

A Comparative Study of Basic Education Parameters for BRICS and their Relationship with Expenditure on Education

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Abstract: No country can develop without development of education. Present study is taken up to investigate educational foundations of fast growing emerging economies of world- BRICS (i.e. Brazil, Russia, India, China and South Africa). It makes comparison of educational achievements in literacy, enrolment, school years and education expenditure between them and with select advanced countries. Further, it studies correlation of enrolment and school years with GDP and education expenditure. Results indicate BRICS still lag behind developed countries. Among BRICS, Russia and Brazil fare better. GDP is positively related to enrolment and school years. Education expenditure is positively related only to enrolment.
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I. INTRODUCTION

Education forms the basis for long term economic development. Economic historians and growth economists have argued that the “Great Divergence” between the developed and underdeveloped world in the 19th century was reinforced – if not caused – by rapid improvements in schooling that occurred in the advanced economies (Chaudhary et al, 2011). Instead of focusing on economic fallouts of the alliance between countries, like most of the studies do, present study analyses and compares the state of education in BRICS countries, by studying various education parameters.

Brazil, Russia, India, China and South Africa together forming about 22 per cent of Gross World Product, are collectively known as fast growing emerging economies. Their shared visions and problems brought them together in 2010. The countries have many similarities, common traits (with exception of South Africa) being, the outstanding size of their economies, strong growth rates, leading to increasing significance in world economy, and the demand for a stronger political voice in international governance structures (Morazan et.al., 2012). But, deeper inside these nations are widely diverse. For there is huge difference in the economies of South Africa at one end and China at the other and Russia stands out as the former super power. This diversity makes the grouping all the more attractive. Modernity of the acronym BRICS, geographical & cultural variability of the members and political & economic importance of the group compel one to investigate heterogeneous profile of these countries. Contribution of the paper lies in presenting an analysis of the empirical evidence on the variation in the educational development between these countries. As compared to advanced countries, like U.S.A. and U.K., these countries started with a low education base at the turn of 20th century. Moreover, developed nations as U.S.A. were high income countries at that time which generated demand for education and led to its development. But, BRICS were low income countries and therefore, education had been low on priority list. Now, with emergence of these countries as fast growing economies, they are more concerned than ever about advancement of education among their people.

The paper tries to corroborate these statements by empirical analysis of the correlation between GDP per capita levels and education parameters for BRICS and some other select advanced economies. The paper also tries to empirically investigate the relationship between levels of GDP per capita and education expenditure for BRICS and other select advanced countries. It also studies education expenditure at various GDP per capita levels for individual BRICS countries. Further, it compares the growth of education expenditure in these economies. It is very important to invest in education and education expenditure is a big item in government budgets (Zoran, 2015). Therefore, it seemed fit to study education expenditure in these countries.

Though these economies are making progress in the development of education, yet it is slow when compared to the world average or to the levels of developed nations. But, raising school enrolment, like economic development in general, takes a long time (Clemens, 2004).

II. REVIEW OF LITERATURE

BRICS and their increasing economic relevance in the world economy and polity cannot be ignored. Kapoor and Tiwari (2010), while analysing the FDI data for BRICS economies rightfully point out that as these states gain importance on the global stage, the international community will increasingly look to them to stabilize the world's economic system. While comparing BRICS with these countries it should be kept in mind that BRICS not only stepped in the 20th century with low education base but have faced turbulent times since then. Chaudhary et. al. (2011) finds that factors such as local ethnic and religious heterogeneity and the institutional legacies of colonialism and serfdom help explain the low achievement levels of these countries. They also find income, political decentralization and the level of political voice important to the spread of primary education in BRICS countries. Clemens (2004) also points out that it has taken rich countries quite long time to achieve high enrolment rates and gender parity in education. There are many countries which have not yet achieved Millennium Development Goals but have made progress much faster than the developed nations. Zoran (2015) makes a study of public expenditure on education and value of Gross Domestic Product of the country and found that there was a positive correlation between these two for the BRICS countries. Kingdom (2007) made a study of India's educational achievements in international perspective, especially BRIC economies, and found that India lags behind all of them in terms of youth literacy. However, India's primary enrolment rates were found to be close to universal, whereas attendance and retention were not. Many studies have been made regarding public expenditure on education in India (De and Endow, 2008; and Araf, 2016) to conclude that government has been playing an active role in education finance but public expenditure on education as a proportion of GDP has remained very low. However, recent government initiatives have succeeded in improving the access to education and enrolment rates, but quality has remained quite low. Vil'anilam (2012) argues that though government schemes in India have been able to increase primary enrolment rates, number of dropouts is still way high. Similar results were obtained for China by Rong (2011) who concludes that even though Chinese government has undertaken rapid reforms and made fast growth in universal primary education, yet much remains to be done. Spaul (2013) however points out that South African education system is poorer than all of the middle income countries and many of the low income African countries. Though there have been some improvements in terms of pupil outcomes, but learner performance is abysmally low. Anyanwu and Erhijakpor (2007), state that government expenditure on education has a positive and significant direct impact on primary and secondary education enrolment rates. However, they also argue that in addition to public expenditure, increase in national income, strengthening of democracy and international aid will go a long way in achieving higher quantity and quality of education in Africa. Sandoval (2012) establishes that sub-standard education system in Brazil is fostering inequality in Brazilian economy and has long-term negative effects. It also concludes that education reforms and efficient education spending promote economic growth. Pogosian (2012) made a study of Russian education systems in pre- and post-Soviet eras and concluded that whereas Soviet education system was isolated, post-Soviet Russian system is following tendencies of global development. Also, as per Education for All (UNESCO, 2015), Russia's education system is making progress by leaps and bounds and Russia has been successful in achieving goals of "Education for All" programme.

III. OBJECTIVES OF THE STUDY

Many studies have been taken up in the past to explore educational development in BRICS economies independently, but a few were undertaken to make their comparative examination. Present study concerns itself with the investigation of state of education and education expenditure in BRICS economies. Also, it endeavours to make a comparison between BRICS countries in this respect. It also attempts to examine correlation of education parameters with GDP per capita and education expenditure by analysing data for BRICS countries and select advanced economies.

IV. COUNTRY STUDY

4.1 Brazil

(Figures 1 & 2 about here)

There appears to be a high correlation between GDP per capita and Adult Literacy Rate, GDP per capita and Education Expenditure (both as %age of Govt. Expenditure and as %age of GDP). But, correlation between GDP per capita and Gross Enrolment Ratio is low. These relations are also verified by results of correlation analysis.

(Table 1 about here)

4.2. Russian Federation

(Figures 3 & 4 about here)

It is clear from the graphs that Gross Enrolment Ratio is weakly associated with GDP per capita. There is strong correlation between GDP per capita and Education Expenditure, and nearly perfect correlation between GDP per capita and Adult Literacy Rate. However, the result for ALR may be due to lack of availability of data for the whole period. These observations are confirmed by results of correlation analysis.

(Table 2 about here)

4.3. India

(Figures 5 & 6 about here)

It is clear that there is strong association between GDP per capita and Gross Enrolment ratio and also between GDP per capita and Adult Literacy Rates. Due to low base, GER in India rose swiftly along with the GDP per person. This is reflecting in rising ALR. Whereas, relation between GDP per capita and Education Expenditure (as %age of GDP) remained stagnant over the years, Education Expenditure (as %age of States' Expenditure) declined over the years. It suggests falling importance of education in government budgets. These remarks are corroborated by the results of correlation analysis.

(Table 3 about here)

4.4. China

(Figure 7 about here)

Clearly, there is a strong association between GDP per capita and Gross Enrolment Ratio. Correlation results corroborate the statement. There is also a high correlation between GDP per capita and Adult Literacy rate, but it is not significant.

(Table 4 about here)

4.5. South Africa

(Figures 8 & 9 about here)

It is clear from above graphs that there is positive and strong relation between GDP per capita and Adult Literacy Rate. However, GDP per capita is negatively associated with Gross Enrolment Rate and also with Education Expenditure as percentage of Government Expenditure. Also, there seems to be very low correlation between GDP per capita and Education Expenditure as percentage of GDP. These observations indicate falling importance of education in government budgets, which is reflected in decreasing enrolment rates. The results of correlation analysis support these statements.

(Table 5 about here)

V. COMPARATIVE ANALYSIS

(Figure 10 about here)

It is clear than the economies differ significantly with regard to their per capita GDP levels. Where Russian, Brazilian and South African economies already had high levels of per capita GDP, India and China were struggling at very low levels. All the economies have registered a growth in per capita GDP from period 1985 to 2015.

Brazil recorded a growth of 43.56 per cent over the span of 30 years. Russia and South Africa saw a growth in Per Capita GDP of merely 11.87 per cent and 15.49 per cent respectively. India's per capita GDP nearly tripled during this period where as China's grew more than 11 times, both getting advantage of a low base. Though both the economies started from similar levels, yet India failed to narrow down the gap with other countries the way China did. Where China is about to join their league (and surpass them all), Indian economy continues to lag behind all.

(Figures 11 & 12 about here)

It is clear that among BRICS nations, Russia is the most literate one, then come China, South Africa and Brazil. India stands at the last. Point to note here is Brazil, though lagging behind, is the only nation among the group where female literacy is higher than male literacy. It is also shown in the accompanying graph depicting Gender Parity Index, which indicates considerable advancement in the area of gender parity as Brazil's GPI score is the highest. However, in India, the gap between male and female literacy is the highest, also reflected in lowest GPI score among all, signifying backwardness of economy, society and education infrastructure.

(Figures 13 & 14 about here)

Graph reveals that Gross Enrolment Ratios (total population and females) have been very high throughout for Brazil and Russia, despite of showing a negative trend sometime during middle of the first decade of the 21st century. China and India showed considerable improvement during the period. India's performance in this area is especially noteworthy as it has shown highest growth. It started from a base quite lower than China's but has succeeded in narrowing down much of the gap.

(Figures 15 & 16 about here)

In this sphere, while growth of average school years (total and female) in Russia, China and India has tampered after initial mount, it has risen remarkably in case of Brazil and South Africa. Brazil though surpassed China in average school years of total population a bit leisurely, but quite swiftly in case of average school years for female population.

It is also evident that Russia, South Africa and China started with lower levels of female school years as compared to that for total population but ended up with similar levels for both (China still having gap slightly larger than other two). Brazil has maintained similar level for both the categories throughout the study period and even

ended up with average school years for females a bit higher than that for total population. India's performance in this area is abysmally low. Not only it started with the lowest base for both the categories, it failed to register any visible improvement. Moreover, the gap between average school years for total population and female population has widened.

(Figures 17 & 18 about here)

In case of expenditure on education as percentage of total government expenditure, performance of South Africa has been stagnant during the period. In India education expenditure has reduced in terms of percentage of government spending. Russia has shown only marginal increase, but there has been considerable improvement in education spending by Brazilian government.

When measured as a percentage of GDP, expenditure on education has risen in Brazil, Russia and South Africa, with India being the only exception. It has registered a fall. In this category performance of Brazil is substantial.

VI. COMPARATIVE ANALYSIS WITH OTHER SELECT COUNTRIES

(Table 6 about here)

(Figures 19 & 20 about here)

Graphs make it clear that Adult Literacy Rates (for total population and female population) in BRICS countries (except India) are higher than the world average. Also, the figures indicate a positive correlation between GDP per capita and Adult Literacy Rate, but these are not significant at 5 per cent level of significance.

(Figure 21 about here)

The graph reveals that besides Russian Federation, no other country among BRICS have figures on Average School Years comparable to that of advanced economies. On applying correlation analysis on the data, it is found that correlation between GDP per capita and Average School Years is significantly positive for these countries.

(Figure 22 about here)

The graph makes it evident that in case of Gross Enrolment Rates BRICS nations lag far behind the developed nations, although Russia and Brazil fare marginally better than the others. Another point worth noting here is though Switzerland is much ahead in terms of GDP per capita, yet its Enrolments levels are quite low as compared to other developed countries. Further, correlation results show that there is significant positive correlation between GDP per capita and Gross Enrolment Rates i.e. countries with high GDP per capita levels have high Enrolment Rates.

(Figure 23 about here)

The graph shows a very uncertain relationship between Average School Years and Percentage of GDP spent on Education. It is due to different stages of development of these countries. Whereas countries like Switzerland have already achieved high levels of schooling in particular and education in general and need not spend much of the GDP on it, countries such as South Africa need to spend high to improve low levels of schooling, reflecting in high percentage of GDP devoted to education. Further, countries like Singapore and Japan are still somewhat behind the advanced nations but are high GDP economies, and therefore, only a small fraction of GDP spending on education converts in to a huge amount in absolute terms. Correlation shows that though there is positive correlation between Education Expenditure as percentage of GDP and Average School years, yet it is not significant.

(Figure 24 about here)

Graph reveals that the countries spending higher proportion of their GDPs on education have higher Enrolment Rates and vice-versa. Performance of Brazil and Russia in this category is quite good and comparable to that of developed nations. However, India and South Africa continue to lag behind. Though South Africa is spending a good amount of its GDP on Education, results are not apparent yet. Correlation analysis shows the presence of a significant positive relation between the two variables.

VII. CONCLUSION

Thus, we can conclude that among BRICS nations, Brazil and Russia are swiftly catching up with advanced nations in terms of education levels and spending. Whereas China and South Africa are quite lagging, figures for India are miserably poor. Though Indian economy is the sixth largest economy in the world and therefore, even a small fraction of GDP spent on education converts in to a very huge money in absolute terms, yet more is required keeping in view its humungous population. We saw through the analysis that there has been a considerable growth in education parameters for India, but efforts need to be stepped up as there is still much to be done. Overall, BRICS economies have shown considerable progress, especially Brazil and Russia. Other members need to catch up soon if they want their economies and societies to be comparable. BRICS economies have a vast potential and can aid each other to this end by sharing funds and experiences. It is to their mutual advantage that all the members grow economically and socially so that their collective voice gains force in global economy and polity.

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(Figures)

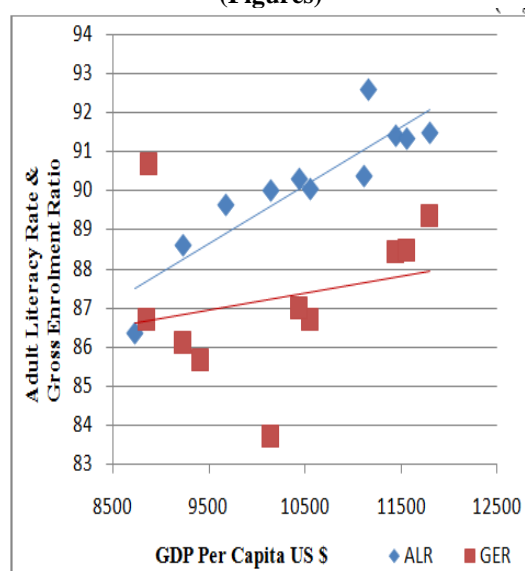


Figure 1: Relation of GDP Per Capita with Adult Literacy Rate & Gross Enrolment Ratio for Brazil

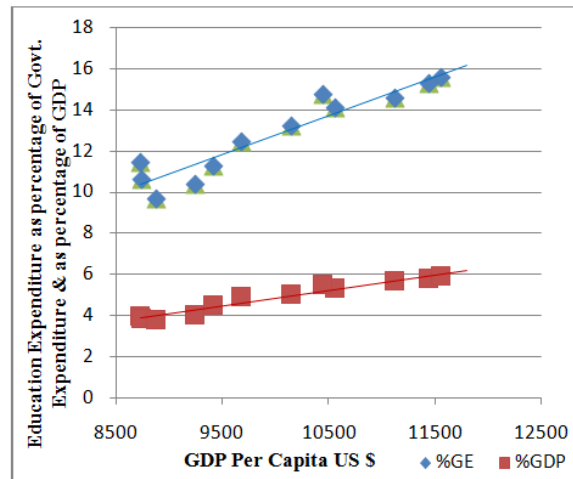


Figure 2: Relation between GDP Per Capita & Education Expenditure for Brazil

*Data for ALR is from 2000-2015, for GER is from 2002-2013, for Education Expenditure as percentage of Government Expenditure and for Education Expenditure as percentage of GDP from 2000-2012. (These figures are self-constructed on the basis of Supplementary Table A)

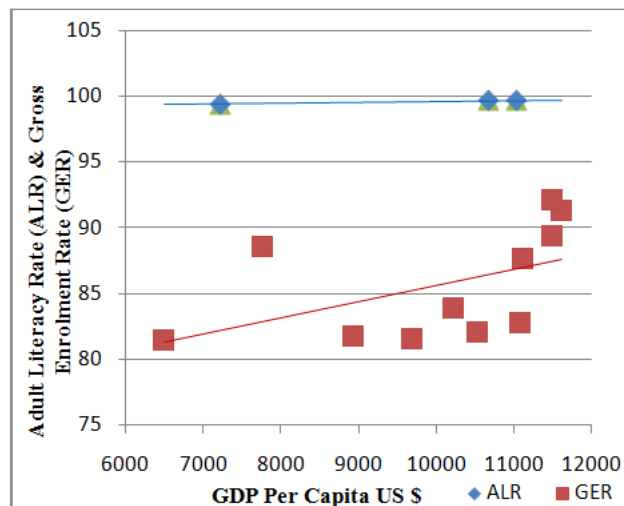


Figure 3: Relation of GDP Per Capita with Adult Literacy Rate & Gross Enrolment Ratio for Russia

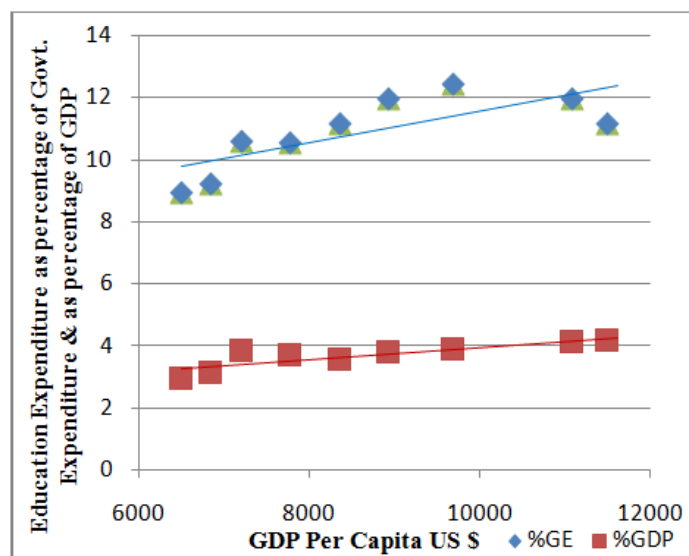


Figure 4: Relation between GDP Per Capita & Education Expenditure for Brazil

*Data for GDP per capita ranges from 2000-2015, for Education Expenditure (as %age of Government Expenditure & as %age of GDP) from 2000-2012. But, data for Adult Literacy Rates was available only for 2002, 2010 & 2015. (These figures are self-constructed on the basis of Supplementary Table B)

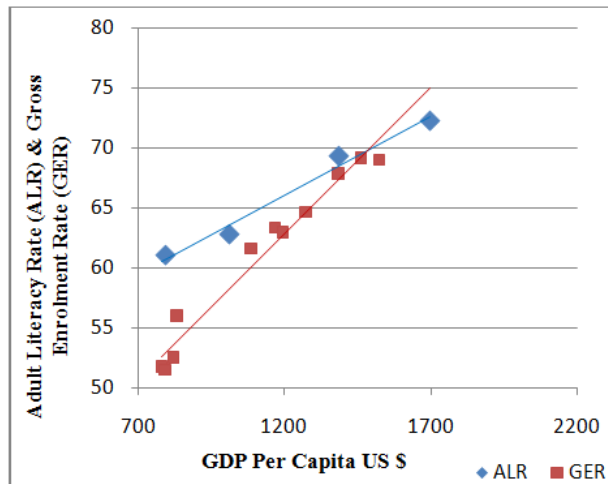


Figure 5: Relation of GDP Per Capita with Adult Literacy Rate & Gross Enrolment Ratio for India

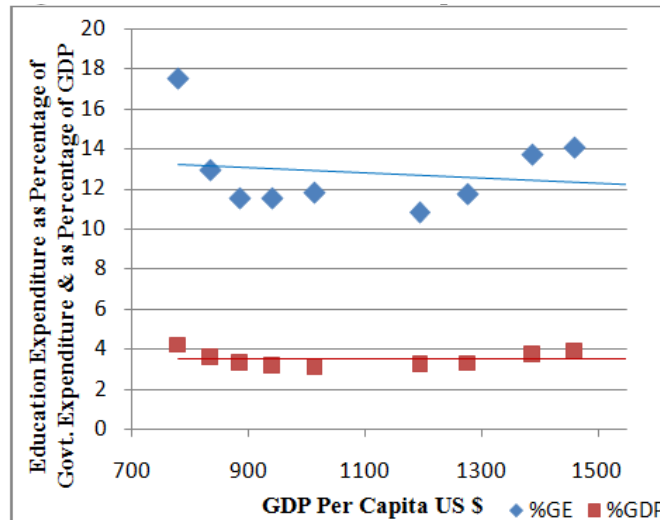


Figure 6: Relation between GDP Per Capita & Education Expenditure for India

*Data for GDP per capita ranges from 2000-2015, for GER from 2000-2013 and for Education Expenditure (as %age of Government Expenditure & as %age of GDP) for 2000-2012. But, data for ALR was available only for 2001, 2006, 2011 & 2015. (These figures are self-constructed on the basis of Supplementary Table C)

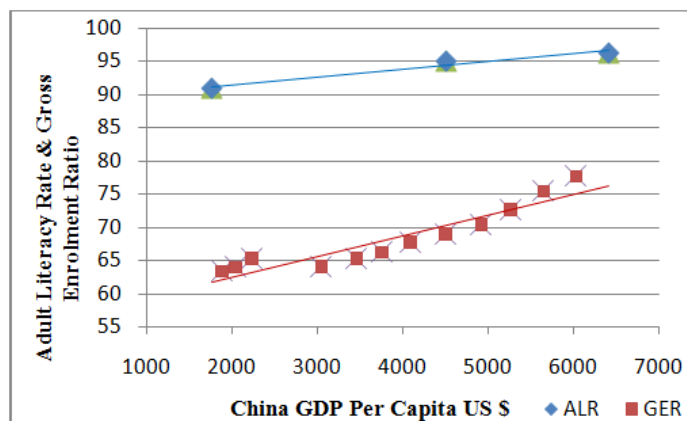


Figure 7: Relation of GDP Per Capita with Adult Literacy Rate & Gross Enrolment Ratio for China

*Data for GDP per capita ranges from 2000-2015, for GER from 2001-2014 and for ALR, it is available only for years 2000, 2010 & 2015. (Data for Education Expenditure as percentage of Government Expenditure and as percentage of GDP were not available for China for the concerned period). (This figure is self constructed on the basis of Supplementary Table D)

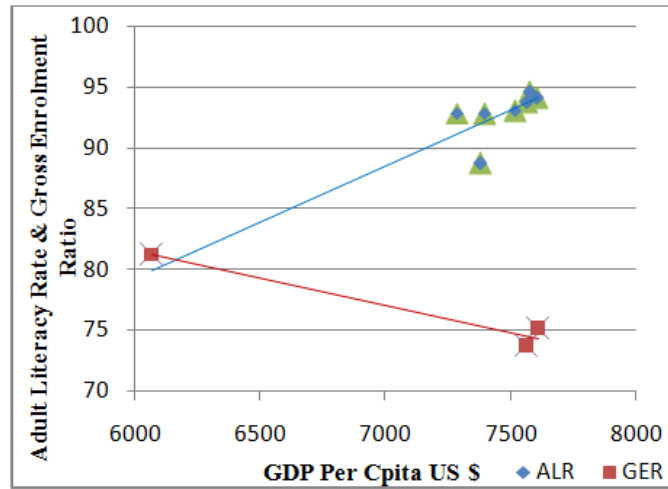


Figure 8: Relation of GDP Per Capita with Adult Literacy Rate & Gross Enrolment Ratio for South Africa

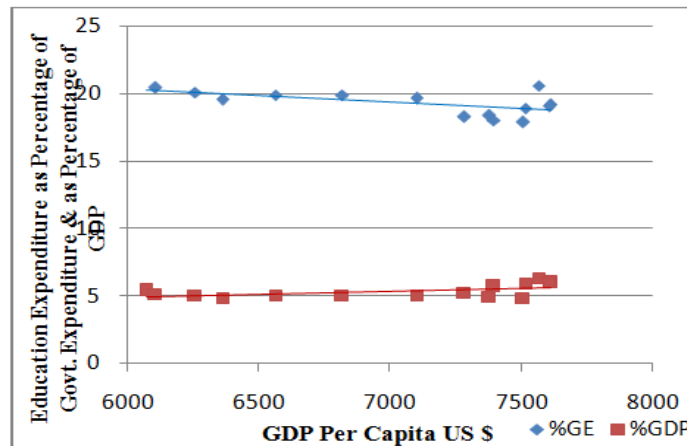


Figure 9: Relation between GDP Per Capita & Education Expenditure for South Africa

*Data for GDP per capita ranges from 2000-2015, for ALR from 2007-20015, for Education Expenditure (as %age of Government Expenditure & as %age of GDP) from 2000-2014. But, for ALR, it was available only for years 2000, 2012 & 2013. (These figures self-constructed on the basis of Supplementary Table E)

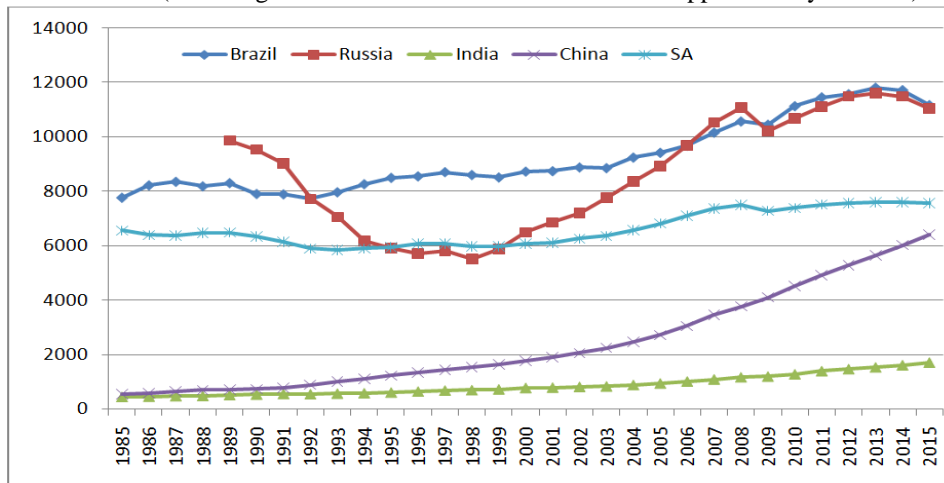


Figure 10: BRICS GDP Per-Capita (US \$, 2005 Constant)

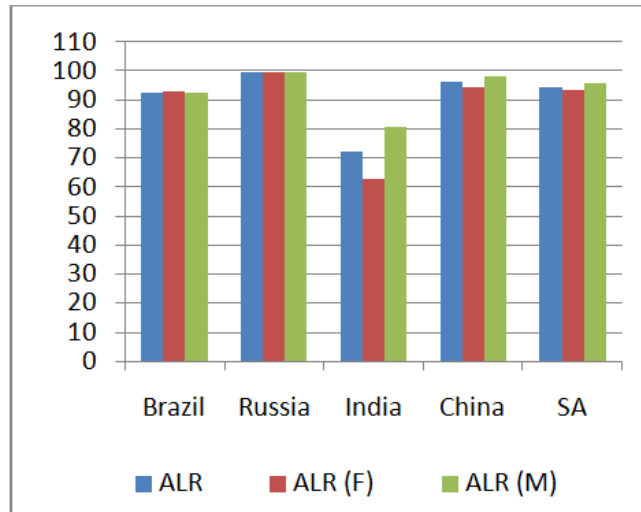


Figure 11: BRICS Adult Literacy Rate in 2015 (% of total population)

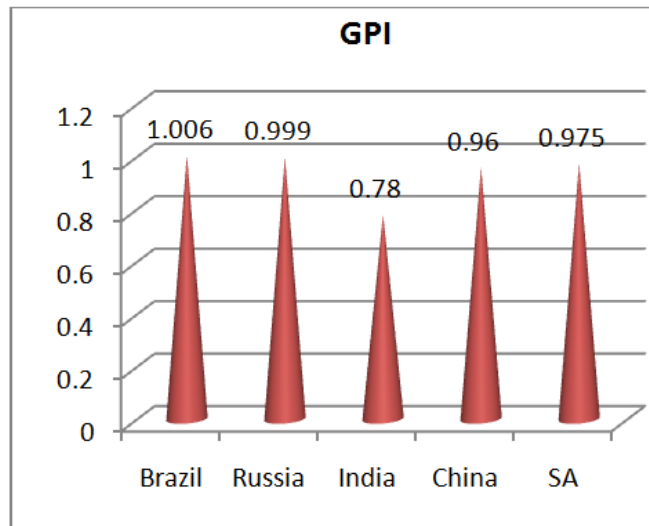


Figure 12: BRICS Gender Parity Index in 2015

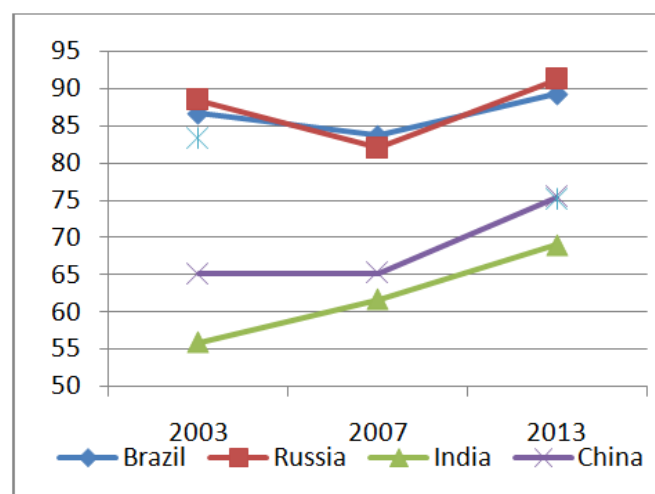


Figure 13: BRICS Gross Enrolment Ratio (GER)*

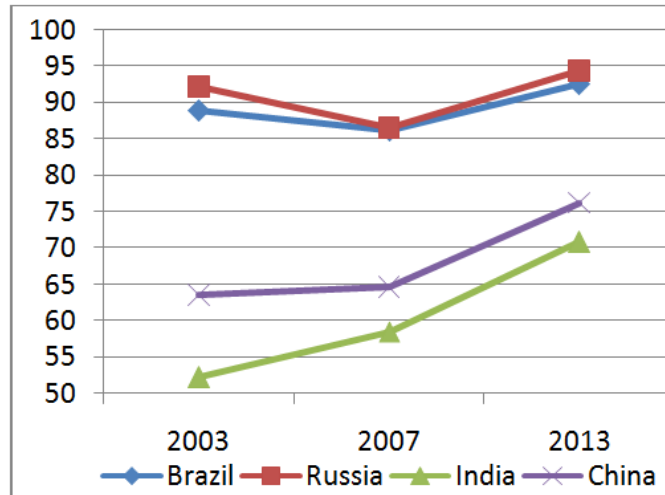


Figure 14: BRICS Gross Enrolment Ratio (Female)*

*Data for South Africa was unavailable for the period.

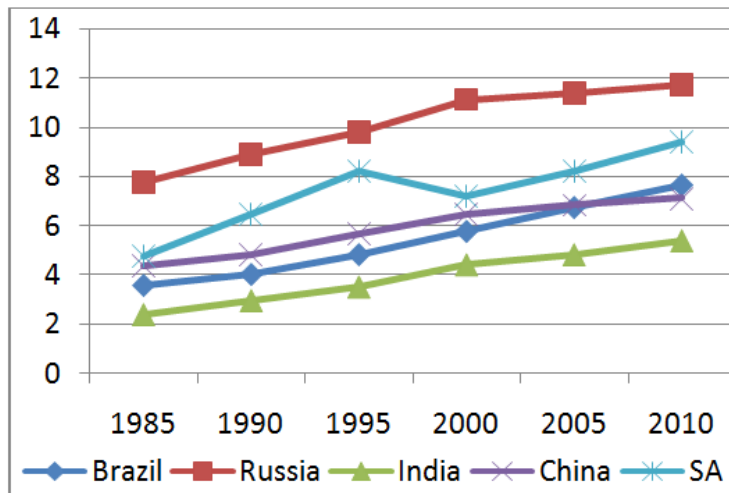


Figure 15: Average School Years (Male & Female)

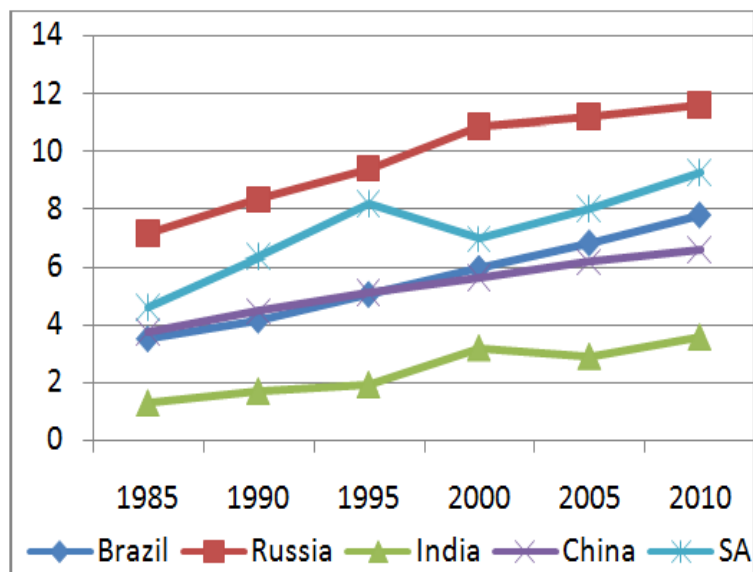


Figure 16: Average School years (Female)

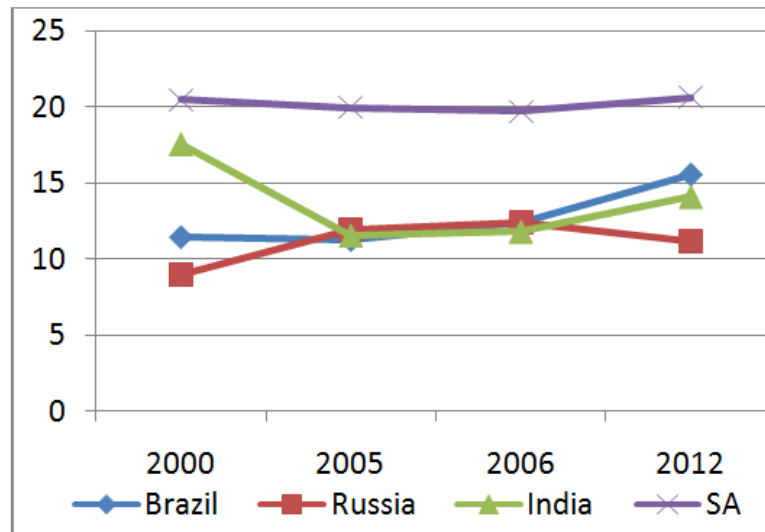


Figure 17: Expenditure on Education (% of Total Government Expenditure)*

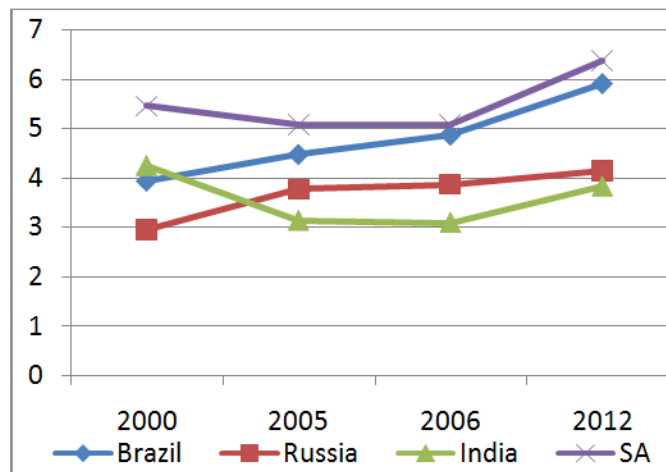


Figure 18: Expenditure on Education (% of GDP)

*Data for South Africa is for 2001 (not 2000).

(Figures 10 to 18 are self-constructed based on Supplementary Tables A, B, C, D and E)

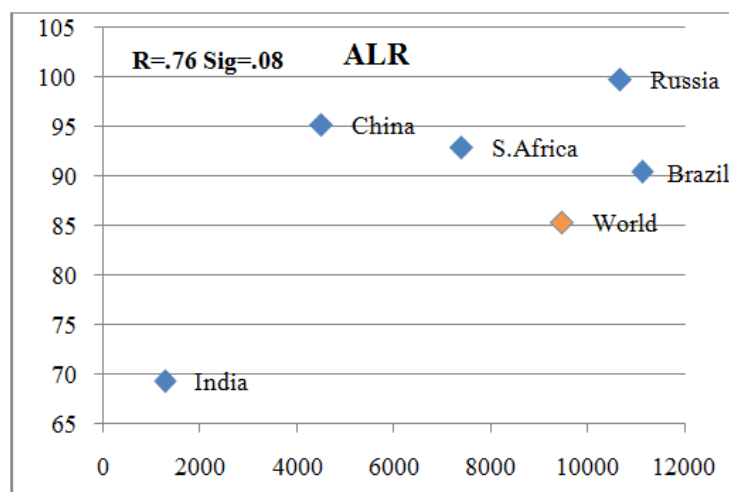


Figure 19: Comparison of BRICS Adult Literacy Rate with World Average

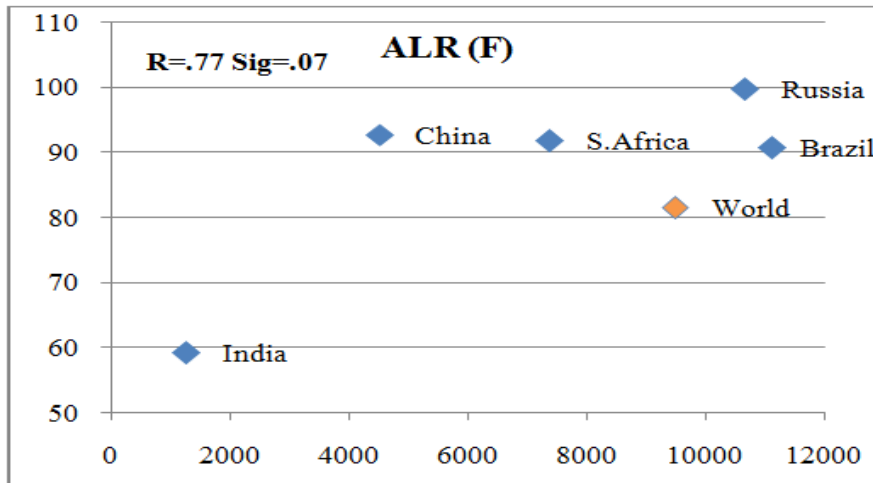


Figure 20: Comparison of BRICS Adult Literacy Rate (Female) with World Average

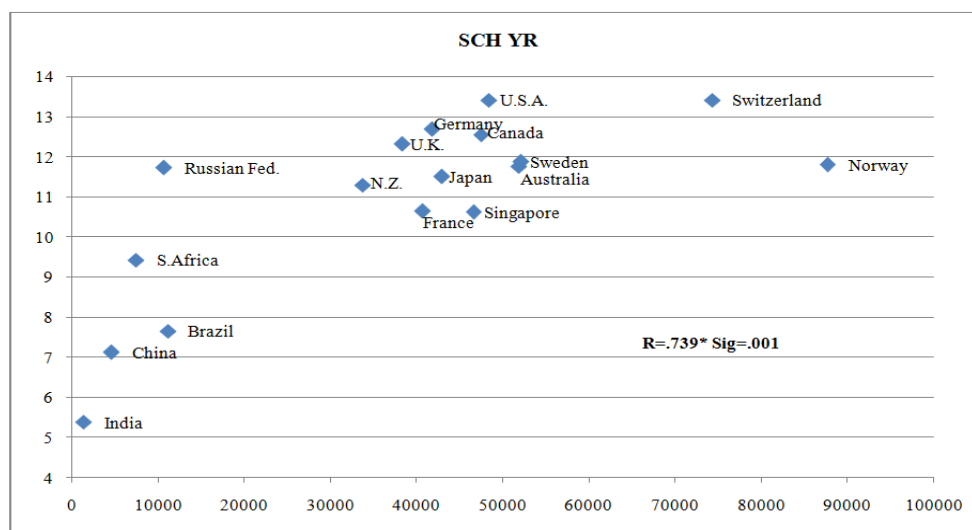


Figure 21: GDP Per Capita and Average School Years (Correlation Analysis & BRICS Comparison with Select Countries)
*Correlation is significant at the level 0.01 (2-tailed).

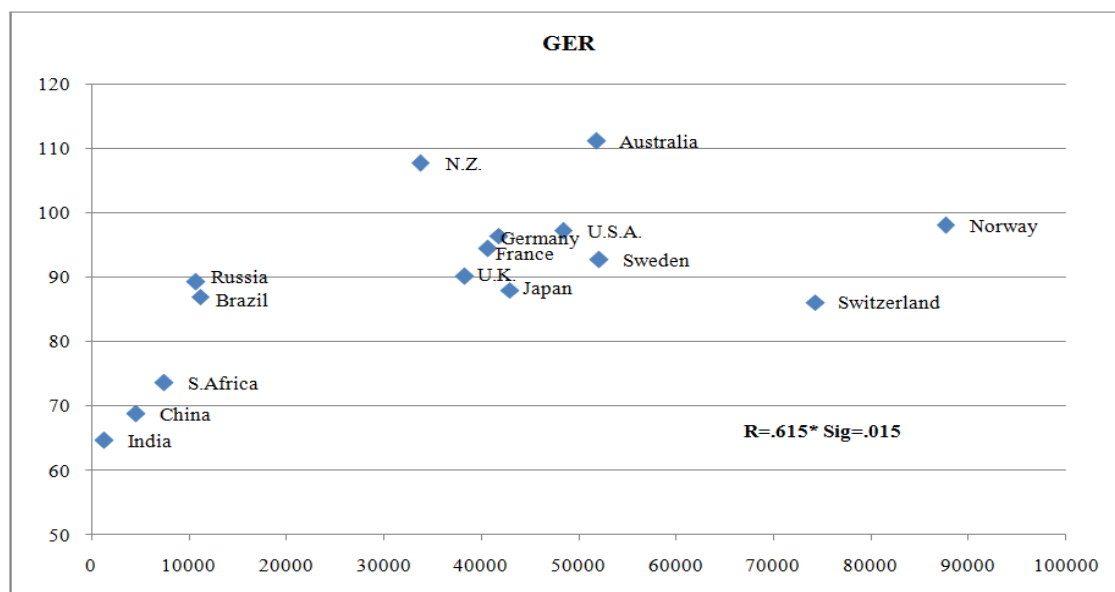


Figure 22: GDP Per Capita and Gross Enrolment Ratio (Correlation Analysis & BRICS Comparison with Select Countries)

*Correlation is significant at the 0.05 level (2-tailed).

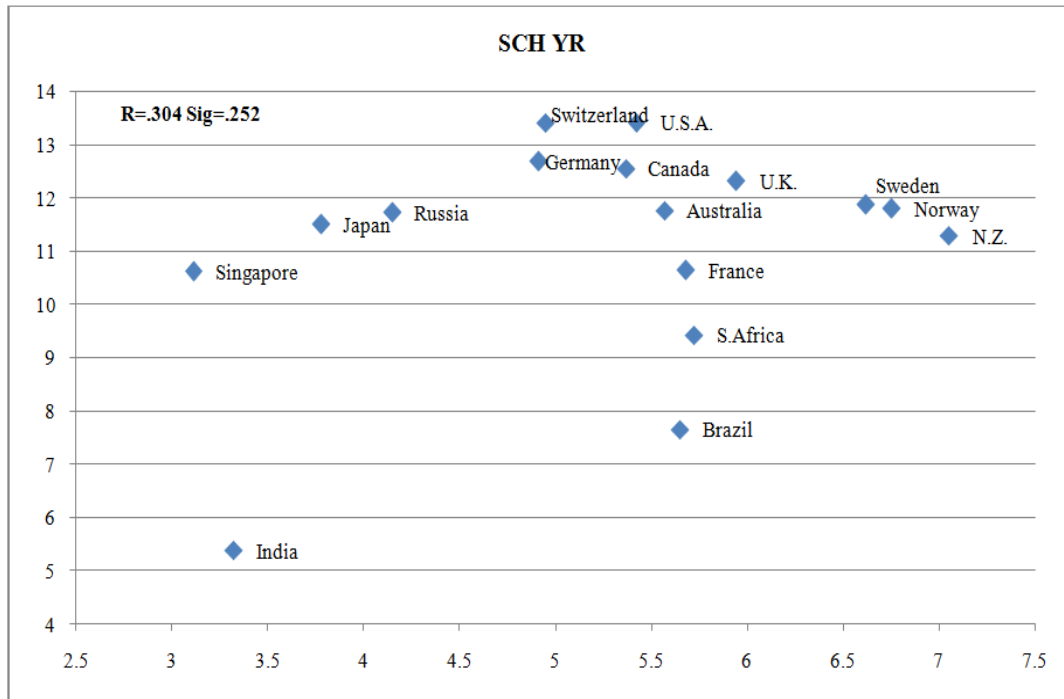


Figure 23: Education Expenditure (as % of GDP) and Average School Years (Correlation Analysis & BRICS Comparison with Select Countries)

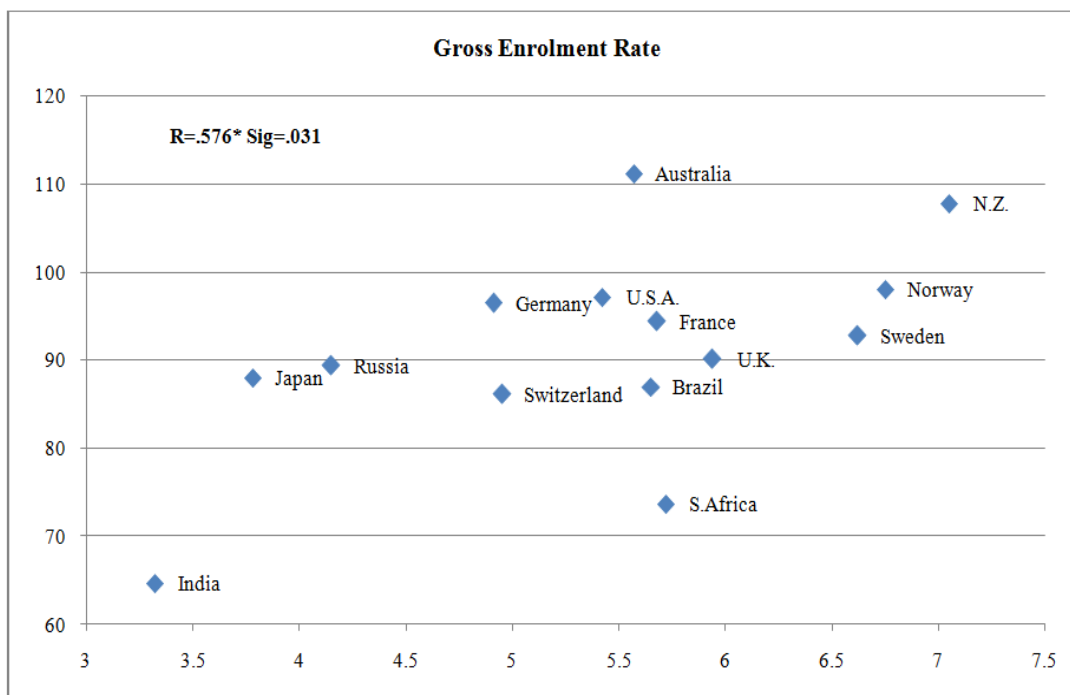


Figure 24: Education Expenditure (as % of GDP) and Gross Enrolment Ratio (Correlation Analysis & BRICS Comparison with Select Countries)

*Correlation is significant at the 0.05 level (2-tailed).
(Figures 19 to 24 are self-constructed based on Table 6)

(Tables)

Table 1: Correlation results for Brazil

	GDP Per Capita	Sig. (2-tailed)
ALR	0.899*	0.000
GER	0.244	0.496
Education Expenditure as percentage of GE	0.947*	0.000
Education Expenditure as percentage of GDP	0.973*	0.000

*Correlation is significant at the 0.01 level (2-tailed)

Table 2: Correlation results for Russia

	GDP Per Capita	Sig. (2-tailed)
ALR	0.999*	0.029
GER	0.495	0.122
Education Expenditure as percentage of GE	0.756*	0.018
Education Expenditure as percentage of GDP	0.844**	0.004

*Correlation is significant at the 0.05 level (2-tailed) **Correlation is significant at the 0.01 level (2-tailed)

Table 3: Correlation results for India

	GDP Per Capita	Sig. (2-tailed)
ALR	0.991*	0.009
GER	0.984*	0.000
Education Expenditure as percentage of GE	-0.156	0.689
Education Expenditure as percentage of GDP	0.009	0.981

*Correlation is significant at the 0.01 level (2-tailed)

Table 4: Correlation results for China

	GDP Per Capita	Sig. (2-tailed)
ALR	0.980	0.127
GER	0.932*	0.000

*Correlation is significant at the 0.01 level (2-tailed)

Table 5: Correlation results for South Africa

	GDP Per Capita	Sig. (2-tailed)
ALR	0.578	0.174
GER	-0.979	0.132
Education Expenditure as percentage of GE	-0.578*	0.031
Education Expenditure as percentage of GDP	0.539*	0.038

*Correlation is significant at the 0.05 level (2-tailed)

Table 6: BRICS Comparison of Education Parameters with Select Countries (2010)

Country	GDP PC	ALR	ALR (F)	GPI	SCH YR	SCH YR (F)	GER	GER (F)	%GE	%GDP
Brazil	11121.4	90.38	90.68	1.007	7.66	7.8	86.98*	89.81*	14.56	5.65
Russia	10675	99.68	99.65	0.999	11.73	11.59	89.36**	92.95**	11.15**	4.15**
India	1276.15	69.30 [#]	59.28 [#]	0.75	5.39	3.56	64.66	63.01	11.74	3.32
China	4514.94	95.12	92.71	0.95	7.12	6.61	68.84	68.48	-	-
S. Africa	7392.87	92.88	91.71	0.97	9.43	9.27	73.68**	77.07**	18.04	5.72
Australia	51845.7	-	-	-	11.77	11.81	111.20	115.07	14.33	5.57
Canada	47445.8	-	-	-	12.56	12.61	-	-	12.3	5.37
France	40705.8	-	-	-	10.64	10.40	94.43	96.52	10.07	5.68
Germany	41788.0	-	-	-	12.69	12.30	96.47 [^]	95.14 [^]	10.45	4.91
Japan	42935.3	-	-	-	11.52	11.34	88.00	86.98	9.46	3.78
New Zealand	33692.2	-	-	-	11.30	11.69	107.81	113.46	16.65	7.05
Norway	87646.3	-	-	-	11.80	11.87	98.04	102.18	15.31	6.75
Singapore	46569.7	95.86	93.77	0.96	10.63	10.12	-	-	16.56	3.11
Sweden	52076.4	-	-	-	11.89	12.00	92.82	97.14	13.35	6.62

Switzerland	74277.1	-	-	-	13.42	12.97	86.12	85.29	15.95	4.95
U.K.	38292.9	-	-	-	12.32	12.15	90.12	92.68	12.96	5.94
U.S.A.	48374.1	-	-	-	13.42	13.44	97.17	102.60	13.17	5.42
World	9481.6	85.31	81.48	0.91	-	-	69.92	69.20	-	-

*Figures are for 2009 ** Figures are for 2012 #Figures are for 2011 ^Figures are for 2015.

Source: World Bank Database

**(Supplementary Tables)
(Only for Reference, NOT to be included in the Paper)**

Table A: Education Statistics for Brazil

Year	GDP PC	ALR	ALR (F)	ALR (M)	GPI	SCH Y	SCH Y(F)	GER	GER (F)	%GE	% GDP
1985	7773					3.59	3.51				
1986	8224										
1987	8353.9										
1988	8189.3										
1989	8306.2										
1990	7909.8					4.04	4.16				
1991	7896.9										
1992	7735.5										
1993	7971.5										
1994	8268.5										
1995	8501.3					4.84	5.05				4.47
1996	8555.1										
1997	8709										
1998	8604.1									11.63	4.74
1999	8512.8									9.60	3.78
2000	8730.2	86.37	86.50	86.23	1.003	5.78	5.95			11.45	3.94
2001	8743.9									10.61	3.84
2002	8880.2							90.68	92.00	9.64	3.74
2003	8855.2							86.68	88.88		
2004	9240	88.62	88.81	86.41	1.005			86.10	87.96	10.39	3.97
2005	9416.4					6.75	6.83	85.67	87.66	11.26	4.48
2006	9675.4	89.62	89.86	89.35	1.006					12.42	4.87
2007	10151.8	90.01	90.23	89.77	1.005			83.71	86.08	13.22	4.98
2008	10560.2	90.04	90.22	89.84	1.004			86.7	89.41	14.08	5.27
2009	10443.3	90.30	90.41	90.17	1.003			86.98	89.81	14.72	5.47
2010	11121.4	90.38	90.68	90.06	1.007	7.66	7.8			14.56	5.65
2011	11446.6	91.41	91.63	91.17	1.005			88.41	90.92	15.27	5.74
2012	11557.3	91.34	91.62	91.03	1.007			88.45	91.53	15.57	5.91
2013	11797.4	91.48	91.77	91.18	1.006			89.35	92.47		
2014	11705.4										
2015	11159.3	92.59	92.87	92.30	1.006						

Source: World Bank Database

Table B: Education Statistics for Russia

Year	GDP PC	ALR	ALR (F)	ALR (M)	GPI	SCH Y	SCH Y(F)	GER	GER (F)	%GE	% GDP
1985						7.76	7.17				
1986											
1987								85.53			
1988								87.43			
1989	9867.4	97.99	96.76	99.46	0.97			88.12			
1990	9534.5					8.91	8.36	87.47			
1991	9033.1							86.80			
1992	7717.1							85.73			
1993	7056.2							83.91			
1994	6176.9							81.56			
1995	5919.3					9.78	9.43	79.84			
1996	5714.56							79.79			
1997	5804.1							80.58			
1998	5505.6							80.46			
1999	5876.2							81.45			
2000	6491.01					11.13	10.88			8.95	2.94
2001	6850.52									9.21	3.11
2002	7208.58	99.44	99.23	99.69	0.995					10.58	3.84
2003	7769.68							88.52	92.17	10.53	3.68
2004	8360.82									11.18	3.55
2005	8927.91					11.41	11.22	81.76	86.03	11.95	3.77
2006	9687.5							81.52	85.89	12.43	3.87
2007	10532.3							82.07	86.53		
2008	11089.9							82.72	87.28	11.96	4.10
2009	10219.5							83.83	88.54		
2010	10675	99.68	99.65	99.73	0.999	11.73	11.59				
2011	11121.5							87.58	92.15		
2012	11493.4							89.36	92.95	11.15	4.15
2013	11615.7							91.25	94.39		
2014	11490.9							92.13	94.61		
2015	11038.8	99.72	99.71	99.73	0.999						

Source: World Bank Database

Table C: Education Statistics for India

Year	GDP PC	ALR	ALR (F)	ALR (M)	GPI	SCH Y	SCH Y(F)	GER	GER (F)	%GE	% GDP
1985	452.6					2.39	1.3	45.52	34.59		
1986	465.8										
1987	477.4							47.02	36.79		
1988	485.58							46.27	36.49		
1989	521.04							46.60	37.13		
1990	540.51					2.96	1.71	47.79	37.96		
1991	558.72	48.22	33.73	61.64	0.55						
1992	553.24										
1993	572.01										
1994	587.51										
1995	614.58					3.51	1.94	51.55	43.53		
1996	648.56							51.49	43.74		
1997	684.41							51.55	44.18	10.74	2.83
1998	698.91									14.78	3.51
1999	728.56									17.64	4.34
2000	778.77					4.41	3.19	51.68	45	17.50	4.25
2001	794.48	61.01	47.84	73.41	0.65			51.56	45.18		
2002	818.51							52.47	46.2		
2003	835.38							55.94	52.33	12.92	3.55
2004	886.26									11.55	3.29
2005	941.54					4.82	2.9			11.53	3.13
2006	1012.44	62.75	50.82	75.19	0.68					11.78	3.09
2007	1089.33							61.66	58.54		
2008	1165.45							63.37			
2009	1193.21							62.88	61.23	10.82	3.21

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2010	1276.15					5.39	3.56	64.66	63.01	11.74	3.32
2011	1387.88	69.30	59.28	78.88	0.75			67.77	65.76	13.68	3.72
2012	1460.48							69.07		14.06	3.83
2013	1522.83							69.04	70.85		
2014	1603.74										
2015	1698.94	72.23	62.98	80.94	0.78						
2016	1805.58										

Source: World Bank Database

Table D: Education Statistics for China

Year	GDP PC	ALR	ALR (F)	ALR (M)	GPI	SCH Y	SCH Y(F)	GER	GER (F)	%GE	% GDP
1985	534.5					4.38	3.73	49.13			2.02
1986	573.6							49.6			2.08
1987	630.61							50.21			1.82
1988	690.67							50.09			1.77
1989	708.83							49.51			
1990	725.98	77.79	68.07	87.03	0.78	4.83	4.45	49.24			
1991	782.51							49.69			
1992	883.33							50.75			1.66
1993	994.95							51.88			1.67
1994	1112.4							53.12	49.94		1.99
1995	1221.4					5.69	5.1	55.47			1.85
1996	1328.59							58.11			1.86
1997	1436.4							60.04			
1998	1534.4									14.55	1.85
1999	1637.1									12.63	1.90
2000	1761.14	90.92	86.53	95.14	0.91	6.47	5.64				
2001	1893.48							63.42			
2002	2051.82							64.01			
2003	2243.4							65.12	63.52		
2004	2454.81										
2005	2717.46					6.86	6.18				
2006	3045.21							63.89	63.20		
2007	3459.36							65.20	64.67		
2008	3772.89							66.29	66		
2009	4100.81							67.58	67.56		
2010	4514.94	95.12	92.71	97.48	0.95	7.12	6.61	68.84	68.48		
2011	4919.53							70.29	70.19		
2012	5275.05							72.52	72.73		
2013	5652.39							75.49	76.21		
2014	6032.62							77.74	78.96		
2015	6416.18	96.36	94.47	98.16	0.96						

Source: World Bank Database

Table E: Education Statistics for South Africa

Year	GDP PC	ALR	ALR (F)	ALR (M)	GPI	SCH Y	SCH Y(F)	GER	GER (F)	%GE	% GDP
1985	6559					4.78	4.6				
1986	6394										
1987	6367.9										5.33
1988	6478.8										5.46
1989	6487.4							69.39	69.92		5.01
1990	6336.5					6.49	6.36	70.67	71.35		5.29
1991	6144							72.49	73.36		5.92
1992	5888.5										
1993	5836.6										6.07
1994	5896							78.35	78.83		5.81
1995	5948.8					8.22	8.17				
1996	6068.02	82.40	80.93	84.07	0.96						5.58
1997	6084.9										
1998	5973.3							82.22			
1999	5970.7							81.30			5.88
2000	6069.29					7.23	6.97				5.44
2001	6106.9									20.47	5.16

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2002	6257.86									20.10	5.07
2003	6360.41									19.59	4.86
2004	6563.54									19.93	5.07
2005	6817.96					8.23	8.02			19.93	5.06
2006	7100.86									19.68	5.07
2007	7377.57	88.72	87.04	90.72	0.96					18.38	4.97
2008	7504.97									17.91	4.87
2009	7282.48	92.89	91.77	94.12	0.975					18.30	5.25
2010	7392.87	92.88	91.71	94.14	0.97	9.43	9.27			18.04	5.72
2011	7515.18	93.10	92.05	94.25	0.98					18.92	5.96
2012	7563.68	93.73	92.59	94.96	0.975			73.68	77.07	20.62	6.37
2013	7609.54							75.14	78.53	19.16	5.99
2014	7603.54	94.14	93.07	95.29	0.98					19.11	6.06
2015	7575.24	94.6	93.43	95.83	0.975						

Source: World Bank Database

Note: World Bank Database was accessed through the website <http://data.worldbank.org/>

Note: GDP PC is Gross Domestic Product Per Capita, ALR is Adult Literacy rate (15+ years), F is Female, M is Male, GPI is Gender Parity Index, SCH Y is Average Years of Total Schooling (Age 25+), GER is Gross Enrolment Rate (Primary to tertiary), GE is Government Expenditure.

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