	Engineer
5	30	90	$ 4	$ 11	F	Human Resources
6	120		$ 14	$ -	M	Business
7	70	50	$ 8	$ 6	F	Finance
8	51	69	$ 6	$ 8	F	Business
9	60	60	$ 7	$ 7	M	Management
10	100	20	$ 12	$ 2	F	Veterinary
11	120		$ 14	$ -	M	Business
12	40	80	$ 5	$ 9	F	Business
13	60	60	$ 7	$ 7	F	Finance
14	60	60	$ 7	$ 7	F	Business
15	80	40	$ 9	$ 5	F	Intl Business
16	90	30	$ 11	$ 4	F	Nursing
17	30	90	$ 4	$ 11	F	Finance
18	120		$ 14	$ -	F	Business
19	120		$ 14	$ -	M	Computer Science
20	80	40	$ 9	$ 5	M	Computer Science
21	120		$ 14	$ -	M	Finance
22	110	10	$ 13	$ 1	F	Natural Sciences
23	80	40	$ 9	$ 5	F	Marketing
24	60	60	$ 7	$ 7	M	Business
25	0	120	$ -	$ 14	F	Business
26	60	60	$ 7	$ 7	M	Business
27	60	60	$ 7	$ 7	F	Business
28	60	60	$ 7	$ 7	M	Management
29	103	17	$ 12	$ 2	F	Operations Management
30	0	120	$ -	$ 14	M	Business
31	120	0	$ 14	$ -	M	Business
32	0	120	$ -	$ 14	F	Business
33	0	120	$ -	$ 14	F	Business
34	12	108	$ 1	$ 13	F	Business
35	60	60	$ 7	$ 7	M	Economics
36	0	120	$ -	$ 14	F	Biology
37	0	120	$ -	$ 14	F	Business
38	84	36	$ 10	$ 4	M	Economics
39	60	60	$ 7	$ 7	M	Arts
40	0	120	$ -	$ 14	M	Physics

Appendix B2: Raw Data – High Denomination

12,000 Tokens - 8,500 Tokens per Dollar						
Participant	Tokens		Money			
	Kept	Donated	Kept	Donated	Gender	Major
1	4,000	8,000	$ 5	$ 9	F	Education
2	12,000	-	$ 14	$ -	M	Education
3	4,000	8,000	$ 5	$ 9	F	Nutrition
4	6,000	6,000	$ 7	$ 7	F	Public Administration
5	6,000	6,000	$ 7	$ 7	F	Hospitality
6	12000	-	$ 14	$ -	M	Business
7	3500	8,500	$ 4	$ 10	F	Business
8	2550	9,450	$ 3	$ 11	M	Computer Science
9	10285	1,715	$ 12	$ 2	F	Business
10	11150	850	$ 13	$ 1	M	Business
11	4248	7,752	$ 5	$ 9	F	Business
12	3500	8,500	$ 4	$ 10	F	Chemistry
13	8500	3,500	$ 10	$ 4	F	Occupational Therapy
14	6000	6,000	$ 7	$ 7	F	Nursing
15		12,000	$ -	$ 14	F	Graphic Design
16	8500	3,500	$ 10	$ 4	M	Business
17	6000	6,000	$ 7	$ 7	M	Engineering
18	11000	1,000	$ 13	$ 1	M	Arts
19		12,000	$ -	$ 14	F	Business
20	8500	3,500	$ 10	$ 4	M	Science
21	10200	1,800	$ 12	$ 2	F	Economics
22	8500	3,500	$ 10	$ 4	F	Bio-Chemistry
23	8500	3,500	$ 10	$ 4	M	International Business
24	10,300	1,700	$ 12	$ 2	M	Finance
25	10000	2,000	$ 12	$ 2	F	Biology
26	7750	4,250	$ 9	$ 5	F	Marketing
27		12,000	$ -	$ 14	M	Management
28	3400	8,600	$ 4	$ 10	M	Physics
29	0	12,000	$ -	$ 14	F	Business
30	2000	10,000	$ 2	$ 12	F	Business
31	12000	-	$ 14	$ -	M	Business
32	0	12,000	$ -	$ 14	F	Business
33	0	12,000	$ -	$ 14	F	Business
34	0	12,000	$ -	$ 14	M	Modern Languages
35	2000	10,000	$ 2	$ 12	M	Physics
36	0	12,000	$ -	$ 14	F	Engineering
37	4,250	7,750	$ 5	$ 9	M	Economics
38	0	12,000	$ -	$ 14	M	MBA
39	2000	10,000	$ 2	$ 12	M	Business
40	3000	9,000	$ 4	$ 11	F	Business
41	0	12,000	$ -	$ 14	M	Arts

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Self-Destructive Work Behavior Management for Socio-Economic Emancipation: A Classic Case of Saving One from Oneself

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Abstract: Africa is amply endowed with diverse dimensions of resources as well as having a rich cultural heritage with great potentials for economic growth and development. It is also worthy of mention that the resourceful capacities of Africans in the diaspora in all spheres of life have contributed immensely to the development of other continents of the world. Despite these great progressive potentials, a large percentage of African States are in obvious and dire need of sustainable socio-economic emancipation. This glaring need to identify the key challenges and propose solutions necessitated this study. This study is conceptual and examined self-destructive behaviors at multiple levels using theoretical underpinnings from the Human survival and the self-destruction paradox as well as the dialectical behavioral therapy. This Paper identified several ingrained sources of self-destructive work behaviors in contemporary public sector workplaces in Africa which contribute to the socio-economic challenges. This work highlights that these obnoxious, self–destructive work behaviors seem highly inimical to management praxis. The behaviors seem capable of contending against the aggregate fight for sustainable socio-economic emancipation of the Continent. Deliberate self-salvation was opined here to steer away behaviors, especially in workplaces, from this current path of self-destruction. Novel Actionable thoughts were suggested to stem this unfavorable tide and push for a generation of operational work behaviors as well as an ethical renaissance in management praxis for the emergence of archetypes completely devoid of any anti-progress tendencies.

Keywords: *Africa, Behavior, Development, Management, Self-Destructive.*

1. Introduction

The Pre-Partition Era of Africa saw gallant people who through resilience, doggedness and ingenuity were, able to forge tools and apply simple operations and technologies to excel in all areas of human endeavors pertaining to their worldview at that time. The African Continent can boast of a strong spirit of resilience that has triggered initiatives that have spurred resourcefulness and intellectual accomplishments so far in her history. The African continent has been credited with the notable status as a cradle of civilization and her very bright prospects, gazetted in the annals of history. The Partition Era came with its pains and gains and although the African States have their political emancipation, the strife for socio-economic emancipation rages on. This struggle for the socio-economic emancipation of Africa as a whole has been a long and tortuous one. Concerted and continuous candid efforts have been and are still being made to harness her potentials and for her to take her pride of place among the comity of Continents (Ejiaku 2014; Seck, Agboh-Noameshie, Diagne & Bamba, 2013). The Organization of Africa Unity, which was established in 1963 and metamorphosed into the African Union in 2002.

Through programs such as the New Partnership for Africa's Development among others as well as other individual and corporate entities with Pan-Africanist ideologies have been key actors in this struggle. Nevertheless, the apparent general socio-economic outlook still shows glaring gaps to be filled. The United Nations General Assembly in 2015 designed a collection of seventeen goals to chart the course of a better future for the nations of the world. These Sustainable Development Goals (SDGs), as part of the United Nations 2030 Agenda resolutions, are intended to ensure that at the targeted year of 2030, there will be no poverty, zero hunger, good health and wellbeing, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, Industry, innovation and infrastructure, reduced inequality, sustainable cities and communities, responsible consumption and production, climate action, care for life below water and life on land, peace, justice, strong institutions as well as a partnership for the goals(United Nations, 2015). There have been several previous laudable long-term plans and timelines of such nature as the SDGs.

However, Ndizera and Muzee (2018) identified limited finances, lack of ownership, lack, of political will, diverse and sometimes conflicting interests as well as lack of ideological backup as some of the challenges that may prevent such long term plans from achieving significant results in Africa. Currently, the predominant socio-economic identity of the African continent still seems to show high levels of poverty as well as similar gross shortcomings indicative of extreme lack in the Strategic Development Goals of the United Nations and reeks of many negative attributes with attendant reflections of despair and hopelessness. The African continent as the second most populous continent of the world is home to many potentials and resources. Rather than reflecting the status of a giant, there seems to be a reflection of diminutive attributes which do not put her in proper perspective. Extant literature is in line with this observation (Besada, 2017; Dauda, Ahmad, & Keling, 2019; Hanson, 2017). Many political leaders and managers of productive sectors of many private and public workplaces are highly trained; possess high capacity and capabilities as well as intellectual skill sets and prowess to handle challenges of their work demands that will put the best foot of the continent forward. However, certain extraneous factors such as corruption, highhandedness, dictatorial rule, luxurious living, fraudulent self-preservation and lack of transparency have been attributed to the somewhat abysmal performance (Amadi & Ekekwe, 2014; Mlambo, Mubecua, Mpanza & Mlambo, 2019; Odemba, 2012).

Also, the observable abysmal levels of economic growth and the somewhat arrested development in Africa have been attributed to poor economic policies. In line with this thought, scholars have suggested appropriate policies and structural economic transformation, improved policy coordination as well as harmonized policy initiatives of regional groups as a veritable solution to the apparent quagmire of the continents development (Atta-Mensah, Tang & Shaw, 2017; Zerihun, Breitenbach & Kemegue, 2015). It has been argued that the intellectual capacity and natural resources of the continent have nothing to do with her performance and as noted by Aloko & Usman (2018) there seems to be an ironic reversal in human history where there exists no concrete relationship between available human/natural resources and the state of development. Despite the foregoing, this work believes that self–destructive work behaviors which seem not to have been previously captured in the extant literature are a major impediment to economic emancipation and may have emanated from certain socio-ethical foundations. Ethics, a series of rules and principles, is often used to decide what behaviors are right, good and proper and defines how things should work according to rules of conduct, prescribed to an individual by an external source such as a profession, business, and social system (Wiid, Cant & Niekerk, 2013). As succinctly put by Singer (2020), ethics are otherwise known as moral philosophy is concerned with what is morally good and bad and morally right and wrong.

In other words, the cause of someone's or something's challenges may not be far. Thus, within the context of this work and without necessarily going into the vector host analogy of the axiom, this work assumes that there is a strong need for a critical introspective look at contemporary work behaviors as well as the socially prescribed and imposed ethical influences on behaviors as well as the fundamental building blocks guiding workplace behaviors. Workplace behaviors exhibited by employees go a long way to make or mar their expected productive outcomes (Ugwuzor, 2018). It has been noted that each productive workplace is a microcosm of the productive fabric of the economy of the nation (Akugri, Bagah & Wulifan, 2015; Muritala, Taiwo, Awolaja & Bako, 2012). It is assumed here that the economic outputs of each nation in Africa will have socio-economic implications for and the performance of the Gross Domestic Products of the Continent. The public service was the primary focus of this work and the behaviors of employees in public sector organizations, who are critical key drivers of economies, were examined to gain profound insights into self–destructive behaviors in work environmental contexts. This was born out of the need to explore avenues fundamental to the achievement of the much-desired socio-economic emancipation. This work is a deliberate attempt at self-salvation by spurring novel self-therapeutic actionable thoughts and consciousness which will eliminate socio-ethical flaws within the behavioral ecosystem and generate progressive workplace behaviors.

2. Theoretical Underpinning

This work was highly interested in certain underlying somewhat self-destructive work behaviors of management and staff of organizations that have adversely affected management praxis in firms in the landscape of the African public productive sectors. Behavior that a person perpetrates against himself/herself with the tendency to cause potential or actual harm is said to be Self-destructive behavior. This may imply that one may not realize that one could sometimes be one's own worst enemy. One theoretical underpinning

of this work was hinged on Walters (1999) Integrated Theoretical Model of Human Survival and the Self-Destruction Paradox. This model draws strength from evolutionary biology, existentialism, developmental psychology, and social learning theory. To the proponent of this model, self-destructive behavior is a function of how an individual psychologically construes survival and copes with perceptions of isolation and separation from the environment. The paradox of self-destructive behavior in organisms is driven by the need for self-preservation. Walters (1999), believes that self-destruction stems from a person's efforts to survive psychologically and resolve the subject-object duality, even when this places their physical well-being at risk. Ikeda (2016) has observed that people make self-destructive decisions that bring small immediate satisfaction but have adverse effects on the individual's future and classified self-harmful behaviors to include under-saving, over-borrowing, credit-card bankruptcy, overeating, smoking, drug abuse, and gambling addiction.

The Walters (1999) Integrated Theoretical Model has been applied to several forms of self-destructive behavior to include anorexia nervosa, substance abuse, pathological gambling and suicide. It is notable that all of the aforementioned range from self-harm to suicide. The behaviors of key actors in the productive sectors of the African economy were a major concern of this work. The observable general work behaviors exhibited by many employees in work settings, irrespective of the work cadre, seem to portray varying levels of unconscious and somewhat latent self-destructive tendencies akin to parasuicide and even suicide itself. The acts carried out, sometimes, with impunity may not only jeopardize and eventually kill the career of the perpetrator but also put the health and life of the organization in jeopardy with an attendant negative effect on the national and continental economies. The perpetrators tend to exhibit the behaviors usually for short-run primordial benefits. All the behaviors exhibited through self-destructive may also be a way to cope with the pressures of life for example a person may perpetrate fraud or take a bribe to cope with the personal desire to acquire wealth or meet societal expectations even though the person knows that the penalty of being caught is sack and prosecution.

This work also aligns with Dialectical behavioral therapy (DBT) which is based upon the biosocial theory of Borderline Personality Disorder. DBT is the first therapy that has been experimentally demonstrated to be generally effective in treating borderline personality disorder (BPD). It is in the light of the foregoing that this work explored self-destructive work behaviors within the realm of Psychological disorders. Butcher, Mineka, & Hooley (2007) have defined a psychological disorder as an ongoing dysfunctional pattern of thought, emotion, and behavior that causes significant distress, and that is considered deviant in that person's culture or society. Linehan (1993) opines that Borderline personality disorder is primarily a disorder of emotional dysregulation and emerges from transactions between individuals with biological vulnerabilities and specific environmental influences. As a type of Cognitive Behavioural Therapy, DBT attempts to identify and alter faulty thinking patterns to achieve desired behavioral changes. There is evidence that DBT can be useful in treating mood disorders, suicidal ideation, and change in behavioral patterns such as self-harm as well as other self-destructive behaviors. It is worthy of mention here that Cognitive behavior therapy (CBT) helps to identify and change views of oneself, the world, and the future.

In other words, with the aid of CBT, one can become aware of one's unhealthy ways of thinking and learn new behavioral patterns. Any behavior causing harm to the individual, regardless of the intention, aim, awareness of their negative consequences, time perspective, the object of harm as well as whether it is a direct or indirect threat can be referred to as self-destructive behaviors (Tsirigotis, 2018). Self-destructive behavior such as drug addiction has been classified as a chronic health condition and quitting usually takes more than good intentions or a strong will (NIDA, 2018). Self-destructive work behaviors, apart from the self-harming, self-sabotaging and dangerous effects on the personal life of the perpetrator, jeopardize the health and life of the perpetrator work career, an organization where the individual works as well as other beneficiaries of the work behavior of any individual employee such as the society and economy. Persons that engage in self-destructive work behaviors, whether consciously or unconsciously may have genuine intentions to come out clean but may be unable to do so by themselves. Thus, this work, in aligning with Dialectical behavioral therapy (DBT), identifies with the need for deliberate diagnosis and therapy as well as the development of other useful models to care for and save persons with self-destructive work behavioral parasuicidal and suicidal tendencies. This is an attempt at self-salvation.

Self-Destructive Work Behavior Management: The model being prescribed in this work for Self-Destructive work behavior management is a multi-level simultaneous self-diagnosis and therapy. With the aid of CBT, one can become aware of one's unhealthy ways of thinking and learn new behavioral patterns. Namely, the individual- level, the corporate- level and the societal- level. The intertwined relationship between the levels is also emphasized to give a holistic picture of the various sources of the levels of Self-Destructive Work Behaviors for effective Management. There is a popular African axiom which states that "the ant destroying the kola nut lives within it". When self-destructive behaviors are exhibited in the workplace to the extent that the work careers of the individual perpetrator and the health and survival of the firm a perpetrator works for are at risk, it translates to Self-Destructive Work Behavior. In many African societies, ethical values tend to guide the behaviors of members and these socio-ethical values may also be brought to workplaces of the productive ecosystems of nations. The societies, which are organized and functioning human communities, have evolved ethical systems which include ethical values, principles and rules which are intended to guide social and moral behavior Gyekye (2011). Firms are usually established for well-defined purposes or goals. Employees who are engaged to help the firms in achieving the said purposes and/or goals may also do so for job security and get to the peak of their personal work careers. The commonsensical expectation is that the employees will work in line with the set purposes or goals. Many employees may honestly want to put up behaviors that may sync with the direction of the organization.

However, more often than not, they tend to exhibit certain behaviors totally inimical to the health of the organization and the detriment of their work careers. These behaviors that employees exhibit consciously or unconsciously, which jeopardize the career of the perpetrator of the behavior and that are at logger's heads with the goals as well as long term health and survival of the perpetrator's workplace are said to be self-destructive work behaviors. Such destructive work behaviors not only expose the individual career to the danger of termination but also endanger the health and longevity of the organization they work for. It is no gainsaying that the health and longevity of an organization depend on the work behaviors of its employees. The management of such behaviors in the workplace may involve case investigations as well as setting up therapeutic behavioral intervention strategies to curb the behaviors, noting the element of self-diagnosis and therapy. Diagnosis is often seen as a primary tool for the work of medicine as they tend to identify, categorize and classify illnesses, disorders and other health conditions. In that light diagnosis is seen as the process of determining the nature of a disease or disorder and distinguishing it from other possible conditions (Rakel, 2018). Diagnosis is useful in providing necessary information on the meanings that people attach to the feelings and behaviors they are experiencing, as well as societally sanctioned explanations to all concerned parties about problematic symptoms (Wykes and Callard, 2010). However, Jutel (2019) sees diagnosis as a profoundly social act, which reflects society, its values and how it makes sense of illness and disease.

Without necessarily going into the various psychological and even psychiatric attributions and associations of self-destructive behaviors in persons, this work strongly believes that the actions and/or inactions of many employees and the current predominant work praxis in many work settings within the African productive ecosystems depict various levels in the continuum of self-destruction which range from traces of parasuicide to suicide itself. The behaviors of the perpetrators do not only seem subconsciously or unconsciously driven but also helplessly deliberate. For example, apart from some levels of impulsivity, which seem to be subconsciously driven, perpetrators may tend to turn deaf ears and seem to choose the death of their careers instead of quitting such behaviors. Impulsivity, an enduring tendency to react hastily rather than deliberately is based on immediate gratification as opposed to future-oriented problem solving (Barratt, 1994; Herpertz, Sass & Favazza, 1997). It may be argued that the current highly volatile and unstable business environment calls for quick actions and decisions and no doubt some of the consequential outcomes may turn out beneficial, this work categorizes the construct of impulsivity in the dysfunctional sense, more especially so, if impulsivity is habitual with an undertone of escalation of commitment or ulterior motives of the decision-maker. Impulsivity has been found to be related to a wide range of maladaptive self-destructive behaviors, such as kleptomania, pyromania, intermittent explosiveness, substance abuse, antisocial behavior, bulimia, conduct disorder and self-mutilation (Barratt, 1994).

3. Sources of Employees' Self-Destructive Work Behavior

As part of the case investigation of self-destructive work behavior, it becomes imperative to identify and trace the sources of self-destructive work behaviors of employees.

Individual-Level Sources: The individual-level sources of self-destructive work behavior may originate from the personality traits, habits, personal attitudes archetypes and/or tendencies of the individual employee which may *ab initio* be skewed in the direction of self-destruction. In other words, the individual may have certain underlying character traits, habits and/or tendencies that are already detrimental and anti-progressive to the individual's wellbeing. If these traits, habits and tendencies when brought to the workplace interfere with smooth operations and behavioral expectations at work, then it gives rise to the employee's self–destructive work behavior. Some personality traits, habits and/or tendencies may include laziness, greed, pride and avarice, excessive personal quest for power, high-handedness .narcissism and selfishness to mention a few. Individual-level sources of self-destructive work behavior may also stem from social influences from the family, socio-ethical heritage of the society and methods adopted to run corporate institutional processes, the technology adopted as well as the social systems within the workplace.

If the behaviors are not condoned by the workplace and society then, individuals will likely make better efforts at doing away with such behaviors. It is interesting to note that the exhibition of these self–destructive work behaviors is not limited to the rank and file employees alone. The management staff at the various levels of management may also be culpable. These self-destructive behaviors exhibited by management staff may also tend to have ripple effects on the work behaviors of their subordinate employees and, of course, on the organization as a whole. Still drawing from the African axiom that the ant that destroys a kola nut lives inside it, it is apparent that what 'lives' within the individual or is part of the individual is destroying him/her. Put differently, an employee's self-destructive work behavior may not be too far from the highlighted personal sources. In other words, the source of an individual's behavioral phenomenon exhibited may just lie within the individuals and manifests in the way they do things.

The Individual-Level Self-Diagnosis and Therapy: In this model, individuals are made aware of the signs and symptoms of self-destructive work behaviors. When honestly self-assessed, the individual could understand what could amount to a self-description of self-destructive work behavior as well as their patterns of behavior. Identifying self-destructive work behaviors could be a challenge especially when it comes to recognizing one's behavior. It is made worse by self-deceit as one may not want to admit an identified work behavior as self-destructive. Identifying self-destructive work behaviors may even be easier to spot when looking at someone else's work behavior. However, beaming the same searchlight on oneself may expose self-destructive work patterns. Self-awareness could also be gained through education and information on what constitutes self-destructive work behavior, the predisposing factors as well as the harmful effects of such behaviors on themselves and others. Some symptoms of self-destructive behaviors that may transcend to the workplace include laziness, lack of motivation, lack of energy, self-aggrandizement frequent interpersonal friction with colleagues, always blaming ones failure on other people or external forces, procrastination as well as lack of time-consciousness in terms of punctuality and keeping to deadlines, haphazard ways of planning, amongst others.

The basic therapeutic behavioral intervention should answer the question of how the individual could be saved from that which is part of him/her. For persons who have identified self–destructive work patterns in themselves, the key step to positive change is the will to change and the strategies to adopt. If one is honest to oneself, one should be able to talk out oneself from the self-destructive work behavior and not allow such behavior to go on unchecked. Personal therapy may include critical self-examination, values redefinition and reorientation devoid of self–destructive and anti-progress tendencies. An individual may have an intrinsic drive to work which will make such a person have good reasons independent of any external motivating force. Also, with a reasonable yardstick for standard self-performance appraisal, one should hold oneself accountable for performance lapses after a careful self-appraisal shows lapses are self-inflicted. If the identified lapse in performance is caused by physical factors such as hunger, lack of sleep, ill health, overindulging in other activities other than work itself, personal efforts should be made to address the issues. One may also seek more interesting ways of doing work and think of something to like in one's job or any

other job one would want to do. Self–destructive work behaviors may be identified by an individual perpetrator or a concerned supervisor or colleague.

By submitting oneself to external help, issues of punctuality, time consciousness and interpersonal work relationship could be addressed. Help may also come to an individual by way of counseling provided by the organization through a unit for that purpose within the organization or external firms with a support system that will help eliminate such behaviors. Couching and mentoring of individual employees on personal work ethics and character molding should be, put in proper perspective to address Self –destructive work behaviors. Since the behavior did not start overnight, time and determination are essential for positive change to occur. To prevent a relapse, the individual should openly advocate against such self–destructive behaviors. New behaviors could be learned that will make a perpetrator resourceful, insightful, compassionate and selfless.

Corporate-Level Sources: It is important to clarify at this point that the firm is a corporate entity and is regarded here as a 'person' which can have identifiable 'self-destructive behaviors' A corporate entity's self-destructive behavior is made manifest when a firm's culture, structure, policies and processes are such that they seem inimical its own purposes and goals and adjudged detrimental to its own health and survival. Some self-destructive work behaviors of employees could stem from their firms ' self-destructive behaviors'. Based on the lapses and inadequacies of the corporate structure and culture, for instance, individuals may tend to begin to exhibit certain self-destructive work behaviors. For example, if a firm's processes are not transparent and there are no laid down structures for accountability and probity, individual employees, especially those who by their personal sources are predisposed to some already underlying self–destructive behaviors, may have room to indulge in fraud, high handedness as well as corruption of various forms. Corruption in this case is not only seen as a situation where persons unduly enrich themselves and personally gain from certain institutional processes.

But includes individual activities that negate the general good of the generality of the populace. Some Firms seem to have perceived distorted rules on the distribution of organizational favors and punishments. This may picture the firm as one with corporate cultures and structures that allow for favoritism. Also, some firms may seem to have perceived a distorted meaning of teamwork. In this case, one may observe many in-group/out-group formations within and between teams within the firm. Corporate culture should foster an atmosphere where everybody thinks of the good of their fellow employees, the betterment of the whole firm and, perhaps, how the success of their firm could add value to the national Gross Domestic Product. A toxic work environment stifles the employees, organizational citizenship behaviors and creates room for bickering and rancor. When a work environment is toxic and firms' processes and procedures do not seem transparent, de-emphasize accountability and probity, to mention a few, such firms are exhibiting corporate self-destructive behaviors from which employees' self-destructive behaviors may emanate.

The Corporate Level Self-Diagnosis and Therapy: The corporate level diagnosis of destructive behaviors could come as a managerial and leadership responsibility to organizations. The ultimate desire of any corporate diagnosis of destructive work behavior is for performance improvements in the Firms. The contemporary managers can right the wrong of previous 'ancestors' noting that the contemporary managers are ancestors to the future generations. Apart from the expectation that firms should have a code of ethical work behaviors for all employees that will serve as the work behavioral compass to guide workplace behaviors in line with the particular firm's goals and purposes, the corporate culture and structure should have tell-tale mechanisms to identify self–destructive work behaviors if corporate structures, cultures and processes are distorted and are not transparent nor their strategies result-driven, individuals will tend to begin to exhibit tendencies.

Such as greed avarice, wealth accumulation, biased and faulty decisions, conflict of interest, ulterior motives, high sense of entitlement. The outcome of such tendencies is capable of truncating or even eliminating the future and posterity will not judge contemporary managers right if the current situation goes on unabated. Suffice it to say that there are some contextual interpretations of Afrocentric thoughts which may have implications for socio-ethical workplace behaviors. For example the maxim in the African contextual thought that one should be ones brother's keeper. This may not be wrong on its own. However, 'brotherhood' has

been interpreted in a sense that selectively favors a few in-group members of a sect to the detriment of the generality. There is also the sense of entitlement mentality as individuals may have a sense of entitlement that their brother or close associate is at the helm of affairs so they are entitled to certain favors.

Also, persons from host communities of firms believe that they are the 'land lords' of the firms and are thus entitled to certain rights and privileges without necessarily meriting them. A corporate therapy direction will be to have reorientation programs that emphasize 'humanhood' as a way of thinking of the collective progress of humanity and the meaning expanded to cover persons of the entire humanity so that all goodwill will be done to all in the same way rather than the already misconstrued 'brotherhood'. There is also an obvious and dire need to re-gig the management praxis in workplaces in a way that de-emphasizes unclear and unfavorable corporate cultures, structures and policies on the distribution of organizational favors as well as policy summersaults and canonical politics among other corporate entity's self -destructive behaviors which may have very serious socio-ethical implications in workplaces.

Societal-Level Sources: When the socio-ethical norms of society seem inimical to its growth and development such norms or acceptable practices are self-destructive and must be changed. Suffice it to say that Society is being personified here to re-emphasize the intertwined relationship between the individual, firm and society. Based on some socio-ethical influences and societal expectations some employees, sometimes unbeknownst to them, tend to exhibit self-destructive work behaviors. African ethics is used to refer both to the moral beliefs and presuppositions of the sub-Saharan African people and the philosophical clarification and interpretation of those beliefs and presuppositions (Gyekye, 2011). Without necessarily going into the controversy of what constitutes sub-Saharan Africa, it is imperative to state that ethics have played important roles in shaping how societies are run and how citizens contribute to the general wellbeing of their societies. The African environmental settings and societal makeup have a very rich cultural heritage that has been traditionally handed down from generation to generation. Awoniyi (2015) aptly describes African cultural heritage as living traditions as well as precious wealth that need to be harnessed and tailored towards African development. This may have been the basis of the bond of unity, peace, friendship and good neighborliness as well as other very laudable socio-ethical virtues. It is also observable that the traditional cultural ethos and the ethical values and norms are highly intertwined.

It may then imply that ethical standards and values are informed and shaped by sociological standards. It may be important to state that the societal context of what is right and wrong or acceptable and unacceptable seems to vary from one geographical ecosystem to the other even within a confined geographical space. The sociological backgrounds of many African societies are based on deeply entrenched traditions handed down from ancestors and are expected to be handed to descendants yet unborn. An important aspect of traditional African education is concerned with teaching oral literature using folktales, riddles and proverbs which are aimed at molding character and providing children with moral values like honesty, integrity, hospitality, truth, respect for old age, covenant-keeping, hard work, good character courage and solidarity (Awoniyi, 2015; Sone, 2018). For example, traditional teachings on patriotism and the meanings giving to a person with a good character are for the person to love his/her people, kith and kin. Such a person should represent the community as an ambassador and defend the land to the extent of dying for the general good of the land. Gyekye (2011) in looking at ethics highlights the centrality of the notions of character and moral personhood as inspired by the African moral language. It is believed that exogenous ideas and practices of potential benefit to Africa must build from the inside out, not outside-in, as an imposition (Mulanga, 2014). However, if certain socio-ethical elements are inimical to society's progress then such socio-ethical elements are self-destructive and can trigger the self-destructive work behaviors of employees.

Jollimore (2014) posits that morality requires one to be neutral and impartial. Molefe (2016), having closely observed the moral intuitions characteristic of African moral thought such as high prize usually accorded to the family, veneration of ancestors and the notion of personhood, argued that African ethics is best captured in terms of partiality. However controversial this might be, it may not be farfetched that all of these socio-ethical practices may have considerable influence on the fundamental fabric of behavior, especially at the workplace. This implies that a system that promotes partiality, favoritism or self-interest is seen as morally defective and if the guiding moral compass is defective then the emanating behavior will likely be self-destructive. For example, the perceived inequity that emanates when ethnicity or any surface-level diversity

is a basis for the selection of persons to be favored or disfavored adversely influences the way work is done as well as in the work behavior of employees. Again, due to the respect for traditional institutions, a manager may uncomfortable querying or reprimanding a community chief or a person of royalty should such a person err in the workplace. In the same vein, one societal expectation of a person occupying a position of authority is that during recruitment or the distribution of organizational favors such a person is expected to favor close in-group members before others irrespective of qualifications. Apart from the conflict of interest this might cause, in-group members feel they are privileged and above the law, as they are hardly reprimanded or at worst they get a slap on the wrist.

Societal-Level Self-Diagnosis and Therapy: The African socio-ethical space still has issues such as ethnic and religious bigotry, nepotism, reverence of the rich and powerful as well as social expectations of persons occupying certain positions or doing certain jobs among others that have not been development friendly. Socio-ethical foundations which are not self–destructive will help in building capacities in individuals and institutional processes to meet and exceed present-day requirements in the global space. Suffice it to say that the higher the societal expectation, the higher the tendency of persons to desire to engage in self-destructive work behaviors such as fraud, embezzlement, nepotism, tribalism as well as other forms of corruption. Self-recognizable elements of societal self-destructive behaviors are based on situations and behaviors that are prevalent in society. Some of them include high levels of felt deprivation discrimination and powerlessness in situations where qualified persons are not given the opportunity to contribute to the society because of their unique identities and the in-group they belong to, greed, selfishness, insincerity, aversion to research and development for innovation, poorly envisioned plans and modus of implementation, decisions riddled and beclouded with ulterior motives.

All the aforementioned self-recognizable elements which have implications for socio-ethical foundations of workplace behaviors may just be the 'ants' destroying the commonwealth of Africa's 'kola nut' of sustainable socio-economic emancipation. Self–destructive behavior at the societal level should be taken as a collective mental condition, with an urgent need for collective therapy through community-driven reorientation programs. Traditional African values are based on many progressive socio-ethical attributes as well as very high ethical and moral foundations with work ethos hinged on hard work, dignity in labor, honesty, probity and integrity all of which are sources of pride and uniqueness world-others can learn from. This work assumes that the management praxis of the productive enterprises are based on highly native traditional socio-ethical foundations and this work calls for a renaissance, total rebirth and regeneration of the meanings given to the socio-ethical elements which transcend many workplaces. In line with this thought, it has been opined that there is a need to rethink management practice and leadership in Africa as well as theoretically upgrade philosophies such as Ubuntu as currently being theorized (Eyong, 2019; Guma, 2012). For instance, one can still be one's "brother's keeper" only if there is a redefinition of brotherhood to include persons living in the same world.

As one human race without recourse to genetics, race, ethnicity or any other in-group relationship; one can still be selfless for the good of everyone. The African socio-economic landscape has not improved significantly. Imagine that if everyone does good for the good of everyone else, then there will be enough good to go around for the good of all: National decisions should be based on their socio-economic imperatives and should neither arouse sentiments and suspicions nor be for selfish and personal gains; ventures set up should have all the necessary plans for funding, provision of basic structures and infrastructure such as power supply, water supply roads, transportation and even the manpower with the right qualification to run them; redefine the Societal values placed on financial status as a measuring yardstick for success without which persons in workplaces may become highly bothered about their earnings thereby increasing the likelihood of engaging in shady practices. Planning should be properly envisioned, especially in the long term and strategically implemented to reduce the somewhat haphazard way things are sometimes done; bottlenecks that stand in the way of ease of doing business should be eliminated at all costs. Create structures and means of identifying, sponsoring or encouraging unique skills and talents as well as make budgetary allocations for research and development, where innovation will be encouraged.

Socioeconomic Emancipation: To highlight how the management of self-destructive work behavior could add value to national wellbeing, the concept of socio-economic emancipation is briefly conceptualized. Socio-

economic emancipation of Africa in this work is seen as the extent to which the aggregate productive capacity status of firms in an economy is able to compete favorably in the global space and positively affect the general wellbeing and outlook of the populace alongside the flora and fauna. The greater the extent the aforesaid feat is achieved, the higher the status of Socio-economic emancipation, and vice versa. The assumption is that a proper self-destructive work behavior management will have positive effects on a firms' product/service quality and quantity, level of innovation as well as the level of accessibility of firms' products/services to the end-user all of which are the measures of the productive capacity status of firms in an economy. With all these properly done through proper self-destructive work behavior management, the much desired socioeconomic emancipation will be achieved and the continent will meet and surpass whatever SDGs there are. If this is achieved, Africa will not only have carved a niche for herself but will set strategic new world standards for others to follow.

4. Conclusion and Recommendations

Africa has highly progressive socio-ethical ancestral injunctions but that over time, the genuine desires and intentions of such injunctions may have been eroded and adversely distorted to the detriment of contemporary workplaces. These observable socio-ethical praxes, which seem ingrained and as part of the ancestral heritage, stem from the individuals, firms' processes and the society. All of these distortions which have implications for socio-ethical foundations of work behavior may just be the 'ants' destroying the commonwealth of Africa's 'kola nut' of sustainable socio-economic emancipation. Thus, it could be safe to assume that negatively distorted socio-ethical work behaviors, as being currently exhibited in many work settings in Africa may be the cause of the myriads of multiple challenges bewitching the productive capacities of the continent of Africa and preventing her from achieving the very much desired sustainable socio-economic emancipation. The firms in Africa cannot continue to do the same thing in the same way and expect different results. Based on the theoretical assumption in the foregoing, the most important policy implication is that therapy is an efficacious intervention to self-destructive behaviors. It becomes imperative, for individuals, corporate entity managers, managers of the wellbeing of society and other concerned stakeholders who are in desperate need of socio-economic emancipation of the African continent, to Manage Self-Destructive Work Behaviors through the multi-level simultaneous self-diagnosis and therapy process as highlighted in this paper.

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Strengthening the Competitiveness of Indonesia's Loser Sector Products in RCEP Cooperation

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Abstract: The purpose of this study is to map some of Indonesia's loser sector products which are commodities that need to be strengthened in the RCEP cooperation forum. In this study, the Revealed Comparative Advantage (RCA) formula is used to analyze the competitiveness of Indonesian export products. The average RCA results between, 2015-2019 show that out of the five food and beverage product items, most of them have high competitiveness. Meanwhile, the average RCA of livestock products, light industry and heavy industrial products has low competitiveness. A strengthening strategy to increase product competitiveness in the RCEP market requires several steps. These steps include identifying market access in RCEP partner countries, improving product quality and specialization, coordinating between the Government and the private sector and continuing to encourage bureaucratic reform, harmonization of regulations to obtain Smart Regulations.

Keywords: *Loser sector product, strengthening competitiveness, strategy.*

1. Introduction

The current free trade has become a world phenomenon. Almost all countries are included in free trade blocs or establish bilateral relations to carry out free trade agreements. Free trade blocs are trade liberalization agreements formed by several countries. In principle, bilateral cooperation and relations as well as free trade blocs want to benefit from cooperation between the countries involved (Obradovic, 2016). FTA is a free trade agreement between a country and another country or region (Gao & Shaffer, 2019). FTAs can be formed bilaterally, for example between the United States and Singapore, the United States with Chile, Japan and Singapore and others. Likewise, FTAs are formed regionally or in regional areas such as the ASEAN Free Trade Area (AFTA), North America Free Trade Area (NAFTA) and the European Union, including the formation of an economic partnership in the Asia Pacific region known as the Regional Comprehensive Economic Partnership (RCEP), whose members consists of newly industrialized countries in the Asia Pacific region (Fukunaga & Isono, 2013). The opportunity for this region to become an area of mutual benefit is very large.

Because it will have a population of more than 3.4 billion people or 47.5 percent of all RCEP members (plus India). Member countries are expected to control a market share of 29.5 percent of world trade with a value of USD 17 trillion. In addition, controlling the world GDP by 33.5 percent and is expected to grow at an average of 6 percent per year, plus potential market access, especially from China, India, South Korea and Japan (Indonesia.go.id, 2020). Based on some of the results of previous research, it is recommended that Indonesia does not need to worry about its participation in the RCEP membership, due to the impact it will experience. In fact, if Indonesia does not participate in this forum, it will have a negative impact on Indonesia. This will result in the disconnection of the Regional Value Chain (RVC) network with other RCEP members (Dahar & Oktaviani, 2014). To take advantage of the formation of RCEP optimally will face several problems. Based on predictions, the biggest impact of liberalization from RCEP for Indonesia is on the manufactured product group. Another worry is the flood of imported products from other countries, especially from China.

On the other hand, Indonesia's superior export products are required to continue to make efficiency in order to compete. Thus the benefits of RCEP are for exports of Indonesian products. In the end, it is necessary to strengthen the competitiveness of Indonesian products. To encourage and increase the efficiency of superior domestic products, fiscal incentives and disincentives are one of the instruments. In this regard, studies are needed to mitigate various strategies and policies to increase the competitiveness of several industrial sectors, especially the products of the loser sector, to be more competitive with other member countries. Loser sector products are products that during the last five years have a downward trend (slowdown) in exports. The same thing can be based on some previous research results. The results of the study (Rahman et al, 2017; Mutiara et al, 2020) recommend that Indonesia does not need to worry about membership in RCEP

because of the impact it will experience. In fact, if Indonesia does not participate in this forum, it will have a negative influence.

One of these negative influences is the disconnection from the Global Value Chain (GVC) network of RCEP members. However, several other member countries will also experience the same thing, namely, there are superior products or winner sectors and products that have low competitiveness or loser sectors in the competition among RCEP members. Several products have the potential to benefit (winner sector) in the RCEP forum, including the agricultural sector, mining products (extraction), wood products, chemical products/rubber/plastic and electronic products. Meanwhile, the loser sector products include food and beverage products, livestock, light industry and heavy industrial product. This study aims to analyze several loser sector products, which are one of the sectors that need strengthening competitiveness in RCEP cooperation. In addition, this research is also expected to obtain policy recommendations related to strategies for strengthening the competitiveness of loser sector products in the RCEP collaboration.

2. Research Method

This research uses a descriptive exploratory approach. One of them is Revealed Comparative Advantage (RCA). RCA is a concept commonly used to measure comparative advantage, but indirectly it can also describe the strength of competitiveness so that strategies can be made to strengthen the competitiveness of these products (Erkan and Saricoban, 2014). This approach is used to analyze the comparative competitiveness of Indonesia's loser sector products to RCEP member countries. The RCA formula is as follows: (Tambunan, 2010)

$$\text{RCA} = \frac{(Xia)/(totalXa)}{(Xiw)/(totalXw)} \qquad \text{.....(1)}$$

Where:
X = export or export value;
i = type of commodity;
a = country of origin;
w = world.

When RCA <1 or close to 0, it means that commodity competitiveness is weak, and if RCA> 1 means strong competitiveness. The higher the RCA of a commodity, the tougher its competitiveness will be. The data and information used in this study are data from the Central Bureau of Statistics and UN Comtrade. Besides that, it takes several sources from journals, mass media and the results of the Focus Group Discussion (FGD).

3. Literature Review

To strengthen competition in the global world arena requires high competitiveness of various items and products of a country which are stated in the competitiveness index (Siudek & Aldona, 2014; Xiao, 2015). Indonesia's competitiveness from year to year has increased and decreased. Based on the assessment of the International Institute for Management Development (IMD) World Competitiveness Ranking 2020, Indonesia's competitiveness ranking fell to position 40 out of 63 countries. This is down from the previous year (2019) which was ranked 32 (Media Indonesia, 2020). According to the research results (Ministry of Trade, 2015) concluded that the increase in Indonesian exports was driven by increased world demand, not by increased competitiveness. The results of the Revealed Comparative Advantage (RCA) and Constant Market Share Analysis (CMSA) which were carried out by sector found that mineral products and stone/glass were commodities that had decreased competitiveness.

Foodstuff is the sector with the best export performance. Although animal and animal products, vegetables, textiles and metals have increased their competitiveness, these products have decreased their market share in several countries such as the United States, including the European Union. Most of Indonesia's export products experienced a decline in exports due to the economic crisis or the pandemic. Based on the calculation of the diamond porter index, it is concluded that the priority products that can be developed are footwear, the basic chemical industry, furniture and electronics. According to several news sources, several

business sectors are affected by the current pandemic conditions. Eight business sectors have the potential to become potential winners and vice versa. These potential winner products include textiles and textile products, pharmaceutical chemicals and medical devices, food and beverages, electronic products, telecommunications services, logistics services, agricultural products, and MSME products (Business Tempo, 2020).

On the other hand, in addition to these potential winner products, there are several products from the loser sector, including several items of food and beverage products, livestock products, light industry and heavy industrial products. These products are needed to strengthen competitiveness through various strategies and implementations to enter the market (access) in member countries of the RCEP cooperation forum. According to research results (Ulfah & Felianty, 2017) show that the competitiveness of Indonesian products is currently still weak compared to most other RCEP member countries. Therefore, the Government of Indonesia must improve the competitiveness of its products so that they can compete and at the same time optimize their participation in RCEP membership. This study uses the Global Trade Analysis Project (GTAP) version 9 application to predict and analyze the impact on all RCEP members with 43 products. The simulation results show that the implementation of the RCEP agreement is expected to improve trade performance, GDP and welfare of most member countries, including Indonesia.

Meanwhile, according to (Moenardy, 2020), several strategies need to be carried out by the Government of Indonesia to deal with RCEP in the form of the concept of trade in goods and international cooperation, to achieve national prosperity, namely by formulating strategies that are internal and external. Internal strategies, among others, the Government must optimize cooperation with exporters. One of them is conducting labor training to improve quality products, creating superior products that can dominate the market, and protecting farmers regarding monopoly on seeds and medicines. External strategies include the Government having to negotiate with partner countries that are trade rivals with China so that there is no surge in products from China to Indonesia. Likewise, regulations must be made with multinational companies to use Indonesian workers when building their industry in Indonesia.

4. Results and Discussion

RCA Product Loser Sector Indonesia at the RCEP Forum

Food and Beverage: The competitiveness of food and beverage products for the RCEP market from 2015 to 2019 is relatively good. Of the five items of HS for food and beverage products, there are 4 that are very good, namely HS 2106, HS 0901, HS 8476 and HS 0902. These four items of food and beverage products have an RCA greater than 1. This means that these products have very high competitiveness in the markets of RCEP member countries. One of them is HS 2106 in the form of food preparations, with an average of 1.51 which means that it has high competitiveness. While two more items, namely HS 8476 in the form of Automatic Goods - Vending Machines have an average RCA in the RCEP market of 6.99 from 2015 to 2019. Likewise, for HS 0901 in the form of Coffee, Whether or not roasted has an average RCA of 3, 86 and HS 0902 in the form of Tea, whether or not flavored has an average RCA of 3.37.

Especially for coffee and tea commodities, these two commodities have not been further processed which have higher added value. As for market access for food and beverage goods, RCEP member countries, especially tea, are mostly exported to New Zealand, China, Australia, and ASEAN countries. Meanwhile, many coffee commodities are exported to South Korea, New Zealand, Japan, China, Australia and ASEAN countries. Two items that have a low RCA are HS 2206 in the form of Cider, Perry, Mead and other Fermented. This commodity still needs strengthening of competitiveness to enter the RCEP market. This strengthening is in the form of increased added value through increased derivative products and increased market access to RCEP member countries. Following are the RCAs for Indonesian food and beverage products in the RCEP market and the world.

Table 1: RCA Food and Beverage

Uraian	2015		2016		2017		2018		2019		Average	
	R	W	R	W	R	W	R	W	R	W	R	W
[2106] Food preparations, n.e.s.	1.69	1.06	1.59	1.08	1.56	1.03	1.42	1.00	1.27	0.93	1.51	1.02
[2206] Cider, perry, mead and other fermented	0.02	0.08	0.01	0.04	0.01	0.05	0.01	0.04	0.01	0.00	0.01	0.04
[8476] Automatic goods-vending machines,	11.10	4.00	8.41	3.18	6.65	2.25	4.50	1.33	4.28	1.49	6.99	2.45
[0901] Coffee, whether or not roasted or decaf	5.40	4.24	3.40	3.69	3.99	3.75	3.20	2.80	3.30	3.27	3.86	3.55
[0902] Tea, whether or not flavoured	4.21	2.05	3.71	1.84	3.34	1.70	3.24	1.66	2.35	1.61	3.37	1.77

Source: UN Comtrade, 2020, processed, R = RCEP, W = World

Animal Husbandry Products: Based on predictions, the export value of Indonesian livestock commodities continues to increase. Moreover, there is a change in the classification of commodities including livestock products based on the Harmonized System (HS) and the Standard International Trade Classification (SITC), the number of commodities that were originally classified as 8 will become 12 commodities. This increase indicates a new industrial growth in the livestock sub-sector so that processed livestock products emerge which are products that are absorbed in the international market, including the RCEP market. Export products that fall into the livestock product category are live livestock, meat, skins, bones and horns. In addition, it includes new commodities, namely feed ingredients, feed and veterinary medicines (Bappenas, 2012). Table 2 shows the RCA for the livestock sector and livestock products. Almost all RCA in the livestock sector is still relatively low or far from 1. Meanwhile, of the 14 HS numbers of goods, some have an RCA of more than 1. These HS include HS 0301 in the form of live fish, which has an average RCA of 1.58 for RCEP and 4.30 for ASEAN. This HS is in the form of fish, and the opportunity to enter the RCEP market is huge. ASEAN countries that absorb the most ornamental fish from Indonesia include Singapore, Malaysia and Thailand. Meanwhile, ornamental fish exports to RCEP countries other than ASEAN are Australia, China, and New Zealand.

Table 2: RCA for Animal Husbandry and Animal Products Sector

Uraian	2015		2016		2017		2018		2019		Average	
	R	W	R	W	R	W	R	W	R	W	R	W
[0203] Meat of swine, fresh, chilled or frozen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[0204] Meat of sheep or goats, fresh, chilled or frozen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[0205] Meat of horses, asses, mules or hinnies, fresh, chilled c	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[0207] Birds' eggs, in shell, fresh, preserved or cooked	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[0208] Birds' eggs, not in shell, and egg yolks, fresh, dried, coo	1.30	2.99	0.61	2.56	0.65	2.06	0.52	1.87	0.13	2.17	0.52	2.33
[0301] Live fish	2.01	3.92	1.57	4.07	1.65	4.07	1.27	3.62	1.41	3.64	1.58	3.86
[0302] Fish, fresh or chilled (excluding fish fillets and other fis	5.79	1.16	3.24	0.75	2.54	0.59	2.00	0.53	2.41	0.67	3.50	0.74
[0303] Frozen fish (excluding fish fillets and other fish meat)	1.26	1.74	1.35	1.99	1.53	2.05	1.12	1.61	1.32	1.93	1.37	1.87
[0304] Fish fillets and other fish meat, whether or not minced,	1.84	2.18	1.94	2.14	1.62	1.95	1.83	2.17	1.74	2.35	1.79	2.16
[0405] Butter, incl. dehydrated butter and ghee, and other fats	0.01	0.01	0.01	0.01	0.07	0.02	0.10	0.04	0.12	0.04	0.06	0.02
[0410] Turtles' eggs, birds' nests and other edible products of	10.40	20.32	12.30	35.00	19.10	42.84	19.70	41.15	26.10	48.83	17.52	37.63
[1603] Extracts and juices of meat, fish or crustaceans, mollus	0.33	0.20	0.41	0.30	0.37	0.24	0.42	0.29	0.73	0.49	0.45	0.30
[1604] Prepared or preserved fish; caviar and caviar substitut	2.07	2.71	1.92	2.60	2.33	2.78	2.76	2.89	2.82	3.16	2.38	2.83
[2301] Flours, meals and pellets, of meat or meat offal, of fish	0.06	0.12	0.09	0.12	0.01	0.02	0.03	0.04	0.20	0.23	0.08	0.07

Source: UN Comtrade, 2020, processed, R = RCEP, W = World

Apart from living fish, there are several export commodities of livestock that are quite good, the average RCA yield is for both the RCEP market and the ASEAN market. These commodities include HS 0302 Fish, fresh or chilled, which has an average RCA of 3.5 and in ASEAN 4.81. In addition, the HS 0303 Frozen fish (excluding fish fillets and other fish meat) has an average RCA of 1.37 and in the ASEAN market 1.56. HS 0304 Fish Fillets and Other fish meat has an average RCA in the RCEP market of 1.79 and ASEAN 1.34. What is very interesting in this sector are livestock products with HS 0410 Turtles eggs, bird's nests and other edible products of the animal. In HS this product has a very high average RCA, namely 17.52 and in ASEAN it is 4.51.

Importing countries for products from HS 0410 are dominated by China and some ASEAN countries. Furthermore, other products that have an RCA of more than 1 are products with HS 1604 Prepared or preserved fish, caviar and caviar substitutes. This product has an average RCA in the RCEP market of 2.38 in the world of 2.83 and in ASEAN of 2.91. Meanwhile, importing countries for this product include China, Japan, South Korea and Australia as well as ASEAN countries. Other products that have an RCA value less than 1, such as HS 0405 in the form of butter, HS 1603 Extract and juices meat and HS 2301 flours, meals and pellets have an RCA of less than 1 for the RCEP and ASEAN markets. These results prove that livestock products have a tendency not to enter the RCEP and ASEAN markets compared to unprocessed livestock products.

Light Industrial Products: Furthermore, 12 items HS, products of light industries, turned out to be products that were still difficult to enter the RCEP country market. Of the 12 items, only 3 HS items had an average RCA greater than 1 for the 2015 to 2019 period. The three HS items were HS 2618, HS 2619 and HS 7106. First, HS 2618 Granulated slag "slag sand" from the manufactures of iron or steel has an average RCA of 1.19. The export market for this product in Australia, which began in 2019. Some have entered the ASEAN market. Second, HS 2619 Slag dross, scaling and other waste from manufactured iron or steel (Slag dross, scaling and other waste made of iron or steel) has an RCA for RCEP countries of 1.92, for the world 1.57 and ASEAN 2, 70. RCEP countries include Japan and China. Third, HS 7106 in the form of silver, including silver plated with gold or platinum, has an RCA in the RCEP market of 1.06, 0.58 for the world and 2.22 in ASEAN. The only RCEP countries importing these goods are Australia and Japan.

Table 3: RCA for Light Industry Products

Uraian	2015		2016		2017		2018		2019		Average	
	R	W	R	W	R	W	R	W	R	W	R	W
[2303] Residues of starch manufacture and similar residues, beet-pulp	0.01	0.02	0.04	0.07	0.12	0.11	0.09	0.10	0.08	0.12	0.07	0.09
[2521] Limestone flux; limestone and other calcareous stone, of a kind	0.00	0.00	0.14	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01
[2618] Granulated slag "slag sand" from the manufacture of iron or ste	0.00	0.10	0.00	0.11	0.00	0.79	0.32	0.79	5.64	2.19	1.19	0.80
[2619] Slag, dross, scalings and other waste from the manufacture of i	2.30	3.11	1.05	1.48	0.99	0.88	2.88	0.96	2.37	1.40	1.92	1.57
[3804] Residual lyes from the manufacture of wood pulp, whether or n	0.01	0.01	0.01	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.01
[7106] Silver, incl. silver plated with gold or platinum, unwrought or ir	1.23	0.49	1.01	0.60	0.89	0.53	1.13	0.60	1.03	0.69	1.06	0.58
[8002] Tin waste and scrap (excluding ash and residues from the manu	2.76	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.05
[8435] Presses, crushers and similar machinery used in the manufactu	0.11	0.04	0.55	0.17	0.17	0.04	0.18	0.04	0.02	0.01	0.21	0.06
[8449] Machinery for the manufacture or finishing of felt or nonwoven	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.05	0.04	0.01	0.01
[8477] Machinery for working rubber or plastics or for the manufactur	0.05	0.05	0.04	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05
[8486] Machines and apparatus of a kind used solely or principally fo	0.01	0.01	0.01	0.02	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01
[8487] Machinery parts, n.e.s. in chapter 84 (excluding parts containir	0.35	0.26	0.50	0.35	0.27	0.19	0.10	0.08	0.22	0.14	0.29	0.21

Source: UN Comtrade, 2020, processed, R = RCEP, W = World

Heavy Industrial Products: Other Indonesian export products are heavy industrial products. Heavy equipment is a large machine designed to carry out construction work such as dredging work, moving building materials and others. Heavy equipment is an important factor in projects, especially construction and mining projects and other activities on a large scale. The heavy equipment industry plays an important role in supporting other business activities, such as in the mining sector, forest land management, infrastructure development, as well as plantations and agriculture. The results of the calculation of the

average RCA for Indonesian heavy equipment industrial products to RCEP countries are still below 1, meaning that the competitiveness of Indonesian heavy equipment industrial products is still low and cannot compete with similar products from other countries. The production of Indonesia's heavy industry includes railroads, trains and their equipment, containers, tractors, the products of the automotive industry (motorbikes, cars), the products of the weaponry industry and others. Of the 21 selected heavy equipment industrial products, there are only 4 products whose average RCA calculation is greater than 1. These products include automotive products, namely first, HS 8702 Motor vehicles for transport with passengers greater than or equal to 10 persons.

The average RCA for this product in RCEP is 1.53 in the world 0.38 and in ASEAN is 1.25. RCEP countries that import a lot of automotive products from Indonesia are ASEAN countries. Second, products with HS 8707, namely Bodies, including cabs, for tractors, motor vehicles, this product has an average RCA yield for RCEP of 1.23, for the world 0.16 and in ASEAN countries of 0.59. The importing countries for this product are Australia and China. Third, products with HS 8708, namely parts and accessories for tractors, motor vehicles, this product has an average RCA yield for RCEP member countries of 1.16 in the world and 0.56 for ASEAN countries. The importing countries for this product include Japan, China and parts of Australia, including ASEAN countries. Fourth, products with HS 8711, namely motorcycles, including mopeds, and cycles fitted, this product has a very high RCA for RCEP countries, namely 7.59, for the world 3.97 and for ASEAN countries at 7.49. Meanwhile, the countries importing this product from Indonesia are South Korea, Japan, China, Australia and New Zealand. By looking at the following table, it turns out that heavy equipment products in the form of automotive have been able to enter the RCEP market, but non-automotive products still need an increase in competitiveness to enter the RCEP market.

Table 4: Heavy Industrial Products

Uraian	2015		2016		2017		2018		2019		Average	
	R	W	R	W	R	W	R	W	R	W	R	W
[8601] Rail locomotives powered from an external source of	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
[8603] Self-propelled railway or tramway coaches, vans and	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.18	0.13	0.04
[8606] Railway or tramway goods vans and wagons (excludir	0.06	0.02	0.06	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01
[8607] Parts of railway or tramway locomotives or rolling sto	0.01	0.10	0.02	0.13	0.01	0.10	0.02	0.14	0.02	0.21	0.01	0.14
[8609] Containers, incl. containers for the transport of fluids	0.18	0.11	0.11	0.09	0.66	0.29	0.06	0.05	0.11	0.08	0.22	0.13
[8701] Tractors (other than tractors of heading 8709)	0.06	0.08	0.17	0.16	0.29	0.17	0.22	0.13	0.13	0.18	0.17	0.14
[8702] Motor vehicles for the transport of >= 10 persons, incl	1.96	0.47	1.40	0.37	1.84	0.49	1.97	0.44	0.49	0.12	1.53	0.38
[8703] Motor cars and other motor vehicles principally desig	0.49	0.39	0.83	0.40	0.89	0.43	0.91	0.46	1.25	0.58	0.87	0.45
[8704] Motor vehicles for the transport of goods, incl. chassi	0.40	0.15	0.34	0.11	0.23	0.07	0.28	0.08	0.28	0.08	0.31	0.10
[8705] Special purpose motor vehicles (other than those pri	0.14	0.05	0.08	0.04	0.08	0.08	0.12	0.05	0.08	0.04	0.10	0.05
[8706] Chassis fitted with engines, for tractors, motor vehicl	0.01	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01
[8707] Bodies, incl. cabs, for tractors, motor vehicles for the	0.07	0.04	1.35	0.19	2.37	0.29	1.42	0.12	0.95	0.13	1.23	0.16
[8708] Parts and accessories for tractors, motor vehicles for	1.23	0.58	1.21	0.61	1.12	0.56	1.13	0.56	1.10	0.49	1.16	0.56
[8709] Works trucks, self-propelled, not fitted with lifting or	0.42	0.20	0.99	0.33	1.28	0.40	0.23	0.10	0.25	0.13	0.64	0.23
[8710] Tanks and other armoured fighting vehicles, motorise	0.00	0.01	0.00	0.09	0.07	0.04	0.00	0.10	0.01	0.01	0.02	0.05
[8711] Motorcycles, incl. mopeds, and cycles fitted with an a	3.99	2.44	4.90	2.73	6.62	3.58	9.89	4.78	12.5	6.30	7.59	3.97
[9306] Bombs, grenades, torpedos, mines, missiles, cartrida	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00

Source: UN Comtrade, 2020, processed, R = RCEP, W = World

Strategy for Strengthening the Competitiveness of Product Loser Sector RCEP Forum: Strengthening and strategies to increase the competitiveness of loser sector products to enter the market for the RCEP cooperation forum is closely related to government plans and actions. Strategies for strengthening the competitiveness of each loser sector product include the following:

- Continue to identify market access in RCEP partner countries periodically.
  The government should continue to periodically identify market access and provide information on new market access for RCEP partner countries to domestic industries. In addition, it continues to provide various facilities and facilities to enter partner country markets. Another thing is to optimize the duties and functions of the economic attaché representatives of the Government of Indonesia in RCEP partner countries to carry out an intelligent economy, especially product information and

market access in RCEP member countries. Thus, the acquisition of data and information can become a picture of the demand for and access of the relevant domestic market.

- Conducting export dissemination and assistance to industrial player's / product loser sector businesses
  This activity is carried out to provide information to domestic industry players, especially the loser sector, to choose various FTA schemes offered from the results of the RCEP agreement, especially those that can provide market access to increase the export of their products. Including, it is necessary to understand the Product Specific Rules and other FTA provisions to take full advantage of the FTA and realize it. Such as the problem of applying tariffs and non-tariffs (NTMs), among others, anti-dumping (ADP), countervailing (CV), quantitative restrictions (QR), safeguards (SG), sanitary and phytosanitary (SPS), special safeguards (SSG), technical barriers to trade (TBT), tariff-rate quotas (TRQ), and export subsidies (ES).
- Encouraging increased competitiveness of the product/industry loser sector
  The form and action of increasing competitiveness are by encouraging continuous improvement in the quality and specialization of products and encouraging the use and availability of domestic raw materials, including the provision of fiscal incentives. Therefore, it requires product standardization which is a requirement that must be carried out by domestic industries.
- Conduct periodic intensive coordination with stakeholders
  Encouraging the active role of domestic industry players to file a Trade Remedies petition if there is an indication of unfair trade and a surge in imports that causes the potential for serious injury. Various business associations and forums need guidance and coordination.
- Carry out repairs or reforms of the bureaucracy to get smart regulation.
  The need for cooperation between the Government and stakeholders related to the formulation of regulations, policies and business systems, especially the loser sector products. This is useful for producing smart regulations so that an influx of imports can be anticipated, especially as a result of the escape of imported products due to the pretext of Non-Tariff Measures (NTMs) from partner countries.
- The need for regulatory harmonization
  Policy Adjustment is one step to anticipate the impact of RCEP implementation. Relevant institutions such as Ministries and Agencies always harmonize existing regulations, including immediately evaluating regulations if they are not effective in their implementation to encourage the competitiveness of loser sector products.

5. Conclusion and Recommendations

The results of the above discussion conclude that the average RCA in the 2015-2019 period for the food and beverage product sector mostly has high competitiveness in the RCEP market. Meanwhile, the average RCA for livestock products, light industrial products and heavy industrial products has low competitiveness. However, there are several product items (HS 4 digits) that have relatively strong competitiveness in the RCEP market such as tea, coffee and snack products. For livestock products such as live pig, fish, lobster, shrimp, tuna, squid and others. Light industrial products were handicraft items covered in silver and gold. Meanwhile, heavy industrial products such as automotive industry products are motorized vehicles. Most of the four product sectors still have an average RCA below 1, which means that their competitiveness is still relatively low. Therefore, these products still need to be strengthened in competitiveness to enter the market for RCEP members.

To increase the competitiveness of the four loser sector products to the markets of the RCEP forum partner countries, a strengthening strategy is needed. The strategic steps to strengthen competitiveness include increasing exports through coordination of the Government and business actors, mentoring and identifying market access in RCEP partner countries periodically. In addition, the role of Indonesian government representative institutions in partner countries continues to be optimized as economic intelligence. Another thing is to continue to improve the quality and specialization of products and encourage the use of domestic raw materials through several fiscal incentive facilities. Likewise, it continues to improve business efficiency through the provision of various facilities and a conducive business climate by continuing to carry out bureaucratic reforms and harmonization of regulations so that smart regulations will be created.

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An Evil to be Extinguished or a Resource to be harnessed-Informal Sector in Developing Countries: A Case of Zimbabwe

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Abstract: The informal sector remains a permanent feature of all economies. It is a more pronounced component of developing country economies where it is an integral part. Literature on economic development offers diverging viewpoints on the sector's contribution to economic growth. On the one hand, researchers view the sector with positivity as a resource to be harnessed, capable of growth and innovation and on the other hand with negativity as a pure survivalist strategy and a stumbling block to effective policy formulation and economic development. Therefore as an inconvenience to be extinguished. The ambivalent view is further compounded by the sector's paltry contribution to national tax revenues and as such, the IS has remained unappreciated and largely on the peripheral of economic reviews and policy responsiveness. The former view suggests that the latter is a misconception and narrow recognition of the sector as merely survivalist and contributing negligibly to employment creation and poverty alleviation efforts. Failure to recognize a coexistence of both street traders and firms with potential for growth, improved productivity and innovation, has consequently resulted in misguided policies. Policymakers pay little or no attention to the potential of informal sector firms, the challenges they face, the vulnerability they are exposed to and the appropriate support they require. This gap motivates this paper, as it seeks to explore the role played by the IS in developing countries with a special focus on Zimbabwe. The study employs a mixed-method research design. The research established that the sector remains unequivocally a major source of employment for many developing countries. It also established that a single-minded focus on formalizing the sector, linked to registration for tax purposes, ignores the other arm to the equation that is the creation of job opportunities, hospitable working conditions, improved productivity and increased profits which are possible with adequate policy support. The research recommends improved policy research and support which is development focused to aid informal firms to grow and be independent institutionally and financially from their owners as well as skills capacitation to improve operational and financial management.

Keywords: *Informal sector, innovation, poverty alleviation, employment, policy.*

1. Introduction

The informal sector (hereafter IS), is viewed as an integral component of developing countries' economies. It is said to be occupying a pivotal role in African economies, representing a substantial piece of cake of the gross domestic product, pegged at 50 to 80% (GDP), a weighty share of economic activity estimated at more than 50%, a considerable slice of employment at around 70-90% and an extensive composition of firms (Bhorat, Naidoo, & Ewinyu, 2017). Despite its predominance, "systematic studies of the IS in Africa are few and some important dimensions are not well understood" (Benjamin & Mbaye, 2012). Literature on informality offers diverse views on the informal economy's impact on economic development. Some scholars proclaim that it promotes the development and economic growth ((La Porta & Shleifer, 2014; Udoh), is a major resource for developing nations (Tanzanian Revenue Authority, 2010) and the biggest source of employment in African economies (Benjamin & Mbaye, 2020), yet others attest to the contrary.

The researchers argue that the sector has negative implications (Mpapale, 2014; Kristoffersen, 2011; Maconachie & Conteh, 2021). The general opinion according to Banik (2011) is that the existence of an informal economy hampers the development of countries. Enquobahrie (2004) however, avows that the informal sector should be recognized as a significant socio-economic force that should be reckoned with, in the development process, particularly in poverty alleviation efforts and job creation in developing countries. In affirmation, Average (2020) describes the sector as "a seedbed for economic development". Cichello and Rogan (2016) affirm the prevalence of the "controversial" view of the IS as a second economy depicted by poverty and lack of development, including being structurally detached from the formal one. They allude to the failure to recognize the importance of the sector in South Africa (SA) as a source of employment, sustenance for livelihoods and poverty reduction. The researchers point to the role of the IS being under-

recognized and not only in SA but in other developing nations as well and Sub-Saharan Africa (SSA) in particular.

This under-recognition has led to policy gaps and misguided policies towards the IS as policy responses often overlook this sector or are sometimes hostile (Cichello & Rogan, 2016; Rogan, 2019). Pimhidzai and Fox (2011) allude to the fact that SSA countries hold a negative view towards the informal sector, often to the detriment of policy prescription. Policymakers are generally neglecting the sector's irrefutable contribution to economic development, poverty reduction and people's survival as well as household incomes. Fourie (2018) concurs on this concern, asserting that the IS has remained unappreciated and largely on the peripheral of economic reviews and policy consciousness. Blaauw (2017) notes that the unrecognized, main feature of the informal economy is that, it can play a vital role in unlocking entrepreneurial potential which could otherwise be trapped and suffocated in a net of formality. Despite the notable positive contribution of the informal economy, other researchers maintain that the IS has far-reaching negative consequences on economic development. Most of the activities associated with the informal economy generate insufficient income for the participant to support the family.

Some researchers argue that the sector's expansion impedes the quality of work, goods and services in society and creates unfair trade competition against the formal sector. The sector results in loss of taxes due to non-payment of taxes by the IS, increased non-compliance by the formal sector in response to the ballooning IS and hinders the availability of statistics for policy formulation, (Mpapale, 2014; Kristoffersen, 2011). As proclaimed by Mazhar and Meon (2017), the inability to tax the informal economy "erodes the tax base" and reduces tax revenues collected, thus compromising the government's power to finance public expenditure. Schneider (2002) affirms that the sector is an extortionate constricting of the tax base and a likely misrepresentation of economic activity. The informal sector commonly exceeds 40% of GDP in developing countries and Zimbabwe has the second-largest IS in the world estimated at 60.6% of GDP (Medina & Schneider, 2018). These statistics signify that a greater proportion of output goes untaxed as it continues to be unrecorded or undeclared. Such erosion of the tax base consequentially impacts negatively on government finances. The paradox is, therefore, how to exploit, promote and harness the positive elements in a way that attempts to mitigate the undesirable consequences of the IS.

Earnings also tend to drop as participants move closer to subsistence level activities (Viljoen, 2014). The implications of IS growth for economic policy have continued to be a fundamental concern for policymakers, attracting considerable theoretical interest and recurring in debates in recent years, with disparate perspectives (Emran and Stiglitz, 2005; Jackson, 2012; Kamete, 2020). The varying viewpoints could be linked to developed and developing country platforms where perceptions towards the IS differ as observed by Munjeyi (2017) citing Gurtoo (n.d). Developing countries perceive the IS as a discreditable phenomenon to be eradicated yet developed countries view it as an asset to be drawn on, supported and harnessed for economic development (World Bank, 2011). Jackson (2012) adduces that the informal sector is important in the skills development and provision of employment in emerging economies, yet it remains understudied at household, individual and firm-level. The ambivalent policies and attitudes towards the IS in developing countries are not enabling the crafting of appropriate policies and strategies (Moyo & Gumbo, 2021; Pimhidzai & Fox, 2011; Potts, 2008) towards " employment, employability and skills development as well as longer-term stainable human development" in the sector (Jackson, 2012:2902).

Unraveling this puzzle places paramount weight on the need to explicate the impact of informality on the economy and contextualize it to developing country and continent contexts as well as individual national settings. In recognition of the perpetual growth, prevalence and the permanent nature of the IS phenomenon, researchers and policymakers are implored to take a closer look at the value, importance and contribution of this sector to economies especially in a developing country context like Zimbabwe. Failure to acknowledge the contribution of the IS to socio-economic growth, revenue mobilization and in other areas would result in misdirected and misguided macro-economic policies. Khavul, Bruton, and Wood (2009:1220) state that economic informal activities remain pivotal to all economies in the world and more so in African economies where they are a predominant feature, but the activities remain largely unexamined. Accordingly, Oviedo (2009) proposes that policy packages need to be adapted to the nature of informality in a country. In some countries, regulatory reform might be more appropriate, while in others enforcement and administrative or

tax reform might be in order, hence the need to contextualize the problem in developing country context such as Zimbabwe.

This paper explores the role of the IS in developing country contexts and the Zimbabwean economy particularly. The second section of this paper reviews the literature on the growth, drivers and implications of the IS. It outlines the nature, size and growth of the informal sector in developing countries and in Zimbabwe, to show the magnitude of this sector. The section also briefly explores the drivers of informality in developing countries as well as the role and importance of this sector, to evaluate the emergence and growth of this sector against its implications for policymakers. Section 2.3 discusses the contribution of the informal sector to livelihoods, employment creation and economic development in developing countries and Zimbabwe in particular, which is often a subject of controversy amongst researchers and policymakers. Section 3 describes the methodology used for data gathering while section 4 discusses the findings of the study. The last section concludes and proposes possible recommendations.

2. Literature Review

Informal Sector in Developing Countries (Nature and Magnitude): There is no consensus on the definition, meaning, nature, magnitude, composition and roles of the IS among researchers, despite numerous researches on the IS (Dube & Casale, 2016). Various definitions have been given to this sector and these have had policy implications too. For example, others define the sector as an informal economy, the shadow economy, the underground economy, the hidden economy, the cash economy and the second economy among other names (Becker, 2004; Joshi, Prichard, & Heady, 2013). Some researchers define the sector as one whose statistical data is not obtainable easily and with economic activities and incomes neither registered nor captured in the tax net**,** yet others argue that only defining the sector in relation to registration and tax payments is a narrow definition of it (Joshi & Ayee, 2008; Meagher, 2018; Pimhidzai & Fox, 2011). Tatariyanto (2014) argues that the IS exists mainly to evade paying taxes from incomes emanating from both legitimate and illegal activities and deliberately do not comply with regulations. Becker (2004) posits that due to its heterogeneity the sector can be categorized by way of two definitions. Firstly, by economic activity (as the sector made up of producers of goods and services with the main aim of generating employment and subsistence incomes for those participating. These activities are small-scale and with little capital. Lastly, by income and employment enhancing likelihood.

This definition includes enterprises that are operating in the IS and can potentially be substantial contributors to national income, economic growth and wealth generation. This class includes individuals who operate in the sector for survival reasons due to low barriers to entry, low capital requirements as well as those that are formally employed but due to low and irregular salaries, they operate informally to supplement the consequence of these controversies and contradictions has been the need for a more contextualized understanding and research that recognizes the informal sector can be burgeoning and growing rapidly in some countries and declining in some (Becker, 2004). The resultant effect is varying policy prescriptions. The IS in Zimbabwe has been growing rapidly in view of declining formal activities and has become the largest employer. The Zimbabwe Economic Policy Analysis and Research Unit and Bank Association of Zimbabwe (Zeparu & Baz, 2014) state that like many other countries in Africa, Zimbabwe's IS comprises of predominantly trade-related activities that account for 51.9%, whilst manufacturing and construction accounts for 16.7% and the remaining percentage being other services. The informal sector has been used to describe activities that escape the tax net, regulation as well as official measurement. Zimbabwe's IS activities include hairdressing, tailoring, wood and stone carving, welding.

Carpentry and other activities that require less capital and marginal input such as construction, farming and manufacturing (Dube & Sanderson, 2014; Njaya, 2015). According to the ILO (1972:41), IS activities are neither taxed nor monitored by regulators. Researchers have agreed on the characteristics of the IS activities to include low capital and labor, small scale operation, labor-intensive, low technology, easy entry, high level of competition, limited capacity for accumulation, unreported and unrecorded revenues and unregulated activities (Dube, 2014; Jackson, 2012). These activities include activities carried out by Micro, Small and Medium Enterprises. Dalu, Maposa, Dalu, and Pabwaungana (2013) suggest that Zimbabwe's IS could be among the largest in Africa contributing 40 to 50% to GDP and with an estimated $7 billion circulating in this

sector between 2010 and 2014. When studying more than 158 economies around the world, Medina and Schneider (2018) conclude that Zimbabwe and Bolivia have the largest informal economies contributing 60.6% and 62.3% of GDP respectively. Referring to a Finscope Micro, Small and Medium Enterprises (MSME) Survey (2012) which established that there were 3.5 million MSMEs with an estimated turnover of US$7.4 billion or 63.5% of GDP and employed 5.7 million people in Zimbabwe, Ndiweni and Verhoeven (2013) affirm that the level of informality in Zimbabwe is undisputedly high.

Drivers of Informality and their Theoretical Framework in Developing Countries: Researchers point out the need to theorize the drivers of informality as an underpinning for effective designing of policies towards addressing the informal sector. For example, Wedderburn, Chiang, and Rhodd (2012) state that, "it is essential to first understand the size of the informal economy and the sources of its growth to develop a rational, enforceable tax system". Equally the consequences of informality on the economy can be traced back to the motivations for operating in the IS. A number of theories have been propounded to try and anatomize the emergence and growth of the informal economy (Chen, 2012; Wilson, 2011). Most scholars theorize four broad approaches to studying the source, dynamics and persistence of the informal economy and these are: the dualist approach by Lewis (1954) and Hart (1973), the structuralist approach (neo-Marxist perspective), the legalist (neoliberalist school of thought) by De Soto (1989) and the continuum approach by Maloney (2004). It will be quite inadequate to explore the implications of the emergence and growth of the IS for developing economies (its role, evaluate whether it's a resource or an inconvenience to economies) and Zimbabwe in particular, without fully comprehending what drives informality. Several reasons for the emergence and growth of the IS have been tabled by researchers and these have been accordingly linked to the IS development theories. Jackson (2012) contends that the IS growth is driven by: limited capacity of the formal sector to absorb surplus labor.

The barriers to entering or operating in the formal sector (such as high costs, stringent government regulations, taxes and corruption), redundancies due to the effects of structural adjustments programs that took place around the early 1990s and globalization. The researcher also includes the lack of commitment and willingness of developing countries' governments to address the IS as well as the economic challenges and hardships. Schneider and Williams (2013) attribute the growth of the IS in developing countries to the rootless nature of the businesses in the sector, onerous tax and social security burden, the complexity of tax systems, formalization costs, the prevailing social and economic conditions, quality of government institutions and government spending. Gerxhani (2004) attributes the emergence and growth of the sector to low tax morale, weaknesses in tax collection and the low probability of detection due to fragile tax administration capacity in developing countries. Despite the varying submissions on what drives the IS in developing countries, the different researchers' arguments seem to revolve around unfavorable economic conditions, poverty, the high tax rates and social security burdens, weak tax administration, government spending that is neither responsible, transparent nor accountable as well as high costs of formalizing and other regulatory burdens. It is important to point out that these reasons sometimes do not perfectly fit in IS growth theories, some might be overlapping in the various theoretical perspectives or do not fit at all in any of the theories. The general theorizations as crystallized theories pointed out earlier are briefly expounded on below.

The Dualist Perspective: In the dualist approach the informal economy is viewed as independent from the modern industrialist sector; marginal and subsistence-oriented, offering a safety net to low-skilled (poor) rural to urban migrants seeking to earn a living in any way they can (Hart, 1973) (ILO, 1972). As posited by Lewis (1954), the informal sector was theorized as a phenomenon that is expected to slowly shrink, fade and eventually become invisible due to the development and modernization of the economy. According to Onwe (2013), this school of thought considers the existence of the IS as a signal for underdevelopment. This viewpoint of the informal economy as just a passive homogeneous entity, overlooking the peculiarities and dynamics within it is an oversight and misguided conceptualization that has contributed to inappropriate analyses and incorrect policy planning and implementation. Wilson (2011) argues that in practice, the dualist description is misleading as evidence shows an array of firm types from the most informal to the wholly formal and, businesses often moving along this continuum, some striving for formalization, with others falling into informality.

Reiterating this concern the African Union (AU) (2008) pose the question, whether the IS should be viewed as "a marginalized 'survival' sector that mops up excess labor or the retrenched workers or a part of a vibrant and growing entrepreneurial component of the economy which has the potential to stimulate economic growth and job creation. In acknowledgment, Onwe (2013) avers that the perception that activities in the IS are merely survival and not worthy of being a subject for consideration under the economic policy should be replaced with the recognition that the sector includes both survivalist activities as well as dynamic, growing and stable enterprises (a continuum referred to by Maloney (2004). This view was also raised by Potts (2008) who points out that "conceptualization of the informal sector in terms of economic dualism has a long history as having effective challenges to those conceptualizations". The researcher further warns that the sector neither is backward nor peripheral to the formal sector but rather an essential part of it and arguing for completely extinguishing or formalizing it is rather misconceived. Concomitantly, the policy approach should focus on support, empowerment and enable the sector. Economic policy should adequately and earnestly take cognizance of the needs and constraints of those in the sector (Fourie, 2018).

The Structuralist Perspective: The structuralist approach stresses the linkages between the formal and informal economies and emphasizes that the latter is included and exploited by the former. It focuses on the informal economy as a product of privileged capitalists attempting to reduce the costs of production by hiring informal labor and subordinating small and micro businesses (Blaauw, 2017). Contrary to the structuralist view that considers the IS subordinate to the formal one, Onwe (2013) adduces that the IS does not exist independent of the formal economy but instead it is closely connected to the formal economy as the sector produces goods and services, trades with and distributes for the formal economy. The IS aids in risk management, the supply of inputs and cost reduction ways to the formal sector hence an important element of the modern economy. Therefore the sector indirectly contributes significantly to economic growth, despite arguments that it does not contribute to economic growth.

The Legalist Perspective: The legalist approach views the informal economy as a reasonable response to overregulation in the formal economy. The argument is that informal operators as rational actors weigh the costs and benefits of operating in the IS and chose to operate informally and the costs of operating formal such as burdensome and onerous regulation such as license fees, registration and taxes including paying pensions, development levies and other social security burdens(Becker, 2004; Chen, 2012). Wilson (2011) described it as a view of the informal economy as a breeding ground for emerging entrepreneurs, constrained only by discouraging and unnecessary legislation to venture into the formal sector. The micro-entrepreneurs opt-out of the overregulation of business by the government by going informal.

Continuum: Pimhidzai and Fox (2011) allude to the fact that the different theorizations that explain informality (legalist, structuralist and dualist) are not entirely divergent. They argue that there may be a co-existence of the tax evaders, the genuinely marginal and subsistence and those that have been sub-contracted by the formal sector. It is apparent from the literature that in some countries the IS has small and erratic incomes (Hart, 1973; Pimhidzai & Fox, 2011) while in some countries the large informal firms are big enough to be formal exist (Benjamin & Mbaye, 2012). The coexistence points to informality being a continuum that cuts across several dimensions and theories. A number of researchers documented this continuum (Benjamin & Mbaye, 2014; Gajigo & Hallward-Driemeier, 2012; Perry et al., 2007). In view of the co-existence perhaps a once size fit all kind of policy prescription would not be ideal. Policymakers should consider how to support and grow the small firms and accordingly make efforts to bring the large informal firms that are formal in all dimensions but evade tax.

The Role Played by the IS in Developing Countries. A resource or Inconvenience?: Contrary to the economic situation in developed countries where the formal sector is the backbone of the economy, in developing countries especially African countries the formal sector plays a limited role and is confined to cities and towns (Dlamini & Schutte, 2020). In these developing countries, the majority of the population is rural-based hence they depend solely on the IS (Haan, 2006; Fox & Gaal, 2008). The informal sector contributes 30-40% of total rural income as advanced by Steel and Snodgrass (2008) and provides the youth in developing countries with employment (Fox, Senbet, & Simbanegavi, 2016). There is no unanimous view or consensus on the role, impact or contribution of the IS to the economy of developing countries (Onwe, 2013; Machemedze et al., 2018). Others hold the perspective that it promotes illegal and fraudulent activities that

rob economies of the much-needed tax revenues, encourages unfair competition, results in a loss of regulatory control and infringes on government legitimacy. The IS threatens the security of economies (especially with shadow activities such as dealing in drugs and human trafficking) and violates the health and safety standards of nations (Bongwa, 2009).

On a different perspective, others hold the IS as a consequential source of employment creation, an accessible market and a provider of goods and services for low-income earners at affordable prices. In affirmation, the Bank of Industry points out that sustainable and inclusive economic development, as well as employment creation, cannot afford to overlook the potential, peculiar requirements and constraints of the IS. The debate on the IS rages on with others considering an under-utilized source of employment that must be enabled (Cichello & Rogan, 2016; Fourie, 2015, 2018), yet other scholars consider it an inferior source of employment (Potts, 2008). Hassan (2018) asserts that discussions about the role of the IS in the economy and the need to formalize it often ignore the development policy and social interests of the weaker power base of those in the IS. It is imperative to adequately comprehend the dynamics of the sector and how to maximize its potential and mitigate the possible negative impacts of the sector. Cassim, Lilenstein, Oosthuizen, and Steenkamp (2016) assert that informality might promote inclusive growth or may constrain inclusive growth depending on the nature of informality as well government support given to the sector.

Muzenda (2016), while investigating whether the IS can be used as an engine for sustainable development, in Zimbabwe, states that the renewed interest in studying the IS, its impact and contribution to the economy and society in developing countries is key in policy design and implementation. This is because the sector constitutes a very significant part of the countries' macroeconomic environment. In the same line of thought ZEPARU and BAZ (2014) contend that the Zimbabwean economy has gone through a structural transformation in the past decade that saw the IS occupying a prominent position in the economy. This transformation implies that traditional businesses models and economic policies need to be revamped to adopt new mechanisms that are best able to recognize the importance of the IS in economic growth and development, job creation, GDP, taxation and poverty alleviation. Controversies and contradictions have emerged especially on the sector's potential contribution towards development, poverty reduction, employment creation and above all tax revenue (IMF, 2012:12). Therefore in light of this, discussion on these key elements that form the born of contention in debates on the impact of the IS are discussed individually below to lay a foundation for empirical research.

Contribution to Employment Creation: The role of the IS in employment creation is debatable among researchers. Fourie and Kerr (2017) describe the IS as a source of livelihood, subsistence income and employment for millions of people in developing economies, yet Debrah (2007) though acknowledging this role, considers informal employment as an unemployment window dressed as employment. This is because working conditions are generally unfavorable in this sector. Chen (2012) approximates informal employment in Sub Saharan Africa (SSA hereafter) at 72% excluding the agricultural sector. Adom and Williams (2014) observe that in Ghana the main source of employment is the IS. In Uganda, Fox and Pimhidzai (2011), as well as Pimhidzai and Fox (2011), argue that the IS should be appreciated as an important source of livelihood, accounting for an increasing share of employment and output in SSA and Uganda. The case is similar in Zimbabwe to the other African countries mentioned, as without doubt arguably the IS plays a crucial role in employment creation. It is the largest employer in the country (Dube & Sanderson, 2014; Dube, 2014; Muzenda, 2016; Njaya, 2015). The IS acts as a safety net for the thousands of retrenched Zimbabweans both skilled and unskilled. This is evidenced by the burgeoning IS during ESAP, the land reform program.

The Indigenisation and Economic Empowerment Act and ultimately in times of economic meltdown in Zimbabwe (Coltart, 2008). This was because the formal business had been highly crippled during this time due to poor economic growth rates, inadequate capital and shortage of foreign direct investment. In Zimbabwe, almost 90% of the population is informally employed. The informal sector absorbs vulnerable groups such as women in most African countries (Benjamin & Mbaye, 2014; Ligomeka, 2019). ZIMSTAT (2015) found that 2.8 million small businesses created 5.7 million jobs and medium-sized businesses created 2.9 million jobs. Rahin (2015) avows that the IS contributes favorably to employment generation, poverty eradication and provision of a seedbed from which future taxpayers can join the formal sector. Despite the sector playing such a tremendous role in employment creation, there has been no consensus amongst

researchers about the role of the IS in stimulating broader economic development through that employment (Debrah, 2007; Ndiweni & Verhoeven, 2013; Kamete, 2020). Others relegate the IS to low productivity employment, survivalist strategies with little contribution to economic development (Ebeke & Ehrhart, 2012; Hart, 1973) Debrah, 2007 and others upgrade it to a true contributor to unemployment reduction and creation (Fourie, 2018; Pimhidzai & Fox, 2011). The ILO (2013) submits that the large portion of the world's workforce that is operating in the IS are often engaged in indecent work.

Low-quality jobs, poverty, low productivity and are confronted with exclusion and discrimination as well as insecurity and vulnerability in the labor market. Re-affirming the unfavorable perception on jobs generated in the IS, Theodore et al. (2015) argue the IS enterprises do not uphold legal and fiscal regulatory requirements such as quality standards, health and safety expectations, intellectual property and copyrights as well as fiscal obligations. In Zimbabwe researchers on informality agree on two important facts and these are: (1) the IS employment is characterized by indecent work at times, unsafe and precarious work, lack of regulation and social security, irregular incomes which are low and lack of legal and regulatory protections for both workers and owners. (2) The recognition that despite the vulnerability of the sector, it indeed employs the majority of the Zimbabwean populace and requires due recognition by the government as such policymakers need to view it with a non-antagonistic lens (Dube & Sanderson, 2014; Dube, 2014; Mbiriri, 2010; Muzenda, 2016). Jobs in Zimbabwe's formal sector have been exhibiting negative economic growth whereas those in the IS have shown positive economic growth. Government and policymakers need to accept the meaningful contribution that this sector makes to employment creation and help nurture the sector to help it contribute more.

To economic growth and development as well as to tax revenue mobilization. Mbiriri (2010), brings out yet another interesting angle on the IS and employment literature that despite the IS having a low resource base, being labor-intensive and using adapted technology, with experience over time, the enterprises and individuals in the sector are likely to expand, employ and train more people. Adom and Williams (2014) further buttress this point by alluding to the fact that the IS contributes greatly in the training of the labor force in the acquisition of artisanal skills (traditional apprenticeship system), laying an indigenous base as a foundation for industrialization. Haan (2006) contends that about half of the IS workers in Kenya, Senegal, Tanzania, Zambia and Zimbabwe have either no education or primary education and at times only 5% have tertiary education. Therefore most of these people do not meet entry requirements into colleges and universities hence it is nearly impossible to get formal training creating a skills gap that is filled by the IS. Sometimes also formal training in colleges is said to be too theoretical focused, lacking sufficient practice opportunities, too rigid and standardized to meet the multi-skilling needs of the business environment and such shortcomings are addressed by the IS (Haan,2006; Fox and Gaal, 2008; World Bank, 2008).

The traditional apprentice is undoubtedly a great component of skills transfer and development in Zimbabwe. This is also affirmed by Magidi and Mahiya (2021) who avow that the IS contributes through vocational training, soft skills development (bargaining or negotiation and conflict resolution) as well as entrepreneurial skills development such as marketing, budgeting, costing and sales and customer care. The IS also increases the pace of innovation, as in some cases small innovative companies are purchased by large companies who take advantage and invest in the innovations, produce and market the products. There is no doubt that the IS in developing countries, in Africa, SSA and Zimbabwe in particular contributes immensely to production, consumption and employment creation as well as income generation. In addition, it is a source of survival and a safety net for the poor and the unskilled in countries where formal jobs are scarce or formal sector growth is stagnant. Haan (2006) studying the contribution of the IS to employment creation in SSA provides evidence in Kenya, Zimbabwe and Tanzania that a large number of the youths acquire skills in the IS under the guidance of the master. In Kenya 40-60% of youths acquire their skills through traditional apprenticeship.

Erosion of the Tax Base: The presence of a huge informal sector in developing countries and African countries particularly, has been linked to the erosion of the tax base (Kundt, 2017; Rogan, 2019; Sebele-Mpofu & Mususa). Therefore there is no denying that the IS alleviates poverty and the suffering of many, ultimately contributing to growth and development in developing country context. The avoidance or failure to honor their tax obligations and security payments by the IS has arguably narrowed the tax base of most developing countries, pushing the tax burden to the formal sector, hence disproportionately taxing formal

enterprises (Joshi, Prichard, & Heady, 2014; Makochekanwa, 2020; Pfister, 2009). The informal sector is posited to contribute insignificantly to national tax revenues in most developing countries. The sector is said to be driven by tax evasion (Joshi et al., 2014). The Tax Justice Network (TJN), (2011) approximates tax losses due to tax evasion at 5% of the world's GDP, 40% of total tax revenues and 6% of GDP in Africa and 17% of total tax revenues and 4% of GDP in Asia. Auriol and Warlters (2005) assert that the tax loss due to informality in developing countries is often exaggerated as some important dimensions are often overlooked, especially the fact that the IS contributes to value-added tax (VAT), through their purchases of inputs, goods and services from the formal sector but unlike the formal sector that claims input tax, the IS enterprises do not.

This view is shared by Fourie (2018) in South Africa and reiterated by Dalu et al. (2013) who portend that the IS contributes to the household incomes of the majority of Zimbabwe, who in turn contribute to VAT through their purchases, hence the sector contributes indirectly to the tax basket. Alm, Martinez-Vazquez, and Schneider (2004) expostulate that the economies characterized by a high level of informality are generally associated with lower tax compliance levels in the formal sector. Pimhidzai and Fox (2011) submit that the view that depicts the IS as tax evaders is rather misguided and ambivalent as the sector pays tax though not to the national government but to local authorities. The sector contributes to government revenues through various payments and levies such as licenses fees and other operating levies. In addition to already contributing to tax, incomes in the IS are generally very low, unstable and for some places seasonal, implying that some of the incomes are below the incomes tax and valued added tax thresholds. This explains that some players might not necessarily evade tax but the level of their incomes and taxable supplies respectively make them exempt from tax. This view was shared by Meagher (2018) in Nigeria and Ligomeka (2019) in Zimbabwe. Sebele-Mpofu (2021) attributes the non-tax compliance in Zimbabwe's IS to the fractured social contract between the state and its citizens.

The failure by the government to be responsive, accountable and transparent in the use of tax revenues diminishes tax morale and trust in the state. Thus fuelling informality and non-tax compliance. Benjamin and Mbaye (2012), though acknowledging the low incomes levels in the IS they point to the presence of large informal firms that are as big as formal firms and have similar operations as these formal firms except that these evade tax. Maloney (2004) and Adams (2008) allude to an influx of the educated, highly skilled and professional such as lawyers, doctors, consultants, engineers and others into the IS due to the potentially high incomes and flexibility of operating in the sector. From the arguments from literature as tabled by different researchers, it is apparent that the IS in some developing countries is a continuum that houses both the low-skilled and highly skilled that operate in the sector because of survivalist needs and by choice respectively. Accordingly, policy prescriptions must recognize the two scenarios and customize policy strategies to the needs and constraints of the sector. Joshi and Ayee (2008) suggest that defining the IS purely based on registration for taxes and formalization ignores important issues.

The focus should not be so much on registration for tax purposes but largely on the constraints to growth and modernization such as limited access to infrastructure and public services such as training and empowerment, in areas such as finance and accounting as well as risk management and marketing. Sebele-Mpofu and Msipa (2011) submit that developing countries' governments should try to understand the challenges affecting tax compliance in the IS (such as low incomes, low tax morale, inadequate tax knowledge, poor government-stakeholder engagement, high tax rates, complexity and multiplicity of taxes among others) and ameliorate to improve the sector's contribution to tax revenues. Meagher (2018) calls for the restoration of the social contract that is damaged and for the need for stakeholder engagement on policies affecting the growth, operations and revenue contribution of the sector. Similar sentiments are raised by Machemedze et al. (2018) who argues that in Zimbabwe the IS needs are ignored by the government, dialogue and engagement are lacking.

Poverty Alleviation: Pimhidzai and Fox (2011) lament the "ambivalent" attitude displayed by governments in SSA and the body of literature on employment and economic development towards the IS. The researchers argue that the role played by this sector towards economic development and poverty reduction is often disregarded. Providing evidence in Uganda, they show that the sector is an indispensable part of people's livelihoods and a major driver for poverty reduction (Fox & Pimhidzai, 2011). The negative perceptions

towards the IS are evident in the actions of some African countries through their efforts to extinguish the sector. For example, in Kenya and Zambia in the 1990s and in Zimbabwe in 2005 through the government operation Murambatsvina (get rid of dirty) that led to demolishing of informal businesses and their structures (Jackson, 2012; Potts, 2008). In Zimbabwe, just like the rest of SSA, poverty is a serious challenge. The Zimbabwean population poverty was compounded by declining living conditions, chronic shortages of goods and cash, hyperinflation as well as high unemployment. According to Mbiriri (2010), a 2003 Poverty Assessment Study Survey showed that 72% of the population was living below the Total Consumption Poverty Line (TCPL) compared to 55% in 1995. The relationship between IS growth and poverty reduction is mixed and contradictory (Klapper et al., 2010; Mbiriri, 2010).

While scholars like Pimhidzai and Fox (2011) posit that the IS has become an integral component of the economies in developing countries and SSA by reducing poverty, others argue that the IS traps its actors in poverty. The latter argument is built on the very characteristics of the IS that is low-quality employment, poor working conditions and low wages as well as lack of social protection. Proponents of this view argue that based on these, the IS accentuates poverty contrary to reducing it. They state that working in the IS means poverty. The earnings for small companies operating in the IS are often very low as compared to those of the big formal firms hence the small firms are often referred to as the "working poor" (Haan, 2006). Contrary to the latter view, the former view upholds the significant role played by the IS in poverty reduction. In Zimbabwe, the IS has become strategic as it undeniably enabled the country to survive the worst economic crises in history by providing a source of livelihood to the majority of the population (Mbiriri, 2010; Muzenda, 2016; Ndiweni & Verhoeven, 2013; Ngundu, 2012). Mbiriri (2010), specifically alludes to the cross-border trade as one key activity of the IS that played a great role in moderating economic hardships, reducing poverty and enhancing human development in the country.

One wonders what the situation in Zimbabwe would have been like in the absence of the IS, with the rate of unemployment of between 80%- 94%. According to Muzenda (2016), the majority of the population would have lived in abject poverty. Ncube (2013) concurs that the IS can be successfully used as a tool for poverty reduction as well as one to foster economic growth and development. Fox and Gaal (2008) allude to the fact that countries with a significant portion of the households operating in the IS have lower rates of poverty. Mbiriri (2010) explains the role played by the IS in Zimbabwe by arguing that the sector provides a number, of critical and social benefits that accrue simultaneously and buttress the operations of the formal sector. These are summarised as follows: minimization of operating costs through outsourcing from the IS sector by formal firms (leads to employment creation), training (traditional apprenticeship leads to skills transfer and innovation) and economic buffering (safety net for the poor and illiterate hence reducing poverty) (Mbiriri, 2010). It can, therefore, be said to be playing an important role in poverty reduction in Zimbabwe and contributing towards GDP, a contribution which Schneider (2002) approximated at 59.4%.

Undue Competitive Advantage Over the Formal Sector: Kristoffersen (2011) and Mpapale (2014) contend that the IS benefits from its informal nature through having an unfair competitive advantage over the formal sector. The argument being that goods produced and some services are often similarly differentiated only through branding, packaging and quality. Exploiting their non-payment of taxes, formal operating costs and security burdens, the IS charges relatively lower prices for their products, disadvantaging sales of the formal sector because goods from the two sectors compete for similar resources, markets and customers. This argument has been questioned by researchers such as Bongwa (2009) and Rogan (2019) who argue that the argument overlooks that the formal sector claims the VAT input tax, is eligible for other tax exemptions and deductions not available the IS and also has access to good infrastructure, services such as training, funding and capacitation for tax purposes. All these points to the formal sector have an unfair advantage over the informal sector. The structuralist view suggests linkages and synergies between the formal and the IS. This indicates that some incomes earned in the IS are spent in the formal sector and vice versa (Nakamba-Kabaso & Phiri, 2012). According to Dube (2014), there are linkages between the IS and the formal sector in Zimbabwe, the IS contributes to the revenue flows of both local and national treasury through supplying inputs to the formal sector. This trade relationship allows the formal sector to increase production and resultantly profits as well as the amount of corporate tax.

VAT and PAYE among other taxes paid by the corporate world (Mbiriri, 2010; Njaya, 2015). Viewed from the other side of the coin, the IS purchases goods and services from the formal sector thus stimulating demand, increasing production and consumption and ultimately economic activity if not growth. The IS also employs a significant number of people who are supporting the majority of the households in the country, their purchasing activities of various households and significantly contribute to productivity, economic growth and revenue mobilization. During the times of economic distress and liquidity challenges in Zimbabwe, the IS provides a source of raw materials and many other products that the formal sector cannot source due to foreign currency shortages (Mawowa & Matongo, 2010; Mbiriri, 2010). The IS because of its flexibility is able to access foreign currency from the parallel market. The sector contributes nearly half of global employment and 90% of new jobs in developing countries. Chibisa (2009) states that the role of the IS in Zimbabwe is often overlooked and underestimated as it lacks official recognition and support, despite this sector having saved the country from complete economic collapse and devastation. Mbiriri (2010), on the same note, adds that between 2000 and 2008, the IS was an instrumental tool in providing the basic needs of millions of Zimbabwe and inputs for a number of companies in the formal sector. This sector is, without doubt, an important part of Zimbabwe's macroeconomic environment, essentially acting as a buffer, a mechanism for poverty alleviation and a platform for employment creation.

Economic Development: The IS that houses most Micro Small and Medium Enterprises is crucial for the development of in African economies, because these enterprises drive growth, generate employment and empowerment opportunities for youth, provide a customer base for formal companies and access to the supply chain to low-income earners. In affirmation (Mbiriri, 2010) postulates that the IS has literally kept the wheels of most developing countries in motion during times of economic downturn especially in Zimbabwe. Enquobahrie (2004) argues that the IS promotes economic development in developing economies, contributing a huge chunk to GDP. In Nigeria the sector was argued to be a major contributor to employment as well as to GDP, contributing approximately 65% of the GDP in 2017. These jobs help contribute to economic development and growth through income empowerment and poverty alleviation. The sector acts as a springboard for development, providing employment as well as a platform for entrepreneurship, helps distribute resources and provides a source of innovation and competitiveness (La Porta & Shleifer, 2014; Udoh). Fourie (2018) suggests that the informal sector's contribution has the potential to be even greater. He points out that an empowered, well reinforced, effective and enterprising IS can lead to inclusive growth and contribute sustainably and substantially to economic growth. IS produces various goods and services that are added up to the national output.

Ndiweni and Verhoeven (2013) assert that the IS creates value in Zimbabwe by providing products and services to a market to meet unsatisfied demand and through their ability to creatively respond to challenge and needs. This ensures the IS provides competition and increases product supply, thereby generating economic growth. Saunyama (2013) observes that the flexibility and malleability of the IS traders enable them to be more responsive to clientele needs hence filling the gap that the inflexibility of the formal sector creates in the supply chain. Cassim et al. (2016:12) hold a different view on the contribution of the IS to economic development, submitting that a huge IS "uses and congests public infrastructure without contributing tax revenue to finance it", thus lowering the quality and quantity of these public goods and services. SMEs are regarded as engines of economic growth and vehicles of employment for both developed and developing economies (Chinomona & Pretorius 2011; Tshuma & Jari, 2013).

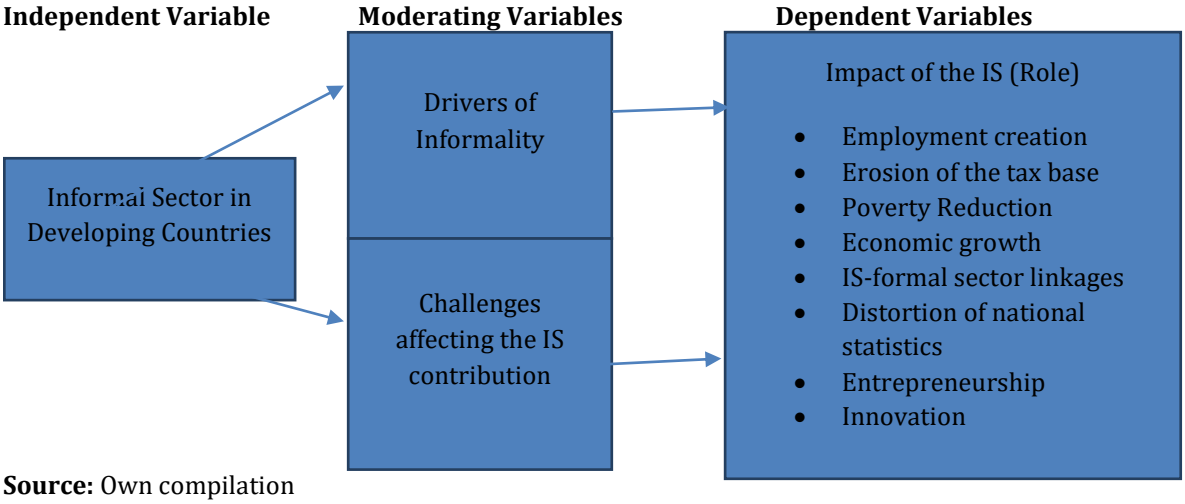
This is further supported by Eniola and Ektebang (2014) who argue that SMEs have a prodigious potential for sustainable development. Chigova (2014) states that the IS has led to increased domestic investment in Zimbabwe in the face of declining foreign direct investments. The increased incomes, as well as economic activities, have seen the IS firms and individuals accumulating savings which have enabled continued investing and reinvesting. As such, the IS contributes significantly to Zimbabwe's GDP. One major social contribution is that the IS keeps the majority of the population occupied and economically empowered hence the reduced crime levels in the country (Chigova, 2014; Mbiriri, 2010). The SMEs also serve as the breeding ground for entrepreneurs and providers of employment in Zimbabwe. Observes that small businesses in Africa have the ability to become large companies in the future that can propel growth and prosperity if only they can be supported appropriately, especially now that they face a gloomy future due to the covid-19 pandemic and lockdown restrictions induced challenges.

Hampers Supply of Reliable Information and National Statistics: The invisible nature of the IS, the hidden activities, the unavailability of complete, reliable and accurate statistics on the sector casts doubt on some governance and policy decisions(Van der Molen, 2018; Sutcliffe & Court, 2005. Policymaking and implementation must be guided by evidence and adequate information. Affirming the challenges of the sector's unrecorded, unmeasured and unaccounted for activities, Kristoffersen (2011) asseverates that the IS diminishes the integrity of national statistics and brings forward challenges for tax policy crafting decisions as statistics from the sector are often misleading and unreliable in relation labor, incomes, employment, economic growth, output and potential tax revenues. Enquobahrie (2004) avows that governments are partly responsible for the lack of information on the IS or its inadequacy as some governments paid minimal or attention to the IS and are not committed to gathering the required information or statistics. This could be due to the "ambivalence and invalidation" of the IS described by Kamete (2020) in Zimbabwe or the ambivalent view referred to by Pimhidzai and Fox (2011) in Uganda and Sub Saharan African countries or the negative view of the IS due to non-registration for tax purposes alluded to by Joshi and Ayee (2008) and Meagher (2018) in Ghana and Nigeria respectively.

Challenges Hindering the IS to Contribute Effectively to the Economy: Traditionally, efforts have cantered on the need to regulate informal businesses and formalize them. Little emphasis has been made towards identifying what drives growth in the various subsectors of the IS and how challenges faced by participants can be alleviated (Hassan, 2018; Jackson, 2012; Wedderburn et al., 2012). The IS faced a lot of challenges that cripple its contribution to the economy. Various studies point out that the informal sector is constrained by factors such as inadequate funding and lack of financial support from the government, taxation, poor accounting and risk management, poor infrastructure, lack of training opportunities, low profits as well as ambivalent government policies towards the sector (Bruhn & Loeprick, 2014; Jackson, 2012; Loeprick, 2009). The covid-19 negative impact has also dampened their survival potential, ability to provide sustainable employment as well as contribution to future economic growth.

Theoretical and Conceptual Framework: This study is guided by the theoretical framework as discussed in Section 2 of this study. The theories that drive the growth of the IS (dualist, structuralist, legalist and continuum), ultimately influence the sector's contribution to the economy. Policymakers must understand these drivers and the challenges faced by the IS and consequently, ensure these are addressed through policy prescriptions to improve the sector's contribution. The way the sector is viewed by the government has an impact on how policy consider it in policy crafting, whether is viewed as a resource to be harnessed or evil to be totally extinguished. The role of the IS in the economy is moderated or impacted upon by the drivers of informality and how the challenges affecting the sector are dealt with in the different national context as suggested by Wedderburn et al. (2012) when studying IS taxation in Jamaica and Jackson (2012) while focusing on the informal economy in Sub Saharan Africa. The sector's contribution to various facets of the economy as derived from the theoretical framework is schematically portrayed in Figure 1.

Figure 1: Conceptual Framework



Source: Own compilation

3. Research Methodology

This study adopted a pragmatic research philosophy, employing a sequential exploratory mixed-method research design (Creswell & Clark, 2017). This design allowed for the researchers to combine both the qualitative (literature review, conceptual framework design and semi-structured in-depth interviews) and quantitative (use of questionnaires) research approaches under one study. The use of mixed methodologies allows researchers to exploit the advantages of both methods while minimizing the impact of their weaknesses (Creswell, 2013; Guetterman, Fetters, & Creswell, 2015; Ryan, Coughlan, & Cronin, 2007). Mixed method research (MMR) is argued to be more suited for researching under-researched areas, vulnerable populations such as low-income earners and the IS and for exploring novel and controversial subjects(Creswell & Clark, 2017; Creswell & Tashakkori, 2007; McKerchar, 2008). MMR was considered more appropriate because the IS which is the subject of this research is considered a disadvantaged population that has low incomes and is operating in the IS for survival purposes if the economic dualist approach by Hart (1973) is anything to go by.

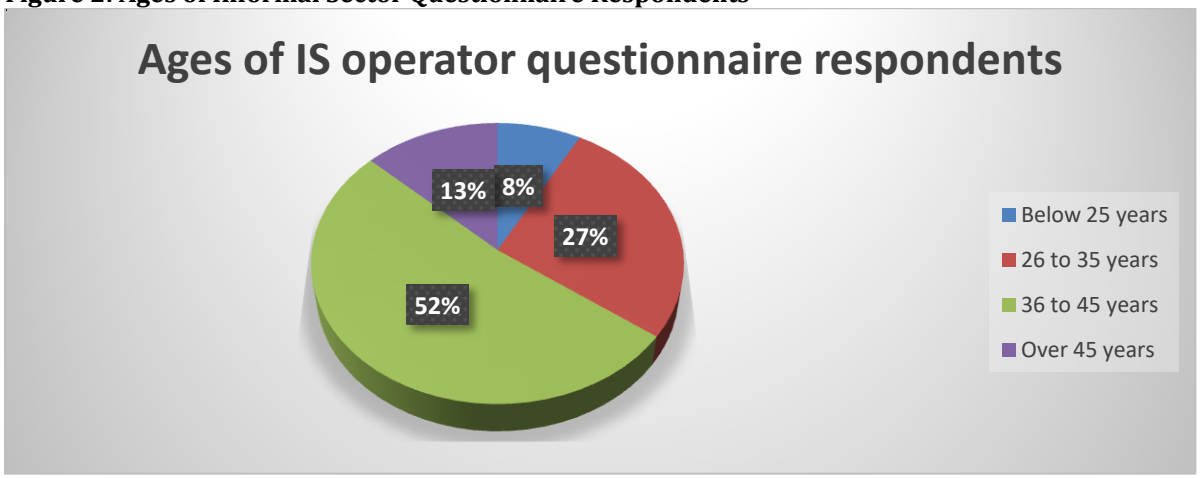
The sector is described as under-examined and its role in the economies of developing countries is considered under-evaluated (Cassim et al., 2016; Jackson, 2012). The sector's role as well as economic impact is contestable and surrounded by ambivalence and invalidation (Kamete, 2020; Moyo & Gumbo, 2021; Pimhidzai & Fox, 2011). Potts (2008) affirms this unfavorable view, stating that the general policy perception in most developing countries is to get rid of informal activities "through modernization and a shift to higher productivity, more sophisticated technology and more sophisticated technology and more capital". In-depth interviews were conducted with tax consultants, Informal sector association members and officers from the Ministry of SMEs while questionnaires were distributed to IS players to get an insight into the demographics of those that operate in the sector, their reasons for operating in the sector and their perceived contribution to the sector as well as the challenges they face. The qualitative part of the study was conducted first and the results from the qualitative analysis were combined with the concepts extracted from the literature review to develop the questionnaire instrument employed in the quantitative part of the study (Creswell & Clark, 2017; Fetters, Curry, & Creswell, 2013).

4. Discussion of Results

Demographics of Participants: The interview respondents were all knowledgeable people with educational qualifications higher than an undergraduate degree and vast experiences in their different areas. For example tax, consults had immense knowledge and experience on IS tax administration, advice and filing of tax returns. The IS association members had been members of those associations for more than five years in various capacities and they also owned informal businesses. While the employees in the Ministry of SMEs had more than 5 years of experience, which was good for institutional memory. The IS sector questionnaire respondents were made up of people of various age groups and qualifications as presented in Figure 2. In Table 1 the majority of people (48 %) had an undergraduate degree or more, while 20 % had college Diplomas and the remaining 32% was made up of 18% that had up to A' level and 14% that had no education or up to O' level. It was evident that contrary to the views by researchers such as Becker (2004) and Hassan (2018) those players in the sector had a low qualification.

The dualist view by Hart (1973), that depicts operators in this sector as low-skilled and low education, players in Zimbabwe's IS were highly educated and held some formal qualifications. This suggests that the operators are in this sector not because of low education levels and lack of training, but for other reasons. This could perhaps be linked to the influx of professionals and skilled personnel to this sector as suggested by Maloney (2004) and Adams (2008). Table 1 presents the results of the drivers of informality in relation to the age groups of participants as a way of trying to explicate why these skilled professionals are in this sector. As a way of trying to assess the role played by the IS through the age composition of the respondents' operation in the sector, respondents were asked to show their age range. In Figure 2, more than 50% of those that were operating in the IS were between 36 to 45years of age (52%), 27% were aged between 26 to 35 years, 8% were below 25 years while 13% were above 45 years. It was clear that most of the people in the IS included the youths and young adults.

Figure 2: Ages of Informal Sector Questionnaire Respondents



Source: Own Compilation

Drivers of Informality: On the drivers of informality the factors that were largely identified by many interviewees as what drove them into the IS were survival (91%), unemployment (85%), retrenchment (60%) and ease of entry into the IS (54%). The other factors such as high incomes (36%), flexibility (40%) and lack of education and training (20%) were not considered as important determinants of informality. It was apparent from the results that most of the operators in the IS in Zimbabwe were not in the sector out of choice but were driven there by the poor economic conditions in the country which have led to retrenchments and high rates of unemployment. These players are in the sector due to the need to earn survival. It is clear also that some are in the sector due to high incomes and flexibility, reflecting a rational choice though they are just a minority. The interviewees for the qualitative part were purposefully sampled, while the questionnaire respondents were randomly selected from the IS stratas. 200 informal sector questionnaire respondents were chosen.

The interview samples ranged between 5-10 interviews per group in line with guidance from Creswell (2014) who advocates for smaller samples of 3-10 for qualitative studies and Malterud, Siersma, and Guassora (2016) who suggests the use of smaller samples if the sample is informationally powerful. Information power considers the strength of the competencies, experience, exposure and knowledge of those sampled (Malterud et al., 2016; Sebele-Mpofu, 2020). The variations in sample sizes (10 informal sector association members, 5 tax consultants and 3 employees for the Ministry of SMEs) were guided by the achievement of the saturation point. The saturation point was considered as the point where no new themes and insights were still emerging from interviews, hence were making further interviewing futile (Fusch & Ness, 2015; Hennink, Kaiser, & Marconi, 2017). Qualitative data analysis was done using NVIVO qualitative data analysis software and the themes and codes were deduced from the analysis were used as some of the variables in the IS questionnaire. The questionnaires were analyzed through SPSS. The IS in Zimbabwe reflects a continuum suggested by Maloney (2004) or a mixed bag by Kristoffersen (2011).

With a combination of those that are driven into the sector by unfavorable economic conditions and lack of employment and those that are there voluntarily. Similar views were expressed by the ISM and TAXC who argued that the IS was made up of many different players that were pushed or pulled into the sector for different reasons. TAXC1 asseverated that it was not entirely correct and fair to define informality from the tax evasion angle. The tax consultant argued that "*yes there are tax evaders in the sector. I don't dispute but the majority of players make very little incomes to be able to pay tax and besides the fixed presumptive tax rates are burdensome they have no regard for profitability, turnover or expenses of the small enterprises*". ISM1 also expressed that most of their members were merely making enough to keep the business going and pay salaries. Operating in the sector was a matter of earning subsistence incomes and that even then it was difficult because government policies were not considerate when it comes to the IS. The results from the questionnaire analysis were presented in Table1. It is evident that survival is the predominant factor (52%), followed by unemployment (27%) and recent retrenchment at 14%.

Table 1: Reasons for Operating in the Informal Sector N=200

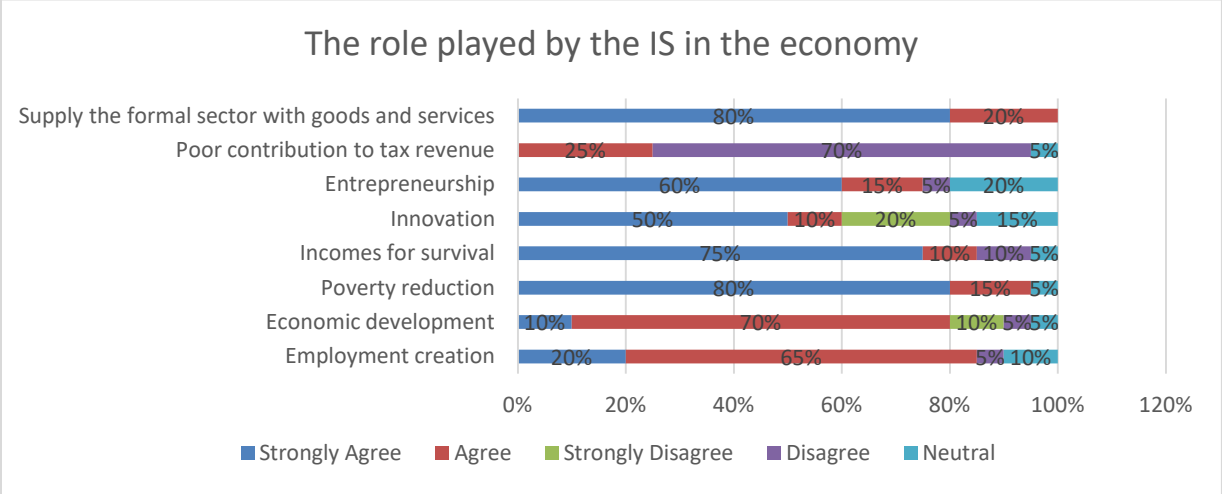
Age Range (years)	High Income	Survival	Recent Retrenchment	Unemployment	Flexibility	Lack of Education and Training	Ease of Entry in the IS
Below 25		11		5			
26 to 35	4	20	10	15	3	2	
36 to 45	2	61	14	27	2	3	2
Over 45	2	13	3	7	1		

Source: Own Compilation

Contribution of the IS to the Economy: The study participants offered different perceptions with regard to the sector's contribution to the economy in Zimbabwe. There was an agreement between interview participants groups (TAXCs, ISMs and MSMEs) that the IS was an indispensable part of people's livelihoods and the economy in developing countries and Zimbabwe in particular. According to ISM3 *"our members contribute greatly to almost all sectors of the economy. Most of our members are involved in various activities manufacturing, sourcing of groceries and medication, distribution and transportation. We hold this economy and make it function*". The contribution of IS especially the SMEs was further affirmed by MSME2 who pointed out that the sector contributes to the GDP of the economy through various activities and that the government was aware of that and was putting measures in place to support their activities.

TAXC6 was of the view that the sector is contributing to innovation, entrepreneurship, survival, economic development and employment creation but it is not contributing the way it should. TAXC6 further observed that *"let's be honest, the government is not enabling this important sector at all. Take, for instance, the introduction of the ZUPCO buses, the needs, concerns and plights of the passenger transport operators that have been providing transport to the whole of Zimbabwe were not considered, despite them having well-established associations. In the current situation with the covid-19 pandemic, the sector is the hardest hit with no supporting measures*". There were mixed sentiments among interviewees on the role of the IS, with some TAXCs pointing to the fact that IS activities curtailed the revenue authority's ability to mobilize tax revenues and led to lower tax morale in the formal sector thus eroding the tax base. Results from the questionnaires were also mixed as shown in Table 2.

Figure 3: The Role Played by the IS in the Zimbabwean Economy



Source: Own Compilation

Regression Results on the Role Played by the IS: To explore more the role played by the informal sector in the Zimbabwean economy, a regression analysis was done to enhance the qualitative results presented, above and the results of the analysis are discussed below.

Correlation Matrix: We constructed the correlation matrix table for our variables of interest. Variables such as employment creation, poverty alleviation, entrepreneurship development, erosion of the tax base measures were tested to see their correlation effects on economic growth and development in Zimbabwe (measured by GDP per capita). From the results obtained, the measures on the role of informality are strongly correlated to GDP/Capita, with entrepreneurship development at the top, with a coefficient of 0.706 and erosion of the tax base at the bottom, with a coefficient of 0.426. Summary correlation results are given in Table 2 below.

Table 2: Correlation Matrix

	GDP (light data)	Employment Creation	Erosion of the Tax Base	Poverty Alleviation	Innovation	Entrepreneurship Development
GDP (light data)	1					
Employment creation	0.583956	1				
Erosion of the tax base	-0.4263	-0.1443404	1			
Poverty alleviation	0.623092	0.040767566	0.964563	1		
Innovation	0.445431	0.201250873	0.928632	0.97876	1	
Entrepreneurship development	0.706168	0.025418575	0.956031	0.991416	0.96844158	1

Note that, even though other relationships presented above are equally important, the correlation between GDP/capita and other variables is key and central to this study.

OLS Regression: To reinforce our correlation results above, we performed and presented some regression results below.

Table3: Regression Statistics

Multiple R	0.774557541
R Square	0.788450215
Adjusted R Square	0.76091009
Standard Error	0.011523662
Observations	257

The table above shows the explanatory power of our model. Both our R-squared and adjusted values are above 50%, (79% and 76%) which clearly shows that our model is powerful. Literally, it means that the selected measures of informal sector role explain the economic growth in Zimbabwe.

Table 4: Regression Coefficients and Statistics

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0732	0.0013	0.002	0.0020	0.0707	0.075	0.070	0.075
Employment creation	0.8251	0.0132	0.025	0.0322	-0.0342	0.017	-0.034	0.017
Erosion of the tax base	-0.3612	0.1447	0.026	0.0245	0.1304	1.881	0.130	1.881
Poverty alleviation	0.2574	0.1643	0.026	0.0186	-0.5810	0.0663	-0.581	0.066
Innovation	0.4102	0.1527	0.216	0.0012	-0.1905	0.4109	-0.190	0.410
Entrepreneurship development	0.4411	0.0804	0.054	0.0036	-0.1579	0.158	-0.157	0.158

The above results came from the Ordinary least squares regression done in STATA. The coefficients for all the variables are positive which agrees with the correlation results above. Also, the p-values are all less than the level of significance (5%) which shows their significance in our model. The final model is given by: $GDP_{capita} = 0.073 + 0.83x_1 - 0.36x_2 + 0.25x_3 + 0.41x_4 + 0.44x_5$

Where Xs are our variables from employment creation down to entrepreneurship development? All in all, the model results show that an increase in any one of the measures of the role played by the IS, except for the erosion of the tax base results in an increase in GDP/Capita in Zimbabwe. Also, a negative erosion of the tax base (or reduced tax revenue flows from the informal sector is sensible as it is inversely related to economic growth.

Table 5: ANOVA Table

	DF	SS	MS	F	Significance F
Regression	5	0.0058	0.1157	88.7122	0.2749
Residual	251	0.0333	0.0133		
Total	256	0.0391			

To test for linearity, an ANOVA table was constructed. The results suggest that there is linearity among the variables and the response measure (GDP/Capita). This is indicated by a large F value of 88.72.

Challenges Hindering the IS from Contributing Effectively to the Economy: From the interviews, various challenges were highlighted by participants to constraining the contribution of the IS to the economy. Though interviewees converged on some commonalities on these challenges but they also differed greatly on the importance they attached to some challenges. These variations were nothing out of the ordinary but were considered as reflective of the diversity of participants' views, attitudes and perceptions built from their experiences and their positions as government employees (MSMEs, IS operators (ISM) and Tax advisors (TAXC). The challenges identified were: lack of adequate financing and financing opportunities, poor management, accounting and risk management practice, the covid-19 pandemic and lockdown restrictions. Lack of government support, low capital, competition, high tax rates and no operating spaces or infrastructure as well as lack of enabling government policies. For TAXCs two reasons were very topical during the discussion and these were the lack of enabling government policies and ARE engagement in policy issues. The tax consultants felt that government policies in relation to the IS including tax policy and tax administration were negative, ill-informed and not supportive of the growth of jobs in the sector or expansion of the IS activities. TAXC6 though acknowledging that developing country governments tend to view the IS with negativity, yet it is a reality of the African continent, gave an example of South Africa's recent measures put in place in response.

To the pandemic that included support to the IS and SMEs as well as leniency in the payment of taxes. This was affirmed by TAXC8 who pointed out that the lockdown restrictions and the costs of protective clothing, sanitizers and masks were heavy costs on small businesses that are unable to recover them as allowable, deductions like their formal business counterparts. For ISMs the prominent factors were taxation, lack of government support and inadequate funding as well as the covid-19 lockdown restrictions. The IS associations members felt that if only their members could be given government support in the form of funding, reduced tax rates and training opportunities and working spaces, their contribution to employment creation, poverty alleviation and economic growth would be better. From the quantitative analysis, the most prominent challenges were lack of capital and funding (95%). Lack of government support (80%), taxation (75%), ambivalent government policies (70%) and the covid-19 restrictions (60%). The results from the questionnaires had a resemblance to the discussions with ISMs who highlighted the same sentiments. In relation to the covid-19 induced lockdown restrictions, ISM2 expressed that "*our members were highly affected because of the small scale nature of our businesses, we hardly have any reserves or assets to fall back on, yet fixed expenses such as license fees, rates, rent and salaries among other costs need to continue to be honored*". These challenges were also affirmed by ISM5 who alluded to cash flow challenges, a reduction in capacity utilization, disruptions in procurements of raw materials, goods and services and no /reduced sales.

5. Conclusion, Limitations and Recommendations

The research concludes that viewing the informal sector from the lenses of an anomaly that should be uprooted is a myopic view and does not represent the IS for what it really is in SSA and specifically in Zimbabwe. The sector contributes consequentially to employment creation and poverty reduction; it is a survival route for a larger portion of the Zimbabwean population. Pushing for the formality of the IS, which is met with serious resistance from the IS, while casting a blind eye to the role by the sector in key areas such as, employment creation, poverty alleviation, innovation and economic development, among others is rather misguided. The study concludes that there is indeed under-recognition of the role played by the sector as policies seem to be unfavorable towards the sector. For example the presumptive tax policy, that does not consider actual incomes and expenses of IS operators. Government-Stakeholder engagements on policy issues tend to overlook the sector. Therefore, there is a need for a more balanced and supportive approach to the IS.

If governments are to derive benefits such as tax revenue generation, Increased, contribution to employment and economic growth. The sector was found to be contributing less than it should to the economy, due to challenges such as lack of adequate financing and financing opportunities, poor management, accounting and risk management practices, lack of government support, low capital, competition, high tax rates and no operating spaces or infrastructure as well as lack of enabling government policies. The research recommends that policymakers should seek to understand the drivers of the growth of the IS, the challenges the sector faces and formulate policies that encourage a positive contribution from the IS. The government is also encouraged to exploit, promote and harness the IS in a manner that brings out its positive aspects while minimizing the negative implications. Further studies could focus more on how policymakers could include the IS in formulating policies that impact favorably on the sector and explore the cost versus the benefits of governments addressing the challenges faced by the IS.

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Business Succession in Indian Family Businesses in South Africa

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Abstract: Family businesses play a pivotal role economically and socially in most countries. The study aimed to identify and understand the experiences of Indian family businesses in South Africa with regard to business succession. A quantitative research approach was used with data collected through Google forms online survey. Data was collected from sixty (60) business people from Indian-owned family businesses in South Africa. The study interrogated the following factors which have an influence on family business succession: business ownership influence in succession, business readiness for the exit of owner and succession, the role of the owner after exit from business and selection criteria of the right successor. Findings revealed that the majority of families (86.27%) said it is important to have a hundred percent or full ownership of the business and that a successor should be selected within the family from their bloodline. Findings also revealed that the majority of businesses (86.27%) were not fully ready for the exit of the owner or current leader of the business and that on the exit of the owner; a majority (90.2%) of businesses will prefer to have the owner playing an active advisory role in the business. It is recommended that family-owned businesses should plan for succession on time and draft a well-planned strategic succession plan for the business. It is also recommended that an objective criterion be used in selecting a successor who will take the business forward. Healthy business continuity should be the ultimate goal of succession and families should not sacrifice successful business continuity because of their, internal differences and conflict, culture, blood relations, gender or religion.

Keywords: *Indian Businesses, Family Businesses, Succession planning, Business continuity, South Africa.*

1. Introduction

There is no one standard definition of what a family business is because of the various factors, complexities and differences within family businesses such as size, percentage of ownership, the environment it operates in and other factors. Kiwia, Bengesi, and Ndyetabula, (2019) define it as a business where family members contribute to its capital and are engaged in its management, and it is intended to be transferred to the next generation. For this paper, a family business is considered as a business whose ownership as well as control is within the founder's family members, the family members are directly involved in the business' daily activities and the plan is to transfer the business to subsequent family generations. Family businesses play a pivotal role in many countries globally. Statistics from the US-Based Family Firm Institute state that; family-owned organizations make up two-thirds of all businesses around the world and they are estimated to contribute 70% – 90% of global growth every year but sadly the failure rate of these businesses seems to be high (www.ffi.org). Furthermore, the majority of new jobs, globally, are created through family businesses (Neubauer and Lank, 1998). Succession planning is the process of transferring leadership and power or management from the business founder/or one family member to another family member while maintaining a positive family relationship and business performance (Chaimahawong and Sakulsriprasert, 2013).

Indian family-owned businesses in South Africa are potentially facing a succession planning problem as most fail to effectively plan their succession to ensure business sustainability. The inability for the long-term survival of family businesses can be attributed to a number of factors including; unsuccessful or lack of succession planning among the most key (Lansberg, 1998) and the reluctance of business founders to hand over their creation (Brockhaus, 2004). A study on the business succession of family-owned businesses conducted by Steen (2018) revealed that the first generational transfer is hard and that only thirty percent of family-owned businesses successfully pass the baton from the first generation to the second generation. Overwhelmingly, if one were to go with findings from Steen (2018) and the (ffi.org) this means that family-owned businesses are not setting themselves up for success in transitioning to the next generation/s and business succession is the main culprit that leads to the failure and non-survival of these businesses. Hence, this study aims to determine the effectiveness of business succession in Indian family businesses in South Africa. The objectives of this study were; to determine the level of preparedness for business succession in

Indian family businesses in South Africa. To investigate how Indian family businesses in South Africa view the different factors that affect business ownership and succession and to closely examine the processes of succession among family businesses in South Africa.

2. Literature Review

Business succession has been described as the most crucial decision family businesses have to make (Handler, 1994). Business succession is a process of preparing and grooming family leaders to develop and transfer firm and family knowledge (Chirico and Nordqvist, 2010). It is a constant and ongoing process done over a period of time (Handler 1990). Succession planning is defined by Lansberg (1983) as making the plans and preparations vital to ensure the harmony of the family and the continuity and success of the enterprise through to the next generation, these preparations must be mindful of the future needs of both the business and the family. Chua (1999) through a theoretical framework outlines some of the factors that can influence the planning and implementation of succession in family-owned businesses which must be considered when succession planning is conceptualized and implemented in the family business. According to Chua (1999), some of those factors are; ownership, management, succession, age of business and financial performance of the business. According to Fahed-Sreih (2018), succession planning secures and ensures the availability of knowledgeable, experienced and capable employees that are prepared to assume leadership and other crucial roles as they become available in the business. Hence, an effective succession management mandate is to build potential successors up to and down the entire leadership chain. Despite the significance of succession, information in the scientific body of knowledge indicates that family businesses wrestle to deal with this issue, with a succession of the family CEO being one of the most vexed issues in a family business (Bennedsen, Nielsen, Perez-Gonzalenz and Wolfenzon, 2007).

Research has indicated that many family business leaders fail to effectively plan for succession (Sharma and Rao, 2000), despite the compelling evidence of successful business succession increasing the chances of survival of family businesses. A study by Feltham and Barnett (2005) found that 61% of family business leaders did not choose a successor and had no plan in place to choose one. One of the key reasons for the hesitance in planning for succession is the uncomfortable emotions generated by the process, together with the reality that it forces one to accept one's impermanence and confront the need for change (Le-Bretton-Miller, Miller and Steier, 2004). Choosing a successor is only one aspect of the process, and it is important that a well thought, effective process of succession be established within the family business (Brun de Pontet, Wrosch and Gagne, 2007). In their study on the importance of planning for business succession for the stability and wealth accumulation for South-Asian families in Kenya, Janjuha-Jivraj and Woods (2001) illustrate the negative impact that ineffective transition in succession has on families, often for generations and on all stakeholders including the community and business market for larger businesses. Research has also determined that family business leaders who acknowledge their need to retire and "pass on the baton" are more aware of the need to invest and grow a business worthy of being passed on, even before the transfer takes effect (Diwisch, Voithofer and Weiss, 2009). Ultimately, Brun-de Pontet et al. (2007) recommend that a transparent succession plan needs to be implemented to avoid the risk of ambiguity resulting in conflict and the possible dissolution of the business.

3. Research Method

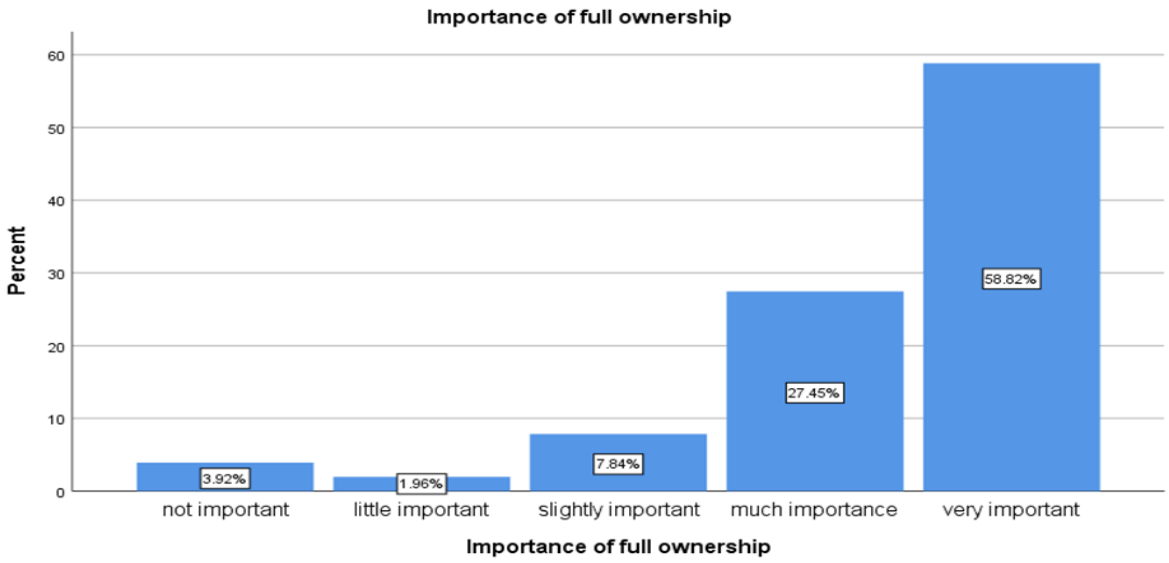
One's approach to research methods qualitative, quantitative or mixed should be informed by the research, question, access to data, and contextual appropriateness (Thurloway, 2014). Having that in mind, the most appropriate research methodology that aligned with the research strategy was the quantitative approach, as it allowed for accurate and efficient collection of quantitative data. Lack of an adequate succession plan is seen as a key reason why many family businesses fail to grow (Cabrera-Suárez, 2005). Therefore, the study adopted a quantitative research methodology. Data was collected via an online survey link created through Google forms and shared via emails with 60 business people who were sampled and invited to take part in the survey. Sample inclusion criteria only allowed that a sample is drawn from South African business people of Indian heritage. A sample was drawn using databases from South African Indian business associations and referrals of earlier respondents. A random sampling technique was used initially, thereafter a snowball sampling technique was employed to reach additional participants and create an adequate sample size

suitable for statistical analysis. A Likert 5-point scale was used to frame questions in the questionnaire distributed. The study used Cronbach's alpha reliability coefficient value of 0.70 or higher to test the reliability of the quantitative data and factor analysis was the technique used to ensure the validity of the data collected. Excel quantitative analysis software was used to analyze the data collected and descriptive statistics with illustrations in the form of figures and graphs were used to report the results.

4. Results

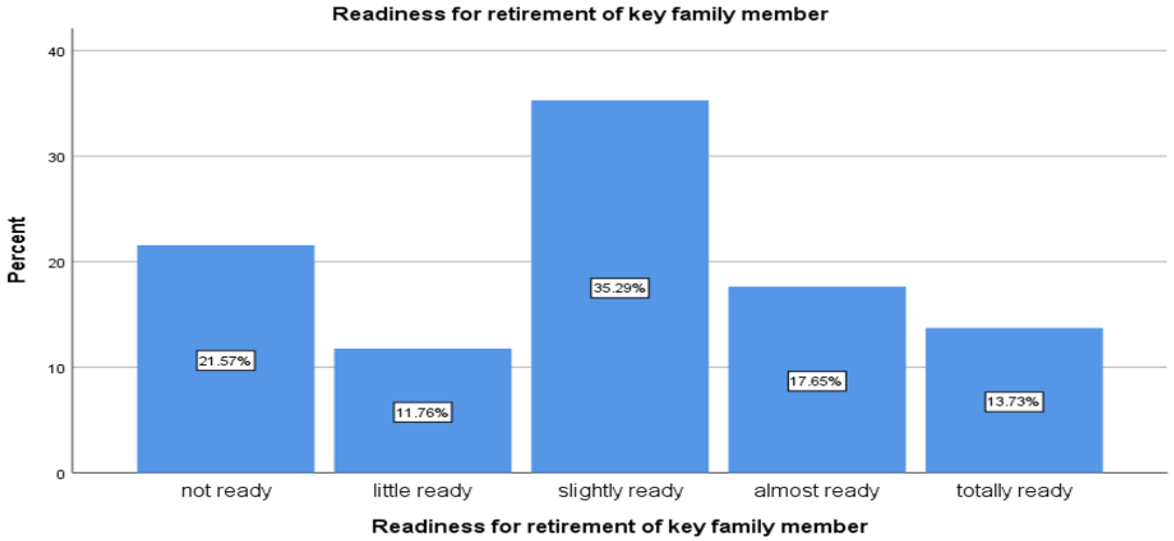
Demographic Details: Respondents' age**-** In terms of age; 86.17% of the respondents were between the ages of 18 to 55, while only 13.73% were over the age of 55. Business Age - It has been identified that the majority of the businesses surveyed were established post-1970 at a total percentage of 71.53%, while 17.47% of the businesses were established pre-1970. The oldest business surveyed being at a current age of 118 years old. Generation in Business - In terms of generation, a total of 64.7% of the respondents were first- or second-generation members of their family business, while a total of 31.3% were in the third and fourth generations or higher. *Business Industry* - manufacturing and trade, wholesale and retail were the industries selected. The Real Estate industry was selected by 7.8% of the respondents and the remaining respondents were involved in other industries. *Annual Turnover* - In terms of revenue, 5.9% had annual revenue of less than R5, 000,000, 84.3% of businesses surveyed with revenues between R5, 000,000 to R1, 000,000,000, and only 9.8% of businesses had revenue exceeding R1, 000,000,000. *The number of full-time employees* - In terms of employees, around 11.8% of the firms had less than 6 employees, while 76.4% had between 6 to 500 employees, and 11.8% firms had more than 500 employees.

Figure 1: Importance of Full Ownership of Business



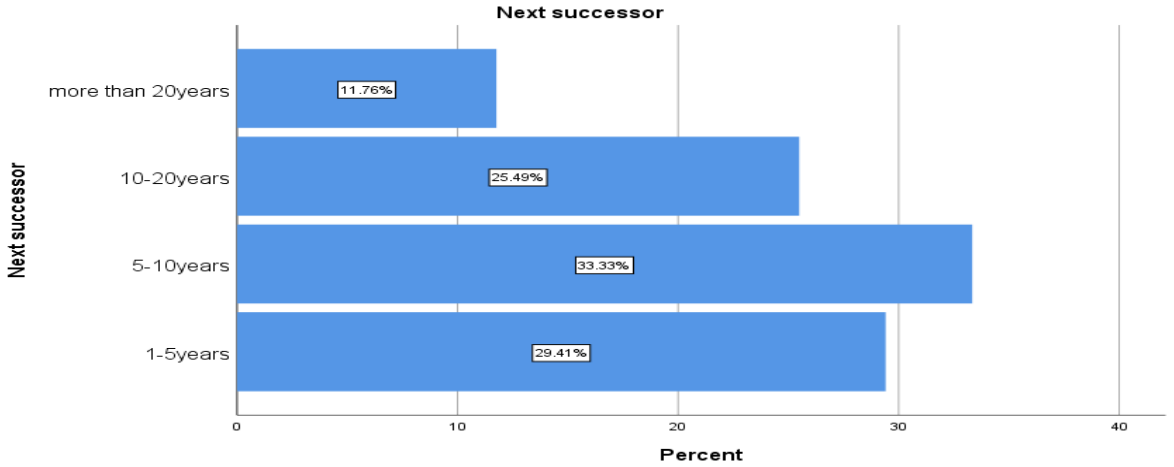
As illustrated in figure 1 above; the majority of the respondents (58.81%) submit that it is very important to keep 100% ownership of the business within the family. In a study done by Sharma and Rao (2000), it was reported that the sentiment from the majority of respondents was that; it was very important for Indian business leaders to have a successor from their bloodline. The authors concluded, in their comparison of a typical Indian family and a typical Canadian family, that Canadian family business owners are more willing to pass on their business to a non-family successor than Indian family business owners (Sharma and Rao, 2000).

Figure 2: Readiness for Retirement of key Family Member



In figure 2 above; 21.57% of the respondents indicated that their businesses were not ready to cope with the exit or retirement of key members in the business. Also, a significantly large number (35.29%) of the respondents indicated that the business is only slightly ready to cope with the exit or retirement of key members and 13.73% of respondents indicated that the business is ready for retirement and exit of key family member running the business. Miller, Steier and Le Breton-Miller (2003) argue that the higher the preparation level of the possible successor, the higher the likelihood that he or she will take over the family business after the predecessor leaves it. This implies that the processes behind the identification of potential successors and the level of preparedness should begin at least five years before the time of the retirement of key members. Unfortunately, in most family-owned businesses the issue of succession planning seems to be placed at the end of the list of priorities hence the response from most businesses indicates their non-readiness for the retirement of an owner or key family members leading the business.

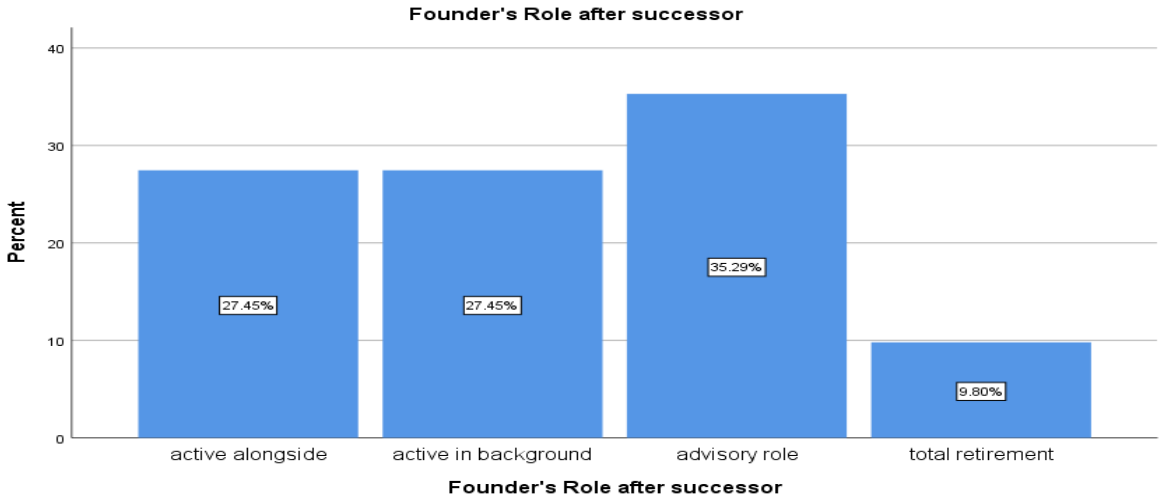
Figure 3: Business Readiness for the Next Successor



As reflected in figure 3 above; the greatest number of the respondents (33.33%) stated that their businesses will be ready for a successor in 5 to10 years, while 29.41% of respondents stated that their businesses will be ready for a successor soon that is within the next 5 years. There are few businesses (11.76%) that indicated readiness in 20 years' time or more. This result is a glimmer of hope for business succession in family-owned businesses as it indicates that although the implementation is not at the level required currently; most

businesses are aware of the need to prepare for succession and to groom potential successors on time. This indicates that these businesses have the knowledge and understanding of the need to prepare for succession but the problem is the lack of willingness or complacency to do it. Feltham and Barnett (2005) in their study found that 61% of family business leaders had not chosen a successor nor had a plan to choose one. One of the weaknesses of most business founders is too much attachment to their business to the extent that they do not think of the future of the business in their absence (Kiwia, Bengesi, Ndyetabula, 2019) Miller et al. (2003) found that there is a direct relationship between the preparation level of possible successor and the effectiveness of succession process. The higher the preparation level of a possible successor, the higher the likelihood that he or she will take over the family business after the predecessor leaves it (Miller et al., 2003).

Figure 4: Founder's Role after Successor Take Over



As indicated in figure 4 above; the greatest number of the respondents (35.29%) submitted that the founder's role will be advisory once the potential successor has taken over while 27.45% of respondents mentioned that the founder will still play an active role alongside the successor and another 27.45% mentioned that the founder will be active in running the business in the background. Only 9.80% of respondents mentioned that the founder will totally hand overall activities and take total retirement. This result is an indication that the majority of Indian family businesses do not feel comfortable with a total retirement option after handing over the reins as they still prefer to have the founder of the previous leader involved in some way either in the background or alongside the newly ordained leader. Studies including those done by Kets De Vries (1977) and Levinson (1971), have found that one of the biggest obstacles to planning for succession is the problems experienced when a founder has to relinquish control. Outgoing leaders, especially founders, are able to ease the transition and handover of power with a family firm (Lansberg and Astrachan, 1994).

Criteria for Potential Successor: A significant number of respondents (39.22%) submitted that the main criteria for which the potential successor to the business should be chosen must be based on; business acumen, skills and experience. A notable number of respondents (23.53%) also stated that a combination of business acumen, skills and education should be the main determinants in choosing the correct successor. Only (3.92%) stated that education and experience should be key factors in choosing a potential successor. The rest of the respondents stated a number of other factors such as; knowledge, skills, passion and other mix of factors as important. Morris, M., Williams, R., Allen, J. & Avila, R. (1997) found the level of formal education; training obtained from the incumbent; work experience; entry-level position; the number of years working with the family business before the succession occurs as the main factors that determine the preparation level of the possible successor. This could mean that the level of preparedness for business succession in Indian family-owned businesses in South Africa does not hinge heavily on the readiness of potential successors.

However, Miller et al. (2003) found that there is a direct relationship between the preparation level of possible successors and the effectiveness of the succession process. This in turn implies that there is room for

improvement in the succession process when it comes to the readiness of potential successors in Indian family businesses. Indian family businesses place importance on the following attributes in a successor: being related by blood, ability to work with and be trusted by family members, business acumen and entrepreneurial risk-taking (Sharma and Rao, 2000). The results in this study indicate that criteria for appointing a successor should be holistic by looking at a variety of competencies that the individual possesses to take the business forward. This indicates that a standalone trait such as 'motivation' or 'education' alone is not enough to qualify one to take over business leadership, more competencies over and above education, motivation and experience are required to ensure that the best successor is appointed. Business acumen was indicated as one of the key competencies required in the selection of the best business successor.

Female Successor Possibility: A significant number of respondents (84.31%) stated that a female family member can be the successor of their family business and only 15.69% of respondents objected to the idea of having a female successor. This is also another notable milestone in the mindset shift of Indian businesses whose long-standing traditional norm has been to select only males as business successors and leaders. This is indeed a paradigm shift. In a study conducted by Virick and Greer (2012), it was found that the nomination of female successors was positively associated with the performance of incumbent managers who nominated them as their successors. This implies that lower-performing incumbents were less likely than higher-performing incumbents to nominate women as successors when the diversity climate was unfavorable. When the diversity climate was favorable, lower performers were more likely and higher performers were equally likely to nominate women as successors (Virick and Greer, 2012). Bozer, Levin and Santora (2017) found that the stereotypical attributes of gender associated with women, such as nurturing and family-orientated tendencies, can compromise a daughter's ability to assume the leadership position in a family business hence families need to introspect and objectively deal with such stereotypes to ensure fairness in the process of selecting candidate successors.

Successor Not Identified Within Family: The majority of the respondents, 58.82%, stated that should their business not find a suitable successor within the family, they would consider having a non-family leader appointed to run the business and 41.18% stated that in cases where there is no suitable family member available to take over the business they will choose the option to sell the business. This result indicates that there is a slight shift in the long-standing conventional norm, belief and sentiment that only persons related by bloodline should be successors to lead Indian-owned family businesses. This might also indicate that most Indian families owning a business are realizing that the health, success and continuity of the business should be the priority and ultimate goal when choosing a successor over and above whether a person being chosen is related by blood or not.

Discussion

Indian family businesses in South Africa face similar issues and environments that have been seen in family businesses and in particular, Indian family businesses globally. Indian family businesses in South Africa consider it crucial to maintain a hundred percent control within the business, and most have found it fairly easy to maintain control of their family business. In a study done by Sharma and Rao (2000), it was also revealed that it is very important for Indian business leaders to have a successor from their bloodline and to keep full ownership of the business. The experiences of past policies of apartheid in South Africa, which for years were discriminatory against persons of color, including Indians in South Africa, could be seen as an incentive for Indian family businesses to prosper, survive and grow. Contrary to early research, which strongly showed a preference of the eldest son taking over the family businesses (Churchill and Hatten,1987) in this study most businesses stated that females in the family could be successors of their business. It was determined that most family firms are unprepared for the process of succession planning and most businesses had not identified a successor. Feltham and Barnett (2005) in their study found that 61% of family business leaders had not chosen a successor nor had a plan to choose one. Those that had identified a successor considered business acumen, business skills, experience within the business, education and motivation to succeed as the most important attributes in a potential successor.

Indian family businesses place importance on the following attributes in a successor: being related by blood, ability to work with and be trusted by family members, business acumen and entrepreneurial risk-taking

(Sharma and Rao, 2000). Interestingly, the often-cited birth order and gender were identified as an attribute of little importance. The study also found that family businesses that had begun the process of succession planning were more confident in the event of an exit or retirement of a key family member than businesses that have not done any succession planning. Furthermore, those family businesses that had a common vision, showed more consistent levels of communication in the business, which is crucial for effective succession planning. It is therefore recommended that; family businesses should always try to maintain the degree of control they have in the business when transitioning from one generation to the next, as this has a strong bearing on the types of succession planning alternatives available to them. Successor pipelines should be created by assessing the current performance of successors with their future potential to ensure that generational transitions brought about by the exit of key members are handled smoothly. Family businesses should not sacrifice hiring new employees and leaders even if they are not blood-related or introducing new product portfolios just to maintain a degree of family control within the business. A shared vision for innovation is a strong foundation that will ensure open lines of communication and effective transitions from one stage of business succession to the next.

Family businesses should design succession plans based on merit and not nepotism, bloodline, culture, religion or gender. The likelihood of appointing a female successor also depends mainly on whether a climate for diversity exists within the family business or not; therefore, family businesses should strive to foster diversity within their enterprises. Family businesses should try to be more objective in choosing the successor and decide more aligned with ensuring the healthy continuity of the business rather than based on past history, culture, internal family conflicts, gender or even religion. Potential successors should be humble and more prepared to learn from the outgoing leader from an entry-level position rather than being placed into a CEO position without adequate training and preparation. The outgoing leader should find a way to transfer their charisma and differentiated vision as part of the readiness and identification of potential successor process. Family business continuity is one of the biggest concerns with regards to the future of family businesses and it is the responsibility of the outgoing leader to ensure that for the sake of future continuity the business is left in the right hands and for the right reasons. Hence, the processes behind the identification of potential successors and the level of preparedness should begin at least five years before the time of the retirement of key members. Overall, it is recommended that family-owned businesses should plan for succession on time and draft a well-planned strategic succession plan for the business.

5. Conclusion

The study aim was to identify and understand factors impacting succession in Indian family businesses in South Africa as well as experiences of these businesses on succession. Findings revealed that Indian family businesses in South Africa face similar issues that have been seen in family businesses, and in particular, Indian family businesses, globally. It was determined that most family firms are unprepared for the process of succession. The implications of this unpreparedness contribute to the non-survival of some of these family-owned businesses. Hence the recommendation was; to ensure healthy and successful business continuity, Indian family businesses need to recognize that a good strategic succession plan needs to be prepared on time, communicated with all relevant stakeholders and be implemented accordingly. This study also revealed that conventional and traditional beliefs that successors should only be male and be from the family's bloodline can be both beneficial and detrimental for business success and continuity. Hence the suggestion that families should be objective in succession decisions and should treat each business according to its unique merits. Further studies are required to look at more factors impacting succession in Indian family businesses.

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