

# The Relationship between Education and Birth Weight in Tanzania

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**Abstract:** The purpose of this study is to see if Tanzanian mothers with greater levels of education produce healthier infants (N=36,720). According to the findings, Tanzanian mothers with a higher educational level had healthier infants than Tanzanian mothers with a lower educational level. In terms of statistics, one additional education year in Tanzania is linked to a 6.9611 gram rise in Tanzanian birth weight and a 0.39 percentage point reduction in Tanzanian low birth weight risk.

**Keywords:** Education; Tanzania; Birth Weight

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## Introduction

Half of fatalities of Tanzanian children are caused by malnutrition in Tanzania. Childhood malnutrition has long-term effects on Tanzanian, such as including cognitive impairment, a greater risk of chronic diseases, lower educational achievement, and lower productivity. Thus, policymakers in Tanzania have moved their focus to solving the health challenges of Tanzanian children, with education seen as a feasible remedy.

The purpose of this study is to see if Tanzanian mothers with greater levels of education produce healthier infants (N=36,720). Other studies have concentrated on more visible results of schooling, such as earnings, professions, and productivity, but this one contributes to the body of knowledge by focusing on less apparent effects, such as newborn health. Our findings, which are focused on Tanzania, contribute to the growing body of evidence concerning the health-education relationship across generations in Tanzania.

According to the findings, Tanzanian mothers with a higher educational level had healthier infants than Tanzanian mothers with a lower educational level. In terms of statistics, one additional education year in Tanzania is linked to a 6.9611 gram rise in Tanzanian birth weight and a 0.39 percentage point reduction in Tanzanian low birth weight risk.

Data

Using data from the Tanzania Demographic and Health Surveys (TZA-DHS), we investigate whether better educated Tanzanian mothers give birth to healthier Tanzanian children. The TZA-DHS collects detailed information on Tanzanian children aged 0 to 4. A number of Tanzanian parental traits are also included in the TZA-DHS. The number of schooling years completed by the Tanzanian respondents is the key explanatory variable (*Education*).

Table 1: Tanzanian Summary Statistics

	Mean (1)	SD (2)	N (3)
Tanzanian Birth Weight	3174.3	591.73	19114
Tanzanian Log Birth Weight	8.044	0.197	19114
Tanzanian Low Birth Weight	0.080	0.271	19114
Tanzanian Education	4.935	3.584	36708
Tanzanian Age	29.131	7.060	36720
Tanzanian Number of Offspring	3.746	2.270	36720
Tanzanian Living in Rural Areas	0.807	0.395	36720
Tanzanian Currently Married	0.952	0.213	36720
Tanzanian Offspring Age in Month	27.749	17.114	36720
Tanzanian Offspring Being Male	0.501	0.500	36720
Tanzanian Plural Birth	0.014	0.119	36720

The statistical breakdown of the variables in this Tanzanian investigation is shown in Table 1. Our sample includes around 36,720 Tanzanian births. Tanzanian offspring had an average birth weight of 3174.3 grams, a log birth weight of 8.044, and a low birth weight rate of 8.0%. The average length of time spent in school in Tanzania is 4.935 years. The average age of Tanzanian responders is 29.131. The average number of children per Tanzanian respondent is 3.746. The Tanzanian population lives in rural areas is 80.7%, with 95.2% of married Tanzanian. The Tanzanian offspring have an average age of 27.749 months. Males make up 50.1 percent of all Tanzanian children. Multiple births make up 1.4% of all Tanzanian births.

Empirical Design

To see whether more educated Tanzanian women had healthier Tanzanian children, we estimate the following regression,

$$Y_{jist} = \beta_0 + \beta_1 Education_{jist} + X'_{jist} \Omega + \epsilon_{jist}$$

where the subscripts  $j$ ,  $i$ ,  $s$ , and  $t$  refer respectively to Tanzanian offspring, women, cluster, and survey date in Tanzania.  $Y_{jist}$  stands for Tanzanian birth weight, Tanzanian birth weight in log, and Tanzanian risk of low birth weight.

$Education_{jist}$  is the number of educational years Tanzanian respondents completed.  $X'_{jist}$  includes Tanzanian number of offspring, age, squared-age, whether Tanzanian lives in rural areas, whether Tanzanian is currently married, whether Tanzanian offspring is a plural birth, whether Tanzanian offspring is male, Tanzanian offspring age in month, squared-age in month, Tanzanian birth date fixed effects, Tanzanian residential cluster fixed effects and Tanzanian survey time fixed effects.  $\epsilon_{jist}$  is the error term.

The coefficient  $\beta_1$  is the effects of more educated Tanzanian mothers on birth outcomes. In other words,  $\beta_1$  reflects the difference in birth outcome of Tanzanian women living in the same area but with different levels of education.

### Results

**Birth Weight** - The relationship between Tanzanian mother education and birth weight in Tanzania are in Table 2. Column 1, where only Tanzanian mother education is controlled for, displays the relationship between Tanzanian mother education and birth weight in Tanzania. We find that one extra school year in Tanzania is associated with a 2.9607 gram increase in Tanzanian birth weight.

The estimate only represent the connection between Tanzanian mother education and birth weight in Tanzania, while key elements in Tanzania are not taken into consideration. For example, Tanzanian with advantage backgrounds may have better access to Tanzanian healthcare system and education simultaneously . As a result, from Columns 2 to 3, we add the collection of Tanzanian attributes and Tanzanian spatial-temporal fixed effects. Then, according to Column 3, we find that one additional school year in Tanzania is linked to a 6.9611 gram gain in birth weight.

Table 2: Tanzanian Birth Weight

	(1)	(2)	(3)
Tanzanian Education	2.9607** (1.2481)	7.3942*** (1.3015)	6.9611*** (1.5348)
Observations	19102	19102	19008
Cluster FE	.	.	X
Characteristics	.	X	X

**Log Birth Weight** - The relationship between Tanzanian mother education and log birth weight in Tanzania are in Table 3. Column 1, where only Tanzanian mother education is controlled for, displays the relationship between Tanzanian mother education and log birth weight in Tanzania. We find that one extra school year in Tanzania is associated with a 0.13% increase in Tanzanian birth weight.

The estimate only represent the connection between Tanzanian mother education and birth weight in Tanzania, while key elements in Tanzania are not taken into consideration. As a result, from Columns 2 to 3, we add the collection of Tanzanian attributes and Tanzanian spatial-temporal fixed effects. Then, according to Column 3, we find that one more educational year of Tanzanian mother is associated with 0.25% gain in birth weight.

## The Relationship between Education and Birth Weight in Tanzania

Table 3: Tanzanian Log Birth Weight

	(1)	(2)	(3)
Tanzanian Education	0.0013*** (0.0004)	0.0027*** (0.0004)	0.0025*** (0.0005)
Observations	19102	19102	19008
Cluster FE	.	.	X
Characteristics	.	X	X

**Low Birth Weight** - The relationship between Tanzanian mother education and low birth weight in Tanzania are in Table 4. Column 1, where only Tanzanian mother education is controlled for, displays the relationship between Tanzanian mother education and low birth weight in Tanzania. We find that one more educational year of Tanzanian mother is associated with 0.28 percentage point reduction in low birth weight.

The estimate only represent the connection between Tanzanian mother education and birth weight in Tanzania, while key elements in Tanzania are not taken into consideration. As a result, from Columns 2 to 3, we add the collection of Tanzanian attributes and Tanzanian spatial-temporal fixed effects. Then, according to Column 3, we find that one more educational year of Tanzanian mother is associated with 0.39 percentage point reduction in low birth weight.

Table 4: Tanzanian Low Birth Weight

	(1)	(2)	(3)
Tanzanian Education	-0.0028*** (0.0006)	-0.0037*** (0.0006)	-0.0039*** (0.0007)
Observations	19102	19102	19008
Cluster FE	.	.	X
Characteristics	.	X	X

### Conclusion

The purpose of this study is to see if Tanzanian mothers with greater levels of education produce healthier infants (N=36,720). Other studies have concentrated on more visible results of schooling, such as earnings, professions, and productivity, but this one contributes to the body of knowledge by focusing on less apparent effects, such as newborn health. Our findings, which are focused on Tanzania, contribute to the growing body of evidence concerning the health-education relationship across generations in Tanzania.

According to the findings, Tanzanian mothers with a higher educational level had healthier infants than Tanzanian mothers with a lower educational level. In terms of statistics, one additional education year in Tanzania is linked to a 6.9611 gram rise in Tanzanian birth weight and a 0.39 percentage point reduction in Tanzanian low birth weight risk.

Our findings are relevant to research into the impact of several variables on Tanzanian health. For example, governmental responses to diseases may have an impact on Tanzanian health; heavy rain and heat in Tanzania worsen illness; political violence and food scarcity in Tanzania may connect to poor survival rates; literacy, land reform, and nutrition efforts improve health (Hang et al., 2020a, 2020b, 2020c).

### References

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