

## Government Spending on Education and Closing the Gender Gap: The Case of Developing Economies

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### Abstract

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Gender equality in education is considered one of the most challenging of the Sustainable Development Goals (SDGs) for developing economies to reach. Using panel least square with regional dummies for a sample of developing countries over the period 1990 to 2014, the study estimates the factors responsible for narrowing down the gender gap in education at the primary, secondary, and tertiary levels. Among other factors, the study focuses on the response of the gender gap in education to economic growth, information communication technology, openness, and public spending on education, the size of the female population, and regional dummies. We estimate the impact of each factor on closing the gender gap in education and predict the ability of these countries to close the gap by 2030, the conclusion of the SDGs, if they depend solely on government spending on education and no other factor. The results show that almost all developing countries in the sample will be able to bridge the educational gap for the three levels of education by 2030. For the few off-track countries, increasing government spending alone will not close the gender gap in education; they must implement other measures such as expanding the use of telephones, cell phones, and internet in order to accelerate the closure of the gender gap in education.

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### Introduction

Substantial benefits accrue to communities in which women are educated. Educated mothers tend to support equality between sons and daughters in health care, food, and learning opportunities, which extends the benefits into the next generation. They also have fewer children. Thus countries that educate their women tend to have reduced poverty rates, greater human capital, and substantial economic growth (Qaisrani & Ahmed 2014:6). Unfortunately, gender equality in education is considered one of the most challenging goals for developing countries to reach.

Economic growth has a documented role in bridging the gender gap in education. Substantial research highlights the factors that complement economic growth in terms of this goal. Proponents of either information communication technology (ICT) in schools or public expenditure on education, for example, argue these factors complement economic growth by facilitating and spreading access to education and that widening ICT infrastructures improves the quality of education which all support the gender gap in education. Supporters of globalization claim that openness, liberalization of trade, and international financial flows must complement economic growth to increase the possibility of overcoming gender inequality in education. On the other hand, scholarship notes that economic growth does not support gender equality in education without a redistributive social spending policy (Bourguignon, et al. 2008) and that such benefits do not emerge until the later stages of economic growth (Dollar & Gatti 1999:13). Globalization may put downward pressures on public spending, which negatively impacts female education (Seguino 2007:1).

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An obstacle to using ICT to bridge the gender gap in particular is that poor and costly infrastructure, illiteracy, and other social obstacles make it a luxury good for the majority of people in developing countries (Gurumurthy 2004:23).

Most economists see economic growth as a major factor in increasing gender equality in education through poverty reduction and increasing job opportunities. Economic growth increases the available resources to the government that can be allocated to support the poor and secure them against disease and hunger, and the lives of families, including females, reflect this (Duflo 2011), which narrows the gender gap overall (Seguino 2007:3). Neoclassical theory suggests that increasing economic growth provides more job opportunities for women and therefore reduces the gender gap. However, social factors also produce gender inequality, and economic growth is therefore not sufficient to improve gender equity (Kucuk 2013:76; Seguino 2006:24). Because of this, theorists have pondered other factors that can impact gender equality in education, thereby reducing gender inequality.

For instance, ICT may increase female education by facilitating access to education and improving the quality of education. E-learning through Internet access, radio, television, or video conferencing can facilitate access (Qaisrani & Ahmed 2014:5). Flexibility of access and studying times characterizes ICT-influenced education processes; ICT also makes it easier to reach women in rural and remote places as well as those who face other social barriers to traditional classroom formats (Chen 2004:10). Even if resources do not permit reliance on ICT as a learning tool, it can be used to spread awareness of modern teaching methods about the importance of female education and to spread a culture of equality and reduce discrimination against women, which is likely to increase female education (Gurumurthy 2004:39; Qaisrani & Ahmed 2014:5).

ICT's role in increasing access to education largely accrues benefits to females because of the fact that countries with insufficient schools to serve all children typically serve boys first. Thus, government spending on public education to increase available classroom spots also benefits females. Similarly, in developing countries female enrollment in school is more sensitive to the cost of elementary education than male enrollment; therefore government subsidies that decrease costs increase female education. However, raising the quality and efficiency of the educational process through government spending does not narrow the educational gap between males and females (Chen 2004:10-12).

Supporters of globalization argue that economic growth can change families' incentives to spend on education (Shultz 2006:7), they argue for trade liberalization, capital flows, and openness as a means to attain gender equality (Seguino 2007:1). Trade liberalization and globalization increase trade opportunities and output (Arora 2012:148), which increases job opportunities. Likewise, opening new industries and new markets to accommodate products through globalization drives wages and improved working conditions. Families, they posit, will invest more in women's human capital if they anticipate job opportunities for their daughters. However, institutional, economic, and social factors may counteract this mechanism in terms of closing the gender gap. Research shows globalization has a limited impact on women's participation in the workplace, especially in rural areas (Arora 2012:148-150). Women tend to continue to work in the informal sector, which is characterized by low barriers to entry and does not require education. Increased incentives to educate women are minimal when globalization does not offer women opportunities outside of low wage sectors such as the garment industry, which do not pay educated women higher than uneducated women (UNCTAD 2008:11-13). Moreover, research shows that trade reduces gender equality measured by the female participation in the labor force decreases (Seguino 2007:1). In many developing countries, an increase in exports of raw materials resulting from trade liberalization has coincided with a decline of women's health and education, as the job opportunities it provides are low-skilled (Potrafke and Ursprung 2011:2; Shultz 2006:7). To summarize, it is difficult to predict the impact of globalization on gender equality in education.

This paper is designed to shed light on the factors that promote gender equality in education. It presents research addressing 54 developing economies and examines the role of government spending on education, projecting their ability to close the gender gap by the year 2030, as the SDGs stipulate. The paper is divided into five sections. Section 1 presents the literature review; data and estimation methodology appear in section 2; section 3 discusses the estimation results; conclusion and policy implications of the study appear in section 4; the fifth part consists of the references and the appended data.

## **I. Literature Review**

While empirical studies reflect a wide range of factors that might reduce gender inequality in education, most describe economic growth as promoting equality.

For instance, Dollar and Gatti (1999) find a convex relation between economic growth and the gender gap in education in secondary schools in a sample of 100 poor and rich countries. The study finds that when a country moves from low-income to middle-income, measured by Gross National Income (GNI), it experiences limited closure of the gap, but that moving from middle-income to high-income has a far greater effect. The study also finds correlations between religion, regional factors, and civil liberty and gender equality in education and health. The study concludes that gender inequality in education has a negative impact on economic growth.

Forsythe, et al. (2003) examine the impact of economic growth on gender inequality for a group of developed and developing countries over the period 1974-1979. The study creates a gender inequality index that covers three dimensions of inequality, covering education, health, and income. The results of the study indicate that economic growth significantly reduces gender inequality. It also finds that countries with higher gender inequality and lower per capita GDP at the beginning of the study period experience the highest impact of growth on gender inequality. The study also concludes that government spending on education significantly reduces gender inequality and that the effect is particularly pronounced in countries with relatively high public spending on education in year 1979. The study also finds that globalization, measured by the share of exports to GNP, has an insignificant effect on gender inequality index constructed in the study.

Chen (2004) explains the mechanisms of impact of economic growth and ICT on gender equality for a sample of 78 countries over the period 1960-2002. The study concludes that ICT has a fundamental impact on gender equality in education and employment. Moreover, the study finds a correlation between economic growth and gender equality, which suggests ICT could improve society by improving gender equality and therefore economic growth, which has myriad benefits to society. But Chen also finds that government spending on education has no significant effect on gender equality in education. Along the same lines, Gurumurthy (2004) confirms previous studies in that it finds ICT increases gender equality in employment, health outcomes, and education. It attributes ICT's contribution to social transformation and closing gender gap to ease of access and efficiency at a low cost.

Taking up the question of trade liberalization, Shultz (2006) examines the relationship between trade liberalization and gender equality in education and health. He finds that trade restrictions in the form of tariffs, quotas, or foreign exchange distortions negatively affect women's education and health, but that liberalization and openness provide more job opportunities for women, which promotes greater educational enrollment and health outcomes and thus helps to close the gender inequality gap. Furthermore, Qaisrani and Ahmed's study (2014) of a group of lower and lower-middle-income countries, measured by per capita income, over the period 2000-2010 concludes that ICT has a limited impact on gender equality in education because those countries that have it had poor integration of it into the community and unreliable access. Moreover, they find that in the countries in their sample the government provides free primary education but not secondary or tertiary education, so growth in average per capita income only affects gender equality at higher levels, but public spending on education significantly increases gender equality in primary education. The study finds that the average years of schooling of the adult population predicts gender equality more strongly than other factors including per capita income, ICT, and public spending on education.

The study also finds that gender equality at low levels of education has a greater impact on economic growth than gender equality at higher levels of education. Along the same lines, Seguino's (2006) study of 101 countries divided into 4 quartiles based on per capita income and ranging from the poorest to the richest countries over the years 1980-1985 examines the relation between economic growth and Dijkstra's (2002) gender equality index, which covers five dimensions of the gender gap in education, life expectancy, senior positions, participation in the labor force, and parliamentary seats. The study concludes that economic growth negatively correlates with gender equality in countries that are located in the first and second quartile and positively correlated in countries in the third and fourth quartile. At the sub-national level, Arora (2012) studied the relationships between economic growth and globalization and gender equality in India among individual states. The study finds that states with high per capita GDP had higher levels of gender inequality, but high globalization overall correlates with low gender equality. Balamoune-Lutz (2007) uses literacy as an indicator of gender equality for a group of 62 countries over the period 1990-1999. The study concludes that economic growth and globalization negatively affect gender equality in Sub-Saharan African countries but have an insignificant effect in non Sub-Saharan countries.

Seguino's (2007) study of 21 Latin America and Caribbean countries over the period 1970-2000 finds economic growth and the annual growth rate of government spending has an insignificant effect on gender equality in education, while globalization and openness, measured as annual growth in exports and the ratio of total exports and imports to GDP, have a negative impact.

In a study of 22 Middle East and North African countries over the period 1990-2007, Emara (2014) emphasizes that economic growth will not close the gender gap in education by 2015, as the MDGs propose. The study asserts that governments must stimulate international trade and increase spending on both infrastructure and education to meet the goal.

## II. Data & Methodology

The data set consists of a panel of country observations regarding 54 developing economies collected from the World Development Indicators of the World Bank's database over the period 1990-2014. Table 1 of the appendix provides the names of the countries, which span 4 continents. The data set includes the gender parity index (GPI), measuring gender equality by the ratio of boys to girls enrolled in primary, secondary, and tertiary schools respectively.

The list of determinants of GPI includes the total government spending on education (as a percent of GDP), growth rate of GDP (constant 2010 US dollars), openness variable measured as the sum of exports and imports as a percent of GDP, ICT variable measured using the principal component analysis of three ICT variables including fixed telephone subscriptions (per 100 people), internet users (per 100 people), and mobile cellular subscriptions (per 100 people). The data set also includes female population (as a percent of total population) and a regional dummy that takes 1 for Europe, Middle East, and North African countries, 2 for Latin American countries, and 3 for Asian countries.

Using panel least squares with regional dummy, we estimate the GPI for the sample of 54 developing countries. Following Panda and Kumar's methodology (2007), as Emara (2014) did, we analyze the extent to which government spending in education along supports gender parity in our sample of developing countries by 2030. The base model is represented by equation (1) to estimate the determinants of the gender parity index.

$$GPI_{i,t} = b_0 + b_1 CV_{i,t} + d_i + e_{i,t} \quad (1)$$

The variable  $GPI_{i,t}$  is the gender parity index defined as primary (GPIP), secondary (GPIS), and tertiary (GPIT) school enrollment. The variable  $CV_{i,t}$  is the set of control variables including government spending on education (as a percent of GDP), GDP growth rate, the openness measure, the ICT variable, and female population. The variable  $d_i$  represents regional dummy. The subscripts  $i$  and  $t$  represent the country and the time period, respectively. Next, in order to project the gender parity index for the year 2030, we use the following computation,

$$GPI_{2030} = GPI_t (1 + bb)^{2030-k} \quad (2)$$

where  $GPI_{2030}$  is the gender parity index in the year 2030,  $GPI_t$  is the latest value of the index (or year 2014 for the majority of countries in the sample),  $b$  is the coefficient of government spending on education estimated from our results of Table 1 below, and  $k$  is the years left until 2030, which is 16 years based on our latest available data for the majority of countries in the sample. The coefficient  $b$  is the government spending on education growth rate over the period 1990-2014 computed using the following semi-log trend function,

$$GSE_t = a + bt \quad (3)$$

Where  $GSE_t$  is the government spending on education (as a percent of GDP),  $a$  is the constant of the equation, and  $t$  is the years from 1990 to 2014. Finally, to close the gender gap in education, the required yearly growth in government spending (as a percent of GDP) is computed as follows,

$$b_{req} = \left[ \left( \frac{GPI_{2030}}{GPI_t} \right)^{1/(2030-k)} - 1 \right] \cdot b \quad (4)$$

Where the definition of the coefficient is the same as previously defined in equation 2.

## III. Estimation Results

The model in equation (1) is estimated for each GPI in a turn. As the results of Table (1) shows, economic growth has a positive statistical significant impact on bridging the gender gap for the three levels of education. More specifically, a one percent increase in economic growth leads to an increase of 0.00068, 0.00768, and 0.0687 percent in the GPIP, GPIS, and GPIT, respectively.

Furthermore, the results show that the increase in government spending on education has a statistically significant positive impact on the GPI for the three levels of education. For instance the government spending on education coefficients is 0.00542, 0.00789, and 0.0971 percent for the GPIIP, GPIS, and GPIT, respectively. In addition, the openness index shows a statistically insignificant impact on the gender gap for all three levels of education. On the other hand, the ICT index has a positive significant impact for all three levels. For instance, a one-unit increase in the ICT variable leads to an increase of 0.0272, 0.0353, and 0.515 for the GPIIP, GPIS, and GPIT, respectively. Next, the coefficient of female population shows that the increase in female population (as percent of total population) increases school enrollment for the three levels of education. More specifically, a one percent increase in female population increases the GPI by 0.0179, 0.0185, and 0.00742 for GPIIP, GPIS, and GPIT, respectively. Finally, the results show that a significant regional effect for the primary and the tertiary levels but not on the secondary level among the countries in the sample. Finally, the R-square shows that all repressors have high explanation to the variability of the three gender parity indices.

Next, using the results displayed in Table 1 and following the approach of Panda and Kumar (2007), we perform a gap analysis is performed to explore the extent to which the increase in government spending on education (as a percent of GDP) can close the gender gap in education by the year 2030. In general, the results of the gap analysis suggest that most of the countries in the sample will be able to close the gap by the year 2030, but a sizeable minority of countries will lag behind, with the least promising results on the tertiary level.

**Table 1: Gender Parity Models**

VARIABLES	(1) GPIIP	(2) GPIS	(3) GPIT
Econ. Growth	0.00648*** (0.00168)	0.00768*** (0.00270)	0.0687*** (0.0169)
Government Sending on Education	0.00542*** (0.00145)	0.00789*** (0.00303)	0.0971*** (0.0181)
Openness	0.00663 (0.00968)	-0.009.76 (0.00776)	-0.0396 (0.00550)
ICT	0.0272*** (0.00008)	0.0353** (0.000141)	0.515*** (0.00139)
Female Population	0.0179*** (0.000325)	0.0185*** (0.000547)	0.00742** (0.00350)
Regional Dummy	0.00786** (0.00343)	0.00593 (0.00736)	-0.0692** (0.0316)
Observations	489	472	412
R-squared	0.996	0.987	0.757

Notes: \*\*\*, \*\* and \* denotes statistical significance at the 1%, 5% and 10% levels respectively. Numbers in round parentheses (.) are the robust standard errors.

For instance, the majority of the countries in the sample will achieve more than 95% of the targeted level, while 5 countries namely Yemen, Iraq, Djibouti, Lebanon, and Dominican Republic will achieve only in the range of 79%-92% only of their targeted levels on the primary level, 6 countries namely Yemen, Iraq, Saudi Arabia, Djibouti, Morocco, and Qatar will achieve only in the range of 63%-89% of the targeted level under the secondary level, and 10 countries namely Yemen, Djibouti, Iraq, Kuwait, Korea, Haiti, Egypt, Turkey, Iran, and India will achieve in the range of 13%-92% of the targeted level at the tertiary level. More specifically, the results of Table 3 of the appendix shows the gap analysis for the off-track countries for the GPIIP, where 5 countries in the sample will not get even close to the targeted level on the primary level of education by 2030 if they depend only on government spending on education. As the table suggests, girls' enrollment in primary education in Yemen, Djibouti, Panama, and Hungary is likely to decrease in the range of 1%-5%. GPIIP in Iraq, Lebanon, South Africa, and Libya are projected to stay the same. The Dominican Republic, Algeria, Qatar, Morocco, El Salvador, Guatemala, Bolivia, Paraguay, and Syria will only have a 1% improvement in parity at the primary level.

Table 4 shows how much government spending must increase for the off-track countries<sup>3</sup> to close the gender gap in education by 2030. For example, countries such as Yemen, Djibouti, Panama, Kuwait, Hungary would require an increase in the range of 0.17% - 2.5% per year of government spending on education (as a percent of GDP) in order to close the gender gap by the year 2030. Similarly Table 5 shows that based on the projection of GPIS, 14 countries in our sample will be off-track by the conclusion of the SDGs in the year 2030. For instance, the GPIS is projected to be only 0.63 for Yemen, 0.75 for Iraq, 0.77 for Saudi Arabia, 0.79 for Djibouti, and 0.86 for Morocco, represent declines for Yemen and Djibouti. For countries such as Yemen, Saudi Arabia, Djibouti, and Morocco closing the education gap for the secondary level by the year 2030 would require an increase in the range of 1.07% - 3.4% per year in government spending on education (as a percent of GDP) as shown in Table 6. Finally, Table 7 shows that only 10 countries will be off-track for the GPIT by the conclusion of the SDGs, with Yemen, Djibouti, and Iraq diverging the most. For example, by the year 2030 the GPIT of for Yemen, Djibouti, Iraq, and Kuwait is projected to be in the range of 0.13 - 0.69. As shown in Table 8, the increase in government spending on education (as a percent of GDP) for Yemen, Djibouti, Kuwait, and Korea is projected at about 0.12% - 1.10% per year.

#### IV. Conclusion

Using the government spending on education coefficient to project the performance of developing countries over the next 14 years, the study finds that the majority of countries will be able to close the gender gap in education under the three levels of education if they depend solely on government spending on education. The results are more promising for the primary level of education in that the majority of countries will be able to close the gap by the conclusion of the SDGs based on government spending alone. More specifically, using the growth in government spending to project the levels of GPIIP, GPIS, and GPIT and to estimate the required increase in government spending needed to close the gender gap in education by the conclusion of the SDGs in the year 2030, and based on 95% performance or better of targeted levels, 5 countries will be off-track for the GPIIP, 6 countries will be off-track for the GPIS, and 10 countries will be off-track for the GPIT if the countries depend only on government spending on education and not other factors. The results make sense given that in most of these off-track developing countries, boys drop out after the primary level of education to work and help their families while girls stay, so parity or close to parity is reached. Also, in most of these countries only wealthy families will participate in secondary and tertiary levels, and at parity. Furthermore, the results of the gap analysis suggest that bridging the educational gap requires increasing government expenditure on education over the coming 14 years. For instance, for the most off-track country in the sample, Yemen, the required yearly increase in government spending on education (as a percent of GDP) is 2.54%, 3.47%, and 1.10% for the primary, secondary, and tertiary levels of education respectively. Similarly, Djibouti would require an increase of about 1.82%, 1.91%, and only 0.45% yearly for the primary, secondary, and tertiary levels of education respectively.

In terms of policy implications the off-track developing countries would need to implement a whole set of policies to bridge the educational gap by 2030. Policies such as ICT infrastructure, especially in rural and remote areas, must complement government spending on education. They must also achieve a high rate of growth to raise the standard of living, provide greater employment opportunities, and increase government resources that encourage the community to invest in women.

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<sup>3</sup> Data on government spending on education (as a percent of GDP) is not available for Iraq, Libya, and West Bank & Gaza

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## APPENDIX

Table 2: List of Countries

1	Algeria	28	Korea
2	Argentina	29	Kuwait
3	Bahrain	30	Lebanon
4	Bolivia	31	Libya
5	Chile	32	Mexico
6	China	33	Morocco
7	Colombia	34	Nicaragua
8	Costa Rica	35	Oman
9	Cuba	36	Panama
10	Cyprus	37	Paraguay
11	Czech Republic	38	Peru
12	Djibouti	39	Philippines
13	Dominican Republic	40	Poland
14	Ecuador	41	Puerto Rico
15	Egypt	42	Qatar
16	El Salvador	43	Russia
17	Greece	44	Saudi Arabia
18	Guatemala	45	South Africa
19	Haiti	46	Syria
20	Honduras	47	Thailand
21	Hong Kong	48	Tunisia
22	Hungary	49	Turkey
23	India	50	United Arab Emirates
24	Indonesia	51	Uruguay
25	Iran	52	Venezuela
26	Iraq	53	West Bank & Gaza
27	Israel	54	Yemen, Rep.

Table 3: Projecting GPIIP for the Year 2030

Country Name	Latest Value	Required Growth	2030 Projection	Gap
Yemen, Rep.	0.84	0.0103	0.79	0.21
Iraq	0.84	0.0074	0.84	0.16
Djibouti	0.87	0.0086	0.85	0.15
Lebanon	0.91	0.0054	0.91	0.09
Dominican Republic	0.91	0.0060	0.92	0.08
Algeria	0.94	0.0038	0.95	0.05
South Africa	0.95	0.0031	0.95	0.05
Qatar	0.95	0.0025	0.96	0.04
Morocco	0.95	0.0029	0.96	0.04
Libya	0.96	0.0017	0.96	0.04
El Salvador	0.95	0.0028	0.96	0.04
Panama	0.97	0.0017	0.96	0.04
Guatemala	0.96	0.0024	0.97	0.03
Tunisia	0.97	0.0019	0.97	0.03
Uruguay	0.97	0.0019	0.97	0.03
Chile	0.97	0.0020	0.97	0.03
Bolivia	0.97	0.0021	0.98	0.02
Paraguay	0.97	0.0018	0.98	0.02
Syria	0.97	0.0016	0.98	0.02
Venezuela, RB	0.98	0.0014	0.98	0.02
Hungary	0.99	0.0008	0.98	0.02
Thailand	0.98	0.0012	0.98	0.02
Cuba	0.96	0.0028	0.99	0.01
Egypt, Arab Rep.	0.99	0.0005	0.99	0.01
Honduras	0.98	0.0013	0.99	0.01
Hong Kong	0.99	0.0007	0.99	0.01
West Bank and Gaza	0.99	0.0004	0.99	0.01
Saudi Arabia	0.99	0.0005	0.99	0.01
Turkey	0.99	0.0004	0.99	0.01



**Table 4: Government Spending on Education Gap for GPIIP**

Country	Required Spending Growth	Actual Spending Growth	Spending Growth Gap
Yemen, Rep.	1.8955	-0.6489	2.5444
Djibouti	1.5828	-0.2357	1.8185
Lebanon	0.9971	0.0027	0.9944
Dominican Republic	1.1150	0.1039	1.0110
Algeria	0.6956	0.1120	0.5836
South Africa	0.5662	0.0030	0.5631
Qatar	0.4520	0.0064	0.4456
Morocco	0.5318	0.0431	0.4887
El Salvador	0.5173	0.1085	0.4088
Panama	0.3208	-0.0680	0.3887
Guatemala	0.4384	0.0835	0.3549
Tunisia	0.3475	0.0204	0.3271
Uruguay	0.3584	0.0547	0.3037
Chile	0.3633	0.0829	0.2804
Kuwait	-0.2298	-0.5032	0.2734
Bolivia	0.3811	0.1256	0.2555
Paraguay	0.3258	0.1041	0.2217
Syria	0.2963	0.0765	0.2198
Venezuela, RB	0.2571	0.0709	0.1861
Hungary	0.1422	-0.0322	0.1744
Thailand	0.2205	0.0487	0.1718
Cuba	0.5212	0.3992	0.1220
Egypt	0.0945	-0.0184	0.1129
Honduras	0.2321	0.1288	0.1033
Hong Kong	0.1360	0.0392	0.0968
Saudi Arabia	0.0961	0.0285	0.0677
Turkey	0.0698	0.0098	0.0600

**Table 5: Projecting GPIS for the Year 2030**

Country Name	Latest Value	Required Growth	2030 Projection	Gap
Yemen	0.69	0.0222	0.63	0.37
Iraq	0.75	0.0127	0.75	0.25
Saudi Arabia	0.76	0.0169	0.77	0.23
Djibouti	0.81	0.0132	0.79	0.21
Morocco	0.85	0.0088	0.86	0.14
Qatar	0.89	0.0062	0.89	0.11
Guatemala	0.94	0.0040	0.95	0.05
Hong Kong	0.96	0.0024	0.97	0.03
Poland	0.96	0.0021	0.97	0.03
Turkey	0.97	0.0019	0.97	0.03
Greece	0.96	0.0024	0.98	0.02
Egypt	0.98	0.0010	0.98	0.02
Iran	0.99	0.0007	0.99	0.01
Indonesia	0.97	0.0018	0.99	0.01

**Table 6: Government Spending on Education Gap for GPIS**

Country	Required Spending Growth	Actual Spending Growth	Spending Growth Gap
Yemen	2.8174	-0.6489	3.4664
Saudi Arabia	2.1427	0.0285	2.1142
Djibouti	1.6710	-0.2357	1.9067
Morocco	1.1146	0.0431	1.0715
Qatar	0.7845	0.0064	0.7781
Guatemala	0.5010	0.0835	0.4175
Hong Kong	0.3092	0.0392	0.2699
Poland	0.2670	0.0356	0.2314
Turkey	0.2407	0.0098	0.2309
Greece	0.3057	0.1284	0.1773
Egypt	0.1300	-0.0184	0.1484
Iran	0.0866	-0.0148	0.1014
Indonesia	0.2261	0.1350	0.0910

**Table 7: Projecting GPIT for the Year 2030**

Country Name	Latest Value	Required Growth	2030 Projection	Gap
Yemen	0.44	0.0439	0.13	0.87
Djibouti	0.68	0.0208	0.44	0.56
Iraq	0.60	0.0207	0.60	0.40
Kuwait	1.62	-0.0280	0.69	0.31
Korea	0.75	0.0178	0.83	0.17
Haiti	0.81	0.0135	0.85	0.15
Egypt	0.89	0.0066	0.87	0.13
Turkey	0.86	0.0090	0.87	0.13
Iran	0.93	0.0043	0.91	0.09
India	0.94	0.0039	0.92	0.08

**Table 8: Government Spending on Education Gap for GPIT**

Country	Required Spending Growth	Actual Spending Growth	Spending Growth Gap
Yemen	0.4523	-0.6489	1.1013
Djibouti	0.2142	-0.2357	0.4499
Kuwait	-0.2879	-0.5032	0.2152
Korea	0.1836	0.0651	0.1186
Haiti	0.1392	0.0354	0.1037
Egypt	0.0678	-0.0184	0.0862
Turkey	0.0928	0.0098	0.0830
Iran	0.0444	-0.0148	0.0592
India	0.0401	-0.0072	0.0474