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A Panel Data Analysis on successful sustainable development Economic Growth in KSA and UAE

[1]Hend Al Qassemi
[1]Shahrjah, United Arab Emirates

Abstract

This present study was conducted to know the impact of successful sustainable development goals on economic growth. The seventeen indicators of sustainable development are taken as independent variables to know the economic growth of UAE and KSA which are considered as dependent variables. The panel data analysis was conducted during the period from 2000-2020. The data was taken from gccstats and World Bank. The discussion was conducted before, during and after the economic situation with a special focus on the global financial crises and climate change situation in the KSA and UAE. The results of this study are important for every developing and non-developing country. The results provide the framework for authorities to design efficient economic, fiscal, and monetary policies for sustainable development growth.

Keywords: Sustainable Economic, Panel data analysis, Gross Domestic Product, sustainable development goals, KSA and USA.

Introduction

Saudi Arabia and UAE grapple with sustainable development issues, originating in the late 19th century, aiming to efficiently utilize natural resources (1). In today's world, development doesn't mean economic growth but also improvement in different aspects of human well-being including health and social well-being (2). The definition of development was promoted by European Union. The ultimate aim of development is to achieve sustainability. There were many definitions that were mentioned in past, the most popular was (3).

Economics study on sustainable development requires multiple analytical frameworks (4) to analyse the relationship between long-term economic development. Multiple theories provide perspectives on the relationship between economic growth and sustainability because growth theorists (5) join forces with resource economists and ecological economists and policymakers have done the same (6). Gross Domestic Product (GDP) functions as the dominant economic development indicator yet fails to represent the general welfare state of a population (7). A total of seventeen indicators provide comprehensive framework for understanding economic development alongside societal well-being (8). The selected indicators demonstrate powerful positive relationships with economic expansion which increases their importance for policy-making processes (9). The research reveals fundamental regions that require attention while providing strategic insights into upcoming development initiatives which demonstrate the necessity of diverse development techniques (10). The key indicators which directly link to economic growth among various inspection points. Individual variables were estimated using multiple regression analysis (11) to understand ecological and socio-demographic patterns which affect economic development and sustainability (12). The combination of these insights creates an essential foundation for policy development which supports both economic progress and social advantage.

The study establishes methods for evaluating the sustainable development levels found within KSA and UAE. Sustainable development projects should become the primary priority for KSA and UAE countries instead

Hend Al Qassemi
Shahrjah, United Arab Emirates
Hendalqassemi@researchergroup.co

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of restricting themselves to exclusive economic expansion. Additional indicators together with policy measures contribute to sustainable development enhancement. This study analyzes national distinctions and establishes specific guidelines utilizing references for advancing toward defined developmental stages.

Literature Review

Economists create economic management models, including classical and neoclassical schools. Adam Smith's "Wealth of Nations" theory, incorporating modern large-scale production models, favors free trade (13).

Public organizations should support labor specialization as an economic policy. Priority growth theories organized their framework into clear systems (14). A modification of the classic Solow growth model demonstrates that economic growth stems directly from variations in capital productivity (15). Multiple important scholars developed principles across mathematical domains as well as economic understanding and basic macroeconomic research (16). Endogenous growth theory represents the current dominant conception of growth dynamics (17). The research exclusively utilized quantitative data from economic growth and sustainability development analyses to reveal the key growth determinants in KSA and UAE (18). Ecological issues are a major factor affecting sustainable development in developing countries (19) like the KSA and UAE. These countries' heavy dependence on fossil fuels leads to increased GDP per capita and standard of living, but also depletion of resources (20). This necessitates sustainability reforms (21). Despite the increasing population and knowledge gap, the GCC countries have experienced economic growth in the last three decades. Sustainable changes in policies include economic, social, and ecological changes, as well as resource security adjustments to maintain a balance between resource use and availability.

Methodology

This research examines the KSA and UAE as its study targets. The researchers examined data from these countries using multiple research periods. Initial data collection involved retrieving sustainable development datasets from gestates alongside world bank. The data is from 2000 to 2020. The relationship between GDP and sustainable development measured through correlation analysis where both the log change of sustainable development indicators and GDP received correlation coefficients. E-views served as the tool which produced results for each dataset. Sustainable development variables were utilized solely for meeting the established requirements. The analysis spanned between 2000 to 2020 where researchers measured data at annual intervals.

The researchers conducted a data panel analysis through random Effect modeling. The initial analysis employed panel least square methods. The research verified statistical significance through assessment of random effect model application. Breusch- Pagan test produced values below 0.005 which prompted us to adopt a Random effect model approach. The REM proves to be the most appropriate analysis choice since random effect values remained significant and Durbin- Wu-Huhasman test results exceeded the assumed value 0.05.

Within the REM methodology Panel provides EGLS (cross-section random effects) as its model where EGLS stands for Error General Least Square. The error correction process operates exclusively on non-casually generated parts of error. The experiment data demonstrates that individual variables generate positive effects on the outcome variable. REM intercept displays the average data from KSA and UAE combined together.

The standard formula for panel data analysis appears below. The model uses regression analysis that we refer to as spatial and entity effects supposedly at multiple time points and cross-sections.

$$Yit= \alpha+Xit\ \beta it+\varepsilon it$$

Yit=Dependent variable for the country i at time t
Xit = Independent variable for the country i at time t
I = country number

α=a fixed coefficient
β= regression coefficient
εit = estimated error coefficient

Random Fixed Effect Model Equations

Linear model equation for country A (KSA) and Country B (UAE)

$$Yit= \alpha+Xit\ \beta it+ZiYi+\varepsilon it$$

In this above equation ZiYi having variance and mean of random variable. Also, and unifies specific effect. In this

equation mean value of all countries are same but values of individual countries were known through the analysis in E-view. The equation become.

$$Yit=Xit\ \beta it+\ \alpha+(ui+\varepsilon it)$$

The concept term α the constant term become an intercept in equation. Also, μi is a magnitude which is proportional to the variance of unit specific effect around the constant mean.

$$Yit=(Xi1t+Xi2t+Xi3t+...+Xikt)\ \beta i1/\beta ik+ZiYi+\alpha+(ui+\varepsilon it)$$

This above equation shows the matrix forms of random Effect Model.

$$\sigma^2u/(\sigma\_\epsilon\ ^2+\ \sigma^2u)$$

These variance components were associated with composite residual error (u+ε)

Results

Table 1 Descriptive statistics

Indicator	GDP	SDE	SDS	SDEC	Dummy 1	Dummy 2
Mean	1.961175	6.481175	15.68002	144.5142	0.423528	0.117646
Median	1.700001	4.300001	13.90002	140.6001	0.000003	0.000001
Maximum	36.60001	33.80001	27.50003	1369.001	1.000002	1.000001
Minimum	−9.10001	0.700001	7.000001	20.60001	0.000001	0.000011
Std. Dev.	5.309113	6.211844	5.392117	144.3488	0.497051	0.324103
Skewness	3.071752	2.446123	0.922383	7.266091	0.309523	2.373465
Kurtosis	22.73132	9.581284	2.862902	62.43424	1.095804	6.633332
Jarque-Bera	1512.528	238.1677	12.11934	13258.65	14.19916	126.5596
Probability	0.000001	0.000001	0.002334	0.000001	0.000823	0.000001
Sum	166.7001	550.9001	1332.801	12283.71	36.00002	10.00001
Sum Sq. Dev.	2367.681	3241.312	2442.295	1750273.	20.75295	8.823528

As mentioned in table 1 the independent variables used in this study have an average value of sustainable development variables which reaches 196.12% GDP, 648.12% SDE, 1567% SDS, and 14,451.42% SDEC. The indicators' median values showed GDP at 171%, SDE at 432% and SDS at 1391% and SDEC at 1405%. Our analysis confirms that the median statistics matched the mean values for each indicator. The result reveals that half of measured values remain below the median while the other half exists above it. The standard Deviation (SD) values effectively display how scatter exists throughout the data. Through SD we can monitor how time series evolves over time. The sustainable development economic section displays the greatest level of volatility followed by SDE. The dummy variable two shows the lowest volatility. Skewness values for every independent variable display right-tail behavior. All measurements including SDE, SDS and SDEC remained below three throughout the analysis. All dummy variable values were recorded below three. The values of kurtosis for GDP together with SDE, SDS, SDEC and dummy variable 2 exceeded three. It indicates leptokurtic distributions. The dataset of this research falls within the normal distribution but contains a short pointy tail. The kurtosis measurement of SDEC variable Essence SKU Distribution of External Causes fell below three which signifies a platykurtic distribution pattern. The high Jarque-Bera test value reveals that data points became non-normal at both 0.001 and 1% significance levels.

Pooled OLS and Random Effect Model

The researcher (22) suggests on estimating results through regression analysis but recommends starting with basic simple regression . Every step in the testing method needs to be followed to reach a final determination. Results were extracted from E-Views execution. This research rejected individual variable effects during its analysis. The OLS estimator proved inappropriate for this analysis. Table 2

below shows the estimated results from pooled regression and random effects methods.

$$GDPit = \beta1 + \beta2SDE + \beta3SDS + \beta4SDEC + eit \quad (1)$$

Table 2 . Pooled Regression Model, and Random Effect Model

Pooled Regression					
Variables	**Coefficient**	**Std. Error**	**t-Stats**	**Prob.**	**Obs**
C	−5.242786	2.437461	−2.561184	0.0126	85
SDE	0.185826	0.096484	1.925945	0.0574	85
SDS	0.001224	0.004012	0.305582	0.7605	85
SDEC	0.436955	0.149827	2.916372	0.0043s	85
Random Effect					
C	−6.242786	2.444441	−2.553871	0.0124	85
SDE	0.185825	0.096765	1.920446	0.0586	85
SDS	0.001227	0.004023	0.304717	0.7617	85
SDEC	0.436959	0.150254	2.908045	0.0048	85

Table 2 indicates that the results of the regression analysis, it is equally possible to identify nature of the relationship between GDP and sustainable development indicators in KSA and UAE. The constant (C) also has a negative coefficient showing an initial economic difficulty. In the case of the Sustainable Development Economic (SDE) has the highest coefficient of regression with a coefficient value of 0.1858 and p-value equal to 0.0574 which on reaching a significance level of 0.05 can affect the GDP. Nonetheless, there is no significant relationship between the independent variables and the dependent variable since Social Development Score (SDS) is not statistically significant (p = 0.7605). On the other hand, the study found a positive correlation of SDEC with the GDP of the economy with a coefficient value of 0.4369, p=0.0043 meaning that increase in SDEC will lead to the improvement of economy.

Table 3 The Hausman Test

Test Summary	**Chi-Sq. Stats**	**d.f. Chi-Sq**	**Prob**	
Cross-Section Random	6.653947	4	0.1553	
	Random Effect	**Var. (Diff.)**	**Prob.**	**Obs.**
C				352
C	0.185827	0.012358	0.4772	352
SDE	0.001225	0.000001	0.1261	352
SDS	0.436954	0.185315	0.1987	352
SDEC	−0.008745	0.124785	0.9384	85

The p value in table 3 exceeded the determined threshold of 0.05 so the research study rejected the null hypothesis. The research used REM successfully to achieve its objectives. The sustainable development economic indicators demonstrate positive annual effects that cause economic growth to rise. The dependent variable GDP with 43.65. The reported economic growth exceeded previous results. The economy would achieve improved manufacture and agriculture activities. Economic growth activities drive up CO2 emissions that create environmental problems.

An uptick in growth begins the process yet a plunge toward negative outcomes will become evident so proper governing systems need to operate for attaining sustainable economic development throughout the long term.

Unit Root and Hadri Test

Unit root testing revealed the stationary or non-stationary status of each individual series. Panel data situations require this test to verify if time series hold a stationary condition. Three versions of the hypothesis were compared to determine if these groups of variables were stationary. The evaluation of statistical variables kept its original state during analysis. The time-series data remained stationary until it experienced non-stationarity after applying both first and second differences.

$$\Delta Yt = \beta yt{-}1 + \varepsilon \quad (2)$$

$$\Delta Yt = b0 + \beta yt{-}1 + \varepsilon \quad (3)$$

$$\Delta Yt = b0 + \beta yt{-}1 + b2 + \varepsilon \quad (4)$$

$$\text{Null Hypothesis} = H0 : \beta = 0 \quad (5)$$

$$\text{Alternate Hypothesis} = Ha : \beta < 0 \quad (6)$$

The study applied a panel unit root test presented in table 4 to analyze relationships between economic expansion indicators and sustainable development indicators. The researchers executed their tests following the methodology of Levin, Lin, and Chu. Transformation each variable into its final regression form required these tests to be successful. A model based on sustainable development indicators show null hypothesis rejection results in table 4. The analyzed data series maintained non- stationarity without exhibiting a unit root.

Table 4. Panel Unit Root test.

Variables	**Method: Levin, Lin, and Chu Test**				
	Statistic	**Prob.**	**Cross-Sections**	**Obs.**	**Hypothesis**
GDP	−7.34875	0.0001	2	60	Null: rejected
D (GDP)	−11.5734	0.0001	2	60	Null: rejected
SD(ecological)	−1.61695	0.0528	2	72	Null: not rejected
D(SDE)	−2.66853	0.0037	2	72	Null: rejected
SD(Social)	−5.56546	0.0001	2	100	Null: rejected
D(SDS)	−4.20167	0.0002	2	100	Null: rejected
SD(Economic)	−3.33352	0.0003	2	89	Null: rejected
D(SDEC)	−8.83458	0.0001	2	79	Null: rejected

As shown in the table 4 Results from the statistical analysis demonstrate important findings about different economic indicators. Statistical tests conducted on GDP alongside its first difference (D) produced very strong reverse relationships that produced 0.0001 P-values so the model rejected its null hypothesis. A p-value of 0.0528 for standard deviation of ecological measures (SD(ecological)) leads to a non-rejection of the null hypothesis. Other measures constitute social and economic standards which display highly significant negative value assessments leading to the rejection of their initial hypotheses. Results reveal essential patterns in economic and social data while showing different levels of statistical significance throughout.

Table 5 Hadri Unit Root test.

Method	**Stats**	**Prob.**
Hadri Z-statistic	−0.32741	0.6284
Heteroscedastic consistent Z-stat	2.47302	0.0065

Note: Series GDP; Sample: 2000–2020; Observations: 357; Null Hypothesis: Stationarity.

Table 5 has shown that the p-value for the Hadri Z-statistic at -0.32741 gives us an insight that more pq confidence can be placed in the null hypothesis that the series may not be stationary since the p-value is equal to 0.6284. Conversely, the Heteroscedastic consistent Z-statistics of 2.47302 for the absolute value of z-t bars have p-value of 0.0065 refutes the null hypothesis to support the stationary of the series. This divergence between two tests raise concerns in terms of data behavior over time and a careful attention should be given to the stationarity aspect in further analysis on regularities between the changes in different economic indexes and sustainable development.

Panel Least Squares Method

Data from table 6 indicates through panel least squares analysis all three variables display positive associations with appropriate economic development. A 10% shift in SDE along with SDS led to GDP growth at 10.12% and 44.2%, respectively. The calculated p value of 0.02 remains lower than the established threshold of 0.05. This confirmation indicates an equilibrium lasting through time. The final analysis establishes the important role of the model.

Table 6 Panel Least Square Method

	Coefficient	Std. Error	t-Stats	Prob.
C(1)	−16.58492	7.394437	−2.378128	0.0201
C(2)	0.160221	0.146945	1.770847	0.0811
C(3)	−0.000574	0.004154	−0.137461	0.8910
C(4)	1.011892	0.443857	2.279771	0.0256
C(5)	0.509787	0.486721	1.047394	0.2985
C(6)	−0.334252	1.189066	−0.281102	0.7794
C(7)	4.430067	1.941082	2.282271	0.0254

Table 6 has shown that the regression analysis reveals different levels of importance between individual coefficients. The coefficient of -16.58 for C (1) demonstrates significant force and produces a p-value of 0.0201. Analysis shows that C (2) produces a positive coefficient of 0.16 which borders on statistical significance (p = 0.0811) although C (3) exhibits no significant effect (p = 0.8910). The analysis found statistical significance at p = 0.0256, while displaying an upward slope of 1.01. Insights from the coefficients show C (5) and C(6) produce insignificant results due to their p-values of 0.2985 and 0.7794. Analysis reveals that the coefficient C (7) presents both a significant association (p = 0.0254) and a positive direction to the model.

The Wald Test

Measurement of the Wald test enabled researchers to select between pooled or REM methods. Our null hypothesis assumptions led to its acceptance. The pooled regression emerged as the selected analytical approach in this study. Results from Wald test table 7 demonstrate a statistically significant linkage exists between the two attributes.

Table 7 The Wald Test

Test Statistics	Values	d.f.	Prob.
t-statistic	−2.411003	68	0.0187
F-stats	5.812947	(1.68)	0.0185
Chi-square	5.812947	1	0.0154

Table 7 has shown that as it can be derived from the test statistics, there exists a significant correlation among the variables of interest. From the above results, the t-statistic computed was -2.4110 while the p-value was 0.0187 hence rejecting the null hypothesis as the effect is statistically significant. The F-statistic of 5.8129 with 1 and 68 degree

of freedom also mark significance level (p = 0.0185) and confirm the relationship between the independent and dependent variables. The score of the Chi-square test is 5.8129 indicating the significance of the relationship between the investigated variables, and overall the hypothesis that investigated variables are relevant in the frame work of the study is supported by the p-value of 0.0154.

Table 8 Johansen Fisher panel Co-integration test

Hypothesized No. of CE(s)	Fisher Stat. (TraceTest)	Result	Fisher Stat. (Max-Eigen Test)	Result	Obs.
Series GDP–SDE					
None	128.2	0.0001	105.2	0.0000	130
At most 1	67.67	0.0000	67.67	0.0000	130
Series GDP SDS					
None	38.65	0.0073	31.72	0.0461	130
At most 1	37.52	0.0102	37.51	0.0102	130
Series: GDP SDEC					
None	85.43	0.0000	60.85	0.0000	130
At most 1	68.50	0.0000	68.51	0.0000	130

Table 8 has shown that Johansen Fisher panel co-integration test found evidence of co-integration between GDP and the sustainable development economic indicator. Extensive evidence supported hypothesis rejection for “none” and “at most 1” through Fisher statistics whose p-value (from trace test) fell below 1% level. This pattern held for maxeigen test results too. The case of the GDP and sustainable development economic indicators. The null hypotheses for “none” and “at most 1” rejected. The analysis shows an integration trend across multiple series. The same conclusion for GDP and ecology. Also for GDP and social sustainable development. Also, VECM model was significant.

Table 9 Individual cross-section results—UAE.

Hypothesized Cointegration	Trace Test Statistics	Prob.	Max-Eigen Test Statistics	Prob.	Obs.
GDP SDE					
None	22.4502	0.0037	20.3208	0.0046	130
At most 1	2.1294	0.1444	2.1295	0.1444	130
Series GDP SDS					
None	12.3874	0.1394	11.3701	0.1367	130
At most 1	1.0177	0.3132	1.0175	0.3132	130
Series: GDP SDEC					
None	23.3225	0.0028	18.9682	0.0085	130
At most 1	4.3541	0.0367	4.3541	0.0367	130

Table 09 shows that the integration analysis for the UAE reveals significant relationships among the variables under consideration. A single integrating relationship exists between GDP and SDE according to the Trace Test where the "None" hypothesis shows statistical significance at 22.4502 (p = 0.0037). When analyzing the GDP and SDS series neither examination detects evidence of cointegration since both probability outcomes surpass 0.1. GDP and SDEC exhibit both "None" level (23.3225, p = 0.0028) and "At most 1" (4.3541, p = 0.0367) level significant results which suggests potential sustained equilibrium between the variables.

Table 10 . Individual cross-section results—KSA.

Hypothesized Cointegration	Trace Test Stats	Prob.	Max-Eigen Test Stats	Prob.	Obs.
GDP SDE					
None	10.5781	0.2387	7.5467	0.4266	130
At most 1	3.0312	0.0817	3.0317	0.0818	130
Series GDP SDS					
None	14.9957	0.0592	9.9908	0.2127	130
At most 1	5.0051	0.0254	5.0051	0.0254	130
Series: GDP SDEC					
None	7.4982	0.5204	6.4031	0.5622	130
At most 1	1.0952	0.2952	1.0952	0.2954	130

The table 10 display results of The co-integration test results show contradictory findings between GDP measurements and various series combinations. GDP SDE fails to demonstrate co-integration due to trace and maxeigen results exceeding 0.05. GDP SDS demonstrates weak long-term association through the second rank co-integration test (p-values = 0.0254) despite the trace test reaching near-significance (p = 0.0592). Co-integration tests for GDP SDEC produce results that exceed the 0.05 significance threshold according to both tests. Long-term relationship strengths in GDP SDS surpass those of GDP SDE and GDP SDEC series integration specifically and this indicates disparate levels of series linkages between them.

Table 11: Panel Fully Modified Least Squares test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SDE	0.097373	0.109658	0.887964	0.3781
SDS	−0.894415	0.461324	−1.938805	0.0573
SDEC	4.486094	0.611395	7.337501	0.0000
R-squared	−293.682746			
Long-Run Variance	5.698580			
SDE	−0.074802	0.015278	−4.895912	0.0000
SDS	−1.090064	0.275362	−3.958643	0.0001
SDEC	0.371322	0.099365	3.736975	0.0003
Dummy 1	−0.553116	0.259444	−2.131927	0.0365
Dummy 2	5.293317	0.619587	8.543283	0.0000
R-squared	−10.876034			
Long-Run Variance	0.7966631			

The table 11 The regression analysis reveals different levels of influence each variable exercises on its target outcome. Analyses demonstrate that SDE failed to produce statistically significant results (0.3781) thus showing minimal effects. Analysis reveals that SDS demonstrates a statistically important negative influence (−0.8944, p = 0.0573). Sound Distance Education can significantly improve the model with a powerful positive relationship (4.4861, p = 0.0000).

Discussion

Economic growth and sustainable development in the context of the Kingdom of Saudi Arabia and the United Arab Emirates depend on analysing several factors (23), such as capital productivity or labor division and the problem of the environment. This discussion wraps up the paper by correlating (1) stated that the findings from the research on resources to broader economic theories and potentials. The study found out that sustainable development has a positive effect on the GDP of the KSA and UAE specifically in SDE and SDEC (24). This underpins the need to ensure that sustainable aspect is incorporated in the economic policies thus supporting the current economic theories that encourages long run economic policies and not the short run.

The classical and neoclassical points of view stress the factors of capital accumulation and labor factor on the generation of economic growth (25). This point of view corresponds with the views expressed in "The Wealth of Nations" by Adam Smith who supports free trade mainly because of the process of division of labor. With the development of the economy, it is imperative that there will always be a demand for competent workforce (26) that has the ability to innovate and adopt to advanced technologies as well as friendly methods of production. The findings shown by the study suggest that apart from supporting labor specialization, public organizations should also invest in education and training to train the labor force to fit into the dynamic economic environment (27). The revision in the Solow growth model that was discussed in this research also shows how capital productivity affects growth in the economy. As a result, raising capital efficiency seemed to boost the GDP considering as a concept that is well expounded in the endogenous growth theory (28), which supports the view that economic growth, particularly in a certain economy, may be traced to certain factors such as human capital or innovation among others (29). This can be particularly illuminating if applied to KSA and UAE since the authorities of both countries may aim at increasing investments in technology and upgrades to infrastructure.

However, as it has been explained earlier, dependence on fossil fuel sources presents some problems (30). Such resources have in the past assisted in the enhancement of growth of GDP per capita and the living standards of people but their use has negative impacts that include pollution of the eco-system and deplete natural resources. This duality necessitates a strategic pivot towards sustainable resource management (31). The paper calls for sustainable change and embodies both environmental and sustainable business changes to adapt to operations and variation in oil prices and global shift to green energy.

One could not underestimate the consequences that the economy brings for the environment, especially when it comes to KSA and UAE through which the countries rapidly developing in terms of industrialization and urbanization (32). The results of the study are in tandem with other research as far as causative factors of ecological factors on sustainable development especially in the developing nations are concerned. This means that there is an increased reliance on fossil fuels (33) in these nation that leads to environment degradation thus the need for the nations to rethink on their growth models.

Therefore, there emerges the issues of sustainability and governance of economic activities and CO2 emissions. With economic development comes degradation of the environment implying that there exists strong pressure for the formulation of policies that ensure consideration of economic factors within the backdrop of environmental conservation (34). The study implies that for this competing balance to be managed, sound governance structures should be put in place so that growth to does not compromise on environmental quality.

Analyzing the methodological strengths of the study, it may be noted that the employment of the panel data analysis contributes to the research reliability (35). The results supported the appropriateness of the REM since this model accounts for variation in countries' characteristics, having most of the unmeasured influences incorporated into fixed effects. The level of statistical significance of the results support the argument that sustainable development indicators do not play a marginal role in economic development, but they are core to it.

Other method used that supports the existence of long-run

associations between GDP and sustainable development indicators include the examination of unit roots (36) as well as co integration. This evidence is important to the policy-makers to note that economic planning needs to be done in a consistent manner and it has to be based on factual information with sustainability a core criteria being put into consideration.

Conclusions

In conclusion, the sutainable development indicators have positive impact on economic growth of a country. The literature from differnet studies on economic growth aslo support the main argument. The financial development directly impacts and play important role in economic development and growth. The economy of both the countries from our sample pool were impacted from different economic shocks in the past, during and in future. the sample country should apply effective policies for sustainable economic growth. The national reserve, fiscal and monetary policies boost sustainable economic growth. Although the sustainable economic development is important for the increase in the economy. The growth helps to implement the Paris Agreement on global warming. The rising CO2 emission create a challenging role for every country to maintain sustainable environment. The CO2 emissions increase the economic growth. But in order to mitigate the effects of CO2 countries should make and create policies for effect results. Technological factors also play an important role in the energy consumption, the KSA and UAE should invest in the green projected to develop sustainable economy. The economy should also encourage to have a developed business friendly environment for the sustainable development growth. The results, the study indicated that low and moderate economic indicators influenced economic growth in UAE and KSA.

Limitation

The data of few years was not available from 2000-2020. The detailed analysis on the implication of sustainable development were insufficient. Also GDP and sustainable economic growth changed in various domain but shared a common goal.

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