Determinants of Economic Growth in the West Bank and Gaza Strip[1]

Abdullah AL-Mutairi

Gulf University for Science and Technology, Kuwait

Dina Naser

International relations and Journalism Specialist

Hani Naser

Klynveld Peat Marwick Goerdeler

Kamal Naser

Senior Financial Advisor, Kuwait Fund, Kuwait

Corresponding Author's Email Address: *mutairi.a@gust.edu.kw*

Abstract: Although the Palestinian National Authority (PNA) has no control over its natural resources, denied the right to issue a national currency, exercises no control over its boarders preventing it from effective trade with the neighbouring countries and the outside world and faces difficulty in moving freely within and between the West Bank, Gaza Strip and East Jerusalem, its economy registered 4.70% annual average growth during the period between 1995-2017. In this study, attempts to investigate factors behind economic growth in the Palestinian National Authority. To accomplish this objective, data were collected from the World Bank Data Bank for the period between 1995-2017. Constant GDP per capita used to proxy economic growth and variables frequently adopted in previous research including education, health, capital formation, government spending and official development assistance and official aid received per capita were employed to explain economic growth. The relationship between these variables was tested by performing a multiple linear regression analysis. The findings of the study demonstrated that economic growth is positively and significantly influenced by education represented by the level of literacy and gross capital formation. A negative and significant association detected between economic growth and health measured by life expectancy at birth. Negative but insignificant relation appeared between economic growth and general government spending and official development assistance and official aid received per capita. The outcome of the study implies that good education, capital formation and good economic management can attain economic growth even without any control on national natural resources, without control on national currency or boarders and with restrictions on movements.

JEL Classifications:C23, O11, O47.
Keywords: Economic growth, capital formation, government consumption, formal aids, West Bank, Gaza Strip, Palestinian National Authority.

---

[1]*Views and opinions expressed in this article are those of the authors and do not necessarily reflect the views and opinions of their employers.*

1.   Introduction

The economy of the West Bank and Gaza Strip is run by the PNA. The PNA was established in 1994, after the Oslo Accords signed between the Palestinian Liberation Organization (PLO) and Israel, as an interim self-government body. Since the PNA took the responsibility of running the economy of the West bank and Gaza Strip, the average annual economic growth rate achieved during the period 1995-2017 was about 4.7%. The achieved average economic growth was the highest among the Arab neighboring countries. Jordan achieved 4.5%, Egypt 4.4% and Lebanon 3.7%. The relatively high average economic growth in the Palestinian territories was achieved despite the fact that the PNA possesses no control over its natural resources. PNA also has no right to issue a national currency and three currencies are in use in the territories: Israeli Shekel, Jordanian Dinar and the US dollar.   In addition, the PNA has no control over its land, sea and air boarders. This limits its ability to free and effective trade with the neighboring countries and the outside world. Moreover, the Palestinians face difficulty moving freely within the West Bank territories due to the proliferation of the Israeli occupation military checkpoints. Furthermore, access to East Jerusalem, which is part of the West Bank, is forbidden and requires a permit that takes time to obtain if luck prevails. More importantly, Gaza Strip that forms an important part of the PNA has been under an Israeli blockade since 2007.

As mentioned earlier, the aim of this study is to explore factors affect economic growth in the Palestinian territories. The importance of this study lies in the fact that it covers an economy with unique characteristics. There is no authority for the Palestinian Authority over its natural resources or its boarders that control the keys to international trade. It restricts its ability to export or import goods and services without prior permission from the Israeli occupation. Restrictions imposed on the movement of people and goods within the West Bank and the closure of Jerusalem and the Gaza Strip in the face of the residents of the West Bank adversely affects economic activity in the Palestinian territories. It is, therefore, expected that studying factors influencing economic growth under abnormal conditions would provide results different than the current economic growth trends and results of similar studies in this area of research, adding a new dimension to the existing body of knowledge.

The remainder of the study is organized as follows. A brief review of the Palestinian economy will be the subject of the following section. Section three offers a brief review of the related literature. Data collection and study methodology are explained in section four. While the results of the analysis and the findings are offered in section five, the conclusion is summarized in the final section.
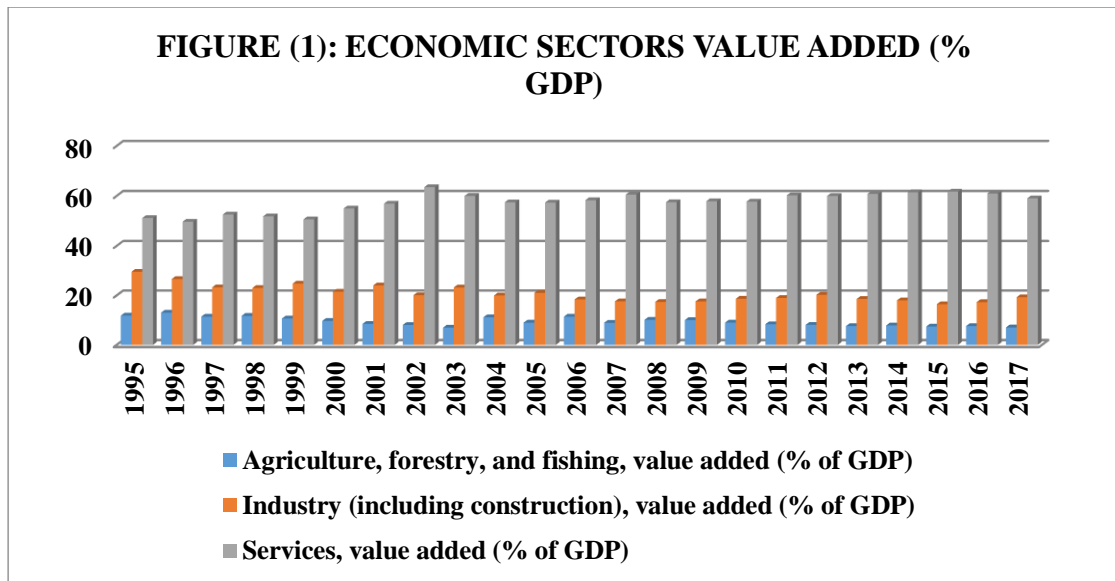
2.   Review of the Palestinian Economy

The West Bank, including East Jerusalem, together with Gaza Strip have been under the Israeli military occupation since 1967. The Palestinians were given a limited authority over parts of the occupied West Bank and Gaza Strip after the PLO signed Oslo accords with the Israeli military occupation in 1994. Palestine is located in the southwestern part of Asia. It connects West Asia with North Africa and connects the Mediterranean with the Red Sea between the Atlantic and

Indian Oceans. Palestine is bordered by Syria and Lebanon in the north, Jordan on the east and south east, the Mediterranean in the west and Egypt in the west and southwest.

The Paris Economic Agreement of 1994 signed between the PNA and Israel governs the Palestinian economy. This agreement regulates the economic relations between the PNA and the Israeli occupation. The agreement restricts the right of the Palestinians to import and export only through Israeli intermediaries. It prevents Palestinians from dealing directly with international trading partners. The agreement also restricts freedom of goods reciprocal movement between the Palestinian territories and Israel. Goods are only allowed to move from Israel to the Palestinian territories. The agreement further prevents the Palestinian from having their own currency. Moreover, it contributed to the evasion and seizure of the monthly tax revenues collected by Israel for the benefit of the PNA. The agreement was due for amendment five years after it's been signed. It is still in force without any amendments ensuring that the Palestinian economy is fully dependent on the Israeli economy in order to maintain political control.

According to the World Bank statistics, the population of the West Bank and Gaza Strip was about 4.7 million in 2017 living on 6,020 Km^2, with a population density of about 781 persons per Km^2.This makes it one of the most populated areas in the World. Given that the average population growth during the period 1995- 2017 was almost 3%, this problem is very likely to worsen in the coming few years. Population density is expected to reach 1,000 persons per Km^2 by 2025. As mentioned earlier, the Palestinian economy is fully dependent on the Israeli economy and governed by the Paris Economic Agreement signed by the PNA and Israel in 1994. The Palestinian economy suffers from lack of geographic, political and economic unity, high levels of unemployment, restrictions imposed by the Israeli occupation on movement within the West Bank and between the West Bank and Jerusalem, and blockade of the Gaza Strip by Israel and Egypt. As a result of these restrictions, the main sectors of the Palestinian economy witnessed significant decline, especially the agriculture. Restrictions on freedom of movement prevent farmers from reaching their fields. Farmers also find it difficult to market their crops internally or externally. Consequently, the share of agriculture in GDP declined from 12% in 1995 to 3.0% in 2017%, as shown in Figure (1). The decline in the agriculture sector's contribution to the GDP was mainly due to the Israeli obstacles including the construction of the apartheid wall, illegal settlements and bypass roads to reach these settlements. This led to the isolation and confiscation of significant areas of agricultural lands. In addition, the Palestinians have no control over their water resources in the agricultural areas. Furthermore, the Palestinians have limited freedom to export their crops and import basic materials. Moreover, fishermen in Gaza Strip are allowed to fish within only 6 miles of a total of 20 miles stipulated by the Paris Economic Agreement. These restrictions are coincided with high risk of Israeli settlers' attacks on farmers who burn their crops. Consequently, many farmers have been forced to give up the agriculture sector.

FIGURE (1): ECONOMIC SECTORS VALUE ADDED (% GDP)

- ■ **Agriculture, forestry, and fishing, value added (% of GDP)**
- ■ **Industry (including construction), value added (% of GDP)**
- ■ **Services, value added (% of GDP)**

Similarly, Figure (1) revealed that the manufacturing sector's share in the GDP declined from almost 30% in 1995 to less than 20% in 2017. The manufacturing sector comprised quarrying industries, transformative and traditional industries (food and agricultural products industry: includes confectionery, dairy products, processed meat, beverages, pasta, grain products, canned foods, oils and animal feeds), textiles, footwear, ceramics, pottery, olive wood, seashells, colored glass, soap making, leather tanning, embroidery and bamboo. Restrictions on the mobility of personnel and goods together with stalemate in the peace process with Israel had negatively affected the manufacturing sector. In addition, the competitiveness of Palestinian industries compared to the regional and international market is relatively low. The activities of the traditional handicraft industries are highly associated with the tourism industry. This industry is currently inactive due to the unstable political and security situations. It worth mentioning that a substantial part of the manufacturing sector is coming from the construction sector. The apparent increase in the share of the construction sector in the GDP is mainly due to the Israel's policy of destruction caused by the frequent wars on Gaza Strip.

Figure (1) further reveals that the services sector share in the GDP increased at the expense of both the agriculture and manufacturing sectors. Its contribution in the GDP increased from 52.24% in 1995 to 68.49% in 2017. The services sector covers real estate, banking, telecommunications, insurance, transport and distribution services, hotels, restaurants and others. Relative success of the services sector is explained on the grounds that it is not dependent on imported goods and service that requires Israeli intermediaries. Imported goods and services are subject to long delays and incur high transaction costs. In addition, the success of the sector is due to the highly skilled labour since the Palestinians are among the highly educated nations in the Middle East and North Africa.

FIGURE (2): GDP GROWTH, GDP PER CAPITA GROWTH, INFLATION AND UNEMPLOYMENTE RATES
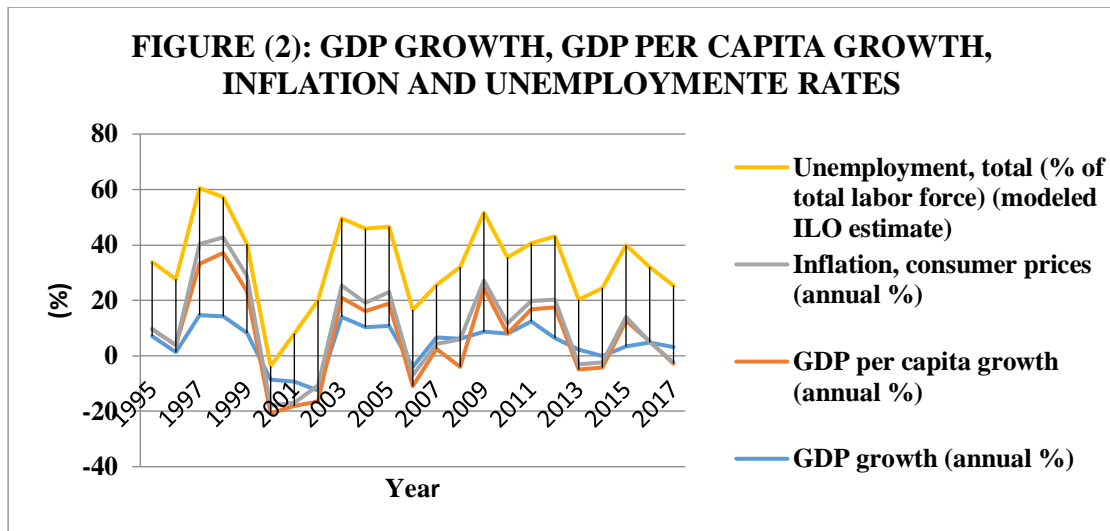
Figure (2) demonstrates that the Palestinian economy suffers from high levels of unemployment. Despite 4.7% average annual real economic growth rate during the period 1995-2017, the annual average growth rate in per capita GDP income during the same period was only 2.6%. This is because the growth in population rate was relatively high. Given that three currencies are in circulation in the Palestinian territories and the PNA has no control over the supply of any these currencies, the relatively low average annual inflation rate registered during 1995-2017 is attributed to these currencies and does not reflect the Palestinian economy.

3. Previous Related Research and Study Hypotheses

Denison (1962) defined economic growth as the increase in real GDP or real GDP per capita. It is the increase in production and services within a specific period in real terms (after removing the effect of inflation). Growth takes place when the productive capacity of an economy increases and employed in producing more goods and services. Boldeanu and Tache(2015) demonstrated that economic growth is influenced by direct factors such human and natural resources, capital formation and advancement in technology. The authors indicated that there was no agreement on the importance of each of these factors in economic growth. In addition to direct factors, Acemoglu (2009) pointed to indirect factors that affect economic growth including government and institutions efficiency, the political and administrative systems, cultural and social factors, geography and demography. Barro (1996) attempted to identify factors influencing economic growth in a sample of 100 countries during the period 1980-1990. He noticed that economic growth, denoted by the growth rate of the real per capita GDP, is associated with low government consumption, secondary Schools enrollment, investment, democracy, the rule of law, inflation, fertility, and trade. Upreti (2015) adopted a similar empirical model of economic growth used by Barro (1996) in a sample of 76 developing countries for the years 1995, 2000, 2005, 2010. He reported positive association between GDP per capita real growth and longer life expectancy, ample natural resources, high volume of exports, and higher investment rates. He concluded that the scope of research in economic growth in developing countries is still limited due to unavailability of reliable data and there is

still need for more research.The succeeding section offers a brief review of factors used in previous studies to explain economic growth and applicable to the Palestinian economy[2].

Government spending

There is no consensus on whether government spending stimulates or hinders economic growth. The Keynesians argue that increases in government spending enhances the purchasing power of the economy and stimulates growth. According to them, financing government budgetary deficit from the local private sector "pump priming" promotes economic growth. The Keynesians believe that government spending should maintain a balance between economic growth, inflation and employment. The counter argument contends that government spending might have negative effect on economic growth since it leads to higher interest rate and hinders investment necessary for the long- term economic growth "deficit hawks". Empirical studies on the relationship between economic growth and government expenditures are used either the total government expenditures or specific type of government spending such as spending on education, heath or defense.

The direction of the relationship between government spending and economic growth is mixed. Ghosh and Gregoriou (2008) reported a significant and positive relationship between the two variables in a sample of 15 developing countries. Benos (2009) showed that the long-run economic growth is significantly affected by infrastructure and human capital in a sample of 14 European countries. Boldeanu and Tache (2015) found negative association between government spending and economic growth in a sample of 30 European countries. Szarowska (2011) studied the relationship between economic growth and various government spending functions, in the Czech Republic, over the period during 1995-2008.

The researcher reported moderately negative association between economic growth and government spending on general public services, defense and economic affairs. While the researcher noticed weak and positive correlations between government spending on public order and safety, environment protection, housing and community amenities, health, social protection and economic growth, weak negative association appeared between economic growth and spending on education. The researcher found moderate negative association between economic growth and total government spending. Govindaraju *et al.* (2011) examined the relationship between economic growth and government spending in Malaysia during 1970-2006. They found government spending to be an important determinant of economic growth. Abu – Eideh, O. M. (2015) investigated relationship between public expenditure and the GDP growth in the Palestinian territories over the period of 1994-2013. The researcher reported a co-integration between government expenditure and economic growth. Sabir *et al.* (2015) considered the effect of local government expenditure on economic growth over the period 2008-2013 in Indonesia. They reported positive and significant association between the two variables. Churchill and Yew (2017) reviewed to the relationship between government expenditures and economic growth in 23 studies. They observed that the relationship between the two variables are more evident in in developed countries when compared with less

---

[2]Some factors such as natural resources and exchange rate have been used in previous research to estimate changes in economic growth. Despite the importance of these two factors, they cannot be used in this study since the PNA has no control over its natural resources and money supply.

developed countries. Significant government spending tends to reduce growth in developed countries. They further observed that the beneficiaries of the government spending impact spending on economic growth. For example, using unemployment benefit instead of social security would have stronger negative growth effect. Dudzevičiūtė et al (2018) explored the relationship between economic development and government spending in a sample of European Union countries over the period 1995-2015. Although the study pointed to a significant relationship between government spending and economic growth, the relationship between the two variables varies across the EU countries. They noticed that some high GDP per capita countries with relatively have high expenditures and other high GDP per capita with relatively low expenditures. In other countries, the relationship between the two variables was weak and statistically insignificant.

Patricia and Izuhukwu (2013) explored the relationship between government expenditures on education and economic growth in Nigeria over the period 1977- 2012. The researchers concluded that government expenditures on education have positive and significant impact on economic growth in the long- run. Olulu et al. (2014) disaggregated expenditures into total expenditure, public debt expenditure, expenditure on health and expenditure on Education. They reported inverse relationship between government expenditures on health and economic growth. This implies that government spending on the health sector was insufficient to transform the Nigerian economy. They further noticed that government expenditure on education was insufficient. Al Gifari (2015) studied the relationship between government expenditures and economic growth in Malaysia during the period 1970- 2014. The researchers classified government expenditures into operating, development expenditures in various sectors of the economy. The result of the analysis pointed to negative correlation between economic growth and government expenditure. The study also noticed that the housing sector expenditure and development expenditure are responsible for low economic growth. However, expenditures on education, defense, healthcare, and operating expenditure appeared to have no significant impact on economic growth. It is, therefore, hypothesized that:

Hypothesis 1   :   Economic growth measured by the real GDP per capita is associated with government expenditures.

Education

The World Economic Forum (WEF, 2016) defined education as "the stock of skills, competencies, and other productivity-enhancing characteristics". According to WEF (2016), education is an important element in a country's to human capital since it increases individuals' efficiency and assists the economy by enhancing productivity beyond manual tasks or simple production processes. In this respect, goal 4 of the United Nations Sustainable Development Goals (SDGs) to be achieved by 2030 emphasized the importance of education in achieving sustainable development. Hence, education is viewed as an important element in the formation of human capital that promotes economic growth. Education extends knowledge, improves individuals' skills and enhances their competencies and efficiencies. Schultz (1961) claimed that education plays an important role in economic growth. Barro (1991) reported positive relationship between economic growth and education. Benhabib and Spiegel (1994) believe that human capital development is a source of economic growth. Similarly, Gemmell (1996) showed that human capital and its growth have significant effect on economic growth.

Researchers such as Romer (1986) and Lucas (1988) showed that education has a positive effect on economic growth. Lucas (1988) disclosed that education in developing countries is vital to technology transfer from developed countries and is vital to technological advancement. Bils and Klenow (2000) revealed that high enrollment rate in schools results in rapid improvement in productivity and faster per capita income. Hanushek and Kimko (2000) contended that the quality of education has a significant impact on individuals' productivity and economic growth. Kakar*et al.* (2011) reported a long- run relationship between economic growth and education. They concluded that better education standards improve the efficiency and productivity of labor force and affect the economic development in the long -run. Hanif and Arshed (2016) showed that tertiary education enrollment has the highest impact on growth in comparison with primary and secondary education enrollment. Kotásková*et al.* (2018) reported positive association between education levels and economic growth. On other hand, De Meulmester and Rochet (1995) noticed that the relationship between education and economic growth is not always positive.

Hypothesis 2 : Economic growth measured by the real GDP per capita is associated with education.

Health

The relationship between economic growth and health can be both ways. In other words, high economic growth would lead to better health services and improve individuals' health or healthy population would lead to better economic growth. Economic growth enhances earnings, ensures food availability and this would make spending on health services more affordable and increase the demand for these services. Higher levels of economic growth result in increase in public revenues that can be used in more investment in the health infrastructure. Similarly, improvements in health allows more healthy members of the population to take part in economic activities and spend more hours at work and this would achieve economic growth. Undoubtedly, improved health forms one part of several intervention measures that increase economic growth. Health impacts economic growth since healthy individuals across a society are expected to contribute to increased productivity and would have less absenteeism in comparison with unhealthy ones. Increase in life expectancy is associated with increase in earnings, saving and spending and these would impact economic growth. In addition, health would affect economic growth through education in that healthier individuals can proceed in their education and this would boost the quantity and the quality of the country's labor force and enhance their productivity. According to Preston (1975), a country with healthy population is richer than a country with bad health population.

Researchers such as Becker *et al.* (2005), Deaton (2013) and Weil (2014) disclosed a positive relationship between health (life expectancy) and per capita income. Zhang and Zhang (2005) demonstrated that life expectancy together increase in schooling and a decline in fertility are positively related to economic growth. Lorentzen *et al.* (2008) showed that less risky behavior, low adult mortality, low fertility and more physical capital investment lead to high economic growth. However, Acemoglu and Johnson (2007) proposed that health improvement has a negative effect on economic growth. They employed a neoclassical growth model to explain the negative relationship under which fertility remains constant as mortality reduces and this would result in high population growth and less economic growth.

Negative relationship reported by Acemoglu and Johnson (2007) can be explained on the grounds that while the population of countries started with better health grow faster, they experience smaller health improvement than countries with lower initial health status. Consequently, Aghion *et al.* (2011) and Bloom*et al.*(2014) suggested the inclusion of the initial health in the health model. This emphasizes the theory of decreasing returns to health investment. In other words, further development in an already developed health care system in a developed country with high standards of living can be attained high cost that restrain economic growth. Hansen (2014) observed that including initial health had insignificant effect on the GDP per capita. In addition, Hansen and Lönstrup (2015) found that controlling for initial health results in a negative impact on the GDP per capita. Cervellati and Sunde (2011) believe this result might be due to demographic transition in the analysis. They disclosed that an increase in life expectancy has a negative insignificant impact on per capita income in the pre-transition sample but positive significant impact in the post transition sample. Cervellati and Sunde (2015) showed that this is due to the persistence effect on fertility and education. Bloom *et al.* (2018) believe that the relationship between health and economic growth can be strong in less-developed, post-demographic transition countries and with respect to children's and women's health. It is, therefore, hypothesized:

Hypothesis 3   :   Economic growth measured by the real GDP per capita is associated with health.

Capital Formation

The relationship between capital formation and economic growth received support from several researchers. (See for example: Romer, 1986, Lucas, 1988, Ghura and Hadji, 1996, Ghura, 1997 and Beddies 1999). Capital formation is the increase in capital stock and investment in the national economic and social infrastructure. Solow (1957) showed that an increase in capital formation results in increase in production. This leads to an increase in employment and promotes economic growth. Singer (1950) revealed that capital formation is tangible (plant and equipment) and intangible (knowledge, technology, education, health). Bakare (2011) described capital formation as the proportion of income saved and invested to increase input and future income.Adekunle and Aderemi (2012) indicated that capital formation is real domestic investment made by acquiring more capital-producing assets to generate additional national income. Jhingan (2006) believes that the relationship between capital formation and economic growth is influenced by three inter-related factors; availability of real savings and increase in them, availability of credit and financial institutions to mobilize savings and direct them towards the right channels and to using available savings to invest in capital goods. Kormendi and Maguire (1985), Barro (1991) and De Long and And summer (1991) concluded that future economic growth is determined by capital formation.
Ugwuegbe and Chinyere (2013) reported a positive and significant relationship between capital formation and economic growth. Ghali and Al-Mutawa (1999) studied the relationship between gross fixed capital formation and economic growth in several countries and noticed that the results varied significantly across these countries. While they showed fixed capital formation positively affected economic growth in some countries, they noticed unidirectional causal relationship appeared in other countries. They also noticed that economic growth caused capital formation in some countries. Blomstrom*et al.* (1992) revealed that capital formation

does not affect economic growth. They noticed that economic growth affects capital formation. Albimanand Suleiman (2016) could not find any long run relationship between capital formation and economic growth. Ogunniyi (2018) reported an existence of long run dynamic relationship between human capital formation and economic growth. It is, therefore, hypothesized:

Hypothesis 4   :   Economic growth measured by the real GDP per capita is associated with fixed capital formation.

Aid Flows and Official Development Assistance

Aid flows and official development assistance form a source of domestic financing that would stimulate economic growth. Morrissey (2001) believes that aid flows support economic growth by promoting investment in physical and human capital, enhancing the capacity to import capital goods and technology. Aid flows would result in transfer of technology that increase capital productivity and stimulate technical change. However, McGillivray *et al.* (2006) believe that aid flows and official development effectiveness are influenced by political conditions, institutional quality, decreasing returns and external and climatic conditions. Yiew and Lau (2018) concluded that overdependence on aid might have a negative effect on growth as a whole, whereas, effective foreign aid management would achieve the Sustainable Development Goals (SDG).Empirical evidences on the relationship between foreign aid and economic growth is mixed. While researchers such as Papanek (1972), Dowling and Hiemenz (1982), Gupta and Islam (1983), Hansen and Tarp (2000), Gomanee, *et al.* (2005), Dalgaard*et al.* (2004), and Karras (2006) reported positive association between the two variables, Burnside and Dollar (2000), and Brautigam and Knack (2004) detected negative relationship.
Ekanayake and Chatrna(2010) revealed that foreign aid has mixed effect on economic growth in developing countries. Yet, Mosley (1980), Mosley *et al.* (1987), Boone (1996), and Jensen and Paldam (2003) noticed no relationship between aid flows and economic growth. Addison *et al.* (2005) concluded that aid to African countries not only stimulated economic growth but contributed to poverty reduction. Burnside and Dollar (2000) concluded that aid flows have positive effect on economic growth only when it is combined with good fiscal, monetary, and trade policies. Oneya*et al.* (2018) also concluded that foreign aid is among external sources of financing, if it is well invested, it results in economic growth and reduction in the levels of poverty.It is, therefore, hypothesized:

Hypothesis 5   :   Economic growth measured by the real GDP per capita is associated with foreign aid flows.

4.   Data Collection, Methodology and Model Specification

The current study used annual data, covering the period 1995- 2017, to identify factors responsible for economic growth in the West Bank and Gaza Strip. The data were collected from the World Bank Data Bank and the Palestinian Central Bureau of Statistics. The choice of the independent variables employed in the current study were based on economic growth theories advanced in the literature together with previous studies in this area of research and data availability. GDP per capita (constant 2010 USD) is used to proxy economic growth.

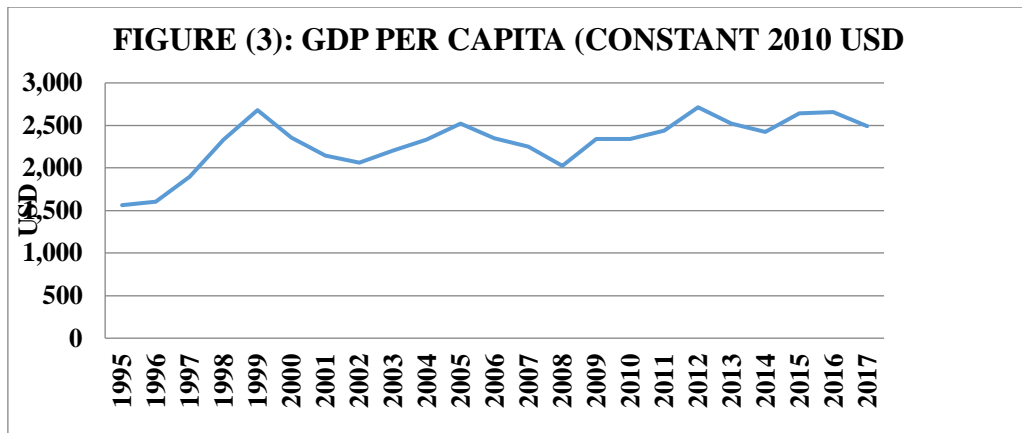**FIGURE (3): GDP PER CAPITA (CONSTANT 2010 USD**

Figure (3) presents GDP per capita in the West bank and Gaza Strip during the period 1995-2017. The figure highlighted that GDP per capita range between USD 1,564in 2002 and 2,714 in 2012. It can also be observed from the figure that GDP per capita witnessed steady increase during the period between 1995-1999 after the Israeli occupation eased restriction on the Palestinians movement and reduced the boarders closer. The economy of the West bank and Gaza Strip witnessed significant deterioration following the outbreak of the second Intifada in September 2000, with the closure of the borders and the deployment of military checkpoints between various areas of the country.

Independent variables used to explain economic growth comprises: government consumption, education, health and capital formation. The dependent and independent variables employed in the current study are expressed in the following regression model.

$$GROWTH = a + \beta_1\ GCONSUM + \beta_2\ EDUCTN + \beta_3\ HEALTH + \beta_4\ GCFC + \beta_5\ GCFORMAT + \beta_6 NODAOARC + \varepsilon$$

Where:

GROWTH	=	GDP per capita (constant 2010 USD)
a	=	Constant
GGFCC	=	General government final consumption expenditure (constant 2010 USD)
EDUL	=	Literacy rate, adult total (% of people ages 15 years and above)
HEALTHE	=	Life expectancy at birth, total (years)
GCFC	=	Gross capital formation (constant, USD).
NODAOARC		Net official development assistance and official aid received per capita (constant, USD)
ε	=	Standard Error
β₁-β₆	=	Parameters of the model

5.   Empirical Analysis

Unit root tests

Regression analysis based on non-stationary data leads to spurious results. The time series data of macroeconomic variables are usually not stationary since it is difficult to maintain the data

mean, variance and auto covariance constant over time. Therefore, the unit root test was performed. The outcome of the test is presented in Table (1).

TABLE (1): UNIT ROOT TEST

Variable	At level		At First difference	
	t- Statistic	Prob.	t- Statistic	Prob.
LNGDPPCC	-3.00	0.051		
LNGCFC	-1.751	0.393	-4.281	0.0034
EDUCTNL	-8.374	0.000		
HEALTHE	-4.483	0.002		
LNGGFCC	-1.329	0.592	-4.212	0.0042
LN NODAOARC	-1.505	0.512	-4.559	0.0019

Table 1 demonstrates that all variables estimated in the regression model were not stationary either at level or after the first difference test. The current study has employed E-views to estimate the model. It automatically determines the number of optimal lags by utilizing Akaike information criterion (AIC) and Schwartz information criterion (SIC).

Descriptive statistics

Table (2) showed little fluctuation in the life expectancy at birth (*HEALTHL*)as it ranges between 70- 74 years and literacy (*EDUCTNL*) had reached recently 97%; this one of the highest rates in the Arab world. The table also showed significant fluctuations in *GDPPCC*. It ranges between 1,564 and 2,714. The table also revealed that government consumption (*GGFCC*) witnessed substantial increase since the creation of the PA. The Table further showed that the net official development assistance and official aid received during the period between 1995 and 2017 averaged at $439 per capita; and it range between $247 and $734.

TABLE (2): DESCRIPTIVE STATISTICS OF THE VARIABLE EMPLOYED IN THE REGRESSION MODEL

Variables	Mean	Median	Std. Dev.	Minimum	Maximum
GDPPCC	2,300	2,342	309	1,564	2,712
GGFCC	2,003,206,988	2,014,277,685	725,832,410	844,755,570	3,077,658,186
GFCFC	1,888,938,713	1,870,479,313	409,718,629	1,249,487,986	2,644,759,727
NODAOAC	439	437	130	247	734
EDUCTNL	92	93	4	85	97
HEALTHL	72	72	1	70	74

Author's calculations (data from World Bank databank)

Model Estimation

To identify factors behind determining economic growth in the Palestinian Authority, *GDPPCC* was regressed against the above-mentioned independent variables. The results of the regression are presented in table 3 below.

TABLE (3): OLS RESULTS

R-squared	0.721997	Adjusted R-squared	0.635121
F-statistic	8.310655	Prob. (F-statistic)	0.000493

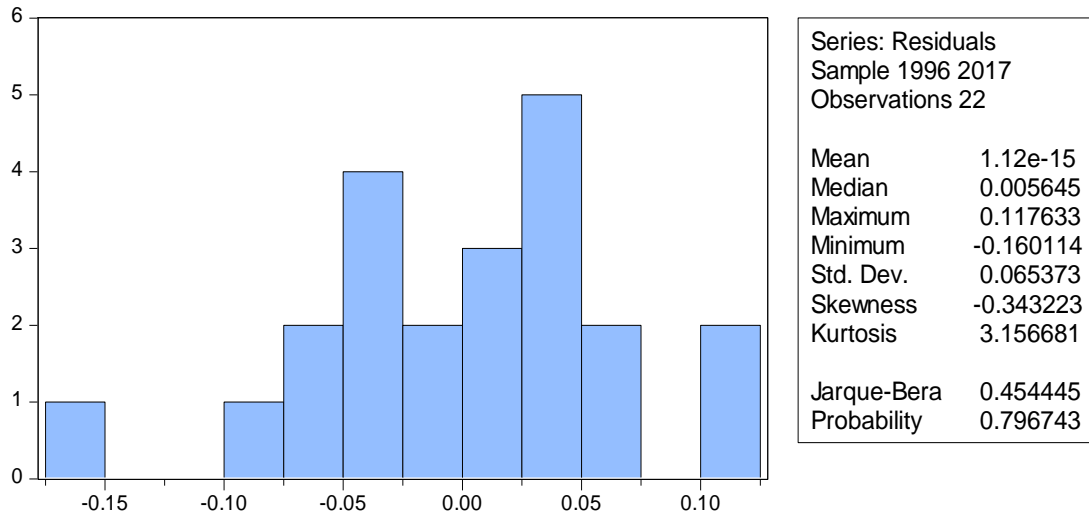| Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.12049	5.044820	3.591900	0.0024
EDUL	0.077353	0.028222	2.740839	0.0145
HEALTHE	-0.252052	0.107360	-2.347730	0.0321
DGCFC	3.06E-10	7.73E-11	3.953046	0.0011
DGGFCC	-0.063168	0.206714	-0.305583	0.7639
DLNNODAOAC	-0.071496	0.096685	-0.739477	0.4703

Table (3) shows that gross capital formation and literacy are the most significant variables positively associated with economic growth. However, the table pointed to negative and significant relationship between economic growth and life expectancy at birth. Although the Table disclosed negative relationships between economic growth and the general government final consumption expenditure and with net official development assistance and official aid received per capita, the relationships were statistically insignificant.

Table (4)reports the outcome of the serial correlation and hetroskedasticity tests. It is evident from the table that the model is appropriate and it is free from serial correlation problem and heteroskedasticity problems.

TABLE 4: SERIAL CORRELATION LM TEST
AND HETEROSKEDASTICITY TEST

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.132234	*Prob. F(2,16)*	0.3501
*Obs*R-squared*	3.063015	*Prob. Chi-Square(2)*	0.2162

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.428393	*Prob. F(4,18)*	0.0807
*Obs*R-squared*	9.491990	*Prob. Chi-Square(4)*	0.0910
Scaled explained SS	5.413869	*Prob. Chi-Square(4)*	0.3675

Series: Residuals	
Sample 1996 2017	
Observations 22	
Mean	1.12e-15
Median	0.005645
Maximum	0.117633
Minimum	-0.160114
Std. Dev.	0.065373
Skewness	-0.343223
Kurtosis	3.156681
Jarque-Bera	0.454445
Probability	0.796743

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. | . |	. | . |	1	-0.019	-0.019	0.0089	0.925
. |**. |	. |**. |	2	0.253	0.252	1.6936	0.429
. | . |	. | . |	3	-0.053	-0.048	1.7731	0.621
.*| . |	.**| . |	4	-0.150	-0.230	2.4367	0.656
.*| . |	.*| . |	5	-0.129	-0.120	2.9537	0.707
.*| . |	. | . |	6	-0.136	-0.046	3.5659	0.735
.*| . |	.*| . |	7	-0.149	-0.116	4.3470	0.739
.*| . |	.*| . |	8	-0.099	-0.117	4.7180	0.787
. |*. |	. |*. |	9	0.120	0.153	5.2991	0.807
. | . |	. | . |	10	0.022	0.037	5.3201	0.869
. |**. |	. |*. |	11	0.235	0.104	7.9744	0.716
. |*. |	. |*. |	12	0.124	0.084	8.7841	0.721

Finally, auto correlation presented in Table (5) shows that there is no auto correlation in the data because residuals are not spread from their mean variance.

6.   Findings

The finding summarized in Table (3)pointed to positive and statistically significant relations exist between economic growth represented by constant GDP per capita and gross capital formation and literacy rate among adults. A negative and statistically significant relationship appeared between economic growth and life expectancy at birth. Although the general government final consumption expenditure and the net official development assistance and official aid received per capita showed negative association with economic growth, such an association was statistically insignificant.

Positive and significant association between economic growth in the Palestinian Authority and gross capital formation is consistent with results achieved by Romer, (1986), Lucas (1988)Ghura and Hadji Michael (1996),Ghura(1997),Beddies(1999), and Chinyere (2013).

Increase in capital formation results in increase investment and capital that expand production. This leads to increase in the levels of employment, improves personal income and stimulate economic growth. The positive and statistically significant association between economic growth and education represented by literacy rate among adults is in line with results reported by Romer (1986), Lucas (1988), Barro (1991), Bils and Klenow (2000), Hanushek and Kimko (2000),Kakar*et al.* (2011) and Kotásková*et al.* (2018).Education extends knowledge, improves skills and enhances individual competencies. Hence, it is considered as an important factor in developing human capital since it enhances efficiency and increases productivity and stimulates economic growth. On the other hand, negative and statistically significant association appeared between economic growth and health denoted by life expectancy at birth. This result is consistent with Acemoglu and Johnson (2007) proposal and Hansen and Lönstrup (2015) findings. They demonstrated that the increase in life expectancy with constant fertility would lead to high population growth and less economic growth.

7.   Conclusion

This study is set out to explore factors impact economic growth in the West bank and Gaza Strip. To achieve this objective, data were collected from the World Bank DataBank for the period between 1995-2017. Constant GDP per capita has been used in this study to proxy economic growth. Five explanatory variables frequently adopted in previous research and it was possible to collect data about them were used in this study. The variables comprised, education measured by literacy among adults, health represented by life expectancy at birth, general government consumption, capital formation and net official development assistance and official aid received per capita. It was evident from the analysis that economic growth in the Palestinian Authority is positively and significantly influenced by capital formation and education. Health represented by life expectancy at birth appeared to be significantly but negatively associated with economic growth. Although the general government final consumption together with net official development assistance and official aid received per capita resulted in negative effect of economic growth in the Palestinian Authority, the associations were statistically insignificant.

REFERENCES

Abu–Eideh, O. (2015). Causality between public expenditure and GDP growth in Palestine: An econometric analysis of Wagner's law. *Journal of Economics and Sustainable Development*, 6(2),189-199.

Acemoglu, D. (2009). *Introduction to Modern Economic Growth*. Princeton NJ:Princeton University Press

Acemoglu, D. & Johnson, S. (2007). Disease and development: the effect of life expectancy on economic growth*Journal of Political Economy*,115(6), 925–985.

Addison, T.;Mavrotas, G. & McGillivray, M. (2005).Aid to Africa: an unfinished agenda. *Journal of International Development*, 17(8), 989-1001.DOI:10.1002/jid.1255

Adekunle, K.&Aderemi, A. (2012). Domestic investment, capital formation and population growth in Nigeria. *Developing Country Studies*, 2(7), 37-42.

Aghion, P.; Howitt, P. &Murtin F. (2011).The relationship between health and growth: when Lucas meets Nelson-Phelps. *Review of Economics and Institutions*,2(1), 1–24.

Albiman, M. & Suleiman, N. (2016). The relationship among export, import, capital formation and economic growth in Malaysia. *Journal of Global Economics*, 4(2),1-6. DOI: 10.4172/2375-4389.1000186

Al Gifari, H. (2015). The effects of government expenditure on economic growth: the case of Malaysia. INCEIF, Global University of Islamic Finance *Munich Personal RePEc Archive (MPRA)*, MPRA Paper No. 71254.

Bakare A. (2011). A theoretical analysis of capital formation and growth in Nigeria. *Far East Journal of Psychology and Business*, Far East Research Centre, 3(2), 11-24.

Barro, R. (1991). Economic growth in a cross section of countries.*Quarterly Journal ofEconomics*, 106(2), 407-443. https://doi.org/10.2307/2937943

Barro, R. (1996). Determinants of economic growth: A cross-country empirical study. *National Bureau of Economic Research*, Working Paper: 5698.DOI 10.3386/w5698

Becker, G.; Philipson, T.& Soares, R. (2005). The quantity and quality of life and the evolution of world inequality.*The American Economic Review* 95(1), 277-291.

Beddies, Ch. (1999). Investment, capital accumulation and growth: some evidence from Gambia1964-1998.*IMF Working Paper 99/117*.

Benhabib, J.&Spiegel, M. (1994). The role of human capital in economic development evidence from aggregate cross-country data. *Journal of Monetary Economics*, 34(2),143-173.DOI:10.1016/0304-3932(94)90047-7

Benos, N. (2009). *Fiscal policy and economic growth: empirical evidence from EU countries*. MPRA Paper 19174, University Library of Munich, Germany.

Bils, M.&Klenow, P. (2000). Does schooling cause growth?.*American Economic Review*, 90(5),1160-1183. DOI: 10.1257/aer.90.5.1160

Blomstrom, M., Lipsey, R. &Zejan M (1992). What explains developing country growth?, NBER Working Papers 4132, National Bureau of Economic Research, Inc.

Bloom, D.; Canning, D. & Fink, G. (2014). Disease and development revisited. *The Journal of Political Economy*,122(6), 1355–66.https://doi.org/10.1086/677189

Bloom, D.; Kuhn, M. &Prettner, K. (2018). Health and economic growth. Discussion Paper Series, IZA – Institute of Labor Economics, IZA DP No. 11939

Boldeanu, F. &Tache, I. (2015). Public expenditures by subdivision and economic growth in Europe.*BASIQ 2015 Proceedings*, Bucharest.

Boone, P. (1996). Politics and the effectiveness of foreign aid.*European Economic Review*,40(2), 289–329.https://doi.org/10.1016/0014-2921(95)00127-1

Brautigam, D. & Knack, S. (2004). Foreign aid, institutions, and governance in Sub-Saharan Africa.*Economic Development and Cultural Change*, 52(2), 255-285.https://doi.org/10.1086/380592

Burnside, C. & Dollar, D. (2000). Aid, policies, and growth. *American Economic Review*, 90(4), 847–868.DOI: 10.1257/aer.90.4.847

Cervellati, M. &Sunde, U. (2011). Life expectancy and economic growth: the role of the demographic transition *Journal of Economic Growth* 16:99–133.https://doi.org/10.1007/s10887-011-9065-2

Cervellati, M. &Sunde, U. (2015). The effect of life expectancy on education and population dynamics. *Empirical Economics* 48: 1445–1478.https://doi.org/10.1007/s00181-014-0830-x

Churchill, S.& Yew, S. (2017). Are government transfers harmful to economics growth? A meta-analysis.*Economic Modelling*, 64(C),270-287.DOI: 10.1016/j.econmod.2017.03.030

Dalgaard, C.; Hansen, H. & Tarp, F. (2004).On the empirics of foreign aid and growth.*Economic Journal*, 114(496),191–216.DOI:10.1111/j.1468-0297.2004.00219.x

Deaton, A. (2013). *The great escape: health, wealth, and the origins of inequality.* Princeton, NJ: Princeton University Press.

De Long, J. &Andsummer, L. (1991). Equipment, investment and economic growth.*Quarterly Journal of Economics*, 106(2), 445-502.https://doi.org/10.2307/2937944

De Meulmester, J.&Rochet, D. (1995). A causality analysis of the link between higher education and economic development.*Economics of Education Review*, 14(4), 351-361.https://doi.org/10.1016/0272-7757(95)00015-C

Denison, E. (1962).*The sources of economic growth in the United States and the alternatives before us*. New York: Committee for Economic Development.

Dowling, M. &Hiemenz. U. (1982).Aid, savings, and growth in the Asian region. *The Developing Economies*, 21(1),3-13. DOI:10.1111/j.1746-1049.1983.tb00641.x

Dudzevičiūtė, G., Šimelytė, A. &Liučvaitienė, A. (2018). Government expenditure and economic growth in the European Union countries. *International Journal of Social Economics*, 45(2),372-386.https://doi.org/10.1108/IJSE-12-2016-0365

Ekanayake, E. &Chatrna, D. (2010). The effect of foreign aid on economic growth in developing countries. *Journal of International Business and Cultural Studies*, 3(2),3-11.

Gemmell, N. (1996). Evaluating the impacts of human capital stocks and accumulation on economic growth; some new Evidence, *Oxford Bulletin of Economics and Statistics*, 58(1), 9-28.https://doi.org/10.1111/j.1468-0084.1996.mp58001002.x

Ghali, K. &Al-Mutawa, A. (1999). The intertemporal causal dynamics between fixed capital formation and economic growth in the group of seven countries. *International Economic Journal*, 13(2), 31-37.https://doi.org/10.1080/10168739900000035

Ghosh, S.&Gregoriou, A. (2008). The composition of government spending and growth: Is current or capital spending better?.*Oxford Economic Papers*, 60(3), 484-516.https://doi.org/10.1093/oep/gpn005

Ghura, D. (1997). Private investment and endogenous growth: evidence from Cameroon.*IMF Working Paper 97/165.*

Ghura, D. &Hadjimichael. M. (1996). Growth in Sub-Saharan Africa. *Staff Papers*, International Monetary Fund, 43(3), 605-634. https://doi.org/10.2307/3867556

Gomanee, K., Girma, S. & Morrisey, O. (2005).Aid and growth in Sub-Saharan Africa: accounting for transmission mechanisms. *Journal of International Development*, 17(8), 1055–1075.https://doi.org/10.1002/jid.1259

Govindaraju, V. Ramesh, R. & Sajid, A. (2011). Economic growth and government spending in Malaysia: a re-examination of Wagner and Keynesian views. *Economic Change Restructuring*, 44(3), 203–219.DOI: 10.1007/s10644-010-9099-z

Gupta, K. & Islam, M. (1983).*Foreign Capital, Savings and Growth—An International Cross-Section Study*, Reidel Publishing Company: Dordrecht.

Hanif, N. &Arshed, N. (2016). Relationship between school education and economic growth: SAARC countries. *International Journal of Economics and Financial Issues*, 6(1), 294-300.

Hansen, C. (2014). Cause of death and development in the US. *Journal of Development Economics,*109 (C), 143–53. 10.1016/j.jdeveco.2014.03.013

Hansen, C.&Lönstrup, L. (2015).The rise in life expectancy and economic growth in the 20th century.*Economic Journal,*125(584), 838–52.https://doi.org/10.1111/ecoj.12261

Hansen, H. & Tarp, F. (2000). Aid effectiveness disputed. *Journal of International Development*, 12(3), 375–398. DOI:10.1002/(SICI)1099-1328(200004)12:33.0.CO;2-M

Hanushek, E.&Kimko, D. (2000). Schooling, labor-force quality, and the growth of nations.*American Economic Review*, 90(5),1184-1208.DOI: 10.1257/aer.90.5.1184

Jensen, P. &Paldam, M. (2003).Can the new aid-growth models be replicated?, *Working Paper No.2003–17*, Institute for Economics: Aarhus.

Jhingan, M. (2006). *Economic Development*, New Delhi, Vrinda Publications (P) Ltd,P.162 Jhingan, *loc.cit.,* 163.

Kakar, Z. Khilji, B.& Khan, K. (2011). Relationship between education and economic growth in Pakistan: a time series analysis*Journal of International Academic Research*, 11(1), 27-32.

Karras, G. (2006). Foreign aid and long-run economic growth: empirical evidence for a panel of developing countries .*Journal of International Development*, 18(1),15–28. DOI: 10.1002/jid.1187

Kormendi, R, &Maguire, P. (1985). Macroeconomic determinants of growth: Cross country evidence. *Journal of Monetary Economics*, 16(2), 141-163. https://doi.org/10.1016/0304-3932(85)90027-3

Kotásková, S. Procházka, P., Smutka, L.;Maitah, M.;Kuzmenko, E.;Kopecká, M. &Hönig, V. (2018).The impact of education on economic growth: the case of India.*Acta Universitatis Agriculturae Et SilviculturaeMendelianaeBrunensis*, 66(1), 253-262. DOI:10.11118/actaun201866010253

Lorentzen, P., McMillan, J., &Wacziarg, R. (2008). Death and development.*Journal of Economic Growth,*13: 81–124.https://doi.org/10.1007/s10887-008-9029-3

Lucas, R. (1988). On the mechanics of economic development.*Journal of Monetary Economics*, 22, 3-42.

Feeny, S.; McGillivray, M.; Hermes, N. &Lensink, R. (2006). Controversies over the impact of development aid: it works; it doesn't; it can, but that depends.*Journal of International Development*, 18(7),1031-1050.DOI:10.1002/jid.1335

Morrissey, O. (2001). Does aid increase growth?.*Progress in Development Studies*, 1(1),37-50. https://doi.org/10.1177/146499340100100104

Mosley, P. (1980). Aid, savings and growth revisited.*Oxford Bulletin of Economics and Statistics*, 42(2),79–95.https://doi.org/10.1111/j.1468-0084.1980.mp42002002.x

Mosley, P.; Hudson, J. &Horrell, S. (1987).Aid, the public sector and the market in less developed countries.*Economic Journal*, 97(387), 616–641. https://doi.org/10.2307/2232927

Ogunniyi, M. (2018).Human capital formation and economic growth in Nigeria: A time bound testing approach (1981-2014).*African Educational Research Journal,*6(2), 80-87. DOI: 10.30918/AERJ.62.17.046

Olulu, R. Erhietovwe, E. &Adrew, U. (2014). Government expenditures and economic growth: the Nigerian experience. *Mediterranean Journal of Social Sciences*, 5(10),89-94. DOI:10.5901/mjss.2014.v5n10p89

Oneya, N. Kepha, O., Ondabu, I. Iravo, M.and Muturi, W. (2018). "Effect of foreign inflows on economic growth of East African member countries, *International Journal of Scientific and Research Publications*, 8(11): 415-431

Papanek, G. (1972). "The effect of aid and other resource transfers on savings and growth in less developed countries", *Economic Journal*,82(327): 935–950.

Patricia, C.and Izuhukwu, C. (2013). "Impact of government expenditure on economic growth in Nigeria", *International Journal of Business and Management Review*, 1(4): 64-71.

Preston, S. (1975). "The changing relation between mortality and level of economic development",*Population Studies*,29: 231–48.

Romer, P. (1986). "Increasing returns and long-run growth", *The Journal of Political Economy*, 94(5):1002-1037.

Sabir, E.; Yustika, A., Susilo, Maskie, G. (2015). "Local government expenditure, economic growth and income inequality in South Sulawesi Province", *Journal of Applied Economics and Business*, 3(2): 61-73.

Schultz, T.(1961).*Education and Productivity*, National Commission on Productivity, Washington, DC.

Singer, H.(1950). "Distribution of gains between investing and borrowing countries", *American Economic Review*, Papers and Proceedings, 40: 473-485.

Solow, R. (1957)."A contribution to the theory of economic growth", *Quarterly Journal of Economics*, 70: 65-94.

Szarowska, I. (2011). "Relationship between government spending and economic growth in the Czech Republic", *Acta Universitatis Agriculturae Et SilviculturaeMendelianaeBrunensis*, 44(7): 415- 422.

Ugwuegbe, U. S. and Chinyere, U. P. (2013). "The impact of capital formation on the growth of Nigerian economy, *Research Journal of Finance and Accounting*, 4(9):36-42.

Upreti, P. (2015). "Factors affecting economic growth in developing countries", *Major Themes in Economics:* *37- 54.https://pdfs.semanticscholar.org/a386/ba53e164f460883c2523f7f9b7f698d7f255.p df*

Weil, D. (2014). Health and economic growth. In: Aghion, P., Durlauf, S.N. (Eds.), *Handbook of Economic Growth*, vol. 2B, 623–82 (chapter 3). Amsterdam: Elsevier.

World Economic Forum (2016) Global Competitiveness Report 2015-2016 http://reports.weforum.org/global-competitiveness-report-2015-2016/education/#view/fn-53

Yiew, T. H., and Lau, E. (2018). "Does foreign aid contributes to or impeded economic growth",*Journal of International Studies, 11*(3): 21-30.

Zhang, J. and Zhang, J. (2005). "The effect of life expectancy on fertility, saving, schooling and economic growth: theory and evidence", *Scandinavian Journal of Economics*,107: 45–66.