

# Statistical Analysis of the Predictors Affecting Number of Children Ever Born in the Philippines

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## Research Article

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## ABSTRACT

Birth is a significant component primarily related to fertility in the study of population. The population growth of the Philippines depends upon fertility because with the high level of fertility, there is a rapid growth of population. Thus, the purpose of this study was to determine the predictors affecting the number of children ever born in the Philippines. The number of children ever born to a certain woman is an estimate of her lifetime fertility involvement to the moment at which the data are collected. The study found out that the peaks of the distribution for a large number of children ever born was reflected on the no education respondents that are in the category of poorest and residing in the rural area. Likewise, factors that are significantly influence the number of children ever born are educational attainment of women, husband/partner's education attainment, current contraception method, wealth index, fertility preference, exposure to need for contraception, place of residence, religion and age at first sex.

## INTRODUCTION

Poverty in the Philippines has been a major hurdle to children that comes from a large family size to reach their full potential and dreams. Girls and boys often miss an opportunity to go schooling because of the child labour and absence of admission to schools. Moreover, their families cannot afford for healthy meals every day. It is also widely view that larger family size tends to be poorer in developing countries like Philippines thus this influenced a research study and policy formulation. Likewise, number of children ever born to a certain woman is an estimate of her lifetime fertility involvement to the moment at which the data are collected. Fertility is one of the key predictors of population development and pattern, and it is important for planning and achieving sustainable growth. Furthermore, fertility is defined as the natural and actual production of offspring to a woman. To measure the data on fertility in terms of trends, levels and differences, the Philippines National Demographic and Health Survey (NDHS) conducted a survey that carefully worded questions to obtain reliable and accurate information.

According to country meters, the population of the Philippines in 2015 was expected to increase in the beginning of 2016 by 1, 947, 406 people and reach 104, 280, 890. The expected increase was predicted to be positive, as the number of births will exceed the number of deaths. Moreover, reports from Functional Literacy, Education and Mass Media Survey (FLEMMS) that around 4 million of Filipino children and adolescence was out of school in 2013. The FLEMMS further defined those out-of-school children that ages 6 to 14 years are not attending school while out-of-school adolescence ages 15 to 24 years are not attending school and have not finished any college courses or postsecondary education and not employed [1].

The government of the Philippines compels to provide birth control amenities and services to poor families with zero co-payment and to upgrade the health facilities. Likewise, they commit also to increase the number of health services suppliers who can provide and deliver reproductive health information. Moreover, reports from National Demographic and Health Survey (2008) posted that that women in poor households had the inclination to bear more children than those who are wealthy. The wealth index presented that women in the poorest households bear more children at an average of 5.2 children per woman compared to an average of 1.9 children per woman in the wealthiest households. The factors affecting birth rates and fertility rates were importance of children as a part of the labour force, urbanization, cost of raising and educating children, educational attainment and employment or job opportunities for women, infant mortality rate, average age at marriage, availability of private and public pension classifications, accessibility of legal abortions, availability of reliable birth control methods and religious, traditions and cultural standards [2].

The unique factor that affects the actual number of children in five developing countries is household income, age of first marriage and education attainment. Furthermore, study conducted revealed that factors contribute for the fertility of the women are age at first marriage, ideal number of children want, literacy status, mass media contact, wealth status, and child-death experience by mothers. revealed that the poverty occurrence, vulnerability to poverty, in addition to the basic mechanism of saving, labour supply and earnings of parents and human capital investment have influence to the number of children ever born. Moreover, shows that family size has a relationship to the number of socio-psychological and economic variables besides from the biological capacity of reproduction. It further shows that education plays a vital role in deciding actual and expected parity level. That despite of the growing information worldwide that provides suggestion of the impact of population growth and family size on growth and development but the role of population growth, at large, and of poverty and vulnerability, in specific, remain largely unresolved.

The mean number of children ever born remained almost constant over recent years and posted at around 4.6 per married woman. Furthermore, for women 40 to 49 years old that is the category of poorest and richest households there is the stable difference in the mean number of children ever born that is a little over 2 births. It is also indicated that in 2002 reflected in the study half of married women use modern method of contraception. Furthermore, women educational attainment and place of residence are significant factors of unintended births and there is an inverse relationship between the educational attainment of women and the number of unintended births that has main implication to social policies.

The rationale for conducting this study was to find out the predictors affecting the number of children ever born in the Philippines. Many predictors responsible for number of children ever born in different sub sectors and sub groups were considered in this study. Further argued that even though the number of children ever born indeed bigger among poorer household but the call for additional children was actually lesser and their contraceptive practice was also poorer. The situation of the Philippines also shows that the bigger number of children ever born among the poor is more of the result for poorer contraceptive practice than the higher demand for additional children. The major explanation of the study was providing valuable and detail information on the number of children ever born in the Philippines to advance human knowledge and welfare of the Filipino family.

This study is also an access to the fascinating information and ideas in policy research; specifically, how policymaker should align their policy strategies with problem in the number of children ever born in the Philippines. This would also allow the researchers to uncover possible unmet needs and motivations which would open opportunities to various groups concerned, whether they may be policymakers or government officials, planners and children advocates. Birth is a significant component primarily related to fertility in the study of population. Fertility deals with birth. The population growth of the Philippines depends upon fertility because with the high level of fertility there is a rapid growth of population. Thus, this study aimed to look at the predictors affecting the number of children ever born in the Philippines.

The results of this study could be useful in policy formulation that will go towards strengthening the family planning program and implementation of population programs. Moreover, the development of the model gives preparedness and awareness of the future consequence on the increasing number of children ever born in the Philippines.

## MATERIALS AND METHODS

The retrospective cross-sectional was employed in this study. Information regarding births and deaths are retrospective because it deals with the past data. It is also cross sectional because both dependent and independent are surveyed at one point in time across a sample population.

The data are from the Philippines Demographic and Health Survey (DHS), consisting of large sample sizes that is nationally representative population-based surveys. The DHS data comprises of information on fertility, family planning, infant, child, adult, and maternal mortality, maternal and child health, nutrition, and knowledge of HIV/AIDS and other sexually transmitted infections. The factors are accessible in terms of national level statistics and for population subgroups and sub sectors such as those defined by age, educational attainment, marital status, economic status, urban/rural residence and region. Moreover, the DHS have a recode manual that contains the documentation and map for use with the data. The documentation file contains a general description of the record file, comprising the rationale for recoding, coding standards and descriptions of variables. Furthermore, the purpose of DHS survey was to provide policymakers and planners with detailed information about demographic and health status of the Filipino people.

The predictors affecting number of children ever born was identified in this study. However, one of limitation is that this study is based on cross sectional design thus it cannot detect causality but only identified significant factors that affect the dependent variable. The data was accessed through registration in Demographic and Health Surveys website and formal approval to use data was obtained. All DHS data was treated as confidential, and no effort was made to identify any household or individual respondent interviewed in the survey. The data sets were not passed to other researchers without the written consent of DHS. Moreover, the researcher also submits a copy of results of this study resulting from using the DHS data files.

The dependent variable was the total number of children ever born (children born alive) to women age 15-49, it was analyzed as an interval variable in both bivariate and multivariate statistical tools. The data comprises information on the number of children born alive (lifetime fertility) up to the survey date. All women age 15-49 were asked to report all the pregnancies that resulted in a live birth, a miscarriage, or stillbirth. The questions for live births are about children still living at home, those living elsewhere, and those who had died.

Frequency count used to describe the demographic profile of the respondent. The number of children ever born where categorized into different factors was measured and summarized using means and standard error. Regression Analysis was used to determine the significant factors that affect the number of children ever born. Also, Breusch-Pagan / Cook-Weisberg tests the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables including White's General Test for Heteroskedasticity that test for linear forms of heteroskedasticity. The results revealed a significant p-value both white tests indicating heteroskedasticity. To address the issues, White's heteroskedasticity-robust standard errors were used for the model. The analysis under this study was carried using STATA software.

## RESULTS AND DISCUSSION

This study aimed to look at the predictors affecting the number of children ever born in the Philippines. Children ever born compose of information on the number of children born alive that is the lifetime fertility of the women and should include all children born alive that is to say excluding fetal deaths during the lifetime of the woman concerned up to the survey date. The table 1 shows the descriptive analysis of the predictors affecting number of children ever born in the household. As a whole, the average number of children is 4.29 with 0.013 standard error. When grouped according to educational attainment, husband/partner's education attainment, current contraception method, wealth index, fertility preference, exposure to need for contraception, place of residence, religion, marriage to first birth interval and age at first sex, the mean ranges from 5.76-2.41. Highest mean was posted in no education under educational attainment of respondent and lowest mean is under current

contraception method which is mucus/billing and ovulation. preferences for small family size deliver the influence to practice contraception and this is the key predictor in the decline of fertility. Likewise, studies using Philippine data from DHS and other country report revealed that the lack of education poses the highest number of children born alive from (Table 1 and Table 2).

**Table 1.** Descriptive Analysis of the Factors Affecting Number of Children.

Categories		Number of children	
		Mean	Standard Error
Entire Group		4.29	0.013
Educational attainment	No education	5.76	0.076
	Incomplete primary	5.61	0.037
	Complete primary	5.1	0.034
	Incomplete secondary	4.4	0.307
	Complete secondary	3.79	0.23
	Higher	3.1	0.2
Husband/Partner's education attainment	No education	5.74	0.077
	Incomplete primary	5.29	0.031
	Complete primary	5.03	0.355
	Incomplete secondary	4.24	0.033
	Complete secondary	3.77	0.23
	Higher	3.26	0.23
Current contraception method	Pill	3.67	0.027
	IUD	3.9	0.052
	Injections	4.13	0.007
	Condom	3.46	0.082
	Female sterilization	4.53	0.033
	Male sterilization	5.46	0.365
	Periodic abstinence	4.58	0.006
	Other	5.02	0.024
	Implants/Norplant	2.38	0.183
	Mucus/Billings/Ovulation	2.41	0.173
	Basal body temperature	3	0.333
	Symptothermal	3	0
	Not using	4.49	0.222
Wealth index	Poorest	5.23	0.026
	Poorer	4.58	0.028
	Middle	4	0.028
	Richer	3.4	0.029
	Richest	3	0.026
Fertility preference	Have another	2.59	0.024
	Undecided	3.93	0.068
	No more	4.68	0.016

	Sterilized (respondent or partner)	4.54	0.033
	Declared infecund	4.76	0.099
Exposure to need for contraception	Fecund	4.19	0.015
	Pregnant	3.75	0.064
	Postpartum amenorrhoeic	4.67	0.053
	Infecund, menopausal	4.69	0.035
Place of residence	Urban	3.87	0.02
	Rural	4.56	0.017
Religion	Roman Catholic	4.15	0.015
	Protestant	4.29	0.059
	Iglesia ni Kristo	3.91	0.075
	Aglipay	4.45	0.188
	Islam	5.28	0.043
	None	5.22	0.468
	Other	4.22	0.043
Marriage to first birth interval (months)		4.29	0.003
Age at first gender		4.29	0.004

**Table 2.** Factors affecting number of children ever born.

Explanatory variables	Full Model			Final Model		
	N=31 376			N=31 376		
	R <sup>2</sup> = 0.2487			R <sup>2</sup> = 0.2487		
	Adjusted R <sup>2</sup> = 0.2485					
	F-value= 1038.43			F=1344.59		
	p-value=0.000			p-value=0.000		
		Coefficients	Robust SE	p-value	Coefficients	Robust SE
Educational attainment	-0.339	0.011	0	-0.34	0.011	0
Husband/partner's educational attainment						
	-0.142	0.01	0	-0.142	0.01	0
Current Contraception Method	-0.003	0.003	0.333	Not included in the second run		
Wealth index	-0.296	0.011	0	-0.296	0.011	0
Fertility Preference	0.698	0.013	0	0.696	0.012	0
Exposure to need for contraception						
	0.041	0.011	0	0.044	0.011	0
Place of Residents	0.047	0.026	0.071	0.047	0.026	0

Religion	-0.003	0	0	-0.003	0	0
Marriage to first birth interval	0	0	0.176	Not included in the third run		
Age at first sex	0.002	0	0	0.002	0	0

Table 2 provides regression coefficients for each of the ten factors (educational attainment, husband/partner’s education attainment, current contraception method, wealth index, fertility preference, exposure to need for contraception, place of residence, religion, marriage to first birth interval and age at first sex), along with the probability value [3]. Likewise, the results revealed there were significant factors that influence the number of children with F-value=1038.43 and p-value less than 0.10 level of significance. The R2 says that 24.87% of the variability of the number of children ever born was explained by the model with adjusted R2 of 24.85% which incorporates a penalty for increasing the number of predictors.

In addition, the estimates displayed that for every unit increase in educational attainment and husband/partner’s educational attainment, a 0.34 and 0.14 unit decrease in the number of children ever born respectively holding all other variables constant [4]. That women who had higher educational attainment has less number of children ever born compare to the women without education. It is also implying a significant inverse relationship between women’s educational attainment and fertility. Further in the study revealed that level of education increases, the number of children born alive per woman decreases.

Also, for wealth index, for every unit increase, a 0.30 unit decrease in the number of children ever born. The coefficients of other factors tell a qualitatively similar story about the impact of a regressor on the dependent variable which is the number of children [5]. The others predictors that are significant was consistent with, that women living in the rural areas have higher number of children born alive and mother’s education negatively affects the average number of children ever born to a woman contraceptive use or exposure to need for contraception is one of the factors highly associated with children ever born. Religion also is significant because of their beliefs that a family chooses not to use contraceptives and their social norms together with religious tradition implies that family planning are not appropriate.

### CONCLUSION

The study found that the peaks of the distribution for a large number of children ever born was reflected on the no education respondents that is in the category of poorest with declared infecund as fertility preference and infecund, menopausal for exposure to need for contraception residing in the rural area. The factors that significantly influence on the number of children were educational attainment of women, husband/partner’s education attainment, current contraception method, wealth index, fertility preference, exposure to need for contraception, place of residence and religion. These results were supported by the study conducted Also, women with higher education together with higher education attainment of husband/partners have significantly lower number of children ever born compared with no education. The effect of community and demographic variables ratifies common potentials. Women living in rural areas have significantly higher number of children ever born as reflected in the results. The negative coefficients for wealth index further imply that poorest women have higher number of children ever born compare to the rich one. The fertility preference and exposure to need for contraception has the expected positive sign and is highly statistically significant.

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