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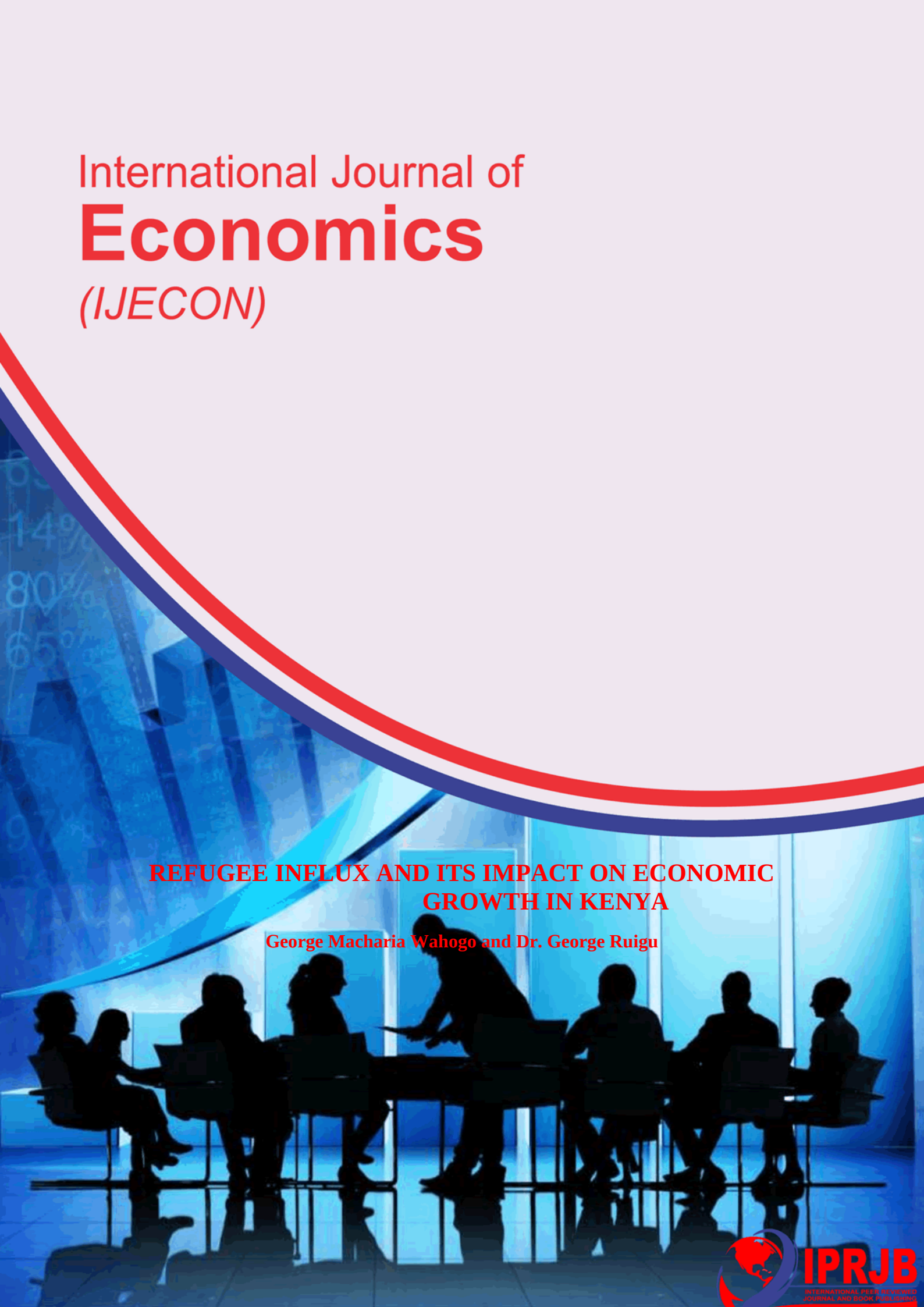

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REFUGEE INFLUX AND ITS IMPACT ON ECONOMIC GROWTH IN KENYA

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Abstract

Purpose: The general objective of this study was to establish the impact of refugee influx on economic growth in Kenya.

Methodology: The study adopted a time series methodology.

Findings: The results indicated that there was at least one co-integrating equation in the long run. It results also indicated that the lag GDP (denoting the previous period GDP) affects the current period GDP positively. This implies a higher GDP in the previous period leads to an increase in the current period GDP. Results also indicated that both in the long run and short run the number of refugees had a negative and significant relationship with GDP. Hence, an increase in the number of refugees resulted to a decrease in GDP. The results indicated that both in the long run and short run, labour had a positive and significant relationship with the GDP. Therefore, an increase in labour resulted to an increase in GDP. The other variables were insignificant both in the short run and long run which implies that change in capital and human capital will have no effect on GDP in the shortrun and longrun that could be due to the impact of inflation.

Unique contribution to theory, practice and policy: This study can be a source of solution to be implemented by government and non-governmental policy makers as it outlined the impact of refugees influx to economic growth so as to see how curbing any refugee crisis would affect the economic outlook. In addition, the study recommendations in the wake of the refugee situation in Kenya as with regard to the economic situation would be vital for achieving such ends as those envisaged in the vision 2030.

The aftereffects of the study would also contribute towards filling the data crevice on the topic. It is trusted that the discoveries of the study will make significant augmentations to the writing in the field of refugee influx and economic growth fortifying further interest.

Keywords: *Refugee Influx, Economic Growth, Human Capital, Non Human Capital and Labour*

INTRODUCTION

Background

Economic growth alludes to an expansion in the beneficial limit of an economy as an aftereffect of which the economy is fit for creating extra amounts of merchandise and administrations. As a rule, the way of life is measured by the amount of products and administrations accessible to us so that financial development is synonymous with an expansion in the general way of life (Romer, 2012).

Displaced people force an assortment of security, monetary and natural weight on host nations while in the meantime exemplify a noteworthy stream of assets as worldwide helpful help, financial resources and human capital. These evacuee assets speak to a critical state building commitment to the host state, yet security issues and different prevention hinder the state's capacity to get to and control them (Jacobsen, 2008).

In Kenya, a late effect assessment of displaced person camps which has one of the biggest evacuee populaces on the planet, gauges that the aggregate yearly immediate and backhanded advantages of the camp operation for the neighborhood host group were around US$ 82 million in 2009, and was anticipated to achieve US$ 100 million in 2010. A portion of the assets for the camp operation are allotted to framework speculations that advantage the host group. The effect of the Daadab camps on the neighborhood host group are broadly felt through exchanging open doors and lessened nourishment and product costs. Moreover, evacuee camps have created real neighborhood markets with significant buying power in connection to peaceful items, for example, milk and domesticated animals. In any case, regardless of these positive pointers, the nearness of refugees is additionally connected with the consumption of kindling and building materials and also rivalry for touching area in the quick region of the camps. The evaluation reasons that effects on the host group are intricate and have both negative and positive angles in Daadab (NORDEC, 2010).

The Kenyan economy enlisted enhanced monetary execution in 2015 with a yearly development of 5.6 percent in GDP contrasted with 4.4 percent in 2011. The macroeconomic environment saw enhanced cost and conversion standard steadiness. However, per capita income growth, which is largely explained by labour market dynamics, had been relatively slow at 1.7 percent in 2012. The Kenyan labour market is characterized by a large share of informal sector employment, which partly explains the low levels of income per capital and productivity. The informal sector is generally characterized by low productivity, vulnerability of employment and low incomes (KIPPRA, 2013).

In Kenya, the majority of refugees arrived here in the early 1990s and have been accommodated at two sites: Dadaab in northeastern Kenya and Kakuma in the northwestern part of the country with a figure of about 550,000 most of whom from this are of Somali origin with significant numbers including those from Ethiopia, South Sudan, Congo DRC and Burundi. The major factors contributing to this being war and political asylum. It is noteworthy that Kenya is among the leading host countries for these among the developing nations with annual trends as below (UNHCR, 2014).

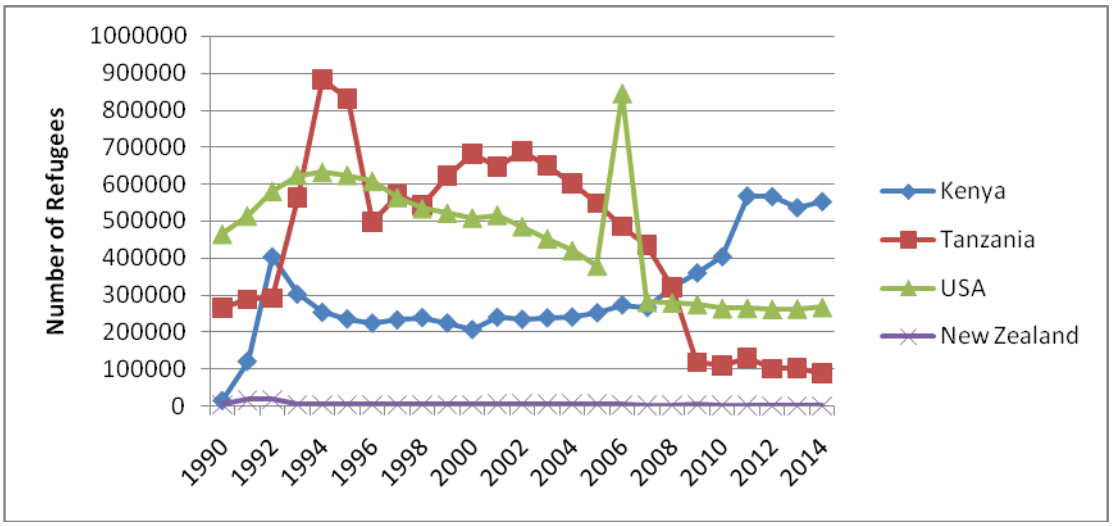

Figure 1: Refugee influx in Kenya and other selected nations

Characteristic of the observation, there could be a tendency for these to eventually move to the urban areas as Jolly *et al.*, (1973) observe, that it would be rational for the migrant to go to the urban centre and risk a period of unemployment or underemployment in the informal sector in the hopes of getting a regular well-paid job. This could be catapulted by those who have already settled in such areas accommodating these eventually as Ghai (1979) observes which could eventually affect growth outcomes.

Resource allocation has become an issue where the Government faces a complex challenge of applying scarce resources to address wellbeing issues here such as employment (KNBS, 2008). Though moral suasion could be adopted as has been tried in the past - there exists a vacuum in tackling the challenges herein.

Problem Statement

Evidenced with the independence of the nation of South Sudan and a knowledge of the many refugees living in Kenya and the more recent Somalia situation where thousands have come into the country due to the war on Al-shabab and with growth projections in Kenya changing unpredictably (Mogire, 2011), there exists a gap in the analysis of the two factors and how they relate with each other.

With increase in population comes with it an increase in pressure on resources as this would tend to put pressure on the environment. Consequently, other vital areas for creating the much needed avenues for economic growth would be affected and eventually undermine growth. Population pressure could be in the form of migrant channels such as through refugees moving in certain areas. On the other hand, one could argue that the influx of these refugees would be a recipe for growth in that they could be channels for greater consumption patterns, investment increase in the form of foreign direct investments all which could enhance economic growth significantly (Lim, 1996) observes.

Thus with diverse perspectives about the effect of refugee influx, there is need to establish the implicit effect of refugee influx on economic growth independent of the entire population value as IRIN global report on the Ugandan model (2014) emphasise. The study thus sought to fill this intellectual gap and provide an understanding of the same. This study sought to

answer the research question: what is the impact of refugee influx on economic growth in Kenya?

Research Questions

i. What is the impact of refugee influx on economic growth in Kenya?

ii. To what extent do non-refugee related factors affect economic growth in Kenya?

Objectives of the Study

The general objective of this study was to establish the impact of refugee influx on economic growth in Kenya with subsidiary objectives being,

- To establish the shortrun and longrun impacts of refugee influx on economic growth in Kenya.
- To establish the extent to which non-refugee related factors affect economic growth.

THEORETICAL REVIEW

This section focuses on theories relevant to the study.

Theory of Economic Growth

Two main theoretical models of economic growth are discussed in this section. These include the Harrod-Domar growth model and the Solow growth model.

(i) The Harrod-Domar Growth Model

Evolving from the works of Keynes (1936) focusing on the short run aspect of investment is the Harrod-Domar growth model. This model looked into the relationship between savings, investment and output. The model contended that national funds rate must be equivalent to the results of the capital-yield proportion and the rate of the compelling work power if the economy was to keep its load of plant and hardware in parity with its supply of work so that the enduring development could happen.

(ii) The Solow Growth Model

This evolved from Robert Solow (1956) seminar paper on gowth and development. It is basically built on two equations which simply put are a production function (2) and capital accumulation equation (3). Where if having,

$$y = f(K) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

y = output K - capital

$$\acute{K} = sy - (n + d)K \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Ḱ = growth in capital

Eventually, with the interaction, growth is seen to be the result of such, by the observation of certain factors which affected the interaction. The model tries to explain growth mainly in

terms of investments (n) and assumes a fixed capital coefficient (d) and constant marginal propensity to save (s).

Both the Harrod-Domar growth model and the Solow growth model are classical models of economic growth. The two models are best exemplified in a cob-douglas production setting.

iii) Cobb-Douglas Production Function

Economic growth is basically associated with the relationship between certain factors as affecting output in the economy. This, as Lim (1996) puts it, can simply be highlighted by adopting a simple production function known as the Cobb-Douglas production function for ease of understanding of such a relationship. The Cobb-Douglas production function may be presented as:

$$Q_t = T_t K_t^{\alpha} L_t^{\beta} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Where Q is real output, T an index of technology, K an index of the capital stock measured in constant prices and L an index of labor for given period t. Thus, the idea here being that eventually for output to grow- it is determined by the level of increases in technology, capital and labor in the simplest form.

Later, Mankiw *et al* (1992), incorporated into the model human capital recognizing how different levels of labor exist with regard to differences in levels of education and skills in general. Due to its flexibility as a model, incorporating various economic situations is possible and hence for our study, this can be a basis to input refugee influx as one of the inputs fit for our study.

METHODOLOGY OF THE STUDY

The study adopted a time series methodology. This study presented both the theoretical and empirical models. The theoretical model borrowed heavily from theories presented in literature review. The empirical model on the other hand is the econometric model that is modified from theory. The model estimates were based on data from various sources mainly UNHCR and IMF data bases and KNBS Statistical Abstracts. The data was for the period 1980 – 2014. This study used a time series regression model to evaluate the impact of refugee influx on economic growth in Kenya. To start with is the study used the unrestricted error correction modeling (ECM) developed by Hendry and his co-researchers (Hendry, 1995). Second method is the co-integration approach spearheaded by Engle and Granger (1990). Then again, the ECM technique created by Hendry (1995) can be applied to data series that are integrated of different orders (Hendry, 1995).The fourth stage was to run unit root tests on each variable.The Augmented Dickey-Fuller (ADF) test was used to test the time-series characteristics of the data. The ADF tested the null hypothesis of non-stationarity against the alternative hypothesis of stationarity. The Phillips-Perron tests were also useful in testing the unit roots. The fifth stage involved testing of the existence of cointergrating equations. The study also employed the error correction modeling (ECM) procedure of Hendry (1995). This was critical for establishing the shortrun relationships between the variables. This technique minimized the likelihood of evaluating spurious connections while holding long-run data without arbitrarily restricting the lag structure. The ECM additionally furnished assessments with substantial t-values even within the sight of endogenous explanatory variables (Inder, 1993). Further, the study tested for Multicollinearity to establish whether the independent variables are correlated as well as normality testing which checked for anomalies in data, the

heteroscedasticity test which checked whether the error term is the same across the observations and the autocorrelation test which helped to establish whether the error terms are correlated across time.

RESULTS OF THE STUDY

Descriptive Statistics

This results on measures of central tendency of the variables; GDP, capital, labour, Human capital and number of refugees being measured in the study. Results are as presented in Table 1.

Table 1: Descriptive Statistics

Indicator	GDP	Capital	Labour	Human capital	Nunber of refugees
Mean	15804.9	3412.71	5496.44	1548.97	302350
Median	15667.2	3273.21	4698.4	1441.59	234665
Maximum	21084.3	5372.22	12476.2	2395.42	1180088
Minimum	12273.2	2552.93	1190.8	1080.89	2980
Std. Dev.	2310.19	705.417	3838.19	374.807	332472

Results show in Table 1 above that the overall mean of GDP was Ksh 15804.86 (million) which indicates the average of GDP in Kenya. The median of GDP was Ksh 15667.2 (million) which implies that half of the observations of the GDP had this value during the period 1980 and 2014. GDP had a standard deviation of Ksh 2310.19.

The results show that the overall mean of capital was Ksh 3412.71 (million) which indicates the average of capital in Kenya. The median of capital was Ksh 3273.21 (million) which imply that half of the observations of the capital had this value during the period 1980 and 2014. The observations of capital had a standard deviation of Ksh 705.417.

The results show that the overall mean of labour was Ksh 5496.44 (million) which indicates the average of labour in Kenya. The median of labour was Ksh 4698.4 (million) which imply that half of the observations of the labour had this value during the period 1980 and 2014. The observations of labour had a standard deviation of 3838.19.

The results show that the overall mean of human capital was Ksh 1548.97 (million) which indicates the average of human capital in Kenya. The median of human capital was Ksh 1441.59 (million) which imply that half of the observations of the human capital had this value during the period 1980 and 2014. The observations of human capital had a standard deviation of 374.807.

The results show that the overall mean of number of refugees was 302,350 which indicates the average of number of refugees in Kenya. The median of number of refugees was 234,665 which imply that half of the observations of thenumber of refugees had this value during the period 1980 and 2014. The observations of number of refugees had a standard deviation of 332,472.

Trend Analysis

This section provides graphical representation of the movement and changes of the variables under study over the years 1980 to 2014.

Annual Trend Analysis of Real GDP

Figure 2 shows the trend analysis of GDP over the years 1980 to 2014 for Kenya.

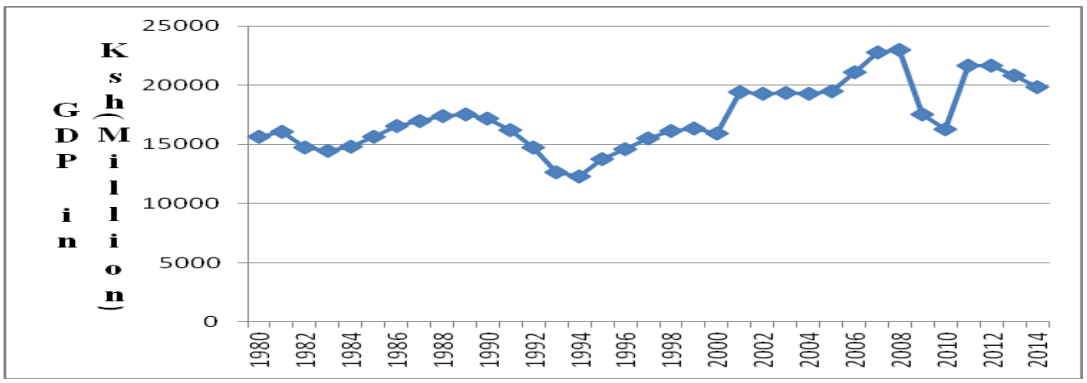

Figure 2: Trend Analysis of GDP (Ksh millions)

The graph shows that the GDP for Kenya has been fluctuating though with an increasing trend. This can be explained by the fact that the level of inflation has been different all through. The level of inflation determines the value of Kenya's currency. This implies that time and inflation are not a good predictors of GDP.

Annual Trend Analysis of Real Capital

Figure 3 shows the trend analysis of capital (non-human capital proxied by non human capital expenditure) over the years 1980 to 2014 for Kenya.

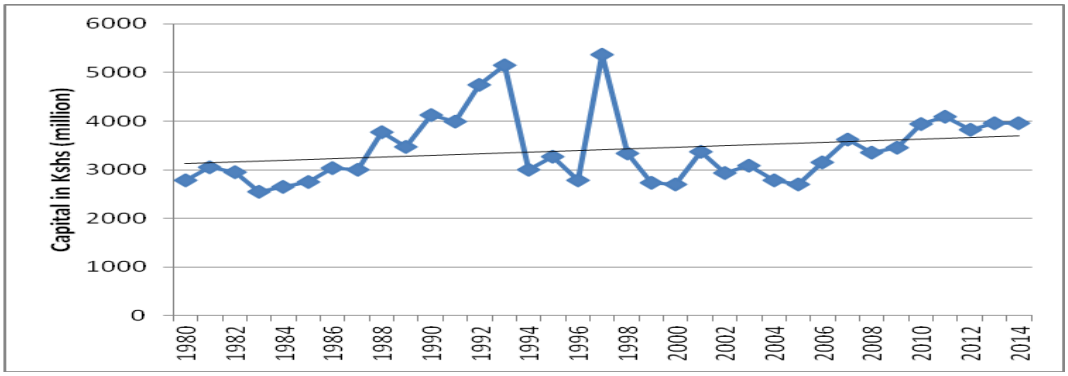

Figure 3: Trend Analysis of Capital (Ksh millions)

The graph shows that the capital for Kenya has been increasing linearly since the year 1980. This can be explained by the fact that development in Kenya has been on an upward trend. This also implies that time is a good predictor of capital.

Annual Trend Analysis of Labour

Figure 4 shows the trend analysis of labour (wages) over the years 1980 to 2014 for Kenya.

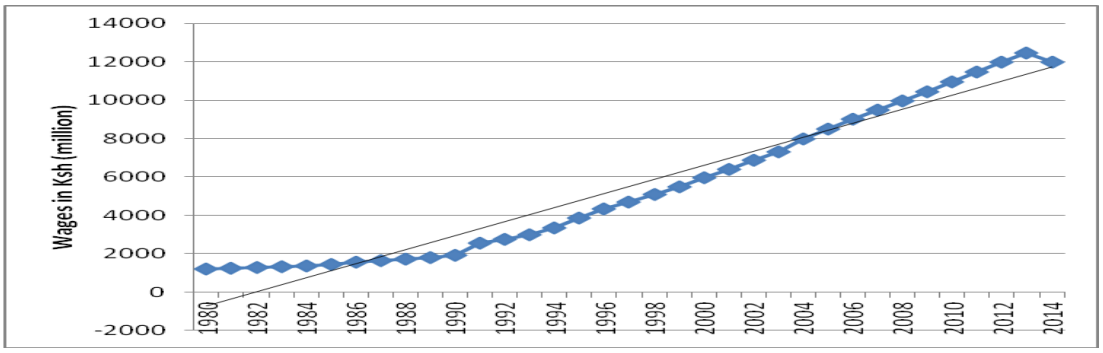

Figure 4: Trend Analysis of Labour (Ksh millions)

Results in Figure 4 above shows that the labour for Kenya has been increasing linearly since the year 1980. This can be explained by the fact there has been in increase in the number of refugees in Kenya and thus leading to more labour provision.

Annual Trend Analysis of Real Human Capital

Figure 5 shows the trend analysis of human capital (education and health expenditure) over the years 1980 to 2014 for Kenya.

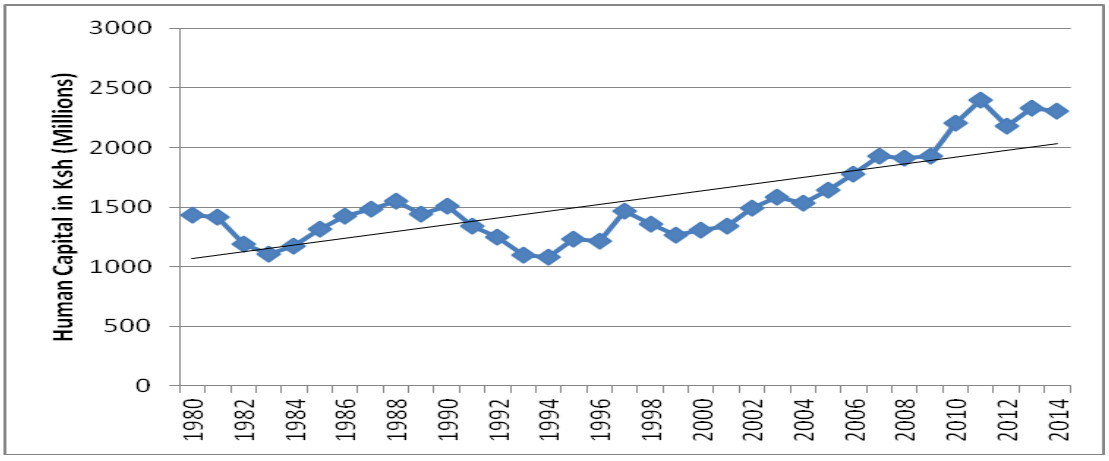

Figure 5: Trend Analysis of Human Capital (Ksh millions)

Results in figure 5 above show that the human capital for Kenya has been increasing unsteadily since 1980. This can be explained by the fact that government expenditure on health and education have been increasing all through. For instance, government expenditure on health increases when there are disease outbreaks. Similarly, the government expenditure on education went up when free primary education was introduced in Kenya.

Annual Trend Analysis of Number of Refugees

Results in figure 6 show the trend analysis of number of refugees over the years 1980 to 2014 for Kenya.

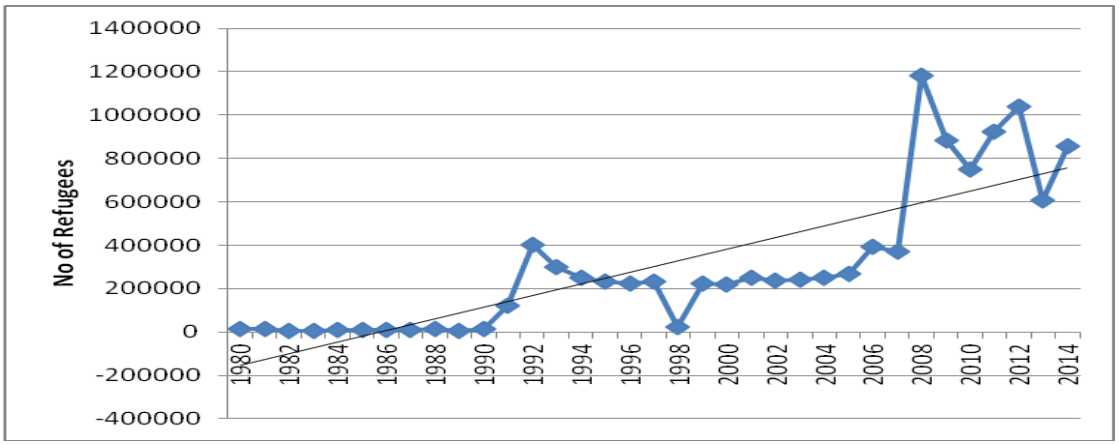

Figure 6: Trend Analysis of Number of Refugees

Results in figure 6 above shows that the number of refugees in Kenya has been fluctuating since 1980. This can be explained by the fact that the number of refugees coming to Kenya varies depending on the state of the countries where those refugees come from. Additionally, the government at times adopts measure to control the number of refugees. For instance, many Somali citizens who were residing in Kenya illegally but regarding themselves to be refugees were depoted to Somali in the year 1998 and 2010. This reduced the number of refugees in Kenya

Pre-Estimation Tests

Prior to running a regression model pre-estimation tests was conducted. The pre-estimation tests conducted in this case were the Multicollinearity and unit root tests. This was performed to avoid spurious regression results from being obtained.

Test for Multicollinearity

According to William *et al.* (2013), multicollinearity refers to the presence of correlations between the predictor variables. In severe cases of perfect correlations between predictor variables, multicollinearity can imply that a unique least squares solution to a regression analysis cannot be computed (Field, 2009). Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors (Belsley *et al*., 1980). Results are presented in Table 2.

Table 2: Correlation Matrix

Variable	GDP	Capital	Labour	Human capital	Nunber of refugees
GDP	1				
Capital	-0.3352	1			
Labour	-0.1172	0.181	1		
Human capital	-0.1855	0.28174	0.85012	1	
Number of refugees	-0.4174	0.32767	0.85586	0.77921	1

Results are presented in Table 2 above shows that there exist multicollinearity between human capital and labour, between number of refugees and labour, between number of refugees and human capital. The presence of multicollinearity was controlled by using white heteroscedasticity test to produce robust standard error.

Unit root test

Preceding testing for a causal relationship and co integration between the time series, the initial step is to check the stationarity of the variables utilized in the model. The point is to confirm whether the series have a stationary pattern, and, if non-stationary, to set up requests of integration. The study used Augmented Dickey-Fuller (ADF) test to test for stationarity. The test results of the unit roots (intercept only) are presented next. Results are as presented in table 3 below.

Table 3: Unit root tests-Level

Variable name	ADF test	1% Level	5% Level	10% Level	Comment
GDP	-1.3975	-3.6394	-2.9511	-2.6143	Non Stationary
Capital	-3.7412	-3.6394	-2.9511	-2.6143	Stationary
Labour	2.22756	-3.6394	-2.9511	-2.6143	Non Stationary
Human capital	0.04791	-3.6394	-2.9511	-2.6143	Non Stationary
Number of refugees	-1.4226	-3.6394	-2.9511	-2.6143	Non Stationary

Results in table 3 indicated that capital was stationary at 1%, 5% and 10% levels of significance. The results also show that GDP, labour, human capital and the number of refugees were non-stationary at 1%, 5% and 10% levels of significance. This called for first differencing of the non-stationary variables.

Table 4 shows the unit root results after first differencing.

Table 4: Unit root tests After First Differencing

Variable name	ADF test	1% Level	5% Level	10% Level	Comment
GDP	-8.7334	-3.6537	-2.9571	-2.6174	Stationary
Capital	-7.1196	-3.6793	-2.9678	-2.6230	Stationary
Labour	-5.2401	-3.6537	-2.9571	-2.6174	Stationary
Human capital	-6.2783	-3.6617	-2.9604	-2.6192	Stationary
Number of refugees	-7.1906	-3.6702	-2.9640	-2.6210	Stationary

The results in table 4 imply that GDP, capital, labour, human capital and number of refugees became stationary on first difference.

Post-Estimation Tests

After running the specified regression model the test for normality, heteroskedasticity and autocorrelation were conducted so as to ensure all the ordinary least squares assumptions are not violated. Co integration test was also conducted to check whether the error term generated from the long run model was stationary. A stationary error term implies that co integrated relationship between long run variables exist. In addition the presence of co integration indicates that there exists an underlying short run relationship. Such a short run

relationship can be modeled through an error correction modeling approach. The purpose of a error correction modeling approach is to link the long run relationship to the short run relationship through an error term correction term.

Normality Test

The Jarque-Bera test was also used to test the normality of the residual. Results are as presented in figure 7 below.

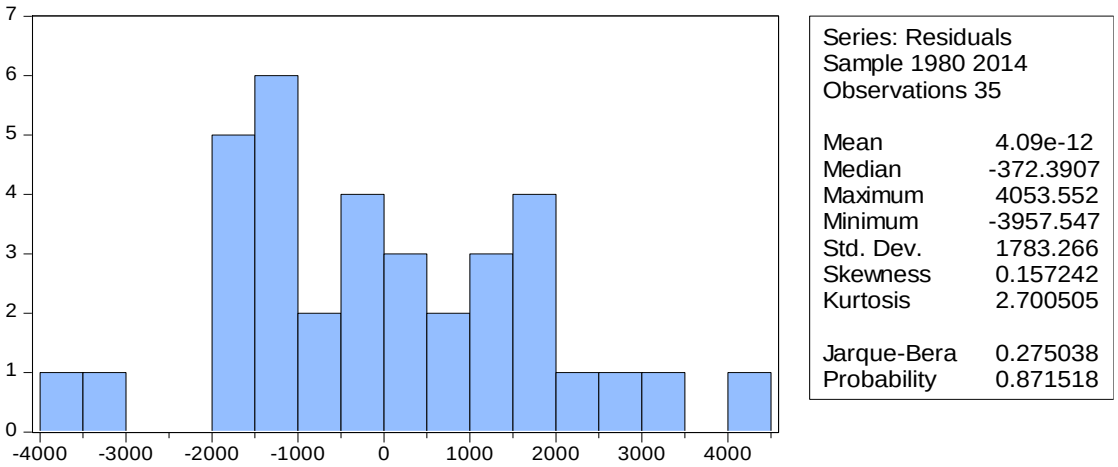

Figure 7: Jarque-Bera Normality Graph

Results in figure 7 indicates that the residuals originating from the model were normally distributed. This implies that the data is ideal for parametric analysis such as regression analysis. This was supported by a Jarque-Bera statistic of 0.275 and a p value of 0.872.

Heteroscedasticity

Ordinary least squares (OLS) assumption stipulates that the residuals should have a constant variance (i.e. they should be Homoskedastic). Heteroscedasticity test was run in order to test whether the error terms are correlated across observation in the cross section data as shown in table 5 below.

Table 5: White Heteroscedasticity Test

F-statistic	1.29873	Prob. F(4,30)	0.2929

The null hypothesis was that the data does not suffer from heteroskedasticity. Results in table 5 revealed that the null hypothesis was not rejected at a critical p value of 0.05 since the reported value was 0.293. This implied that the error term was homoscedastic and thus did not violate OLS assumptions.

Serial Correlation/Auto Correlation

Serial correlation tests were run in order to check for correlation of error terms across time periods. Serial/auto correlation was tested using the Breusch-Godfrey serial correlation LM test as shown in Table 6 below.

Table 6: Breusch-Godfrey Serial Correlation LM Test

F-statistic	5.82781	Prob. F(2,28)	0.0077

Results in table 6 show that the null hypothesis is that no first order serial /auto correlation exists. The p value of 0.0077 indicates that we reject the null hypothesis and conclude that serial correlation does not exist. This implies that it was not critical to include lagged variables to correct for autocorrelation.

Co-integration Tests

Then cointegration of the variables was tested using Johansen test of cointegration. Table 7 indicates the results.

Table 7: Johansen Co-Integration test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.
None *	0.73128	93.1699	76.9728	0.0017
At most 1	0.44541	49.8048	54.079	0.114
At most 2	0.34714	30.3502	35.1928	0.1517
At most 3	0.29884	16.2793	20.2618	0.1617
At most 4	0.12916	4.56384	9.16455	0.3346

Table 7 indicates the results that there is at least 1 co integrating equation as supported by a trace statistic of 93.1699 at a p value of 0.0017. This implies that all the variables in the model estimating GDP do converge to an equilibrium in the long run (i.e. are co-integrated).

Regression Results on the Impact of Refugee Influx on Economic Growth

The long run results presented in Table 8 are generated from the non-stationary variables.

Table 8: Long Run Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LagLn_GDP	0.80254	0.10984	7.30638	0.000
Ln Capital	-0.0991	0.11867	-0.8347	0.4105
Ln Labour	0.1779	0.08495	2.09425	0.0448
Ln Human Capital	-0.1772	0.15154	-1.1691	0.2516
Ln Number of Refugees	-0.0732	0.03423	-2.14	0.0406
C	11.1251	1.19059	9.34425	0.000

R-squared	0.77515	Mean dependent var	9.65791
Adjusted R-squared	0.735	S.D. dependent var	0.14668
S.E. of regression	0.07551	Akaike info criterion	-2.1703
Sum squared resid	0.15965	Schwarz criterion	-1.901
Log likelihood	42.8955	Hannan-Quinn criter.	-2.0785
F-statistic	19.3057	Durbin-Watson stat	1.90301
Prob(F-statistic)	0.000		

Dependent Variable: LN_GDP
Method: Least Squares
Sample (adjusted): 2 35
Included observations: 34 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Results in table 8 showed that the model R squared was 0.7751. This implied that the goodness of fit of the model explained 77.51% of the variation in GDP was explained by the independent variables. The overall model was significant as demonstrated by an F statistic of 19.3057 (p value = 0.000). This further implied that the independent variables were good joint good predictors of the GDP.

The lagged GDP (denoting last years GDP) was positive and significant. (The lagged GDP coefficient reported is 0.80254 and its P-value 0.000). This implies that in the long run the lagged GDP by one unit leads to an increase in this years GDP by 0.80254 units.

The results in table 8 also indicated that in the long run, capital has a negative and insignificant relationship with GDP. (The capital coefficient reported is -0.0991 and its P-value 0.4105). This implies that an increase or decrease in capital (non human capital) has no effect on GDP.

Table 8 indicated that in the long run, labour has a positive and significant relationship with GDP. (The labour coefficient reported is 0.1779 and its P-value 0.0448). This infers an v by one unit prompts an increase in GDP by 0.1779 units.

Table 8 also indicates that in the long run, human capital has a positive and insignificant relationship with GDP. (The human capital coefficient reported is 0.1772 and its P-value 0.2516). This implies that an increase in human capital by has no effect on GDP.

Further, Table 8 indicates that in the long run, the number of refugees has a negative and significant relationship with GDP. (The number of refugees coefficient reported is -0.0732 and its P-value 0.0406). This implies that an increase in number of refugees by one unit leads to an decrease in GDP by 0. 0732 units.

Discussion of the Error Correction Model Results

Since the variables in the model are cointergrated, and then an error-correction model can be specified to link the short-run and the long-run relationships. Residuals from the cointegrating regression were used to create an error correction term (lagged residuals) which was then integrated into the short-run model. The specific lagged residual term is LAGRESIDUAL. The estimates of the error-correction model are presented in table 9.

Table 9: Error Correction Model/Short-Run Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.

LagLn_GDP	1.4229	0.36695	3.87762	0.0006
Ln Capital	0.02986	0.05727	0.52143	0.6065
Ln Labour	0.42982	0.15987	2.68852	0.0124
Ln Human Capital	0.06852	0.17857	0.3837	0.7043
Ln Number of Refugees	-0.0357	0.01429	-2.5011	0.019
LAGRESID	-1.6573	0.53771	-3.0822	0.0048
C	-0.0244	0.01646	-1.483	0.1501

R-squared	0.50433	Mean dependent var	-0.0068
Adjusted R-squared	0.38994	S.D. dependent var	0.07994
S.E. of regression	0.06244	Akaike info criterion	-2.5234
Sum squared resid	0.10137	Schwarz criterion	-2.206
Log likelihood	48.636	Hannan-Quinn criter.	-2.4166
F-statistic	4.40899	Durbin-Watson stat	2.16879
Prob(F-statistic)	0.00335		

Dependent Variable: DLNGDP
Method: Least Squares
Sample (adjusted): 3 35
Included observations: 33 after adjustments
White heteroskedasticity-consistent standard errors & covariance

The lagged GDP (denoting last years GDP) was positive and significant. (The lagged GDP coefficient reported is 0.14229 and its P-value 0.0006). This implies that in the short run the lagged GDP by one unit leads to an increase in these years GDP by 0.14229 units.

Results in table 9 revealed that in short run capital has a positive but insignificant relationship with GDP in the short run. A regression coefficient of 0.02986 (p-value = 0.6065) implies that an increase in capital by one unit has no effect on the GDP in the short run.
Results in table 9 revealed that labour have a positive but significant relationship with GDP in the short run. A regression coefficient of 0.42982 (p-value = 0.0124) implies that an increase in labour by one unit increases the GDP by 0.42982 units in the short run.

Results in table 9 also revealed that the human capital have a positive and insignificant relationship with GDP in the short run. A regression coefficient of 0.06852 (p-value = 0.7043) implies that an increase in human capital by one unit has no effect on the GDP in the short run.

Further, results in table 9 revealed that the number of refugees have a negative and significant relationship with GDP in the short run. A regression coefficient of -0.0357 (p-value = 0.019) implies that an increase in the number of refugees by one unit decreases the GDP by 0.0357 units in the short run.

The error correction term measures the speed of adjustment to the long run equilibrium in the dynamic model. The error correction term LAGRESIDUAL has the expected sign and is significantly negative (-1.6573, p value = 0.0048). This result implies that there is a negative

gradual adjustment (convergence) to the long run equilibrium. The coefficient of (0.0244) indicates that 2.44% of the disequilibria in short run GDP achieved in one period are corrected in the subsequent period. The other short-run variables however were insignificant.

CONCLUSIONS

It was concluded that there was at least one co-integrating equation in the long run. It was also concluded that the lag GDP (denoting the previous period GDP) affects the current period GDP positively. This implies a higher GDP in the previous period leads to an increase in the current period GDP. The results also indicated that both in the long run and short run the number of refugees had a negative and significant relationship with the long-run GDP. Hence, an increase in the number of refugees resulted in a decrease in GDP. The results indicated that both in the long run and short run, labour had a positive and significant relationship with the GDP in the long-run. Therefore, an increase in labour resulted to an increase in GDP. The other variables were insignificant both in the short run and long run which implies that change in capital and human capital will have no effect on GDP in the the shortrun and longrun possibly due to inflationary pressure, that could counter any positive effects of such human and non human capital on economic growth, (Barro, 1995) .

RECOMMENDATIONS

The study gave two recommendations in accordance to the study findings. First given that the effect of the number of refugees on GDP was negative and significant in the long run, it is recommended that the Kenyan government should adopt strategies which aim at minimizing the number of refugees. These strategies may include having stringent laws on registration of refugees with probable reduction in refugee certificate expiry time in a bid to increase aggregate economic growth.

Second, given that the effect of labor on GDP was positive and significant, it is recommended that the government should encourage self employment, investments and innovation through such as encouraging credit administration at subsidised rates since increase in development calls for increased labour force resulting to increase in the aggregate GDP.

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