

Attaining the Millennium Development Goals in Ghana by 2015: Myth or Reality? A Statistical Evidence from Kumasi

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Abstract

The Millennium Development Goals (MDGs) represent the first collective and integrated attempt to improve the lives and life chances of the world's poor. By adopting the MDGs, Ghana committed itself to making substantial progress toward the eradication of poverty and achieving other human development goals by 2015. Although Ghana has now attained the lower middle-income status as at 2013, this paper empirically at the micro-level established that it will not meet the majority of the goals by the target date of 2015. Nonetheless all is not lost and with about two more years to reach the target date of 2015, this paper recommends the need to increase commitment from multilateral donors in and of course from the Ghanaian government to meet majority of the targets set by 2015.

Keywords: Millennium Development Goals, collective, integrated, attempt, multilateral donors, targets.

Introduction

A major difficulty in comparing theories of economic development is that two authors writing on the subject seldom mean the same thing by the phrase "economic development" (Robinson, 1972). In strictly economic terms, economic growth is defined as increases in aggregate product, either total or per capita income without reference to changes in the in the social and cultural value systems. Economic development on the other hand, is defined to include not only growth but also social and cultural changes which occur in the development process. It is as a result of its broad and general applicability that a number of economists and policymakers and the 189 members of the United Nations in September 2000 clamoured for and adopted the eight Millennium Development Goals (MDGs). By adopting the MDGs, they committed themselves to making substantial progress toward the eradication of poverty and achieving other human development goals by 2015. The Ghanaian government was a signatory to the MDGs document. As a result, a greater number of references have been made by the Ghanaian bureaucrats and officialdom to the MDGs concerning government policies and implementations. However with the publication of the MDGs 2013 Report and with two years to reach the MDGs final implementation stage, one argues whether the Ghanaian government policies and its implementation will ensure the overall attainment of the MDGs by the year 2015. This is so because there has been little empirical work at the micro-level investigating how government policies are geared towards attaining the MDGs. This is aggravated by the fact that the attainment of the MDGs has become a technocratic project informed by experts, driven by governments and multilateral agencies and based on measures of success that pay little heed to local desires (Hasan *et al.* 2005). This paper attempts to overcome this problem by undertaking a micro-level empirical study on the views of the Ghanaian public about whether the Ghanaian government policies and its implementation will ensure the overall attainment of the MDGs by the year 2015. The remainder of the paper is structured as follows. The next section reviews the original literature of the MDGs which are of primary interest to this study. A description of the micro-level survey data used for the empirical analysis follows. This is followed by the section that deals with the statistical methodology used for the study. The penultimate section discusses some statistical issues related to the estimation of the empirical relationship of interest and presents the empirical results. The last section offers some concluding remarks.

The Millennium Development Goals

At the 8th plenary meeting on September 8, 2000 of the Fifty-fifth session United Nations General Assembly, the United Nations Millennium Declaration under the various headings of, Values and Principles, Peace, Security and Disarmament, Protecting our Common Environment, Human Rights, democracy and Good Governance, Protecting the Vulnerable, Meeting the Special Needs of Africa, and Strengthening the United Nations were declared. The UN then adopted the eight goals which are linked to eighteen targets, which are in turn determined by forty-eight indicators of the Millennium Development Goals (MDGs)¹.

Data

The empirical analysis for this paper uses information obtained from a unique individual-level survey designed

¹ Readers are referred to (<http://www.un.org/millennium/declaration/ares552e.pdf>) for the original version of the MDGs.

to elicit information on the views of Ghanaians in Kumasi, the second largest city after the capital city Accra on how the Ghanaian government policies and implementations are geared towards achieving the MDGs. The survey dealt with the 2013 Millennium Development Goals report and amongst other things sought information on the socio-economic status of an individual respondent. The data are based on responses to individual-level questionnaires drawn from purposive sampling, designed to be *ad hoc* and combines elements of ‘snowballing’. This procedure however, does not vitiate the exercise as the information obtained from such surveys do provide important statistical estimates for policy inferences (Markova & Reilly 2007).

The survey obtained information on:

- a) individual respondent’s level characteristics including gender and whether the respondent works in the formal or informal sector;
- b) the number of years the respondent has worked. In addition to the conventional biases associated with obtaining complete and correct responses from a sample survey, a survey on civil/public/private employees encounters difficulties arising from the zeal of respondents to reveal or over emphasize the difficulties and problems confronting them. In order to attenuate the effect of this systematic bias on survey responses, the approach of interviewing was modified to minimize respondent bias. The confidential nature of the survey was emphasized and respondents were assured that the information would only be used for research purposes. The sequence and wording of the questions on the questionnaire were adjusted to elicit an honest response from the respondents as possible under the circumstances. A total number of 170 respondents were interviewed; however, the responses for six respondents were excluded as they could offer no meaningful responses.

The Millennium Development Goals Report 2013 is presented in Table 1.

Statistical methodology

This paper primarily considers the MDGs Report 2013, asked an individual respondent that considering the MDGs Report 2013 will the Ghanaian government policies and its implementation ensure the overall attainment of the MDGs by the year 2015?

It is hypothesized that:

H_0 : The Ghanaian government policies and its implementation will not ensure the overall attainment of the MDGs by the year 2015.

H_1 : The Ghanaian government policies and its implementation will ensure the overall attainment of the MDGs by the year 2015.

The chi-squared test of independence is commonly used to test the association between two categorical variables. This test compares actual (or observed) values in a given set of categories to the values expected if a given distributional assumption is satisfied. The Ghanaian government policies and its implementation takes either a value of 1 or 0 depending on whether an individual respondent considered the Ghanaian government policies and its implementation will ensure the overall attainment of the MDGs by the year 2015 or not. The goodness-of-fit test focuses on the differences between the observed proportions (or frequencies) and the expected proportions (or frequencies). Large differences between observed and expected frequencies cast doubt on the ‘null hypothesis’ that there is no association between the Ghanaian government policies and its implementation and the overall attainment of the MDGs by the year 2015. A chi-squared test provides the statistical basis for testing whether the large differences observed are statistically significant or not, using a conventionally defined critical value. The test statistic for the goodness-of-fit is denoted by:

$$\chi^2 = \sum_{i=1}^n \sum_{j=1}^m \frac{[f_{ij} - e_{ij}]^2}{e_{ij}} \quad (1)$$

Where f_{ij} = observed frequency for category i_j , and e_{ij} expected frequency for category i_j , based on the assumption of independence. The test statistic is distributed as chi-squared with $(n - 1) \times (m-1)$ degrees of freedom, provided that the expected frequencies are five or more for all categories under consideration. In this two-by-two example, the test statistic is distributed with one degree of freedom, since $n = m = 2$. If $\chi^2 > \chi^2_{\alpha}$ then we can reject the null hypothesis, where α is the level of statistical significance.

Table 1: The Millennium Development Goals Report 2013

Goals (8)	Targets (18)	Indicators (48)
<p>GOAL1: ERADICATE EXTREME POVERTY & HUNGER</p>	<p>Target1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than \$1.25 a day</p> <p>Target1.B: Achieve full and productive employment and decent work for all, including women and young people</p> <p>Target1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger</p>	<p>1.The target of reducing extreme poverty rates by half was met five years ahead of the 2015 deadline. 2. The global poverty rate at \$1.25 a day fell in 2010 to less than half the 1990 rate. 700 million fewer people lived in conditions of extreme poverty in 2010 than in 1990. However, at the global level 1.2 billion people are still living in extreme poverty</p> <p>3. Globally, 384 million workers lived below the \$1.25 a day poverty line in 2011—a reduction of 294 million since 2001. 4. The gender gap in employment persists, with a 24.8 percentage point difference between men and women in the employment-to-population ratio in 2012.</p> <p>5. The hunger reduction target is within reach by 2015. 6Globally, about 870 million people are estimated to be undernourished. More than 100 million children under age five are still undernourished and underweight.</p>
<p>GOAL2: ACHIEVE UNIVERSAL PRIMARY EDUCATION</p>	<p>Target2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling</p>	<p>Enrolment in primary education in developing regions reached 90 per cent in 2010, up from 82 per cent in 1999, which means more kids than ever are attending primary school. In 2011, 57 million children of primary school age were out of school. Even as countries with the toughest challenges have made large strides, progress on primary school enrolment has slowed. Between 2008 and 2011, the number of out-of-school children of primary age fell by only 3 million. Globally, 123 million youth (aged 15 to 24) lack basic reading and writing skills. 61 per cent of them are young women. Gender gaps in youth literacy rates are also narrowing. Globally, there were 95 literate young women for every 100 young men in 2010, compared with 90 women in 1990. The world has achieved equality in primary education between girls and boys, but only 2 out of 130 countries have achieved that target at all levels of education. Globally, 40 out of every 100 wage-earning jobs in the non-agricultural sector were held by women in 2011. This is a significant improvement since 1990. In many countries, gender inequality persists and women continue to face discrimination in access to education, work and economic assets, and participation in government. For example, in every developing region, women tend to hold less secure jobs than men, with fewer social benefits. Violence against women continues to undermine efforts to reach all goals. Poverty is a major barrier to secondary education, especially among older girls. Women are largely relegated to more vulnerable forms of employment. Despite population growth, the number of deaths in children under five worldwide declined from 12.4 million in 1990 to 6.9 million in 2011, which translates into about 14,000 fewer children dying each day. Since 2000, measles vaccines have averted over 10 million deaths. Despite determined global progress in reducing child deaths, an increasing proportion of child deaths are in sub-Saharan Africa where one in nine children die before the age of five and in Southern Asia where one in 16 die before age five. As the rate of under-five deaths overall declines, the proportion that occurs during the first month after birth is increasing. Children born into poverty are almost twice as likely to die before the age of five as those from wealthier families. Children of educated mothers—even mothers with only primary schooling—are more likely to survive than children of mothers with no education.</p>
<p>GOAL3: PROMOTE GENDER EQUALITY AND EMPOWER WOMEN</p>	<p>Target3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015</p>	<p>In many countries, gender inequality persists and women continue to face discrimination in access to education, work and economic assets, and participation in government. For example, in every developing region, women tend to hold less secure jobs than men, with fewer social benefits. Violence against women continues to undermine efforts to reach all goals. Poverty is a major barrier to secondary education, especially among older girls. Women are largely relegated to more vulnerable forms of employment. Despite population growth, the number of deaths in children under five worldwide declined from 12.4 million in 1990 to 6.9 million in 2011, which translates into about 14,000 fewer children dying each day. Since 2000, measles vaccines have averted over 10 million deaths. Despite determined global progress in reducing child deaths, an increasing proportion of child deaths are in sub-Saharan Africa where one in nine children die before the age of five and in Southern Asia where one in 16 die before age five. As the rate of under-five deaths overall declines, the proportion that occurs during the first month after birth is increasing. Children born into poverty are almost twice as likely to die before the age of five as those from wealthier families. Children of educated mothers—even mothers with only primary schooling—are more likely to survive than children of mothers with no education.</p>
<p>GOAL 4: REDUCE CHILD MORTALITY</p>	<p>Target4.A: Reduce by two thirds, between 1990 and 2015, the under-five mortality rate</p>	<p>Maternal mortality has nearly halved since 1990. An estimated 287,000 maternal deaths occurred in 2010 worldwide, a decline of 47 per cent from 1990. All regions have made progress but accelerated interventions are required in order meet the target. In Eastern Asia, Northern Africa and Southern Asia, maternal mortality has declined by around two-thirds. Nearly 50 million babies worldwide are delivered without skilled care. The maternal mortality ratio in developing regions is still 15 times higher than in the developed regions. The rural-urban gap in skilled care during childbirth has narrowed.</p> <p>More women are receiving antenatal care. In developing regions, antenatal care increased from 63 per cent in 1990 to 81 per cent in 2011. Only half of women in developing regions receive the recommended amount of health care they need. Fewer teens are having children in most developing regions, but progress has slowed. The large increase in contraceptive use in the 1990s was not matched in the 2000s. The need for family planning is slowly being met for more women, but demand is increasing at a rapid pace. Official Development Assistance for reproductive health care and family planning remains low.</p>
<p>GOALS: IMPROVE MATERNAL HEALTH</p>	<p>Target5.A: Reduce by three quarters the maternal mortality ratio</p> <p>Target5.B: Achieve universal access to reproductive health</p>	<p>Maternal mortality has nearly halved since 1990. An estimated 287,000 maternal deaths occurred in 2010 worldwide, a decline of 47 per cent from 1990. All regions have made progress but accelerated interventions are required in order meet the target. In Eastern Asia, Northern Africa and Southern Asia, maternal mortality has declined by around two-thirds. Nearly 50 million babies worldwide are delivered without skilled care. The maternal mortality ratio in developing regions is still 15 times higher than in the developed regions. The rural-urban gap in skilled care during childbirth has narrowed.</p> <p>More women are receiving antenatal care. In developing regions, antenatal care increased from 63 per cent in 1990 to 81 per cent in 2011. Only half of women in developing regions receive the recommended amount of health care they need. Fewer teens are having children in most developing regions, but progress has slowed. The large increase in contraceptive use in the 1990s was not matched in the 2000s. The need for family planning is slowly being met for more women, but demand is increasing at a rapid pace. Official Development Assistance for reproductive health care and family planning remains low.</p>
<p>GOAL6: COMBAT HIV/AIDS, MALARIA AND OTHER DISEASES</p>	<p>Target6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS</p> <p>Target6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it</p> <p>Target6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases</p>	<p>New HIV infections continue to decline in most regions. More people than ever are living with HIV due to fewer AIDS-related deaths and the continued large number of new infections with 2.5 million people are newly infected each year. Comprehensive knowledge of HIV transmission remains low among young people, along with condom use. More orphaned children are now in school due to expanded efforts to mitigate the impact of AIDS.</p> <p>While the target was missed by 2011, access to treatment for people living with HIV increased in all regions. At the end of 2011, 8 million people were receiving antiretroviral therapy for HIV. This total constitutes an increase of over 1.4 million people from December 2010. By the end of 2011, eleven countries had achieved universal access to antiretroviral therapy. The global estimated incidence of malaria has decreased by 17 per cent since 2000, and malaria-specific mortality rates by 25 per cent. In the decade since 2000, 1.1 million deaths from malaria were averted. Countries with improved access to malaria control interventions saw child mortality rates fall by about 20 per cent. Thanks to increased funding, more children are sleeping under insecticide-treated bed nets in sub-Saharan Africa. Treatment for tuberculosis has saved some 20 million lives between 1995 and 2011.</p>
<p>GOAL7: ENSURE ENVIRONMENTA L SUSTAINABILITY</p>	<p>Target7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources</p>	<p>Forests are a safety net for the poor, but they continue to disappear at an alarming rate. Of all developing regions, South America and Africa saw the largest net losses of forest areas between 2000 and 2010. Global emissions of carbon dioxide (CO2) have increased by more than 46 per cent since 1990. In the 25 years since the adoption of the Montreal Protocol on Substances that Deplete the Ozone Layer, there has been a reduction of over 98 per cent in the consumption of ozone-depleting substances.</p>
<p>GOALS: DEVELOP A GLOBAL PARTNERSHIP FOR DEVELOPMENT</p>	<p>Target7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss</p> <p>Target7.C: Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation</p>	<p>More areas of the earth's surface are protected. Since 1990, protected areas have increased in number by 58 per cent. Growth in protected areas varies across countries and territories and not all protected areas cover key biodiversity sites. By 2010, protected areas covered 12.7 per cent of the world's land area but only 1.6 per cent of total ocean area.</p> <p>The world has met the target of halving the proportion of people without access to improved sources of water, five years ahead of schedule. Between 1990 and 2010, more than two billion people gained access to improved drinking water sources. The proportion of people using an improved water source rose from 76 per cent in 1990 to 89 per cent in 2010.</p>

<p>Target7.D: Achieve, by 2020, a significant improvement in the lives of at least 100 million slum dwellers</p> <p>Target8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system</p> <p>Target8.B: Address the special needs of least developed countries</p> <p>Target8.C: Address the special needs of landlocked developing countries and small island developing States</p> <p>Target8.D: Deal comprehensively with the debt problems of developing countries</p> <p>Target8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries</p> <p>Target8.F: In cooperation with the private sector, make available benefits of new technologies, especially information and communications</p>	<p>Over 40 per cent of all people without improved drinking water live in sub-Saharan Africa. In 2011, 768 million people remained without access to an improved source of drinking water. Over 240,000 people a day gained access to improved sanitation facilities from 1990 to 2011. Despite progress, 2.5 billion in developing countries still lack access to improved sanitation facilities.</p> <p>The target was met well in advance of the 2020 deadline. The share of urban slum residents in the developing world declined from 39 per cent in 2000 to 33 per cent in 2012. More than 200 million of these people gained access to improved water sources, improved sanitation facilities, or durable or less crowded housing, thereby exceeding the MDG target. 863 million people are estimated to be living in slums in 2012 compared to 650 million in 1990 and 760 million in 2000.</p> <p>Despite the pledges by G20 members to resist protectionist measures initiated as a result of the global financial crisis, only a small percentage of trade restrictions introduced since the end of 2008 have been eliminated. The protectionist measures taken so far have affected almost 3 per cent of global trade. Tariffs imposed by developed countries on products from developing countries have remained largely unchanged since 2004, except for agricultural products. Bilateral aid to sub-Saharan Africa fell by almost 1 per cent in 2011. There has been some success of debt relief initiatives reducing the external debt of heavily indebted poor countries (HIPC) but 20 developing countries remain at high risk of debt distress. Aid to landlocked developing countries fell in 2010 for the first time in a decade, while aid to small island developing States increased substantially.</p> <p>At this time, it appears developing countries weathered the 2009 economic downturn and in 2011 the debt to GDP ratio decreased for many developing countries. Vulnerabilities remain. Expected slower growth in 2012 and 2013 may weaken debt ratios. Resources available for providing essential medicines through some disease-specific global health funds increased in 2011, despite the global economic downturn. There has been little improvement in recent years in improving availability and affordability of essential medicines in developing countries. 74 per cent of inhabitants of developed countries are Internet users, compared with only 26 per cent of inhabitants in developing countries. The number of mobile cellular subscriptions worldwide by the end of 2011 reached 6 billion.</p>
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Source: Adapted from <http://www.un.org/millenniumgoals/index.html>

Table 2: Summary Statistics for the Variables Used in the Analysis

Variable	Pooled	Male	Female
Gender	.2987805 (.4591253)	0 (1)	1 (0)
Government Policy	.25 (.4343389)	2434783 (.4310596)	.2653061 (.4460713)
Achieve MDGs	.3414634 (.4756529)	.2782609 (.4501038)	.4897959 (.5050763)
Sample Size	164	115	49

Standard deviations in parentheses

Results and Discussion

Reported values of the chi-squared test and critical values in this paper are presented in Table 3 which used prob-values to indicate the significance level at which one can reject the null hypothesis. The lower the prob-value, the lower the probability that one wrongly rejects the null hypothesis which therefore ensures that inferences are statistically reliable. Using the conventional 95 per cent confidence interval, one infers from a prob-value below 0.05 that one safely rejects the null hypothesis of independence between the variables used in the cross tabulations, that is between government policies and implementations and the achievement of the MDGs by 2015.

Table 3: The Chi -Squared Cross Tabulations Results

govtpolicy			
=1 if achieveMDG=1 if MDGs			
based on will be achieved, 0			
the MDG, 0 otherwise			
otherwise	0	1	Total
0	83	40	123
	81.0	42.0	123.0
1	25	16	41
	27.0	14.0	41.0
Total	108	56	164
	108.0	56.0	164.0

Pearson chi2(1) = 0.5785 Pr = 0.447

The statistical analysis was performed using the STATA (version 10) statistical software package. A chi-squared value of 0.5785 and a prob-value of 0.447 were recorded. The null hypothesis of the Ghanaian government policies and its implementation will not ensure the overall attainment of the MDGs by the year 2015 is accepted as the prob-value 0.447 obtained from the results is higher than the conventional 0.05 percent prob-values used to indicate the significance level at which one can reject the null hypothesis.

Conclusion

The MDGs represent the first collective and integrated attempt to improve the lives and life chances of the world’s poor. Although Ghana has now attained the lower middle-income status, it already seems, however, that it will not meet the majority of the goals by the target date of 2015. Nonetheless all is not lost and with about two more years to reach the target date of 2015, there needs to be an increase commitment from both donors in terms of increased assistance and of course from the Ghanaian government to meet majority of the targets set by 2015.

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