Government Disbursements in Education Division, Urbanization and Economic Escalation in Under-Developed and Emerging Republics

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Abstract

Education is vital for every country. Education leads to urbanization and economic growth and prosperity. In this research paper we are interested to see how developing country and under-developed countries are taking this important issue under the guidelines of United Nations and World Bank. Economic development is associated with education and urbanization. For this study researcher collected data from all developing and under-developed countries from 2011 to 2020. Our main dependent variable is GDP growth and for education we collected overall government expenditure on education sector and also divided them into three main components of primary, secondary and tertiary to analyze them separately. FDI, fertility rate, gross capital formation, government expenditure also considered in this study. Research result highlights that education sector expenditure not significant, hence government spending on education sector is not transforming their socio-economic issues due to mismanagement, lack of strategies and proper governance. In future governance may also be considered in study and split data of under-developed and developing countries in separate groups.

Key Words: Growth, Economic, Education, Development and Financial

Introduction

Education, urbanization of society and economic prosperity has closed links. This is the most important demographic phenomena in the current history of developing countries. More than a billion people live in developing countries like Asia, Latin America and Africa and education, urban settlement and socio economic prosperity are main concerns for all of them irrespective of living in rural areas or already settled in urban areas. There are many issues faced by different regions. Education somewhat can be taken as a consequence of social change in society occurring in different phases in developing countries, not at the same rate though. Country economy is also attached with this social development. It is generally understandable that education has a high correlation with urbanization, hence affecting social and economic prosperity of the country. Economic development of any country is associated with education because required skills can be accomplished with its support to improve productivity and to meet required job skills. No doubt that infrastructure, public facilities and governance are important factors, nevertheless education plays a significant role in the development of urbanization and economic prosperity. Government spending on education has a significant impact on literacy rate that keeps on improving urbanization too and translates into economic prosperity.

In this research we have to study how developing countries' data on education, urbanization and economic prosperity interlinked with each other while controlling many factors that may influence this relationship. Our main contribution is analysis of the education sector by developing two different models based on ten years' average data. In first model we are considering overall government expenditure on education sector as a share of GDP. In second model we are taking various education sectors like primary, secondary, tertiary and then see their impact on urbanization and economic growth. We understand that secondary and tertiary education play a more significant role in the development and growth of urbanization and social and economic prosperity rather than primary education. Apart from that we are also empirically testing education together with urbanization on economic growth by taking various proxies.

The United Nations and World Bank play significant roles in developing countries to support education at the basic level and bring meaningful reform in this area. Due to this reason developing countries expanded their education system in the last couple of decades, realizing its role in development and growth. Millennium development goal set for education that every child

will get primary education all over the world as well as gender equality will also be maintained. It is obvious that all countries' policies and strategic plans are needed to achieve it. This study is important and fruitful to test empirically how education plays its role in different economies.

Literature Review

Gries and Grundmann (2018) discussed human family growth behavior with urbanization in developing countries. They worked on export diversification and slums as a regular part of urbanization in developing countries. It is found that fertility impacts on urbanization in different pools and areas and reduces skill intensive work. It is pointed out that there is a link between demographic change in urbanization. Todaro (1980) showed concern on urbanization growth in developing countries. Collier and Venables (2017) observed that for economic development in any economy urbanization is an integral part of it. Urbanization provides good basic facilities, productivity and opportunities that do not exist in rural areas but many countries have different experiences. Hofmann and Wan (2013) provided empirical support on the impact of urbanization on education, economic growth and industrialization. GDP growth has close relation with urbanization and it is found that it moves unidirectional from growth to urbanization. They found significant positive relation between education and urbanization and found that one percentage increase in schooling increases urban population two percent.

Flückiger and Ludwig (2017) explored Sub Saharan African countries and empirically documented that lower birth rates were associated with urban areas though less death was observed there due to more educated female presence in urban areas and other facilities. However, they also observed high investment in education with a high degree of urbanization. There is a significant relation between urbanization and children education terms of investment and attainment in life. Henderson (2002) worked on urban concentration that researchers observed in the last fifty years after growth in industrialization. Industrialization also needs a connected population with a variety of skills that are required for a variety of industries. Education plays a key role in the growth and development of urban population and sustainability of society.

Xu and Law (2015) argued that Chinese policy of economic growth neglected during last couple of decades but later on government realized and made many reforms in rural education that brought significant changes and researcher argue that these reform will improve quality of

urbanization. These developments in rural education will support urban economy to grow and become more prosper and will help to reduce rural-urban disparity. Huisman and Smits (2009) worked on district level primary school enrollment of around thirty countries and found that demographic and socio-economic features of district influence on number of primary school children, female teachers etc. They also found that urbanization and the number of women in society also play a role. Dickens et al. (2006) earlier supported this view that for long term benefits government policies should focus on primary education that does not give immediate return but beneficial for the economy in long run.

Drèze and Murthi (2001) pointed out that since the early 1980s fertility declined in India significantly. It is observed that women's education, urbanization, modernization, poverty reduction and specifically low need of sons are main factors of fertility reduction. Boli et al. (1985) observed that mass education exists in every part of the world, though not on an equal basis but no country can deny it and it has increased in the last two centuries, even improvement in this regard observed in poorest countries. Mass education is not only related to boys but girls are also included in this plan. Mass education not only depends on the central government but also regional and local social factors play its role.

Kim (2018) assumed in his paper that there is a positive relation between happiness and income level and also observed that it also affects children's education and urbanization. It is found that moderated education brought more happiness in EastAsia compared to the Middle East. On the other hand, he found a low level of happiness with higher education in East Asia than other regions. In Europe no relation exists between education and happiness. White et al. (2008) done event history analysis by taking Ghana data covering education, union status, cohort, fertility and developed link with urbanization. It is found that the fertility rate in urban population is 11 percent lower compared to rural areas and the reason may be the level of education and lifestyle adapted in urban areas. Kumar and Kober (2012) empirically test education, urbanization, health on total factor productivity and found that education has insignificant impact on total factor productivity while infant mortality, urbanization and life expectancy has positive impact on it. Akita and Miyata (2008) worked on Indonesian rural-urban education and inequality of expenditure in these two areas during the period of 1996 to 2002. First they divided all populations in urban and rural classification and then similar processes applied on low and high

level of education and found a significant contribution of higher levels of education in urban areas towards inequality. Urban rural disparity in expenditure helps shift the population from rural areas to urban sector. Haryanto et al. (2021) tested education, urbanization on economic growth in Indonesia and found significant impact by vector error correction model application. Researchers argued that infrastructure, transport and other public facilities in better form in urban areas may further enhance this impact and causality. Buchmann and Hannum (2001) examined developing countries' research on education and inequality. Family background, stratification and macro economy areas addressing education, consequently education puts a positive impact on overall economy.

Glewwe and Kremer (2006) observed based on World Bank data that more than eighty percent of children are located in developing countries. Study of developing countries in terms of education has vast fields of research and may bring very interesting facts that can help to address many socio economic issues. They also work on the quality of education and its impact on society and learning phases out of school play a vital role in the understanding of reform that needs to be done in developing countries. Gylfason (2001) argued with the support of Adam Smith and John Stuart Mill that education is good for growth. His work was based on the observation that natural resources have more risk because of rent seeking activities, too many people engaged in low skilled work, hence unable to bring change in their own life as well as their children in terms of wealth and prosperity. On the other hand, resource rich countries put less effort on the development of human capital because they are more confident on their natural wealth, hence less effort on the education sector. Hanushek (2016) observed that only the number of years in schooling if increasing without improvement in cognitive skills does not increase growth. Emphasis is not only on the number of years increasing but skill development plays a key role in growth and prosperity. Bloom et al. (2014) argued that literature commonly supports that primary and secondary schooling have an impact on economic growth while tertiary education does not have impact on economic growth. Though in African countries result of tertiary education is not significant due to other macroeconomic mismanagement as observed by researcher like rent seeking, poor planning and narrow vision. Based on the above discussion and detailed review of literature we develop following hypothesis for this study.

H1: Education expenditure by developing and under-developed economies impact on economic growth of country

H2: Education expenditure by developing and under-developed economies impact on urbanization of countries

Research Methodology

To work on developing country education spending and mobility towards urbanization, in this research we have taken all developing countries data from World Bank data source. Some countries data show missing values that eliminated from overall sample. We also considered small island, estate specifically to understand education spending and its impact on economic growth, though urbanization is not main concern of these small island. In this way overall we collected 194 counties and other small islands for our study. We collected data from 2011 to 2020 and then we computed their average to get one single figure. This is helping us to understand and to show impact of overall performance, strategies and shift in behavior during a decade.

Our first study plan is based on overall government spending on education sector as taken based on percentage of GDP. This can be taken as Model No.1 where we consider overall spending on education sector. The objective is to observe on average spending on education sector and its impact on economic prosperity and towards urbanization.

For this study we selected following variables.

GDP growth (average)
average Urban population
Fertility rate, total (births per woman) average
General government final consumption expenditure (% of GDP)
Gross capital formation (% of GDP)
Government expenditure on education, total (% of GDP)
Foreign direct investment, net inflows (% of GDP)
Expenditure on primary education (% of government expenditure on education)
Expenditure on secondary education (% of government expenditure on education)
Expenditure on tertiary education (% of government expenditure on education)

Descriptive study as given in Table No.1 is based on Government expenditure on education as a whole based on percentage of GDP. In this descriptive statistics we do not consider three main components of education expenditure i.e. on primary, secondary and tertiary sector.

Table No.1

Descriptive Statistics with Education Expenditure

	GDP	FETILITY	FDI	EXP01	EDUEXP	GROSSC	URBANP
Mean	2.27938	2.650225	8.01515	12.77909	2.632728	18.67685	56.07287
Median	2.26173	2.308944	2.553951	13.11567	2.61474	20.35551	55.2506
Maximum	9.129286	7.150889	509.2776	57.43256	10.47959	48.88657	100
Minimum	-4.73761	0	-1.73903	0	0	0	0
Std. Dev.	2.345476	1.51391	41.9353	9.436192	1.928271	11.70715	24.35469
Skewness	0.077213	0.509676	10.2682	1.220071	0.543789	-0.16071	-0.04019
Kurtosis	3.389122	2.803504	114.9395	6.998771	3.628114	2.504591	2.169923
Jarque-Bera	1.416713	8.711337	104697	177.3844	12.75028	2.81899	5.621852
Probability	0.492453	0.012834	0.000	0.000	0.001703	0.244267	0.060149
Sum	442.1997	514.1437	1554.939	2479.143	510.7492	3623.308	10878.14
Sum Sq. Dev.	1061.743	442.3411	339403.9	17185.05	717.6184	26452.09	114478.2
Observations	194	194	194	194	194	194	194

Following abbreviations used to discuss various variables under study.

GDP growth (average) = GDP

Average URBAN POPULATION = URBANP

Fertility rate, total (births per woman) AVG = Fertility

General government final consumption expenditure (% of GDP) = exp01

Gross capital formation (% of GDP) = GROSSC

Government expenditure on education, total (% of GDP) = EDUEXP

Foreign direct investment, net inflows (% of GDP) = FDI

Expenditure on primary education (% of government expenditure on education) = PRIEXP

Expenditure on secondary education (% of government expenditure on education) = SECEXP

Expenditure on tertiary education (% of government expenditure on education) = TEREXP

Table 2

Descriptive Statistics with Components of Education Expenditure

	GDP	FETILITY	FDI	EXP01	GROSSC	URBANP	PRIEXP	SECEXP	TEREXP
Mean	2.670103	2.798022	5.000323	13.34692	20.6837	53.81549	36.05105	33.0064	19.22094
Median	2.545031	2.297111	2.817067	13.98393	21.42779	53.9435	34.26626	32.60288	18.50242
Maximum	9.129286	7.150889	107.8204	57.43256	48.88657	100	66.98602	67.1609	50.60062
Minimum	-4.50124	0	-1.02417	0	0	12.2645	0.68204	11.63542	4.46395
Std. Dev.	2.217834	1.560609	10.57569	7.842594	10.58142	23.45889	12.84303	9.620809	8.657596
Skewness	-0.00419	0.552123	8.024497	1.340324	-0.2777	0.200565	0.250244	0.337642	0.749429
Kurtosis	3.340891	2.519636	76.80939	10.36384	3.162204	2.008745	2.600794	3.620491	3.960679
Jarque-Bera	0.576541	7.190112	28289.26	304.5011	1.659915	5.669811	2.032188	4.170038	15.71533
Probability	0.749559	0.027459	0	0	0.436068	0.058724	0.362006	0.124305	0.000387
Sum	317.7423	332.9646	595.0384	1588.283	2461.36	6404.043	4290.075	3927.762	2287.292
Sum Sq. Dev.	580.4168	287.3892	13197.73	7257.741	13212.05	64937.7	19463.32	10922.08	8844.568
Observations	119	119	119	119	119	119	119	119	119

In this descriptive study as given in Table No.2 we provided component wise data information related to education sector like primary, secondary and tertiary. Here number of observation reduced because many countries data were missing from World Bank data set.

Table No.3

Dependent Variable: GDP		
Variable	Coefficier	Prob.
EXP01	-0.08478	0.0004
FDI	0.007075	0.6288
FERTILITY	0.53297	0.0003
GROSSC	0.109731	0.0001
PRIEXP	-0.02953	0.1504
SECEXP	-0.00443	0.8389
TEREXP	-0.02708	0.2426
URBANP	-0.02131	0.0098
C	2.883151	0.0784
R-squared	0.476441	
Adjusted R-squared	0.438364	
F-statistic	12.51258	
Prob(F-statistic)	0	

In Table No.3 we are taking Model No.1 in which we decided to take all components of education expenditure separately to see their individual impact on economic growth like primary, secondary and tertiary together with all other variables of study like fertility, gross capital formation, urban population and foreign direct investment and government expenditure. Model is best fit as indicated by F test. None of the education expenditure show significant result in the case of developing country. This indicate that developing countries expenditure in education sector is not sufficient enough that can impact on the economic growth and prosperity of the country. Government expenditure is significant but showing negative sign that indicates that due to poor governance and mismanagement government expenditure which is part of fiscal stimulus unable to improve economic growth. On the other hand, urbanization is significant but negative to growth means in developing country rural area has more significant role in economic growth rather urban population growth.

Table No.4

Dependent Variable: GDP		
Variable	Coefficient	Prob.
EXP01	-0.058656	0.0033
FDI	0.002167	0.5488
FERTILITY	0.210523	0.0739
GROSSC	0.081585	0.0001
URBANP	-0.016339	0.0257
EDUEXP	0.094401	0.2853
C	1.597522	0.0168
R-squared	0.250347	
Adjusted R-squared	0.226294	
F-statistic	10.4081	
Prob(F-statistic)	0	

In Table No. 4 we are taking Model No.2 in which we decided to take overall expenditure of education sector by government as compared to various components. In this respect we have to see overall impact of government spending on education sector. Model is best fit as indicated by F test result. In this model government spending variable is insignificant though showing positive sign. It is suggested that developing country should spend not only more amount in education sector but they should also improve management of this education sector that can help to improve growth of developing countries.

Table No.5

Dependent Variable: GDP		
Variable	Coefficient	Prob.
EXP01	-0.080978	0.0009
FDI	-0.005364	0.3933
FERTILITY	0.426169	0.0016
GROSSC	0.096647	0.0001
URBANP	-0.016308	0.0449
SECEXP	0.007661	0.635
C	1.195145	0.2237
R-squared	0.397047	
Adjusted R-squared	0.367149	
F-statistic	13.27984	
Prob(F-statistic)	0	

In Model No.3 we are taking secondary school spending as education sector variable including rest of the variables of study. Model is significant but secondary school spending variable is not significant though showing positive sign that indicates that secondary school spending can improve economic growth. Fertility is significant which is obvious in present scenario that new labor can increase economic growth. Urban population is significant here that shows that secondary education when connected with urban population can help to boost economy.

Table No.6

Dependent Variable: URBANP		
Variable	Coefficient	Prob.
EDUEXP	-1.13025	0.1973
EXP01	0.465381	0.0194
FDI	0.005687	0.8741
FERTILITY	-7.383356	0.0001
GDP	-1.610632	0.0257
GROSSC	0.123877	0.4462
C	73.98094	0
R-squared	0.314618	
Adjusted R-squared	0.292628	
F-statistic	14.30679	
Prob(F-statistic)	0	

After empirically testing three models with different point of view keeping education spending as main independent variable, now we move to other dynamics of government education expenditure and focused on urban population growth. We understand that more education in any economy will bring demographic change in society and people will move toward urban settlement. In case of developing country, we understand that people after completing certain number of years of schooling may find better opportunities in urban areas rather in rural areas.

Table .7

Dependent Variable: URBANP		
Variable	Coefficient	Prob.
EXP01	0.221376	0.4282
FDI	0.037976	0.8201
FERTILITY	-4.730627	0.0056
GDP	-2.770032	0.0098
GROSSC	0.224822	0.3283
PRIEXP	-0.401981	0.0853
SECEXP	-0.107938	0.6639
TEREXP	0.144475	0.5854
C	81.93096	0
R-squared	0.391647	
Adjusted R-squared	0.347403	
F-statistic	8.851991	
Prob(F-statistic)	0	

In Table No.7 we are taking all three components of education sector spending rather than cumulative amount to check their individual impact on urbanization. Only primary school spending is significant at 10% while rest are insignificant. Tertiary education spending sign is as per our understanding because this education area spending may increase in urban areas.

Conclusion

Education is required for every citizen of society without any doubt. It leads to economic growth as well as urbanization of society. In this research, we empirically tested education expenditure of underdeveloped and developing countries and its impact on urbanization and economic growth and prosperity. World Bank and United Nations have given top priority to education as World Bank included education in millennium development goals. For this study, wecollected

data from all under-developed and developingcountries from 2011 to 2020. For economic growth we used GDP growth as proxy and for education we collected overall government expenditure on the education sector and also divided them into three main components of primary, secondary and tertiary to analyze them separately. FDI, fertility rate, gross capital formation, government expenditure wasalso considered in this study.

Our results highlight that education sector expenditure is not significant, hence government spending on the education sector is not transforming their socio-economic issues due to mismanagement, lack of strategies and proper governance. All results are highlighting the fact that only spending on education sector in developing countries is not enough to book economic growth and bring prosperity for people. Education spending, development of infrastructure, improvement in governance not only in all areas but specifically in education sector, long term strategic planning is required. Results may vary if we reduce many small islands and very poor countries. It is also possible that results vary from economy to economy because many macro and social factors vary from country to country but based on ten years' average data of under-developed and developing economies situation is very gloomy. In future governance may also be considered in study and split data of under-developed and developing countries in separate groups.

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