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Foreign Aid and Economic Development: Experience of South Asian Countries

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ABSTRACT

Foreign aid has been a debatable issue for the past few decades due to its implications for developing countries to foster their growth processes by supplementing their domestic sources of finance. Different writers have different views regarding aid inflows, with some favoring aid inflows and others opposing the inflow of foreign aid. The aim of the given paper is to inculcate the relationship between foreign aid and the economic development of South Asian economies from 2000 to 2019. The findings from the study, based on a panel data regression model and a quantile regression model, reveal that the amount of foreign aid received has increased the economic development of the aid-receiving country, but it has failed to improve the living standards of the people.

Keywords: Foreign aid, Economic Development, Human Development, International Finance

JEL Codes: F35, F63, O15, F3

INTRODUCTION

The importance of Official Development Assistance in the growth and development of poor and developing economies have been a topic of intense debate as it has its implication in the poverty reduction of developing nations. Given the relevance of Official Development Assistance to the economies of poor and developing nations, it is quite important to scrutinize its contribution to the growth process of these economies. Official Development Assistance is needed by poor countries to accelerate their growth process by bridging the domestic Investment and domestic Savings gap. Absence of such resource support will retard the economies from their take off stage (Dowling and Hiemenz, 1983). Aid plays a vital role in enabling the human and physical capital stock accumulation, relieving the savings gap and building a strong

infrastructure (McGillivray, 2009). Such type of inflows for infrastructural and human development is an essential part to attract the foreign direct investment by serving as a complementary factor into the host countries (Selaya and Sunesen, 2012). As posit by the endogenous theories, human capital development investment can be indirectly served as a complementary factor to facilitate foreign direct investment into the economy (Asiedu *et al* 2009, Karakaplan *et al*, 2005).

Another two major motivations for giving aid are Humanitarianism and altruism (Chauvet, 2003). As per Ouattara, 2006 the aid effectiveness and its macroeconomic impact have been revived recently because the success of aid or its magnitude depends on the fiscal activities or the growth rate of the countries receiving aid. The key question on the behalf of both the donor and recipient nations is that whether this aid inflow has any impact on the growth of developing economies and their poverty reduction respectively. Indeed, since for decades this South Asian region has also been a major destination of foreign aid to fulfill its several socio-economic and infrastructural goals, the study pays an attention on analyzing whether this Official Development Assistance can be used to overcome the bottlenecks faced by least developed aid receiving economies.

OBJECTIVES AND METHODOLOGY

The following paper will analyze the role of Foreign Aid in the economic development of given South Asian Countries namely Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Maldives and Sri Lanka from 2000 to 2019. The paper has been divided into two sections, where the first section will inculcate the relationship of foreign aid with economic development by taking into consideration the per capita gross domestic product as an indicator of development and Section II will calculate the relationship between aid and development through the Human Development Index variable statistically. The results are based on secondary data collected from World Bank Development indicators and tested statistically using panel data regression model and quantile regression model respectively.

LITERATURE REVIEW

There are numerous studies in the support of foreign aid. Foreign Aid promotes the growth by supplementing the domestic capital formation as supported by Chenery and Strout (1968); Hatemi-H and Irandoust (2005). Another view in

the support of aid is that it can fill low foreign exchange gap (Papenek, 1973). The study conducted for period of 1970 to 1990 on the 77 countries also supports the idea of providing Foreign Aid (Fayissa and El- Kaissy, 1999). Asteriou (2009) in their work examined that long run relationship between the ODA and economic growth for given five South Asian economies and concluded that aid and growth are positively related with each other.

On the contrary there are also studies that oppose Official Development Assistance as a growth contributing factor. Griffin (1970) assures that Official Development Assistance hinders the economic growth as success of Official Development Assistance requires a sound political bureaucracy which is major constraint in poor countries. Another view in support of aid ineffectiveness was tested on three South East Asian Countries and unveiled that aid has insignificant effect on the growth rate thus displacing the domestic savings (Burke and Almacli- Esfahani, 2006).

So there is no single or affirm conclusion regarding the aid effectiveness to promote development and growth process. The key factor behind this variation in Official Development Assistance is the factor that determines the amount of Foreign Aid usually known as determinant of Foreign Aid (Ali and Isse, 2006).

Section I

The results of the study are based on the following model:

$$PCGDP = \beta_0 + \beta_1 ODA + \beta_2 Trade + \beta_3 Population + \beta_4 GCF + \beta_5 DC + \varepsilon$$

$$(i)$$

The dependant variable in the above equation is PCGDP that is annual percentage growth rate of per capita gross domestic product based on constant local currency. The sample size depends on the data availability of the relevant variables. The independent variables used in the above equation are:

(a) ODA- Official Development Assistance as a percent of Gross National Product

(b) Trade- trade as a percentage of Gross Domestic Product

(c) Population- Annual population growth rate

(d) GCF- Gross Capital Formation as a percentage of Gross Domestic Product

(e) DC- Domestic credit as a percentage of Gross Domestic Product

The first independent variable stated in the equation 1 is ODA which is Official Development Assistance. The ratio of aid to gross national income provides a measure of recipients' country dependency on aid. The second independent variable is trade which is sum of export and import of goods and services as a share of gross domestic product. The third independent variable is population which measures the population growth rate annually. The data for the above mentioned variables is collected from World Bank Development Indicators.

The next independent variable is GCF which is gross capital formation. It is an important determinant of Official Development Assistance as the development of any economy depends on the amount of resources spent on capital formation. The last independent variable is DC which implies the domestic credit to private sector as a percentage of gross domestic products. It refers to financial resources provided to the private sector by financial corporations.

Post Estimation Test

In our study we have conducted the test of multicollinearity, Heteroskedasticity and autocorrelation test. The results of which are shown in the table 1 to table 3 respectively.

Test of Multicollineairty

We used the correlation method to check the multicollinearity and the results based on the test are as follows:

Table 1: Results of Multicollinearity

Variable	ODA	GCF	Trade	Population	DC
VIF	1.9	2.7	2.1	1.7	1.6
1/VIF	0.5	0.4	0.5	0.6	0.6
Mean VIF: 2.01					

Source: Author's own calculation

The value of variance inflation factor for all variables is below the commonly accepted threshold of 5(i.e. 2.01), indicating that there is no significant multicollinearity in the model.

Test of Heteroskedasticity

The null hypothesis being tested is that there is constant variance of the error terms across all values of the independent variables.

Table 2: Results of Hetroskedasicity

Variables: Fitted values of REAL PER CAPITA GDP	*Variables: Fitted values of log PCGDP*
chi2(1) = 310.0	chi2(1) = 0.6
Prob> chi2 = 0.0	Prob> chi2 = 0.5

Source: Author's own calculation

The results based on Breusch-Pagan / Cook-Weisberg test for heteroskedasticity in the table two are divided into two parts. The left column of the table shows the prior results when there was problem of heteroskedasticity and the right side showed the results when the problem of heteroskedasticity was solved by taking the log of the dependant variable. The p-value is 0.5 which is greater than the significance level thus we fail to reject the null hypothesis of constant variance.

Test for Autocorrelation

The null hypothesis to test autocorrelation is that there is no first-order autocorrelation in the residuals.

Table 3: Results based on Wooldridge test for autocorrelation

H0: no first-order autocorrelation	
F(1, 6)	1.6
Prob> F	0.3

Source: Author's own calculations

In this case, the p-value is 0.3. Therefore, we cannot conclude that there is first-order autocorrelation in the residuals of the panel data regression model.

Foreign aid and Economic Development

In this section the economic development of the aid receiving economies is shown via per capita gross domestic product. The gross domestic product is taken in the real terms due to price changes. The independent variables are amount of Official Development Assistance, trade, population growth rate, and gross capital formation and domestic credit to private sector. However it is often observed that economies that are dependent on private capital often

tend to attract the less Official Development Assistance. So it is important to inculcate the gross capital formation as a determinant of Official Development Assistance. Success of foreign aid also depends on the trade pattern of the developing economies as aid receiving economies may become politically efficient comparatively but remains socially and economically inefficient. Foreign aid received by poor and developing economies is somehow related to increase the income levels of the recipient economy.

Table 4: Foreign Aid and Economic Development

S.No	Variable	Fixed Effects Model		Random Effects Model	
		Coefficient	SE	Coefficient	SE
1	ODA	0.003	0.071	-0.103	0.04
2	Trade	-0.033***	0.001	0.019	0.004
3	Population	0.033	0.2	0.309	0.13
4	GCF	-0.034***	0.01	0.008	0.011
5	Domestic credit	0.055***	0.008	0.027	0.008
6	Constant	6.375***	0.74	2.927	0.4

No of Observations: 126
Hausman Test: 0.0001
rho: 0.95
R-sq: 0.87
Source: Researcher's own calculations

Table 4 shows the results of both the fixed effects model and random effects model based on panel data regression model. The Null hypothesis being tested is that fixed effects model is appropriate. Later the Hausman test is applied to choose between both the models. The p value of Hausman results is 0.0001 which is less than 0.05. Thus we will accept the null hypothesis and the fixed effects model fits best to given data. The results based on the panel fixed regression depict the followings results. (Note: The asterisks *, **, and*** are 10 percent, 5 percent and 1 percent level of significance respectively).

Column 3 of table 4 shows the coefficient of various independent variables. The first one is ODA, which indicates that with one unit increase in Official Development Assistance, the per capita gross domestic product increases by 0.003 units. Thus the foreign aid received by the South Asian economies has a positive impact on the growth rate of these economies. The results are consistent with the previous studies where Dash (2021) also concluded that there is a

positive relationship between foreign aid and economic development. Asteriou (2009) also provided the similar results tested for the five South Asian countries.

The coefficient of trade is negative which implies that with one unit increase in trade, the real per capita gross domestic product decreases by 0.033 units. Laffont and Guessan (1999) in their study analyzed that aid increase the consumption which in turn has negative impact on the trade of the economy. Being a heavily dependent economy on foreign aid there is a divesting negative growth rate. However this systematic failure of aid effectiveness is not only restricted to developing economies. Leon (1994) in his study stated that a huge amount of $ 400 billion aid channelized to Latin America was only financed in unproductive institutions. Landes (1998) also stated that excessive borrowing from IMF and World Bank failed to boost the economic performance because most of the resources were transferred to secret banks in Switzerland and USA.

Population has also positive impact on the per capita gross domestic product success as a unit increase in population growth rate increases the per capita gross domestic product by 0.033 units. Due to the increasing intensity of international human development aid it is now worthwhile to analyze its aid effectiveness (Williamson, 2008). The data collected from Organization for economic and co-operation development provides the evidence that among all the members of the South Asian economies the maximum amount of aid is received by Afghanistan, India, Bangladesh, Pakistan and Nepal whereas the Sri Lanka, Maldives and Bhutan received a much lower amount of aid. One of the key factor to this variation in aid disbursement can be the population of economies as economies with more population needs more resources for the development and upliftment of society as compared to economies with low levels of population.

The gross capital formation is negatively related with real per capita gross domestic product as one unit increase in gross capital formation will decrease the per capita gross domestic product by 0.034 units respectively. The studies show that aid amount received is not success in developing economies as it is often provided on government to government basis. This indicates that there is commanding and controlling role by the government regarding the ownership, allocation, organization and distribution of foreign aid resources which in turn provides the less opportunity for the development and enhancement of private enterprises (Ali and Isse, 2006). A unit increases in domestic credit increases the per capita gross domestic product by 0.055 units. The findings from the

study strongly suggest that this private credit decreases the country dependency on foreign aid.

Based on the t values, the effect of Official Development Assistance on real per capita gross domestic product is positive but insignificant whereas the effect of trade variables as a percentage of gross domestic product and gross capital formation is negative but significant at one percent level of significance. The effect of population growth rate is positive but insignificant. The findings from the study reveals that amount of ODA received has a positive impact on the growth rate of given South Asian economies measured by the real per capita gross domestic product.

Further the goodness of fit is tested and the value of R square is 0.87 which states that 87 percent of variation in the given dependent variables around the mean is explained by the independent variable whereas the remaining 14 percent of variation is attributed to error or omitted variables. The overall value of P>F is 0.000 shows that overall results are significant at 1 percent level of significance.

Section II: Foreign Aid and Human Development Index

The utmost importance of Official Development Assistance should be to raise the living standards of the people in the aid recipient economies. Official Development Assistance and human development can be linked with each other because aid received supplements the domestic resource gap via financing the public investment in social services that are directly linked with the life of people. HDI is a static composite index of basically three indicators i.e.

- (a) Life expectancy at birth which is measured in years.
- (b) Education which further contains two sub parts: mean years of schooling computed and expected years of schooling upon entering the education system.
- (c) Gross National Income Per capita (2017 PP$)

The data for the above mentioned variables are taken from United Nations Development Report, 2022.

ODA and Overall HDI Value

Section II is further bifurcated into four parts wherein the relationship of foreign aid is firstly calculated by taking into consideration the overall value of

Human Development Index. Then all the variables are separately checked to inculcate the impact of a particular factor in improving the living standards of the people. Table 5 to table 8 shows the relationship of the aid with overall HDI, education, health and income respectively.

Model: The general equation for the quantile regression model on which are results are based is as follow:

$$HDI = \beta 0 + \beta 1 ODA + \beta 2 Expenses + \beta 3 Population + \beta 4 GDP + \varepsilon \quad (ii)$$

In above equation Human Development Index is the dependent variable and ODA, Expenses, Population, and GDP are the independent variables with their respective coefficients. The data for the independent variables is taken from World Bank Development indicators.

Foreign Aid and Human Development Index

The following table shows the aid and development relationship based on the quantile regression.

Table 5: Foreign aid and overall HDI

Variable	*q=10*	*q=25*	*q=50*	*q=75*	*q=90*
ODA	-0.008***	-0.008***	-0.010***	-0.010***	-0.006**
	(0.001)	(0.002)	(0.002)	(0.003)	(0.003)
Expenses	0.008***	0.006***	0.009***	0.007**	0.002
	(0.001)	(0.002)	(0.002)	(0.003)	(0.003)
Population	-0.054***	-0.031*	-0.065***	-0.038	-0.043
	(0.009)	(0.017)	(0.014)	(0.021)	(0.021)
GDP	0.005***	0.004	0.001	0.001	-0.000
	(0.001)	(0.003)	(0.002)	(0.003)	(0.003)
Constant	0.46***	0.51***	0.56***	0.61***	0.74***
	(0.020)	(0.038)	(0.031)	(0.046)	(0.046)
Pseudo R^2	0.35	0.32	0.32	0.27	0.27

Note: The asterisks *, **, and*** are 10 percent, 5 percent and 1 percent level of significance respectively.

Source: Researcher's own calculations

The value of ODA coefficient at different levels of quantile with their significance levels obtained by comparing the p values with the t values just below the value of each respective coefficient. The coefficient for ODA is negative for all quantiles, indicating that a higher level of ODA is associated

with lower levels of HDI. This suggests that ODA may not be an effective way of improving HDI. Aid negatively effects the growth as high amount of received aid erodes the institutional quality thus in turn increasing the corruption and rent seeking (Knack, 2004). A one-unit increase in Official Development Assistance would lead to an average decrease of 0.008 units, 0.008 units, 0.010 units and 0.006 units in HDI at quantile 10th, 25th, 50th, 75th and 90th respectively. All the values are statististically significant at one percent level of significance for the first four quantiles and at five percent for the last quantile. The findings from the study are consistent with the Gong and Zou results which showed a negative relationship between aid and growth. McGillivary *et al* (2003) concluded that impact of aid amount received on the human development index is negative.

The coefficient for expenses is positive for all quantiles, indicating that a higher level of expenses is associated with higher levels of HDI. This suggests that spending on public services such as healthcare, education, and social welfare may improve HDI. A one-unit increase in expenses would lead to an average increase of 0.008 units, 0.006 units, 0.001 units, 0.007 units and 0.002 units in the overall HDI, controlling for other factors at quantile 10th, 25th, 50th, 75th and 90th respectively. The study finds that foreign aid positively affects government spending, and that government spending has a positive effect on economic growth (Yasin, 2011, Papanek, 1972). The p-values for quantile 10th and 25th are less than 0.05, indicating that the coefficient is statistically significant at one percent whereas it is significant at 5 percent level of significance at quantile 75th. At the 90th quantile of expenses, the effect is no longer statistically significant.

A one-unit increase in Population would lead to an average decrease of 0.054 units and 0.031 units in the overall HDI, This effect is statistically significant at the one percent and ten percent level of significance respectively. Easterly, Levine and Roodman (2004) further studied the result of Burnside and Dollar by increasing the sample size in their study and concluded that results found by Burnside and Dollar are not robust. For a one-unit increase in population, the overall HDI is expected to decrease by 0.065, 0.038 units and 0.043 units at quantile 50th, 75th and quantile 90th respectively. The results are statistically insignificant at 75th and 90th quantile whereas it is found to be statistically significant at quantile 10th, 25th and quantile 50th respectively.

A one-unit increase in GDP would lead to an average increase of 0.005 units in the overall HDI. This effect is statistically significant at one percent level of significance. Faissey and El-Kaissy(1999) also stated that Aid and economic growth in developing economies are positively related with each

other. Now moving to 25th and 50th quantile, for a one-unit increase in GDP, the overall HDI is expected to increase by 0.004 units and 0.010 units respectively. Further at the 75th quantile, a one-unit increase in GDP increases the overall HDI by 0.001 units and at the 90th quantile, for a one-unit increase in GDP, the overall HDI is expected to decrease by 0.000 units. However the values at the quantile 25th, 50th and quantile 90th are not statistically significant.

To conclude, the relationship between the independent variables and overall HDI may differ at different points of the distribution of overall HDI. It is important to consider the results at each quantile separately to gain a more clear understanding of the relationship between the variables.

HDI Education Index

The following table shows the aid effectiveness by taking into consideration the Education as a proxy for the measurement of development.

Table 6: Quantile Regression results: HDI Education Index

Variable	q=10	q=25	q=50	q=75	q=90
ODA	-0.283***	-0.261***	-0.214***	-0.207***	-0.198***
	(0.053)	(0.040)	(0.047)	(0.046)	(0.063)
Expenses	0.229***	0.225***	0.185***	0.223***	0.225***
	(0.051)	(0.039)	(0.045)	(0.044)	(0.061)
Population	-1.557***	-1.620***	-1.742***	-1.899***	-2.251***
	(0.410)	(0.310)	(0.362)	(0.353)	(0.487)
GDP	-0.040	-0.014	0.003	0.092*	0.061
	(0.060)	(0.046)	(0.053)	(0.052)	(0.072)
Constant	5.85***	6.34**	8.14***	8.32***	9.70***
	(0.909)	(0.687)	(0.802)	(0.782)	(1.078)
Pseudo R^2	0.33	0.29	0.29	0.38	0.35

Note: The asterisks *, **, and*** are 10 percent, 5 percent and 1 percent level of significance respectively.

Source: Researcher's own calculations

Table 6 shows the relationship between years of schooling and economic development. With one unit increase in ODA, the schooling level decreases by 0.283 units, 0.261 units, 0.214 units, 0.207 units and 0.198 units respectively at quantile 10th, 25th, 50th, 75th and 90th respectively. The main reason behind this is that the government of aid receiving economies fails to channelize the aid amount on time due to volatile nature of aid. It even further fails to persuade

to the donors that remaining amount of funds will be spent efficiently. Such type of behavior on part of developing economies further delays the disbursement of aid thus in turn hampering the spending ability of the government. The amount of Official development assistance received has not been appropriately channelized to educational sector. With one unit increase in expenses, the education index increased by 0.229 units, 0.225 units, 0.185 units, 0.223 units and 0.225 units at quantile 10th, 25th, 50th, 75th and 90th respectively.

Population has again negative relationship between education index as with one unit increase population, he schooling index decreases by 1.557 units, 1.620 units, 1.742 units, 1.899 unit and 0.225 units at quantile 10th to quantile 90th respectively. However, GDP does not have a significant effect on schooling at this quantile. At the 25th quantile, the results are similar to the 10th quantile, with ODA having a significant negative effect on schooling, and expenses and population having significant positive and negative effects, respectively. However, the effects are relatively smaller in magnitude than those at the 10th quantile. At the median ODA, expenses, and population continue to have significant effects on schooling, with ODA and population having negative effects, while expenses has a positive effect. The magnitudes of these effects are smaller compared to the 10th and 25th quantiles. At the 75th quantile, the effects of ODA and expenses are significant at one percent level of significance, while population has a significant negative effect on schooling, indicating that a one-unit increase in population decreases the schooling level by 1.899 units at the 75th quantile.

GDP has a positive effect on schooling at quantile 50th, 75th and quantile 90th respectively, but the effect is not statistically significant except for quantile 75th where the P>|t| is significant at 10 percent level of significance. At the 90th quantile, ODA, expenses, and population have significant effects on schooling. Aid promotes the higher levels of human development index when positively associated with pro-poor government expenditure (Gomanee *et al*, 2003). The pseudo R2 ranges from 0.2 to 0.37, indicating that the independent variables explain a moderate to high proportion of the variation in the dependent variable, depending on the quantile.

HDI Health Index

This part will inculcate the development through the improvement in health services of the aid receiving economies.

Table 7: Quantile Regression Results: HDI Health Index

Variable	q=10	q=25	q=50	q=75	q=90
ODA	-0.164**	-0.244***	-0.506***	-0.566***	-0.399***
	(0.073)	(0.084)	(0.090)	(0.121)	(0.084)
Expenses	0.154**	0.123	0.275***	0.269**	0.216***
	(0.070)	(0.080)	(0.086)	(0.116)	(0.081)
Population	-2.274***	-1.281**	-0.448	0.609	-0.139
	(0.564)	(0.644)	(0.692)	(0.933)	(0.649)
GDP	0.087	0.051	0.168	-0.011	-0.016
	(0.083)	(0.095)	(0.102)	(0.137)	(0.095)
Constant	65.75***	67.29***	65.77***	68.15***	71.56***
	(1.250)	(1.425)	(1.532)	(2.066)	(1.436)
Pseudo R^2	0.35	0.30	0.26	0.23	0.26

Note: The asterisks *, **, and*** are 10 percent, 5 percent and 1 percent level of significance respectively.

Source: Researcher's own calculations

The value of first coefficient is negative at all the quantiles which shows an inverse relationship between Official Development Assistance and health conditions. With one unit increase in Official Development Assistance, the value of Life expectancy at birth decreases by 0.164 units, 0.244 units, 0.506 units, 0.566 units and 0.399 units at quantile 10th, 25th, 50th, 75th and 90th respectively. The results are similar to that of (Islam, 2003) where the study stated that foreign aid has insignificant impact on human development and human rights with a small correlation with infant mortality rates negatively.

A positive coefficient for Expenses indicates that as Expenses increase, the dependent variable also increases as expenses and Life expectancy at birth are positively related with each other. With one unit increase in government expenses, the value of Life expectancy at birth also increases by 0.154 units which are significant at 5 percent level of significance whereas it increases by 0.123 units at quantile 25th and the study was found to be statistically insignificant at this quantile. One unit increase in expenses increased the Life expectancy at birth by 0.275 units at quantile 50th i.e. when classified at different levels almost fifty percent of classified group is benefitted from amount of aid received. The value is significant at one percent level of significance. The one unit increase in expenses increased the Life expectancy at birth by 0.269 units and 0.216 units calculated at quantile 75th and quantile 90th respectively. Both the values are again significant at 5 percent and 1 percent level of significance respectively.

There is small increment in the investment expenditure through foreign aid but there are minor reductions in education and health expenditures (Feeny, 2003).

For Population, a negative coefficient suggests that as Population increases, the dependent variable decreases. Another reason that constraint the development process of aid receiving economies is conditionality. The population and Life expectancy at birth are negatively related with each other at all the quantiles expect the quantile 75th. At quantile 10th, with one unit increase in population the Life expectancy at birth value decreases by 2.274 units and values are significant at one percent level of significance. Further at quantile 25th, again with one unit increase in population the Life expectancy at birth decreases by 1.281 units. The $p>|t|$ compared at q=25th is significant at 5 percent level of significance. With one unit increase in population, the Life expectancy at birth decreases 0.448 and 0.139 units at quantile 50th and quantile 90th respectively whereas it increased by 0.609 unit when measured at q=75.

The last independent variable is GDP. The one unit increase in gross domestic product improves the Life expectancy at birth by 0.087 units, 0.051units and 0.168 units at quantile 10th, 25th, and 50th respectively. The q=75 and q=90 showed a negative relationship between Life expectancy at birth and gross domestic product. With one unit increase in gross domestic product, the Life expectancy at birth decreased by 0.011 units and 0.016 units at quantile 75th and quantile 90th respectively. Value of $p>|t|$ is highly insignificant at all different levels of quantile for GDP variable suggesting that GDP is not a significant predictor of the dependent variable. The value of pseudo R2 is significant as the value ranges between 0.2 to 0.4 for all the variables at different qauntiles

HDI Income Index

Income is an important indicator in the overall development of any economy. Higher levels of income means population is able to attain the basic amenities of life. The following table will show the relationship between aid and economic development via income as dependent variable. The findings from the study are as follows:

The findings from study depict negative relationship between Official Development Assistance and GNIPC. At 10th quantile, with one unit increase in Official Development Assistance, the income decreased by .0561 units. The same result was proved by chong *et al* (2009) in their study where they stated

Table 8: Quantile Regression Results: HDI Income Index

Variable	*q=10*	*q=25*	*q=50*	*q=75*	*q=90*
ODA	-0.056***	-0.056***	-0.085***	-0.067***	-0.051***
	(0.008)	(0.011)	(0.019)	(0.017)	(0.004)
Expenses	0.031***	0.045***	0.074***	0.066***	0.019***
	(0.008)	(0.011)	(0.018)	(0.017)	(0.003)
Population-	-0.132	-0.219	-0.103	-0.064	0.119***
	(0.066)	(0.089)	(0.148)	(0.136)	(0.028)
Constant	7.70***	7.85***	7.69***	8.14***	8.98***
	(0.123)	(0.166)	(0.276)	(0.255)	(0.052)
Pseudo R^2	0.23	0.22	0.17	0.20	0.24

Note: The asterisks *, **, and*** are 10 percent, 5 percent and 1 percent level of significance respectively.

Source: Researcher's own calculation

aid as ineffective way to reduce the poverty and income inequality. The study is significant at 1 percent level of significance with value p>|t| equal to 0.000 at each quantile for the ODA variable. The value turns out to be negative and the results are again significant at 1 percent level of significance. The value decreased by 0.0851 units, 0.067 units and 0.051 units at quantile 50th, 75th and 90th respectively. Overall, the results suggest that ODA may have a regressive effect on income distribution.

The study showed a positive relationship between GNIPC and government expenses. With one unit increase in government expenditure, the GNIPC increased by 0.031 units at quantile 10th. The values are significant at 1 percent level of significance. However the values changed extremely at q=50. With one unit increase in government expenses, near about 0.045 units of GNIPC has increased at quantile 25th. The values are significant at 1 percent level of significance for quantile 50th, 75th and 90th respectively as with one unit increase in government expenses the GNIPC improved by 0.074 units, 0.066 units and 0.019 units respectively. For Expenses, all coefficients are also statistically significant at one percent level of significance. Foreign aid has a either direct impact on the welfare of the people but public spending on the various social services is not much effective expect those of middle income countries (Morrisey, 2003).

For Population, a one unit increase in Population will decrease GNIPC by 0.132 units, 0.219 units, 0.103 units, 0.064 units and 0.119 units at quantile 10th,

25th, 50th, 75th and quantile 90th respectively. At 10th and 25th quantile the values are statistically significant at 5 percent level of significance whereas it is significant at one percent level of significance at quantile 90th. Some argue that foreign aid can actually contribute to population growth by improving healthcare and sanitation, leading to decreased mortality rates and higher birth rates. In some cases, aid programs may not be designed to address population growth specifically, but may indirectly contribute to it by improving overall living conditions.

Dreher *et al.* (2011) found that foreign aid can have a positive effect on population growth in developing countries, but only if it is directed towards investments in health and education. The study suggests that aid can improve population health and reduce fertility rates, leading to lower population growth over time. Another reason for the failure of aid growth is capacity. The asymmetry in the donor recipient relationship provides little space for the weak recipient economy for negotiation where the former bargains with their high capacity. So the economic and political structure of exploitation and domination leaves the recipient economy with low capacity. The aid impact on poverty reduction depends on the growth rate of per capita income and the impact of growth rate of per capita income on poverty reductions (Collier and Dollar, 2002). Overall, the relationship between foreign aid and population is complex and depends on various contextual factors. It is important for aid programs to be designed with careful consideration of local needs and priorities, and to be implemented transparently and with accountability to ensure that aid is used effectively and to the benefit of the population.

CONCLUSION

Even in the 21st century, there are many developing economies that face serious constraints on resource availability for their development paths. A major portion of these economies are in ongoing battle with their huge debts and are dependent on financial aid inflows. This paper statistically analyzes the role of foreign aid in the economic development of given South Asian economies. Findings from the study reveal that the amount of official development assistance received by these South Asian economies promotes the economic growth of aid-receiving economies. However, the population growth rate has a positive impact on the effectiveness of aid, as more population means more working capital, which will channel the received aid amount to more productive resources. Domestic credit to the private sector also helps to promote economic

growth via increased per capita gross domestic product as it increases investment in productive sources. Moreover, trade and gross capital formation retard economic growth.

Moving now to the human development index as an indicator of economic development, it depicts that aid programs fail to raise the standard of living of the aid-receiving economies. Official development assistance has a significant negative effect on the overall HDI. ODA has a negative and statistically significant effect on education, meaning that higher ODA is associated with lower levels of education. This may be because ODA is often given for specific purposes and may not be directed towards education, or it may be because aid can lead to a decrease in government accountability and transparency, resulting in lower education outcomes.

The relationship between aid and health is a complex and multifaceted one. Aid can come in different forms, such as financial assistance, technical support, and material goods, and can be directed towards different aspects of health, such as disease prevention, treatment, and healthcare infrastructure development. As such, the impact of aid on health outcomes can vary depending on the specific type of aid and the context in which it is provided. The coefficient values become more negative as we move to higher quantiles, meaning that the effect of ODA on health is greater for countries with lower health outcomes. The coefficient of the ODA variable is negative, indicating that an increase in ODA decreases GNIPC. These findings are consistent with the relevant economic theories and can have implications for policy decisions related to aid, government spending, population growth, and economic development.

However, it is notable here that the amount of aid inflows to these economies keeps changing over the past few decades, so there is a need for developing nations to search for some other alternative ways for the effective utilization of aid inflows supported by the right policies and more innovative methods to attract and utilize the aid inflow optimally. North (1981) stated that the lack of adequate financial resources is never a major hindrance to economic growth performance; rather, a lack of appropriate policies and institutions is a major constraint. North (1990), in his study, further provided strong evidence regarding the strong institutional apparatus providing opportunities for the success of aid amounts received via a sound institutional framework. The same results were given by Islam (1992) in his work, where he showed a weak positive link between aid and growth tested for the Bangladeshi economy for the period 1972–1988. M. Baku (1994) also provided similar results to those of Islam

(1992) for the Cameroon economy. Rowley (1998) explained that these economies are economically worse off today in comparison to the situation before the onset of foreign aid. He argued that these developing economies lacked the entrepreneurial skills necessary for the transfer of resources to useful production levels. Therefore this ODA is simply a transfer of wealth rather than the creation of wealth. Most of the ODA is on a on a government-to-government basis. So it is the duty of the rulers of an economy to effectively allocate the given resources. So it is important to determine whether this aid amount is invested in a productive or unproductive way.

References

Ali, A. M. and H.S. Isse (2006). An Empirical Analysis of the Determinants of Foreign Aid : A Panel approach. *International Advances in Economic Research*, 12, 241-250.

Asiedu, E., Jin, Y., & Nandwa, B. (2009). Does foreign aid mitigate the adverse effect of expropriation risk on foreign direct investment?. *Journal of International Economics*, *78*(2), 268-275.

Asteriou, D. (2009). Foreign aid and economic growth: New evidence from a panel data approach for five south Asian countries. *Journal of Policy Modeling*, 31, 155-161.

Burke, P. J., & Ahmadi-Esfahani, F. Z. (2006). Aid and growth: A study of South East Asia. *Journal of Asian economics*, *17*(2), 350-362.

Chauvet, L. (2003). Socio-political instability and the allocation of international aid by donors. *European Journal of Political Economy*, *19*(1), 33-59.

Chenery,H.B.andA.M.Strout(1968).Foreignassistanceandeconomic development: Reply. *The American Economic Review*, *58*(4), 912-916.

Chong, A., Gradstein, M., & Calderon, C. (2009). Can foreign aid reduce income inequality and poverty?. *Public choice*, *140*, 59-84.

Collier, P. and Dollar, D. (2002). 'Aid allocation and poverty reduction', *European Economic Review,* vol. 45, pp. 1470–500.

Dash, A. K. (2021). Does foreign aid influence economic growth? Evidence from South Asian countries. *Transnational Corporations Review*, 1-14.

Dowling, J.M. and Hiemenz, U. (1983) Aid, Savings and Growth in the Asian Region. *The Developing Economies,* 21, 3-13.

Dreher, A., Nunnenkamp, P., & Thiele, R. (2008). Does aid for education educate children? Evidence from panel data. *The World Bank Economic Review*, *22*(2), 291-314.

Easterly, W., Levine, R., & Roodman, D. (2004). Aid, policies, and growth: comment. *American Economic Review*, *94*(3), 774-780.

Fayissa, B. and El-Kaissy (1999). Foreign aid and the economic growth of developing countries (LDCs): Further evidence.*Studies in Comparative International Development*, *34*(3), 37-50.

Feeny, S. (2003). The impact of foreign aid on poverty and human well-being in Papua New Guinea. *Asia Pacific Development Journal*, *10*(2), 73.

Gomanee, K., Morrissey, O., Mosley, P., & Verschoor, A. (2003). Aid, pro-poor government spending and welfare.

Griffin, K.B. and J.L. Enos (1970). Foreign Assistance: Objective and Consequences. *Economic Development and Cultural Change*, 18(3), 313-327.

Irandoust, A. H. J. M., and A. Hatemi (2005). Foreign aid and economic growth: new evidence from panel cointegration. *Journal of economic development*, *30*(1), 71-80.

Islam, A. (1992). Foreign aid and economic growth: an econometric study of Bangladesh. *Applied Economics*, *24*(5), 541-544.

Islam, M. N. (2003). Political regimes and the effects of foreign aid on economic growth. *The Journal of Developing Areas*, 35-53.

Karakaplan, U., Neyapti, B., & Sayek, S. (2005). *Aid and foreign direct investment: International evidence* (No. 2005/12). Discussion Paper.

Knack, S. (2004). Does foreign aid promote democracy?. *International studies quarterly*, *48*(1), 251-266.

Laffont, J. J., &N'Guessan, T. (1999). Competition and corruption in an agency relationship. *Journal of Development Economics*, *60*(2), 271-295.

Landes, D. S. (1998). *Why Some are so Rich and Some so Poor*. Little, Brown.

Leon, R. S. (1994). Mexico, Markets and Multilateral Aid. *Bandow, D., Vasquez, I. Perpetuating Poverty, the World Bank, IMF, and the Developing World, Washington, District of Columbia: Cato Institute*.

McGillivray, M. (2003). Aid effectiveness and selectivity: Integrating multiple objectives into aid allocations.

McGillivray, M. (2009). Aid, economic reform, and public sector fiscal behavior in developing countries. *Review of Development Economics*, *13*(3), 526-542.

Murthy, V. N., Ukpolo, V., &Mbaku, J. M. (1994). Foreign aid and economic growth in Cameroon: evidence from cointegration tests. *Applied Economics Letters*, *1*(10), 161-163.

North, D. C. (1981). *Structure and change in economic history*. Norton.

North, D. C. (1990). A transaction cost theory of politics. *Journal of theoretical politics*, *2*(4), 355-367.

Ouattara, B. (2006). Foreign aid and government fiscal behaviour in developing countries: Panel data evidence. *Economic Modelling*, *23*(3), 506-514.

Papanek, G. F. (1972). The effect of aid and other resource transfers on savings and growth in less developed countries. *The Economic Journal*, *82*(327), 934-950.

Papanek, G. F. (1973).Aid, foreign privateinvestment, savings, and growth in less developed countries. *Journal of political Economy*, *81*(1), 120-130.

Rowley, C. K. "Political Culture and Economic Performance in sub-Saharan Africa," Working Paper, 1998.

Selaya, P., & Sunesen, E. R. (2012). Does foreign aid increase foreign direct investment?. *World Development*, *40*(11), 2155-2176.

United Nations Development Report, 2022.

Williamson, C.R. (2008). Foreign Aid and Human Development: The Impact of Foreign Aid to the Health Sector. *Southern Economic Journal*, 75(1), 188-207.

World Bank Development Indicators, 2022.

Yasin, M. (2011). Public spending and economic growth: empirical investigation of Sub-Saharan Africa. *Southwestern Economic Review*, *30*, 59-68.