

Influence Of Socio-Economic, Environmental And Financial Infrastructures In Achieving Inclusive Growth In Gulf Region: A Panel Data Analysis

Masahina Sarabdeen¹, Manal Osman Ali Elhaj², Safia Omer Hapallah Omer³, Ghadda Mohamed AwadYousif⁴

^{1,2,3,4} Department of Economics Collage of Business Administration Princess Nourahbint Abdulrahman University, Riyadh

¹drsmasahina@gmail.com /MSarabdeen@pnu.edu.sa

ABSTRACT

Socio-economic, environmental and financial infrastructures are pre-requisites for achieving inclusive growth. Inclusive growth focuses on growth that result in a broader access to stable is it stabilize socio-economic opportunities for a wider number of people in the region or the country protecting the vulnerable and equal justice. In this context, this study aims to analyze the influence of socio-economic, environmental and financial infrastructure on inclusive growth in the short-run and long run among the six Gulf cooperation countries (GCCs). Panel Autoregressive distributed lag approach was used to investigate the relationship of the dependent and independent variables using secondary data for the period of 1990-2016. The findings show evidence of a significant long-run relationship between socio-economic, environmental & financial factors and inclusive growth of GCCs. Besides, it was found the case of disequilibrium in the short run, the Error Correction Mechanism can be significantly adjusted to restore the long-run relationship within the first year. This study is useful for academic specialists and decision-makers, offering extended support for improving the inclusive growth and developing socio-economic, environmental and financial infrastructural policies. In that context, the work proposes to go further, by supplementing inclusive growth with some new elements, required for the society's advancement.

Keywords

Socio-economic and financial infrastructure, inclusive growth, Gulf region, Panel data

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Introduction

Development Bank, 2013). According to Ngepah (2017), a more active participation of the poor is suggested by the main concept of inclusive growth and the two pillars are proposed such as labor absorbing growth and increasing productivity of those who are being employed. "The commission on growth and development laid an emphasis that inclusiveness, a concept that encompasses equity, equality of opportunity, and protection in market and employment transitions, is an essential ingredient for any successful growth strategy" (Ianchovichina and Lundstrom, 2009). According to The United Nations Development Programme (UNDP) perspective, inclusive growth implies participation and benefit-sharing. It ensures that everyone can participate in the growth process and that the benefits are shared equitably. Therefore, there is a need for improving structural transformation and create effective job opportunities for the poor people. Moreover, economic guidelines need to be implemented by investing in human capital and other skilled expansion plans to develop social inclusion and equal access to employments (Alexander, 2015; McKinley, 2010). Thereby, undermining its sustainability would further root existing poverty level, injustice and inequalities (Pedro and Paula, 2013).

With regards to the strategies and inequalities of inclusive growth, the two types of inequalities that the researchers made a distinction with are acceptable and unacceptable inequalities (Chaudhuri and Ravallion, 2007). Differences in individual efforts could be the main reason for arising the acceptable inequality while differences in circumstances beyond the control of individuals could do for unacceptable inequality which prevent equal access to opportunities. It is

the unequal access to chance that must form a fixed target of policy mediations towards inclusive growth. Chaudhuri and Ravallion (2007) suggests that, as the objective of the inclusive growth is to reduce occurrence associated with unacceptable inequality, there is a necessary to form equivalent access to chance.

Accordingly, inclusive growth could be replaced with the term, economic growth with fairness of chance. Consequently, it is tied in with raising the speed of development and augmenting the economy's size, while leveling the odds for venture and expanding opportunities for productive employment, just as guaranteeing reasonable admittance to them. It permits each segment of the society not only to participate in but also to contribute to the growth process equally, regardless of their circumstances. (ADB 2011, 47). Traditionally, studies analyzed poverty and economic growth separately; there may not be a trade-off between equity and efficiency. Economic growth alone is not sufficient to generate economic development and reduce poverty. It is necessary to develop research on inclusive growth (shared growth, broad-based growth, pro-poor growth). Recent studies should take into consideration growth together with income distribution, environmental balance, justice, social security simultaneously (Mthuli et al., 2013, ADB 2011). The main rationale of this paper is to make a comprehensive assessment of key drivers in achieving inclusive growth among the GCCs and to explain the main motivation and contextualize the inclusive growth. These issues are now increasingly pertinent, as the principal objective of inclusive growth is an explicit response to reduce poverty without increasing inequalities and many transformations in terms of employment (Dollar, 2008). It is even more important to consider the role of human capital in

the current pattern of inclusive growth more precisely in Gulf region countries. This research contributes to the ongoing research issues about key determinants influencing factors for inclusive and sustainable development in developing countries especially, in GCC. However, attempts to measure inclusive growth and the influencing factors on achieving inclusive have remained limited.

Consequently, there is an urgent need for the state to assess the socio-economic, environmental and financial factors which boost the inclusive growth in worldwide in general. In this concept, this study focuses among the GCCs for letting the stakeholder or policy makers to take strong actions to improve the country against adverse effects of instability and injustice. Thus, this paper aims to investigate the influencing socio-economic, environmental and financial factors on inclusive growth among GCCs. Further, this study would help policymakers to take into consideration to restructure the socio-economic, environmental and financial infrastructure to achieve the inclusive growth of the country, which will be of added value to the world at large.

Literature

Socio-economic factors related to inclusive growth

There is an interaction between economic, social and environment to inclusive growth. Recent inclusive related studies have examined the relationship between economic growth and social dimension. Many of the existing studies confirmed that socio-economic variables such as health, education, trade openness, inflation, GDP per capita are the most important umbrella of institutions on inclusive growth for less and middle developed Asian countries (Aslam and Zulfikar, 2016). Inclusive growth is a crucial factor to reduce the poverty and it would increase the employment and create opportunities for productive activities among the poor. Tsai and Huang (2007) analyzed the link between growth and poverty in Taiwan. It was found that economic growth is a major driving force to reduce poverty while openness to foreign trade helps the poor people through a direct distribution effect as well as an indirect growth effect, in both the long and the short term. According to Nwosa (2016) exchange rate significantly influenced unemployment rate while fiscal policy significantly influenced poverty, rate in Nigeria. Nwosa (2016) emphasized that, it is important to take initiatives prudently to utilize the fiscal and monetary policies to reduce unemployment rate in order to achieve inclusive growth in Nigeria. More & Ayea (2017) assesses the effect of social infrastructure on economic development and disparity in South Africa. Social infrastructure refers to infrastructure that gratifies for social services such as jails, hospitals, public educational institutes. The result shows that education spending positively related with economic development; meanwhile economic development and disparity were negatively associated with health in South Africa. Smorgunov (2018) describes that the formation of public management that encounters the justifiable development and enhancement of social welfare level, requires not only sharing institutions, but also sharing culture as a prerequisite of inclusive economic growth in BRICS. UNCTAD (2011) stated that tourism can play a pivotal role to promote economic diversification, structural

transformation, global fight to poverty reduction and peace and development in Africa continental inclusive growth.

D'Souza (2018) analyzed the magnitude of exclusiveness among the homeless people in India. The study justifies that there is a need to address the difficulties of people who does not have home by adopting applicable or minimal-cost housing strategies and a careful operation in order to achieve level of justice, where the nations adore liberty, security, and basic services to achieve growth in India.

Financial inclusive

A study of Abor (2018) investigates whether telephone communication advances pro-poor improvement by making a difference households to efficiently designate consumption and explore out of deprivation. Secondly, the study analyzes whether access to a wide cluster of financial administrations improves the capacity of households to higher stranded of living. The study found that mobile technology and financial inclusion significantly associate with diminished destitution and expanded family utilization per capita within the female-headed family and rustic tests in Ghana.

The study of Olusola & Oluwatobi (2017) shows that both the direct and indirect transmissions with which monetary policies distress on the inclusive development. The finding shows that monetary policy instruments need to be adjusted to reach ideal and effective inclusive growth in Nigeria. Further, the result of structural vector auto regression framework indicates that the money supply shock and financial openness greatly affect inclusive advance in Nigeria. Ayinde & Yinusa (2016) examines the link between monetary improvement and inclusive development in Nigeria for the period 1980 – 2013. Finding the study shows that the effect of monetary development on inclusive advance subject to the measure of the prior up to the threshold level and not beyond. The results further revealed that government's inclusion within the working of the economy, monetary openness and capital speculation are delicate to the design of financial advancement in Nigeria.

Environmental inclusive

While, several studies have considered the impact of growth on environmental conditions. The study of Smyth et al (2008), analyzes the correlation between development and environmental concerns in China. The outcome of the study shows that the high rate of economic development causes a high rate of contamination, which is experienced by many cities in China. Natural disasters, as well as a traffic congestion problem also are major problem in many cities in China. Those problems are becoming a major impediment for the future development of China. Another study investigated the impact of rising CO₂ expulsions on inclusive human advance in 44 sub-Saharan African nations for the period 2000–2012 (Asongu, 2018).

Review on inclusive growth and Gulf corporation countries (gccs)

The general economic execution of GCCs nations has a major impact on the economic development within the Middle Eastern region as a whole. Middle East and

GCCs contributed to the actual GDP of the region remains steady with the higher share of around 59 per cent among the Arab region. Saudi Arabia and the United Arab Emirates collectively denote for more than two thirds of the total GDP of GCCs. The yearly average growth rate of real GDP per capita exhibited a shape comparable to that of the real GDP. Since of the economic emergency in 2008, GCCs recorded an actual GDP per capita development rate of -4.41 per cent in 2009. However, these countries recouped within the two years and recorded essentially superior development rates of actual GDP per capita, cresting at 3.99 per cent in 2011. In framework of economic sustainability, the Arab region has the most noteworthy youth unemployment rates within the globe and are creating a talented labor force. Creating jobs is a great challenge to the GCCs.

In addition to that, it is evident that the only largest recipient of temporary migrants that has implications for social sustainability in terms of the coherence and fabric of societies, is the GCC countries. In the context of, specifically inside the MENA region, the disappointment of nations to participate in economic advancement with specific thought, with regards to the impacts on social and economical, was apparently one of the most supporters to the Middle easterner Spring. For instance, from an economic perspective, as an outcome of the lack of strong sustainable development schemes, inconsistent in terms of wealth distribution is a serious issue in the mentioned region. Correspondingly, it is clear from a social point of view, the disappointment to absorb the public of all categories in the decision-making process and assure that everyone has equal chances, again through an absence of vital practical improvement added a fuel to fire for developing a feeling of estrangement and disconnection, which at last prompted the Arab Spring (Mouzughhi and Al Rasheed, 2017).

The economic development of GCCs states that the last three decades have accomplished extraordinary rates. However, the region has being evidenced an uncalculated cost to its limited natural and conservational assets. Moreover, a more noteworthy portion of concealed reserves of oil and gas of GCCs is gradually overwhelmed to fuel their fast economic and urbanization development. Interest for power is mounting and will develop unavoidably by 7%- 8% for every annum for the following decade to meet the heightening requirement for air conditioning and water-produced, generally from energy-intensive desalination measures. Balancing their socio-economic development, coupled with inefficient energy use and damaging (Mouzughhi and Al Rasheed, 2017).

Methodology

For the estimation purposes, the study used panel co-integration techniques to address the impact of financial development, unemployment, Carbon dioxide (CO₂) emission, energy use, and mortality rate and schooling years on inclusive growth in GCCs. We used credit to private sector as a financial development indicator, unemployment is an economic indicator to measure the inequality, CO₂ and energy are environmental indicators, year of schooling and infant mortality rate are the socio variables to measure the educational level, and health condition and standard of living of the people of the country respectively.

Model specification

The model specification of the relationship between inclusive growth (PGDP), financial development (FD), unemployment (UEMP), CO₂ emission (CO₂), energy use (EU), infant mortality rate, (MORT) and schooling years (ESCH) is expressed as follows in Equation 1:

$$Y_{it} = \beta_{0i} + \sum_{j=1}^k \sum_{i=0}^{q_i} \beta_{ij} X_{ijt} + \varepsilon_{it} \quad , i = 1, \dots, N, \quad t = 1, \dots, T \quad (1)$$

Y the dependent variable (PGDP)

X the explanatory variable (FD, UEMP, CO₂, EU, MORT, ESCH)

Unit Root test

Firstly, the study performed panel unit root tests to check the presence of root among the series.

Panel co-integration Test

The panel co-integration equation specified in the line of basic form of Pedroni (2004) test as follows in Equation 2:

$$\log PGDP = \beta_{0i} + \beta_{1i} FD_{it} + \beta_{2i} UEMP_{it} + \beta_{3i} CO_{2it} + \beta_{4i} EU_{it} + \beta_{5i} MORT_{it} + \beta_{6i} ESCH_{it} + \omega_{it} + \varepsilon_{it} \quad , i = 1, \dots, N, \quad t = 1, \dots, T \quad (2)$$

Where ω_{it} represents the group effect (heterogeneity). The decision regarding the existence of co-integration among the variables is taken based on the results of the majority of the seven statistics proposed by Pedroni (2004) co-integration test.

Panel ARDL

Based on the results of the co-integration test, the study estimated the coefficients using the ARDL (p, q) model for the long-run relationship between inclusive growth and financial development, unemployment, CO₂ emission, energy use, mortality rate and years of schooling. This model is defined as follows in Equation 3:

$$\begin{aligned} \Delta \ln PGDP_{it} = & \alpha_i + \sum_{k=1}^p \beta_{1i} \Delta \ln PGDP_{it-k} + \sum_{k=0}^{q_1} \beta_{1i} \Delta \ln FD_{it-k} + \sum_{k=0}^{q_2} \beta_{2i} \Delta \ln UEMP_{it-k} \\ & + \sum_{k=0}^{q_3} \beta_{3i} \Delta \ln CO_{2it-k} + \sum_{k=0}^{q_4} \beta_{4i} \Delta \ln EU_{it-k} + \sum_{k=0}^{q_5} \beta_{5i} \Delta \ln MORT_{it-k} \\ & + \sum_{k=0}^{q_6} \beta_{6i} \Delta \ln ESCH_{it-k} + \omega_{it} + \varepsilon_{it} \end{aligned} \quad (3)$$

Where i indicate the cross- section, and t represent the time period. The short-run parameters of ARDL were estimated using the error correction model ECM, which specified as follows in Equation 4

$$\begin{aligned} \Delta \ln PGDP_{it} = & \alpha_i + \sum_{i=0}^p \lambda_{ij} \Delta \ln PGDP_{it-j} + \sum_{i=0}^{q_1} \theta_{ij} \Delta \ln FD_{it-j} + \sum_{i=0}^{q_2} \theta_{ij} \Delta \ln UEMP_{it-j} \\ & + \sum_{i=0}^{q_3} \delta_{ij} \Delta \ln CO_{2it-j} + \sum_{i=0}^{q_4} \varphi_{ij} \Delta \ln EU_{it-j} + \sum_{i=0}^{q_5} \gamma_{ij} \Delta \ln MORT_{it-j} + \sum_{i=0}^{q_6} \theta_{ij} \Delta \ln ESCH_{it-j} \\ & \lambda_{ij} ECM_{t-i} + \omega_{it} + \varepsilon_{it} \end{aligned} \quad (4)$$

Causality tests

The study applied vector error correction model (VECM) to test the short run and long run causality between the

variables. The empirical analysis of study is based on balanced panel data cover the 6 GCCs during the time period 1991-2016. The selection of the period of the study is based on the availability of data on the selected variables. The variables used are; Inclusive growth is proxy with per capita GDP, financial development (domestic credit to private sector (% of GDP)), unemployment (% of total labor force), CO2 emissions (metric tons per capita), energy use (kg of oil equivalent per capita), mortality rate (infant), expected years of schooling. All the data transformed to logarithmic form. Data on the selected variables were obtained from the 2019 World Bank Development Indicators, United Nations Development Program (UNDP) and United Nations Conference on Trade and Development (UNCTAD).

Results and Discussion

Unit root tests results

Unit root tests were used to check the stationary of data series. ImPesaran and Shin W-stat., Augmented Dickey-Fuller test and Phillips-Perron test were used to check the stationary of the seven variables.

Table 1 Panel unit root test result (series in level)

Variables	Im, Pesaran, and Shin W-stat	ADF-Fisher Chi-square	PP-Fisher Chi-square
Log PGDP	-2.75004*** (0.0030)	38.9706*** (0.0001)	6.00541 (0.9158)
Log FD	-1.48381* (0.0689)	20.3715* (0.0604)	8.25206 (0.7651)
Log UEMP	1.29677 (0.9026)	9.40392 (0.6681)	4.16213 (0.9803)
Log CO2	-2.37170** (0.0089)	28.8196*** (0.0042)	32.4048*** (0.0012)
Log EU	-0.89955 (0.1842)	15.0847 (0.2368)	12.6960 (0.3915)
Log MORT	1.05282 (0.8538)	7.90862 (0.7922)	17.8011 (0.1219)
Log ESCH	1.79158 (0.9634)	13.6587 (0.3230)	4.72591 (0.9665)

*, **, *** indicates that the estimated parameters are significant at the 10%, 5%, and 1%, respectively.

Table 2 Panel unit root test result (series in first difference)

Variable s	Im, Pesaran, and Shin W-stat	ADF-Fisher Chi-square	PP-Fisher Chi-square
Log PGDP	-7.95464*** (0.0000)	72.3602** * (0.0000)	76.7472** * (0.0000)
Log FD	-6.31597*** (0.0000)	55.3572** * (0.0000)	61.7911** * (0.0000)
Log UEMP	-4.51488*** (0.0000)	40.3519** * (0.0000)	26.5194** * (0.0000)
Log CO2	-	82.3604**	118.645**

	8.88784*** (0.0000)	* (0.0000)	* (0.0000)
Log EU	-9.45214*** (0.0000)	85.6028** * (0.0000)	126.339** * (0.0000)
Log MORT	-6.68039*** (0.0000)	73.3843** * (0.0000)	39.3044** * (0.0000)
Log ESCH	-1.93572** (0.0265)	21.8285** (0.0395)	35.3375** * (0.0004)

*, **, *** indicates that the estimated parameters are significant at the 10%, 5%, and 1%, respectively.

Table 1 result shows that three of the selected variables (PGDP, FD, CO2) are stationary at the level.

Table 2 result shows that all the selected variables became stationary at the first difference. The results illustrates that all variables were integrated of order one; I(1) which allows to apply ARDL procedure for the panel data.

Co-integration tests results

To identify the long run and short-run relationship between the variables, the study applied Pedroni (2004), Kao (1999) and fisher (1999) co-integration analysis. The results presented in Table 3. Based on Pedroni's test of co-integration none of the panel co-integration test statistics rejects the null hypothesis at 1%, 5% or 10% levels, while the results of Kao test reject the null hypothesis of no co-integration at 1% level of significance. Moreover, Fisher co-integration test for both trace and maximum eigenvalue statistics supported the co-integration of the variables at 1% and 5% level of significance.

Table 3 Panel co-integration tests

Tests	Statistic and probabilities	
Petroni test	Statistic	Weighted Statistic
Panel v-Statistic	-0.277907 (0.6095)	-0.398805 (0.6550)
Panel rho-Statistic	2.373546 (0.9912)	1.804455 (0.9644)
Panel PP-Statistic	1.736311 (0.9587)	0.087335 (0.5348)
Panel ADF-Statistic	-0.089798 (0.1650)	-1.000545 (0.1585)
Group rho-Statistic	2.894673 (0.9981)	
Group PP-Statistic	0.779254 (0.7821)	
Group ADF-Statistic	-0.974263 (0.1650)	
Kao test		
ADF statistic	-3.464719*** (0.0003)	
Fisher test	Trace test	Max Eigen test
None	337.2*** (0.0000)	351.9*** (0.0000)
At most 1	229.0*** (0.0000)	126.2*** (0.0000)
At most 2	125.8*** (0.0000)	60.80*** (0.0000)
At most 3	75.68*** (0.0000)	33.88*** (0.0007)
At most 4	50.13*** (0.0000)	29.32*** (0.0035)
At most 5	32.42*** (0.0012)	25.54** (0.0125)
At most 6	27.44** (0.0067)	27.44** (0.0067)

*, **, *** indicates that the estimated parameters are significant at the 10%, 5%, and 1%, respectively.

Panel ARDL (PMG) estimations results:

The study applied Pool Mean Group (PMG) method modified by Pesaran and smith (1995), to estimate long run and short run coefficients. The maximum lag length values (p, q1, q2, q3, q4, q5, q6), selected based on Akaike info. Criterion (ACI), Schwarz Criterion (SC) and Hannan-Quinn (HQ) Criterion. ARDL (2, 1, 1, 1, 1, 1, 1) model was revealed as the best model for the panel.

Table 4 summarized the panel PMG estimation results. The output confirmed the long-run relationship between the inclusive growth in GCCs. Financial development (FD), unemployment (UEMP), and CO2 emission are significant and have unexpected sign. Meantime, energy use, mortality

rate, and schooling years were significant with expected sign.

The short-run results presented in table 4 showed that the value of ECM was implies (40%) deviation form long-run equilibrium. The negative sign for ECM, which was statistically significant, indicated that (40%) of disequilibrium in the short-run can significantly be recovered within the first unit of time. In addition, the short-run results showed that most of the variables have a statistically insignificant coefficient except the lag of per capita GDP and unemployment were significant at 10% level.

PMG estimates in Table 4 also showed the estimates of the error correction models for each GCCs, all coefficients of ECM for every country was negative and significant, indicated that there is long run equilibrium for all GCCs.

Table 4 PMG estimation result

Long-run estimations:	Coefficient	P value
Log FD	-0.192228	0.0001
Log UEMP	0.077730	0.0088
Log CO2	0.143839	0.0029
Log EU	0.174072	0.0043
Log MORT	-0.107155	0.0021
Log ESCH	0.277684	0.0011
Short-run estimations:		
ECM	-0.400896	0.0169
Δ Log PGDP(-1)	0.219088	0.0733
Δ Log FD	-0.043250	0.4899
Δ Log UEMP	-0.116711	0.0895
Δ Log CO2	-0.024378	0.3404
Δ Log EU	0.046487	0.6129
Δ Log MORT	0.427615	0.2767
Δ Log ESCH	-0.053191	0.8601
C	3.356721	0.0143
Cross-section short-run coefficient:		
Bahrain	-1.036984	0.0000
Kuwait	-0.432542	0.0001
Oman	-0.039594	0.0145
Qatar	-0.175369	0.0000
Saudi Arabia	-0.697659	0.0001
United Arab Emirates	-0.023226	0.0038

Panel causalities results

Although the long-run relationship among the variables indicates the existence of Granger causality at least in one direction, which does not give any information regarding the direction of the causality. The study applied VECM model to test the short run and long run causality between the variables. The results of Table 5 shown a unidirectional short run causality running from PGDP to CO2, EU and ESCH; from UEMP to EU; CO2 to MORT, ESCH to MORT and from EU to ESCH. Moreover, there was a bidirectional causality between EU and MORT. In addition, the significant error correction coefficient indicates the existence of long run causality in five equation, ensuring

that long run causalities are provided to FD, CO2, EU, MORT and ESCH.

Table 5 Panel causality test results

Short run causality	T statistic
Log PGDP $\rightarrow$ Log CO2	2.353218 (0.0188)
Log PGDP $\rightarrow$ Log EU	2.937440 (0.0034)
Log PGDP $\rightarrow$ Log ESCH	3.813579 (0.0001)
Log UEMP $\rightarrow$ Log EU	3.072082 (0.0022)
Log CO2 $\rightarrow$ Log MORT	-1.743010 (0.0816)
Log EU $\leftrightarrow$ Log MORT	-2.147397 (0.0320) 2.600420 (0.0059)
Log EU $\rightarrow$ Log ESCH	3.561002 (0.0004)
Log ESCH $\rightarrow$ Log MORT	-3.986571 (0.0001)
Long-run causality	ECT
F(LPGDP,LFD,LUN,LCO2,LEU,LMORT,LESCH)	0.000745 (0.7753)
F(LFD,LPGDP,LUN,LCO2,LEU,LMORT,LESCH)	-0.015421** (0.0392)
F(LUN,LPGDP,LFD,LCO2,LEU,LMORT,LESCH)	0.007508 (0.2144)
F(LCO2,LPGDP,LFD,LUN,LEU,LMORT,LESCH)	0.013829* (0.0788)
F(LEU,LPGDP,LFD,LUN,LCO2,LMORT,LESCH)	-0.016325*** (0.0000)
F(LMORT,LPGDP,LFD,LUN,LCO2,LEU,LESCH)	-0.002141*** (0.0000)
F(LESCH,LPGDP,LFD,LUN,LCO2,LEU,LMORT)	-0.002025* (0.0905)

*, **, *** indicates that the estimated parameters are significant at the 10%, 5%, and 1%, respectively; ($\rightarrow$), ($\leftrightarrow$) indicate unidirectional causality and bidirectional causality respectively.

Conclusion

To add up, inclusive growth is emphasizing that for the economic growth of a country, steps should be taken to develop employment & infrastructure, to mitigate reduce the inequality, poverty & general equity, accessibility, ensure social protection and governance. (the World Economic Forum 2017) The well-established Human Development Index (HDI) and the more recently developed Multidimensional Poverty Index (MDI) both focuses on health, education, and standard of living. The Inclusive Development Index (IDI) adds inequality as an overarching dimension to these existing indices and further contributes to a multidimensional understanding of development. Considering the three index; HDI, MDI, IDI, the current study includes all the dimensions together with environmental dimensions. This is the uniqueness of the present study. Panel co-integration techniques had being used to address the impact of financial development, unemployment, CO2 emission, energy use, and mortality rate and schooling years on inclusive growth in GCCs. We used credit to private sector as a financial development indicator, unemployment is an economic indicator to measure the inequality, CO2 and energy are environmental indicators, year of schooling and infant mortality rate are the socio variables to measure the educational level, and health condition and standard of living of the people of the country respectively. The result shows that there is long-run relationship between the financial, socio-economic, environmental variables and inclusive growth in GCCs. Financial development (FD), unemployment (UEMP), and CO2 emission are significant and have unexpected sign. Meantime, energy use, mortality rate, and schooling years were significant with expected sign. However, to strengthen the focus on inequality in development practice, the implementation of concrete policies need to be followed to boost the financial development and create more job opportunities to absorb the labor force in GCCs. Specially, labor female participation increases equivalently or more

than men labor participation. Significant of the variables; energy use, mortality rate, and schooling years proves that GCCs is achieved inclusive growth in social dimension (education and living standard). The Inclusive Development Index provides a useful picture of the current situation on a country level and allows to measure progress made in reducing inequality.

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References

- [1] Aslam, A., & Zulfikar, K. (2016). Policy Framework for Inclusive Growth: A Case Study of Selected Asian Countries. *Forman Journal of Economic Studies*, 12 (January–December).
- [2] Asongu, SA (2018). CO2 emission thresholds for inclusive human development in sub-Saharan Africa. *Environmental Science and Pollution Research*, 25:26005–26019. <https://doi.org/10.1007/s11356-018-2626-6>.
- [3] AT Olusola, & AT Adekunle, (2017) Monetary Policy Efficiency and Inclusive Growth in Nigeria: A Dea Approach *ActaUniversitatisDanubius. (Economica Vol 13, No 6*.
- [4] D'Souza, Prescilla., (2018). 'Inclusive Growth – A Solution to Homelessness'. *Journal of Management*, DOI:10.18311/sdmimd/2018/21685.
- [5] Madhushree Joshi. (2019). "Inclusive Innovations for Sustainable Development: A Right Path for Global Prosperity" *Global Journal of Enterprise Information System Volume-10, Issue-4*. (www.gjeis.com). <https://scholar.google.co.in/citations?user=S47TtNkAAAAJ&hl=en>
- [6] P.I Nwosa(2016). Impact of Macroeconomic Policies on Poverty and Unemployment Rates in Nigeria, Implications for Attaining Inclusive Growth. *ACTA UniversitatisDanubius Vol 12, No 2*.
- [7] Patluang, K. (2018). Contemporary Frontier Transformation for Inclusive Growth: The Dual Role of "Smart" Competitiveness Factors. *Journal of Business and Economics Review*. 3 (3) 67 – 74. www.gatreenterprise.com/GATRJournals/index.html
- [8] Puja Rani and Deepak Kapur (2019). Need of Inclusive Growth in India: Some Justifications. *Journal of Commerce & Accounting Research* 8 (2), 72-78 <http://publishingindia.com/jcar/>
- [9] Sharma, Vijay Paul (2012). Accelerating Agricultural Development for Inclusive Growth: Strategic Issues and Policy Options. *VIKALPA* , VOLUME 37. NO. 1 .
- [10] Smorgunov, L.V. (2018). Inclusive Growth and Administrative Reform in the BRICS Countries. *Public Administration Issues. Special Issue*.
- [11] TO Ayinde, & OG Yinusa (2016). Financial Development and Inclusive Growth in Nigeria: A Threshold Analysis .*ActaUniversitatisDanubius*, Vol 12, No 5.
- [12] UNCTAD (2017) Economic Development in Africa Report: Introduction Tourism for transformative and inclusive growth. In *Africa*.
- [13] Wong, C Y and Lee, K., (2018). Projecting the Arena of Inclusion: The Case of South Korea in Pursuing a Phased Inclusive Growth Process. *Review of Policy Research*, Volume , Number 10.1111/ropr.1228.
- [14] Meyer, D & Meyer, N. (2019). Assessment of Inclusive Growth Performance: A Comparative Analysis of the BRICS Countries, *ActauniversitatisDanubius*, Vol 15, no 4.
- [15] Itumeleng More and Goodness C. Ayea . (2017), Effect of Social Infrastructure Investment on Economic Growth and Inequality in South Africa: , South Africa, Pretoria, University of Pretoria, Department of Economics.

- [16] Joshua Yindenaba Abor, Mohammed Amidu & Haruna Issahaku (2018) Mobile Telephony, Financial Inclusion and Inclusive Growth, *Journal of African Business*, 19:3, 430-453, DOI: 10.1080/15228916.2017.1419332.
- [17] Brundtland, G.H., (1987). "Report of the World Commission on environment and development: our common future." United Nations.
- [18] Dollar, David. 2008. "Lessons from China for Africa." World Bank Policy Research Working Paper Series (4531).
- [19] Ianchovichina, Elena and Susanna Lundstrom. 2009. "Inclusive Growth Analytics: framework and Application." World Bank Policy Research Working Paper, (4851).
- [20] Mthuli Ncube, Shimeles Abebe and Younger Stephen. 2013 "Inclusive Growth Index for Africa: Methods and Application." African Development Bank Working Paper.
- [21] Ngepah, N (2017). A review of theories and evidence of inclusive growth: an economic perspective for Africa.
- [22] Smyth, R., Nielsen, I., Zhai, Q., Liu, T., Liu, Y., Tang, C.Y., Wang, Z., Wang, Z., and Zhang, J. (2008), "Environmental Surroundings and Personal Well-Being in Urban China," Monash Department of Economics Discussion Paper 32/08.
- [23] Tsai, P. L. and Huang, C. H. (2007), "Openness, Growth and Poverty: The Case of Taiwan", *World Development*, Vol. 35, No. 11, pp. 1858–1871.
- [24] Sustainable Development Challenges in the Arab States of the Gulf, Yusra Mouzughy and Turki Faisal Al Rasheed, Published by: Gerlach Press, DOI: 10.2307/j.ctt1df4hx6, Pages: 224.
- [25] Al-Yousif, Y. K. (2004). EDUCATION EXPENDITURE AND ECONOMIC GROWTH: SOME EMPIRICAL EVIDENCE FROM THE GCC COUNTRIES. United Arab Emirates University, UAE.
- [26] ADB (2011) Sustainable Development Working Paper Series, Inclusive Growth Criteria and Indicators: An Inclusive Growth Index for Diagnosis of Country Progress.
- [27] Mouzughy, Y. and Al Rasheed T.F. (2017). Sustainable Development Challenges in the GCC, Gulf Research Center Cambridge,