Impact of Abortion to Philippine Fertility: A Health and Demographic Perspective

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Abstract

The Philippines' total fertility rate has been analysed using Bongaarts' model of proximate determinants using the National Demographic and Health Surveys over the years since the said data had been available. There had been substantial tracing of societal development supplemented by this.

It had demonstrated the relative contribution of most of the components namely marriage, contraception, postpartum infecundability. The abortion component of the model had been overlooked due to the assumption that it was estimated at the value of '1' referring to the total absence of abortion in the country since it is illegal. With this said, there had been a noticeable continuous increase in disparity of the estimated TFR based on the model and the observed TFR. It is exemplified by the figures from 1993, 1998, 2003, and 2008contention in this paper is that because of the growing prevalence of abortion in the Philippines, this disparity may be decreased if abortion is given an estimate more fit. Results from preliminary estimates based on independent surveys show that it indeed becomes smaller and maintains this in a stable manner. Together with this, decomposition is done to reassess the relative contribution of each index to the percent change in TFR over the years. Outcomes show it retained the levelling of previous decomposition values but now has accommodated a meaningful segment to abortion. What this entails is that there may be a need for estimations based on various sources to have a more comprehensive view of fertility in the country.

Keywords: Abortion, Fertility in the Philippines, Maternal health, Decomposition of change in fertility

Introduction

What will come to mind when a woman is having or has had an abortion is that the pregnancy is somehow unwanted. And from this, it should be noted that it is often a decision done jointly with a partner or another person close to the woman[1]. This aspect of being unwanted, which is experienced by seven of ten women in her lifetime[1], stems from various reasons for different women based on their socioeconomic background and age among other factors. For one it is often pointed that abortion is observed with more prevalence in urban areas due to their desire to have smaller families with the prospect of gaining ore resource eventually. This may be linked to the cost of having a child in general as well. Another may be in the form of a young woman wanting to continue her education and being pregnant and subsequently having the child may lead to the opposite of such a scenario.

Whatever the reasons may be, experiencing an unintended pregnancy becomes an issue due to lack of access to information on reproductive health; and consequently supplies that may support said object. Policies and programmes have been lacking which can be connected with political and cultural, particularly religious, dimensions in the Philippines. Strong opposition from the Catholic Church had impeded this goal and the government becomes wary of formulating reproductive health programmes due to supposed moral grounds.

This nature of abortion being shirked to the side-line has also affected that which is protected by legality. Abortion only becomes legal when it is to save a woman's life based on Philippine law. Although there is this provision, Reyes[2]noted that because of social implications and personal allusions that medical training to attend to this event of abortion response is unaddressed. When properly trained medical providers become unwilling to perform this sensitive procedure because of their lack of awareness of the legal grounds of it, then it is women's health that suffers. Chances of preventing complications become low even if they have access to facilities.

Due to this, some women turn to traditional practitioners of medicine, or those who have not received proper medical training. This in turn becomes a greater risk to her life because of unwarranted procedures and implements.

This is a brief description of abortion being a major source of concern. And as it had been seen in the data; the impact of abortion is increasing overtime. It lowers the TFR at this point and it may also be a factor for the unrelenting maternal mortality situation in the country.

In this paper, the model of proximate determinants by Bongaarts[3]is analysed using the 2008 National Demographic and Health Survey. This is a mathematical model which quantifies the effects of particular determinants on fertility. This was further

established in the study of Bongaarts and Potter[4] whereby a cross-country variation shows that four groups of these determinants affect fertility levels: marriage, contraceptive use, postpartum infecundability, and abortion. This is employed on the national level to estimate the absolute and relative effects of the said categories.

Using Bongaarts' model with Philippine data had been done in previous years by Cruz[5] but what is noticeable is the continually increasing gap between the model estimates of TFR and the observed TFR which is presented below. It may be that it is due to the unexplained factors that would demonstrate itself as residuals which is quite prevalent. For our purpose, it may be that abortion is somehow disregarded. It is claimed that due to lack of data and the social context of the Philippines whereby it is illegal to perform induced abortion; it is safely assumed to have a value of '1' which in terms of Bongaarts' model refers to the curious absence of the incidence in society.

Therefore, what is done here is to estimate an abortion index for the model and subsequently approximate it within the decomposition representation as to reattribute the change of TFR over time to the four previously mentioned components within the proximate determinants of fertility model.

This is important to view as to update the body of knowledge and be able contribute to possible policy and programme implications. It is seen as an evidence-based planning in order to intervene and improve formulations of such aspects.

Materials and Method

Demographic and Health Surveys are nationally representative, population-based household surveys which provide comparable data between countries on health indicators. This is conducted in developing countries to improve health surveillance in a population. For the Philippines, the National Statistics Office conducts the National Demographic and Health Survey, NDHS, with the technical assistance by ICF Macro International through their MEASURE DHS programme

Sample

For this study, the 2008 NDHS is utilised. This involves 13,594 women with ages 15 to 49 years from 12,469 households. 794 enumeration areas throughout the country were selected through cluster sampling. This particular NDHS covered information on fertility levels and preference, awareness and use of family planning, breastfeeding practices, marriage, nutrition status of women and children, maternal and child health, childhood mortality, knowledge and attitudes regarding HIV/AIDS, and violence against women.

Data analysis

Demographers have developed models to attribute which aspect of fertility experience may be affecting varying fertility levels

between societies. Bongaarts developed a model that can be utilised with commonly available data. He deemed other determinants to be collapsed or be simplified; which results to having eight determinants in four categories mentioned earlier: proportion married in the population, contraception, induced abortion, lactational infecundity, frequency of intercourse, sterility, spontaneous intrauterine mortality, and duration of the fertile period.

This method is not without its critics as Stover[6] who deemed it necessary to update the model based on developments in societies through revising the equation by incorporating measures on sterility among others. But for our purpose, the Bongaarts' model of proximate determinants will be pursued because the data is more accessible for the Philippines[5]. Aside from accessibility of data pertaining to the four categories containing the determinants mentioned above, Bongaarts' model's application is expedient with regard to the robustness of the determinants. They have been observed to indicate fertility changes over time in a comprehensive manner especially with the further analysis involving decomposition as would be discussed later.

For using the model by Bongaarts, the central equation is:

$$TFR = Cm * Cc * Ca * Ci * TF$$

TF is the total fecundity rate, the number of children expected over a lifetime to a woman who first marries prior to age 15, who never practices contraception, and never breastfeeds her children nor engages in postpartum abstinence.

$$C_m = \sum m(a)\, g(a) \;/\; \sum g(a)$$

This is the Index of proportion married where $m(a)$ is the weighted average of the age-specific proportions ever-married and $g(a)$ is the age-specific marital fertility rates. What are included here are those formally married and in consensual arrangements.

The next is the Index of Contraception

$$C_c = 1.00 - 1.08\, ue$$

u is the average proportion of married women currently using contraception and e is the average contraceptive effectiveness (average of use-effectiveness levels by age and method)

For the Index of Abortion C_a, has been assumed to be equal to 1, due to lack of data support and the fact that abortion is illegal in the country as mentioned above[5]. But upon estimating the number of abortions, the equation proposed by Bongaarts becomes workable where the index starts with A representing the number of births averted per woman by the end of her reproductive years.

$$A = b(TA)$$

Where;

$$b = 0.4(1+u)$$

u remains to be same as with the Index of Contraception. It is used to attain *b* which is the multiplier with *TA*. The latter is equal to the average number of induced abortions a woman may have until the end of her reproductive period.

The actual Index would then be;

$$C_a = TFR / (TFR+A)$$

The final is the Index of Postpartum Infecundability

$$C_i = 20 / (18.5 + i)$$

i is the average duration in months of infecundability from birth to the first postpartum ovulation or menses.

To further the analysis as mentioned before, decomposition of the changes in the indices is implemented.Decomposing the change in fertility is done here by extracting the percentage change between the two TFR's[4,7].

$$TFR = (TFR^2 - TFR^1)/TFR^1$$

The contribution of an index is the difference between the natural logarithm in two particular times divided by the natural logs of the TFR's.

$$c = (\ln C_c^2 - \ln C_c^1) / (\ln TFR^2 - \ln TFR^1)$$

For this example in Index of Contraception, it will be converted to *C* to indicate the proportionate relation with the percentage change of the TFR.

C = Percentage change in TFR * c

This will be done for all other indices.

Estimating the Index of Abortion

Previous estimates had been done regarding total number of abortions within the Philippines[8].Both were concerned with only localised areas which are Cavite and Metro Manila; the former being a province and the latter the whole National Capital Region. None were representative of the country albeit only one region is represented. Moreover, abortion has to be delved into in terms of data collection. As presented, the survey of the total abortion cases was in 1994 therefore it still covers the period to which women had abortion-complication care for 1993. And an assumption here is that the cases do not vary immensely in a span of a year. Hence the 1994 estimates are utilised for both 1993 and 1998 to match the NDHS data available; and for the more recent ones, 2003 and 2008; the subsequent data is employed. In this paper, the median is used in the succeeding analysis.

Table 1 Estimates of the total number of abortion cases in the Philippines by major island groups, 1994 and 2005

Area	1994				2005			
	Population of women aged 15 to 49 years	Estimated number of induced abortion cases*			Population of women aged 15 to 49 years	Estimated number of induced abortion cases*		
		4	*5*	*6*		*5*	*6*	*7*
Philippines	16020650	320413	400515	480618	17711810	394506	473408	552309
Metro	2535394	83668	104585	125502	2705350	116544	139853	163162
Luzon	6483167	155596	194495	233394	7496277	170088	204105	238123
Visayas	3064444	27580	34475	41370	3373065	46685	56022	65359
Mindanao	3826286	53568	66960	80352	4137118	61189	73427	85665

* These represent the multipliers whereby women who have had complications due to abortion procedure are taken to a healthcare facitlity. Therefore, the correspondence of having low to high estimates is displayed.

Therefore in Singh, Cabigon, Hossain, Kamal, and Perez[9]did a survey which took place around 1994 on hospital records to approximate the total number of induced abortions. Due to its being illegal, they relied on the information of being taken to these hospitals due to abortion complications. As such, they had assumed that the proportion of those taken to said hospitals for spontaneous abortions are quite similar elsewhere in world; from which they were able to distinguish which are induced. The similar methodology of data collection was then published by Juarez, Cabigon, Singh, and Hussain in 2005[1] to replicate and update the data which was collected from 1996 to 2001.

To adjust the estimations, the formulated multipliers according to factors of access to health facilities (Table 1). This is to create scenarios of the pregnant woman to be able to go to such place. Therefore, as the multiplier increases, her safety due to the visit to a health facility also increases. They present three best representative multipliers for each period that depict the best fit to the situation at the time (Table 1). From these figures, the resulting Indices of Abortion in the medium variant are 0.975, 0.972, 0.970, and 0.967 for 1993, 1998, 2003, and 2008 respectively.

Results

To have a better understanding of the most recent context, a brief set of descriptive to exemplify the subsequent indices are presented. Among women aged 15 to 49

years, about 66% are married. There are a few among these who are below 20 at 12%. About half of the women 20 to 24 years old are also married. This reflects the median age at first marriage to be at 22 years. And among women aged 25 to 49 years, the median age at first birth of their child is 23 years.

There are 54% of women in union who use contraceptives whether to space or limit their fertility. Most use modern methods than both folkloric and traditional methods across age groups. This is the similar case even for women who are unmarried or even formerly married.

These are part of being able to delay conception. Women who breastfeed do it for the duration of 11 months in average. Postpartum amenorrhea is measured also at an average of 5 months while postpartum abstinence is done at about 4 months in general.Among these aspects, duration of breastfeeding is used as it defines more clearly the event of infecundability. These said measures pertain to the period two years prior to the conduct of the survey. And so, the analysis will have the dimension of being from 2005 to 2007 for the 2008 NDHS; as with the previous NDHS's.

Based on the summary of indices presented in Table 2.A, it is observed that marriage has had no change in the period prior to 2003 and 2008 yielding an index of 0.6. Contraception has a mild fertility-inhibiting effect in the indicated period with the decline in index from 0.55 to 0.54. This is the similar case to the postpartum infecundability index Ci; where there was also a decline from 0.73 to 0.74.

With the addition of the abortion index (Table 2.B), it is observed that the difference between the two models for each year had decreased aside from the 1998 model estimate which had gone lower. This demonstrates that there the residual caused by the Bongaarts' model of proximate determinants will be lower if the estimates are fit. This is further evidenced through the decomposition of the percentage change in TFRs in Table 3.

Table 2 Summary of indices based on two scenarios, 1993 to 2008

A. With the previous assumption on abortion

Year	Cm	Cc	Ci	Ca	Model estimate of TFR	Observed TFR	Absolute difference
1993	0.576	0.630	0.737	1.0	4.1	4.1	0.00
1998	0.559	0.549	0.763	1.0	3.6	3.7	0.10
2003	0.603	0.554	0.737	1.0	3.8	3.5	0.30
2008	0.603	0.540	0.733	1.0	3.7	3.3	0.40

Table 2 Summary of indices based on two scenarios, 1993 to 2008

B. With the abortion estimates

Year	Cm	Cc	Ci	Ca	Model estimate of TFR	Observed TFR	Absolute difference
1993	0.576	0.630	0.737	0.975	4.0	4.1	0.09
1998	0.559	0.549	0.763	0.972	3.5	3.7	0.20
2003	0.603	0.554	0.737	0.970	3.6	3.5	0.12
2008	0.603	0.540	0.733	0.967	3.5	3.3	0.17

Based on the decomposition model, changes in one index will bear no altercation on the contribution of the others. They are independent in approximation of the change. Marriage has no apparent contribution to the change of TFR from 2003 to 2008. There is a contribution of postpartum infecundability based on breastfeeding practice. Much of the decline in TFR is from contraception. Its fertility-inhibiting is greatest among the other components or proximate determinants. Although, a relatively sizeable part of the changes is that on abortion which continues to increase its negative effect over the years.

Table 4 Decomposition of the change in total fertility rates, 1993 to 2008

Periods	C_m	C_c	C_i	C_a
1993 to 1998	-2.85	-13.08	3.29	-0.23
1998 to 2003	7.37	0.88	-3.37	-0.22
2003 to 2008	0	-2.49	-0.53	-1.01

Discussion

As one of the indices in Bongaarts model; marriage has been somehow an erratic determinant over the years. As Cabigon[10] had observed, marriage is among the main factors explaining fertility decline in recent decades. In recent years, when premarital conceptions have been increasing, it has become a fertility enhancer rather than an inhibitor. This is evidenced by Cruz's study[5] where the decomposition of the TFR by indices with the Bongaarts' model shows that in the period of 1993 to 1998, it has a value of -4. But in the period of 1998 to 2003, it increased significantly to 7.7 making it enhance fertility further.

Furthermore, there has been past observations that shows the tendency that

this is to be lower where women spend more time unmarried[11]. This case may be related to the fact that cohabitation is increasing in prevalence among youth which has been changing the formation of families and affecting fertility according to Kabamalan[12].

What has been observed in this study is that prevalence of unions actually lowered from then on. It neither exhibits fertility enhancement nor inhibition. This may be linked with the increased knowledge of contraception and history of ever using them; which has also affected the increase in the effect of the lowering of TFR with contraception as seen in this study.

Concerning contraceptive methods knowledge, 97% of all women exhibited it in 1998 and increased slightly to 98% in 2008. And among married women, this is the similar case where it increased from 98% of them to 99% in 2008. Those who ever used any method is at 43% of all women in 1998 to 56%. Again, this case is similar among married women which is at about 70% of them in 1998 to 77% in the latter date.

Contraception has been a major contributor to lowering TFR based on the estimates presented. It has had this level in early 1990s but had subsequently decreased and even enhanced fertility for a period[5]. This may be due to the change of behaviour among adolescents according to Natividad and Marquez[13]. Premarital sex increased in prevalence at early 2000; and a low contraceptive prevalence rate, or CPR, has also been observed among them where they opt for the less reliable methods resulting early pregnancy[14].

But as observed here,contraception has become an inhibitor again even having the most contribution to the decrease in TFR. Among the proximate variables, contraception is one of the strongest factors affecting lower fertility in the past[15]. It is first to postpartum infecundability based on breastfeeding practice; which has been an inhibitor as well for a long period.

Connected with contraception, abortion is seen as increasing its effect. This may be due to the observation that, although CPR is indeed augmenting, the effectiveness of the methods are disregarded. It contains those who are using non-modern methods. And this has to be considered when analysing fertility behaviour further.

These somehow are reflected to some of the programmes that the government has been pushing in recent years.

As it is indicated in the Medium-Term Philippine Development Plan, dubbed MTPDP, for 2004 to 2010, the population has to respond the fluctuating infant mortality rate and deviating crude death rate; and the maternal mortality rate that has exhibited a plateau in improvement in previous years. One of the responses then planned was to intensify the implementation of "priority programs" which includes "population management" There is even a target of reducing TFR from 3.5 births per woman in 2003 to 3.2 in 2006[16].

But there was a lack of concrete programme of action toward this goal aside from the continuance of previous administrations' efforts as providing supplies in health centres in different levels of governance based on the policy of devolution. As Costello and Casterline[17] noted at the beginning of the decade is that policies are in place but there is no institution that will encourage couples to do so.

There was no indication in the government's action regarding strengthening the programmes further.

In 2009, an update of the MTPDP[18] was released. It continued to aim to intensify priority programmes including population management. What was raised is that there is a slight increase in CPR but there is a high unmet need for family planning still especially among the poor. Also, it raised the low participation of males in this process.

Still, there is a lack of concrete actions laid for this purpose.

As evidenced in the 2008 NDHS, most of the supply of modern methods decreased for the public sector supply side. 72% of women in 1998 has declared their source of contraceptives to be the government at different levels of administration; but in 2008, it declined to 46%. The increase is for the private sector from 26% to 51% from 1998 to 2008 respectively. Furthermore, there may have been other facets on the increase of contraception and postpartum infecundability. This is a site for further investigation.

Conclusion

On this paper, it can be said that particular actions may be done to intervene in terms of policy from the results presented. Promotion of modern methods of contraception, which is part of the millennium development goals to be accessible, can be strengthened to respond to the attribution to the change in TFR; as with postpartum infecundability. For the aspect on marriage, certain responses may be done toward improving the state of early pregnancy among youth and other risky situations that may contribute to an increase in fertility.

These incidences are important because even if they are deemed illegal, they are still occurring and based on what was presented, the figures are growing. What was presented is a preliminary view, improvement in data and the approximation may be refined further. These aspects are important to peer into because it leads to the issue of women's health in general. Furthermore, although presented here is the case of the Philippines; this may lead to encouraging cross-country comparisons as states as Thailand experience an entirely different fertility experience which is low and this may have a different manifestation in analysing women's health status and behaviour.

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