

# Does Public Expenditure Reduce the Level of Poverty? A Comparative Study on OIC and Non-OIC Countries

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## Abstract

*Poverty is a human phenomenon and alleviation of poverty has been the priority and responsibility of all government. The main objective of the paper is to evaluate the impact of public expenditure on poverty reduction in OIC member countries and the rest of the world. This study applies OLS method on the dataset obtained from 126 countries to estimate the impact of government expenditure on education and health on poverty reduction in OIC and non-OIC countries. The OIC countries are expected to have close to zero poverty headcount ratios but in reality, some OIC countries are at the top of the poorest countries in the world. In this study, we find that government expenditure has a positive impact on poverty reduction for both OIC member countries and the rest of the world whereas the GNI of both OIC member countries and the rest of the world are about the same albeit less convincing.*

**Key Terms:** Poverty, Public Expenditure, OIC, OLS.

## 1. Introduction

People are not born equal socially, economically, politically and geographically. This inequality has manifested into a world of privileged and underprivileged people. For the latter, it is the responsibility of the government to provide social welfare to those who are deprived of basic needs such as food, employment, education and health care. In monetary term, the people are considered living in extreme poverty if their average daily income is less than USD 1.25 per day, as defined by the World Bank. If expressed in poverty headcount ratio, the world's extreme poor in 2011 has reached 1 billion

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people or 14.5% of world population (World Bank, 2015), and 350 million of which are living in OIC member countries which recorded differing poverty headcount ratios between zero percent and 68 percent of their population (COMCEC, 2014).

As reported in SESRIC (2016), OIC countries altogether possessed 58.5% of the world's total proved crude oil reserves in 2015 and supplied 41.5% of the world's total oil production. The share of OIC countries in the worldwide proved gas reserves reached 58.8% in 2015 and 36% of the world's total natural gas production stemmed from OIC countries. On the other hand, 52.7% of all uranium, a raw mineral used in nuclear power plants, production in the world came from OIC countries in 2014. In addition, the Muslim population is one-fourth of the world's total population, constituted 23% of the world population (COMCEC, 2016), and provides a huge pool of human capital. In geographical advantage, a number of OIC countries are located in some of the most strategic trade routes such as the Red Sea, Black Sea, the Mediterranean Sea, the Arabian Sea, the Northern Indian Ocean and the Suez Canal. In view of the above, the OIC member countries are well endowed with abundant resources to support and finance government spending which has been proven as an important component in poverty reduction. Though a controversy theory, the Keynesian, for instance, asserted that an increase in government spending to a certain extent would increase demand, which would stimulate economic growth and employment (Mitchell, 2005). The intriguing questions that remain are: Despite much government spending and effort, why people of OIC Muslims continue to languish in abject poverty? Is the allocation of government expenditure effective in meeting poverty reduction objective in OIC member countries?

This paper uses cross-sectional data of 126 OIC and non-OIC member countries to evaluate the impact of public expenditure on poverty reduction in OIC member countries and the rest of the world and to determine the direction of the relationship between public expenditure and poverty in OIC member countries

The paper is followed by Section 2 on a review of previous empirical studies and literature on the impact of government spending, education, health, private investment, secondary school enrolment and inward remittances on poverty reduction. Section 3 will outline the data and methodology. Lastly, Section 4 will present the results and section 5 will conclude the paper.

## **2. Literature Review**

Poverty is viewed as much more complex than simply just income deprivation as it entails the lack of empowerment, knowledge, opportunity as well as access to income

and capital (Gounder & Xing, 2012). In recent years, the developing countries recognise the importance of government expenditure in the process of human development. Education does not only provide a better quality of life for every citizen but also have positive effects on the economic growth and development of a country (Alvesson & Benner, 2016). The benefits of schooling increase welfare via increased ability to acquire higher income and positively influence socioeconomic outcomes. A study by United Nations Development Program (UNDP) has confirmed the above viewpoint by revealing that human poverty not only stands for income poverty: it is the lack of access to opportunities and alternatives for living an endurable life. Lack of education is one such significant opportunity which reflects the poverty of education. Therefore, in a cyclical overview, educational poverty translates into an important measure of human poverty (Ahmad & Batul, 2013).

Al-Mamun et al (2016), examining 50 producing countries, show quality of governance (QOG) impacts economic growth over short and long-run. They show that the positive effect of QOG on economic growth works in countries with higher information communication technology (ICT) diffusion, social capital, economic globalization, and financial development.

Based on the report on the World Social Situation, as a remark to recent trends in economic inequality concluded that disparities in income, wealth and consumption have tended to contribute directly to the well-being of individuals and families, shape the opportunities people have in life including access to goods and services, good educational outcomes and good health (United Nations, 2013) social and environmental spheres and national action. The Department works in three main interlinked areas: (i.

Moreover, Gounder and Xing (2012) tested the impact of education and health on poverty reduction through monetary and non-monetary models from Fiji and the monetary model indicates that all income quartile households (i.e. lowest to highest) benefit from additional skills obtained through formal education. While those in the lowest income quartile, in particular, benefit the most from formal education, however, it cannot sustainably prevent people with only primary education from falling into poverty. It is, therefore, imperative to measure education also in terms of percentage of gross secondary school enrollment. UNICEF defines gross primary or secondary school enrolment ratio as ‘the number of children enrolled in a level (primary or secondary), regardless of age, divided by the population of the age group that officially corresponds to the same level’. The measure of secondary school enrolment is considered a more relevant measure of human capital development for poverty reduction in addition

to spending on education. While the results for the non-monetary model show that education has a positive and significant influence on the tendency of the people to engage in health prevention activities and in acquiring good housing facilities.

Besides, Mendola & Busetta (2005) stated that breadwinner illness is a major cause of the financial deterioration for poor households, almost one-fifth of all deterioration in Bangladesh. The costs are direct (medical fees and treatments) and indirect (lost wages or production, care, withdrawal of children from school, asset depletion and long-term indebtedness). Chronic diseases such as tuberculosis (TB) have particularly devastating results. Severe or prolonged illness or accidents are more likely in very poor households. Clean water and good household and community sanitation, are increasingly recognized as factors in determining not only the health of children but also of adults. Although hypertension and heart disease are commonly considered problems of the middle class, they also are significant problems for the poor.

On the other hand, investment is an important contributor to sustainable economic growth and development. It is evidenced from the United Nations Sustainable Development Goals (UNCTAD, 2014) which identify investments in areas ranging from poverty reduction to food security, health, education, employment, equality, climate change, ecosystems and biodiversity, among others for sustainable economic development in less developed and developing countries. The projected investment needs in key Sustainable Development Goals (SDG) areas in developing countries are estimated at \$3.3 to \$4.5 trillion per year between 2015 and 2030, the proposed SDG delivery period. Current investment in these sectors is around \$1.4 trillion, implying an annual investment gap of between \$1.9 and \$3.1 trillion. The fulfilment of this investment gap is expected to be driven by private investment (UNCTAD, 2014). It is in line with Khan and Reinhart (1990) who concluded in their study that private investment has a larger effect on growth than does public investment although certain public investment, e.g. infrastructure, human capital, etc. are complementary to private investment.

In a country like Malaysia, between 1984 and 2005, poverty was proven to reduce the flow of private investment to manufacturing sectors (Abdul Karim & Ahmad, 2008). Shah & Batley (2009), however, found that there was a possible but not necessary association between private investment in infrastructure projects, economic growth and poverty reduction in their study of the impact of private sector investment in thirteen facilities of some developing countries. As such, a pro-poor investment framework should be set up to maximise the impact of investment in economic growth

and poverty reduction. However, countries with low capacity in private domestic investment, foreign private direct investment is preferred to bring about sustainable economic development as long as the imbalance of trade is manageable (Guisan & Exposito, 2012).

Another important element in poverty reduction is inward remittance. It represents household income from foreign economies arising mainly from the temporary or permanent movement of people to those economies. It is sizeable and, in certain OIC countries, a stable source of funds that sometimes exceeds official aid or financial inflows from foreign direct investment. Adams (2006) concludes that inward remittance reduces poverty in recipient households, especially when transfers are from abroad. Ratha (2003) suggests that remittance that raises the consumption levels of rural households might have substantial multiplier effects because they are more likely to be spent on domestically produced goods, thus stimulating aggregate demand and economic growth in receiving economies.

The above literature supports the view that government expenditure on education and health, secondary school enrolment, private investment and inward remittance are an impetus for poverty reduction based on studies in various countries. This paper attempts to fill the gap in the literature as not much work has been done so far on the comparison of poverty reduction efforts of OIC and non-OIC countries. The results of the research will provide important details, which cannot be over-emphasized to Government policy makers to 'do it right' in the allocation of government expenditure for poverty reduction.

### **3. Data and Methodology**

The sample data set contains the year 2012 data from a total of 126 countries, including 31 countries from OIC and 95 countries from non-OIC. We applied classic ordinary least square (OLS) and weighted least square (WLS) methodology to correct for heteroskedasticity and autocorrelation problems. The country choice was constrained by the availability of data for the main explanatory variables; nonetheless, it is important to note that the dataset is substantially larger than most previous studies. The benefit of using a dataset that includes a wider range of countries is that it increases the degrees of freedom and, therefore, enhances the credibility of the results (Wooldridge, 2013).

Using a large sample of 50 oil exporting countries, we extend the prior literature by examining the role of quality of governance (QOG) on economic growth under the condition of heterogeneity and cross-sectional independence in errors. We document

that QOG is by far the most important factor in augmenting economic growth both in the long and short-run. More importantly, we investigate a number of mediating factors under which QOG affects economic growth. We show that the positive effect of QOG on economic growth works in countries with higher information communication technology (ICT) diffusion, social capital, economic globalization, and financial development. We also show that the ‘resource curse’ or ‘resource blessings’ debate in growth literature is sensitive to methodological choices.

Due to the unavailability of poverty headcount ratio for all the sample countries, we have decided to use Gross National Income (GNI) which is more readily available as a proxy for poverty. In addition, the benefit of using GNI is that it shows the total domestic and foreign output claimed by residents of a country, consisting of gross domestic product (GDP) and factor incomes earned by foreign residents, less income earned in the domestic economy by non-residents (Todaro & Smith, 2011).

As for government expenditure (GE), we expect the government expenditure on education and health will have a significant impact on poverty reduction. Moreover, the data on education and health spending are always published on the fiscal spending of government thus facilitate the data collection effort. In this respect, the education and health spending is used as the proxy for government expenditure.

All variables (dependent and independent variables) used in the study are summarised below. The sample data was obtained from the World Bank, UNDP’s World Development Indicators as well as SESRIC for the OIC Development Indicators. Table 1 below illustrates the average differences between OIC and non-OIC countries.

<b>Table 1: Differences between OIC and other countries (mean of selected variables)</b>		
<b>Variables</b>	<b>OIC</b>	<b>Non-OIC</b>
GE	7%	10.59%
PCF	4%	6%
SSE	69%	85%
GRMI	6%	4%

As expected, the measures for Government Expenditure on Health and Education (GE) as a percentage of GDP, Private Capital Investment Flows (PCF) in the percentage of GDP and Secondary School Enrolment (SSE) in the percentage of gross secondary school enrollment are on average lower for OIC countries than non-OIC countries.

It is also understandable that Inward Remittances (GRMI) in the percentage of GDP is higher in OIC member countries than non-OIC countries. Given the fact that OIC countries on average have lower scores for each of the core explanatory variables, it is clear that our hypotheses are well grounded.

### **Model Specification and Estimation**

The aim of this study is to analyse the relationship between the government expenditure and poverty in the presence of controlled variables such as Private Capital Flows, Secondary school enrollment and Inward Remittances. For making a comparison of OIC and non-OIC countries, two dummy variables are created in OIC member countries.

We begin our analysis by specifying the following model,

$$GNI = f(GE, LOGPCF, LOGSSE, GRMI, OICDUMMY, GE * OICDUMMY)$$

Where,

GNI = Gross National Income per capita

GE = Government Expenditure on Health and Education as percentage of GDP

LOGPCF = Private Capital Investment as percentage of GDP

LOGSSE = Secondary School Enrolment as percentage of gross secondary school enrollment

GRMI = Inward Remittance as percentage of GDP

OICDUMMY = is a dummy variable for OIC countries,

GE\*OICDUMMY = is the interaction of government expenditure on health and education in OIC countries

The model takes the following form with  $\zeta_t$  as the error term and all other variables as described previously.

$$\text{LogGNI} = \beta_0 + \beta_1 GE_t + \beta_2 \text{LogPCF} + \beta_3 \text{LogSSE} + \beta_4 GRMI + \beta_5 OICDUMMY + \beta_6 GE * OICDUMMY + \zeta_t$$

#### 4. Empirical Findings

**Table 2: OLS Estimation: Regressions 1-7**

Eq Name:	EQ01	EQ02	EQ03	EQ04	EQ05	EQ06	EQ07
Method:	OLS	OLS	OLS	OLS	OLS	OLS	WLS
Dep. Var:	LOGNI	LOGNI	LOGNI	LOGNI	LOGNI	LOGNI	LOGNI
C	8.5809** (0.305)	3.6228** (0.588)	-1.8588* (0.738)	-1.0297 (0.575)	-1.1124 (0.648)	-1.0820 (0.626)	-1.0820 (0.744)
GE	0.0459 (0.025)	0.0367 (0.021)	0.0222 (0.016)	0.0247 (0.013)	0.0259 (0.013)	0.0436** (0.014)	0.0436** (0.011)
LOGPCF		0.5982** (0.064)	0.2881** (0.057)	0.2279** (0.044)	0.2254** (0.045)	0.1994** (0.045)	0.1994** (0.051)
LOGSSE			1.9080** (0.205)	1.8703** (0.158)	1.8891** (0.172)	1.8835** (0.166)	1.8835** (0.171)
GRMI				-0.0422** (0.006)	-0.0426** (0.006)	-0.0409** (0.006)	-0.0409** (0.008)
OICDUMMY					0.0322 (0.114)	1.0108** (0.377)	1.0108* (0.480)
GE*OICDUMMY						-0.0985** (0.036)	-0.0985 (0.050)
Observations:	154	102	99	96	96	96	96
R-squared:	0.022	0.499	0.734	0.837	0.837	0.849	0.849
F-statistic:	3.486	49.274	87.388	116.512	92.284	83.582	83.582
Prob(F-stat):	0.064	0.000	0.000	0.000	0.000	0.000	0.000

<sup>a</sup> t-stats are in the bracket  
Standard Error is in Parentheses  
\*Significance at the 0.10 level  
\*\*Significance at the 0.05 level  
\*\*\*Significance the 0.01 level

In this study, the result reported in column EQ01 of Table 1 indicates that Government Expenditure on health and education accounts for 2.2% of the variation in GNI. It shows that GNI increases with Government Expenditure on health and education. This, however, proves statistically insignificant.

Besides, in Column EQ02 of the same table, Private Capital Investment Flows (PCF) is included as a controlled variable. The R2 increases to about 50%. This shows that Government Expenditure on health and education combines with Private Capital

Investment flows have accounted for half of the variation in GNI. The result also indicates that Private Capital Investment flows are positive with GNI and statistically significant. The result is in line with Khan and Reinhart (1990), who concluded that private investment has a larger effect on growth than public investment and it increases the level of gross national income. However, Government expenditure on health and education remains statistically insignificant.

Likewise, with the addition of another controlled variable in Column EQ03, Secondary School Enrollment (SSE), the R<sup>2</sup> increases to about 73%, which is very encouraging. Gounder and Xing (2012) found that all income quartile households (i.e. lowest to highest) benefit from additional skills obtained through formal education. While those in the lowest income quartile, in particular, benefit the most from formal education, which is supporting the result of secondary school enrolment. This shows that the combination of Government Expenditure on health and education, Private Capital Investment flows and Secondary School enrollment accounts for nearly three-quarter of the variation in GNI. All three variables increase with GNI and are significant except for GE, which remains statistically insignificant.

Also, in column EQ04, GRMI, an additional controlled variable is included and the R<sup>2</sup> increases to 83%. Adams (2006) depicted that inward remittance reduces poverty in recipient households, especially when transfers are from abroad and it supports the estimated result. This shows that as a group GE, PCF, SSE and GRMI accounts for 83% variability in GNI per capita. The result also indicates all four variables increase with GNI and are significant except for GE, which still remains statistically insignificant.

On the other hand, we have included a dummy variable, OIC-Dummy in column EQ05. This is to test whether the OIC member countries in average obtains lower GNI per capita relative to other countries in the world. OIC-Dummy equals one in for OIC member countries. The result indicates that OIC dummy is positive but statistically insignificant. It means OIC countries do not receive lower GNI per capita as compared with the rest of the world.

Besides, we interact Government Expenditure on health and education with the OIC dummy in column EQ06. The result shows that the interaction term is negative while all other variables are positive. All variables are significant inclusive of GE. However, it is not possible to make inference on the hypothesis that Government Expenditure has less of an impact for OIC countries because the Bruesch – Pagan’s heteroskedasticity test proves the presence of heteroskedasticity in this estimation. To correct the presence of heteroskedasticity, we have performed the Newey-West Weighted Least Square (WLS) test.

Moreover, column EQ07 is the final estimation using weighted least square to correct for heteroskedasticity and autocorrelation problems. The results confirm that government expenditure has a positive impact on poverty reduction for both OIC and non-OIC countries as a whole. The GNI of both OIC and non-OIC countries are about the same albeit at 10% significant level as shown by the coefficient of OICDUMMY. However, we are unable to measure the impact of government expenditure on poverty in OIC countries through the interactive dummy  $GE*OICDUMMY$ . Overall, we have failed to reject the null hypothesis that Government Expenditure has no impact on GNI of OIC countries.

## 5. Conclusion

The study confirms that government expenditure has a significant positive impact on poverty reduction in OIC member countries and the rest of the world. The GNI of both OIC member countries and the rest of the world are about the same albeit less convincing. Lastly, we are incompetent to measure the impact and direction of the relationship of government expenditure on poverty in OIC countries. The last two results are unexpected as OIC member countries are endowed with enormous economical, geographical and human capital advantages over the rest of the world. At this juncture, we may speculate that more positive results could be achieved by OIC member countries through effective utilisation of government expenditure and distribution of the countries' resources by effective governance. However, it may also be possible that we have left out some important independent variables which are peculiar to OIC member countries but are significant to the study.

Further research is needed to bring forth a more convincing conclusion for the relationship of OIC's government expenditure on poverty. For example, a new estimation may be conducted using the same data but divide the OIC countries into sub-groups based on different GNI levels such as high income, middle-high income, middle low income and low-income groups. We may discover the group(s) and reasons which contribute to the impact and to fine tune the model accordingly.

Another research area is the segregation of OIC member countries into one group which practices Islamic economics principles of no wastage, no extravaganza, no riba, low corruption, and low borrowing and the other group which do not practice the Islamic principles. After the group is segregated using acceptable guidelines, we could test the relationship of government expenditure for these two groups of OIC countries and which group shows a more effective government spending. If data is available, controlled variables such as government aids per capita, corruption index,

total government borrowings per capita, private savings and private investment could be incorporated in the estimation with the purpose of yielding more convincing results.

We believe that continuous and relentless efforts will give rise to a convincing model for policymakers to allocate resources for the sake of alleviating poverty.

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