The anomaly of low infant mortality and high fertility in Nanggroe Aceh Darussalam: An analysis of the 2007 Indonesia Demographic and Health Survey Data

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DECLARATION

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by any other person except where due reference is made in the text.

Adelaide, December 2009

A f r i d a

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ABSTRACT

Despite the common observations of a positive relationship between infant mortality and fertility of a population, Nanggroe Aceh Darussalam (NAD or Aceh) has recently experienced a substantial decline in its infant mortality rate (IMR) from 45.5 to 25 per 1,000 live births between 1997 and 2007, but a continuation of its total fertility rate (TFR) at 3.0 and 3.1 between 1997 and 2007 respectively. The general aim of the present study is to address the question of the anomaly of low and declining infant mortality rate and the continuing fertility at above replacement levels. To achieve this general aim, the study examined the effects of each proximate determinant of fertility according to Bongaarts' framework to identify the factors that influenced causation of the anomaly mentioned above and examined whether socio cultural factors in Aceh have any role in this anomaly. Several types of analysis have been done to address the study objectives. The ProxDemo computer software was used to find the effects of each of the proximate determinants of fertility. Bivariate and multivariate analyses were used to identify the most influential factors responsible for the current state of infant mortality and fertility in Aceh.The findings of this research have revealed that marriage, which is represented by percent in marital union in the ProxDemo software, has the largest effect in determining total fertility rate in Aceh at both 1997 and 2007. This is followed by contraceptive use and breastfeeding which have weaker effects on fertility in Aceh. The bivariate and multivariate analyses, on the other hand, have shown that education is the most significant factor for determining both fertility and child mortality levels in Aceh. The bivariate analysis has also revealed that marriage, in this case represented by age at first marriage has a significant influence on mothers' experience of child death. Further, women's education has been found to significantly affect at age first marriage. Sex preference of future children is significantly related with the use contraception. Finally, women living in urban areas were more likely to shorten breastfeeding, which is more likely to increase fertility.The discussion about socio cultural background and special circumstances that happened in Aceh between 1997 and 2007 has influenced reproductive behaviour of women in Aceh. Most women and men in Aceh desired to stop childbearing only when they had four living children, which is in contrast to the situation in Indonesia as a whole where most women and men want no more children after having only two living children. Furthermore, the military conflict in 1989-1998 and tsunami disaster in 2004 are believed to have affected the socio-cultural situation of Aceh, creating a special condition that had caused this anomaly in demographic performance that happened in Aceh. All these social changes may have influenced in reproductive behaviour change of Acehnese people. This study suggests the need of further research to assess the factors responsible for increasing the desired number of children among reproductive age couples in Aceh. It is necessary to maintain a high level of education among women to keep them getting married at 20 years or older in order to maintain a low level of fertility rate on one hand, and to support the low level of child mortality on the other.

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Chapter One

BACKGROUND

1.1. Introduction

The universal applicability of the theory of demographic transition (McDonald 1993, p. 4) has long been questioned by many social scientists due to its variety of implications when applied to different cultures and societies. For example, in Asian societies, fertility has declined within the context of early marriage, and without rapid economic development. In some Asian countries such as China, Singapore, and South Korea, fertility continues to decline even though fertility and mortality levels balance each other at a low level (McDonald 1993, p. 5). Likewise, within the scope of a huge country formed by an archipelago like Indonesia, there are a variety of cultural, religious and customary situations among the provinces which have an influence on the prevailing demographic situation of each region.

A province with a continuously high level fertility is commonly associated with low levels of socio-economic development. According to Bongaarts (1978, p. 105-132), the socio-economic factors have only a distant relationship with fertility. Their influence on fertility occurs through other proximate or intermediate factors which directly affect fertility. Bongaarts identified four proximate factors or determinants that affect fertility directly, namely: marriage, contraception, lactation, and induced abortion. Bongaarts' proximate determinants are taken from the 11 factors which Davis and Blake (1956) had identified earlier as being the intermediate variables between socio-economic factors and fertility. According to Bongaarts (1978) the four proximate determinants explain almost all of the variations in fertility in a population.

All of these proximate determinants of fertility will be discussed in this thesis in relation to Nanggroe Aceh Darussalam with the exception of induced abortion for which no data are collected in Indonesian surveys or censuses because it is declared illegal for fertility control purposes by the government of Indonesia (Hull et al. 1993, p. 241).

The most recent study conducted by Tejasmara (2009, p. 67) with integrated analysis of all the proximate determinants of fertility in Indonesia (minus induced abortion), concluded that Indonesia experienced a stalling in fertility in the period 2002-2007. It recommended investigating this phenomenon to see whether it also occurred at the provincial level.

Nanggroe Aceh Darussalam (NAD) is a province in Indonesia which has many natural resources, but for years has suffered from unfair shared contribution or economic benefit of the explored natural resources between the provincial government and the central government. Moreover, the military conflict on the east coast of Aceh during 1989-1998, which was followed by the earthquake/tsunami disaster on the west coast on 26 December 2004, produced an imbalance in the age-sex structure of the population involved in the conflicts and disaster. Recent efforts to rebuild this province therefore need take into consideration such population data (Ananta 2007, p. 15-22).

1.2. Trends in population size, fertility and infant mortality in Nanggroe Aceh Darussalam

In 2005, Nanggroe Aceh Darussalam had a population of 4,031,589 people. This number included the estimates of about 250,000 to 350,000 people who died or migrated to places outside the region during or after the devastations caused by the earthquake/tsunami (Ananta 2007, p. 19).

Table 1.1. Population by regency / city, Nanggroe Aceh Darussalam 1980-2005

Regency/City		*Population*			
		1980 Census	1990 Census	2000 Census[a]	2005 SPAN
1.	Simeulue7)	-	-	57.058	78.389
2.	Aceh Singkil3)	-	-	120.459	148.277
3.	Aceh Selatan	27.545	342.901	302.273	191.539
4.	Aceh Tenggara	159.248	185.768	207.721	169.053
5.	Aceh Timur	423.418	585.971	656.086	304.643
6.	Aceh Tengah	163.341	199.659	263.070	160.549
7.	Aceh Barat	288.422	385.700	422.690	150.450
8.	Aceh Besar	236.374	240.219	285.750	296.541
9.	P i d i e	343.558	420.107	499.796	474.359
10.	Bireuen11)	-	-	349.085	351.835
11.	Aceh Utara	625.296	846.435	667.243	493.670
12.	Aceh Barat Daya3)	-	-	-	115.676
13.	Gayo Lues4)	-	-	-	72.045
14.	Aceh Tamiang3)	-	-	-	235.314
15.	Nagan Raya7)	-	-	-	123.743
16.	Aceh Jaya7)	-	-	-	60.660
17.	Bener Meriah4)	-	-	-	106.148
18.	Banda Aceh	72.090	184.699	216.121	177.881
19.	Sabang	23.521	24.416	23.654	28.597
20.	Langsa5)	-	-	-	137.586
21.	Lhokseumawe11)	-	-	-	154.634
Total		2.610.528	3.415.875	4.073.006	4.031.589

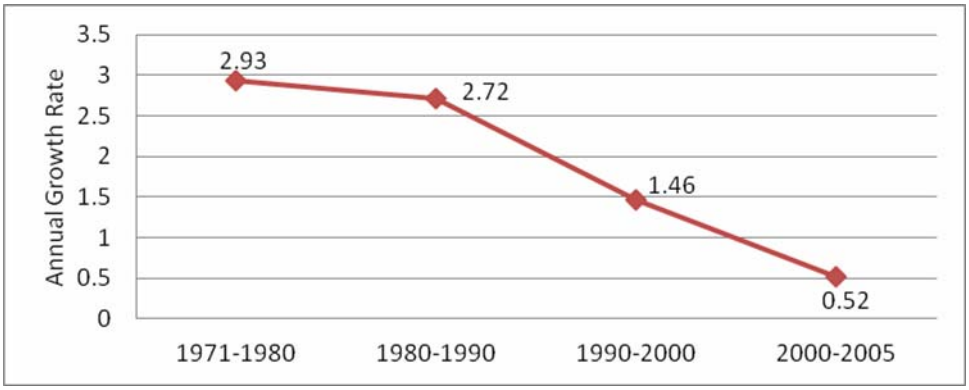
Source: Badan Pusat Statistik (Central Board of Statistics), Nanggroe Aceh Darussalam Province, 2009

Notes:
a) *Estimated value*

x) Number followed name of any Regency/City referred to the previous regency which the former was part of, before the later split into two or more regencies.

Even though the population of the province increased during 1980-2005, the annual rate of population growth in the province declined steadily in the same period, as shown in Figure 1.1:

Figure 1.1. Annual rate of population growth in Nanggroe Aceh Darussalam, 1971-2005



Source : Badan Pusat Statistik (BPS) website 2009, Table 1.1.2.

As can be seen from the graph above, there has been a dramatic fall in the rate of population growth since 1980-1990. This was perhaps associated with many deaths due to the military conflict and tsunami disaster mentioned earlier. However, it is interesting to note that NAD has experienced a trend in its fertility rate, which recorded a decline between the periods implied by the 1971 and 2000 Censuses, but an increase in the period implied by the 2007 Indonesia Demographic and Health Survey (2007 IDHS), as shown in Table 1.2 below.

Table 1.2. Total fertility rate in Nanggroe Aceh Darussalam, 1971-2007

Source	Reference Period	TFR
1971 Population Census	1968	6.26
1980 Population Census	1977	5.24
1990 Population Census	1987	4.37
1991 IDHS	1990	3.76
1994 IDHS	1992	3.3
1997 IDHS	1995	3.0
2000 Population Census	1997	2.81
2007 IDHS	2005	3.1

Sources: BPS Indonesia website 2009, and a series of Indonesian Demographic and Health Surveys by BPS et al. (IDHS 1991 p. 32 Table 3.5.; IDHS 1994 p. 45 Table 3.5.2.; IDHS 1997 p. 39 Table 3.4.2.; IDHS 2002-2003 p. 212 Table A.4.1; and IDHS 2007 p. 251 Table A-4.1)

According to the Indonesian Demographic and Health Survey (IDHS) 2007, NAD has a Total Fertility Rate (TFR) of 3.1. This means that there was a slight increase from 3.0 if compared with the preceding survey conducted in this province (IDHS 1997). The 2002-03 IDHS did not include NAD because of the widespread military conflict, therefore, it is not known whether the TFR had increased or not in between 1997 and 2007.

Several surveys were conducted in NAD in between the censuses and the IDHS. These included the 1976 Intercensal Survey, the 1985 Intercensal Survey, the 1995 Intercensal Survey and National Socio-Economic Surveys (Susenas) of 2003, 2004 and 2005. However, due to small sample sizes and reported inaccurate enumerations in the districts the reliability of the estimates of fertility derived from such surveys is questionable. Therefore, considering the available data from the censuses and the IDHSs shown in Table 1.2, it can be seen that fertility in NAD started increasing from 1995 after a decline from 1968 through to 1997.

The trends in fertility discussed above are consistent with some of the proximate determinants of fertility proposed by Bongaarts (1978, p. 105-132), but are inconsistent with the other proximate determinants. For example, the determinant supporting higher fertility since 1995 is the falling age at first marriage among women, which declined from 23.4 years (2000 Population Census) to 20.2 years (IDHS 2007). However, the proximate determinant contradicting this rise in fertility was the increasing contraceptive prevalence rate (CPR) for any contraceptive method, which continued to rise from 37.1% to 47.4% during 1997-2007, and the CPR for any modern contraceptive rose from 36.3% to 45.4% in the same period.

Fertility and infant mortality are generally positively related, that is, a decline in TFR is associated with a decline in infant mortality rate (IMR). However, this is not the case in Nanggroe Aceh Darussalam. The IMR fell sharply from 45.5 to 25 infant deaths per 1,000 live births according to the IDHS 1997 and 2007 respectively.

Table 1.3. shows the rank of TFR and IMR of the provinces in Indonesia from the lowest to the highest level with corresponding differences of the ranks to show whether an anomaly of both rates occurred in Nanggroe Aceh Darussalam.

Table 1.3. Rank of the provinces from the lowest to the highest in terms of total fertility rate (TFR) and infant mortality rate (IMR), Indonesia 2007

Infant mortality rate			Total fertility rate			**Rank(IMR)-Rank(TFR)**
Province	**IMR***	**Rank**	**Province**	**TFR***	**Rank**	
DI Yogyakarta	19	1	DI Yogyakarta	1.8	1	0
Nanggroe Aceh Darussalam	25	2	Bali	2.1	2	5
East Kalimantan	26	3	East Java	2.1	3	6
Central Java	26	4	DKI Jakarta	2.1	4	1
DKI Jakarta	28	5	Central Java	2.3	5	-1
Central Kalimantan	30	6	Bengkulu	2.4	6	18
Bali	34	7	Bangka Belitung	2.5	7	7
North Sulawesi	35	8	Lampung	2.5	8	12
East Java	35	9	Gorontalo	2.6	9	18
West Papua	36	10	South Kalimantan	2.6	10	19
Riau	37	11	Banten	2.6	11	12
Jambi	39	12	West Java	2.6	12	1
West Java	39	13	East Kalimantan	2.7	13	-10
Bangka Belitung	39	14	South Sumatera	2.7	14	4
Papua	41	15	Riau	2.7	15	-4
Southeast Sulawesi	41	16	South Sulawesi	2.8	16	1
South Sulawesi	41	17	North Sulawesi	2.8	17	-9
South Sumatera	42	18	West Kalimantan	2.8	18	4
Riau Islands	43	19	West Nusa Tenggara	2.8	19	13
Lampung	43	20	Jambi	2.8	20	-8
North Sumatera	46	21	West Papua	2.9	21	-11
West Kalimantan	46	22	Central Kalimantan	3	22	-16
Banten	46	23	Nanggroe Aceh Darussalam	3.1	23	**-21**
Bengkulu	46	24	Riau Islands	3.1	24	-5
West Sumatera	47	25	North Maluku	3.2	25	1
North Maluku	51	26	Southeast Sulawesi	3.3	26	-10
Gorontalo	52	27	Central Sulawesi	3.3	27	4
East Nusa Tenggara	57	28	Papua	3.4	28	-13
South Kalimantan	58	29	West Sumatera	3.4	29	-4
Maluku	59	30	West Sulawesi	3.5	30	3
Central Sulawesi	60	31	North Sumatera	3.8	31	-10
West Nusa Tenggara	72	32	Maluku	3.9	32	-2
West Sulawesi	74	33	East Nusa Tenggara	4.2	33	-5

Source: Indonesia demographic and Health Survey 2007.
*IMR (number of infant deaths per 1,000 love births); TFR (Number of children per woman in her reproductive period)

1.3. Statement of the research problem

In terms of the ranking from the lowest to the highest, NAD is ranked 2 in terms of infant mortality rate, but 23 in terms of total fertility rate (Table 1.3). It shows the greatest anomaly in the ranking of this province in terms of infant mortality rate (IMR) and total fertility rate (TFR). Most of the other

provinces except Bengkulu, Gorontalo, South Kailmantan, Banten, West Nusa Tenggara, Central Kalimantan and Papua have a difference of 10 or less in their ranking in terms of IMR and TFR.

Further, the trends described above point to certain other anomalies with respect to the trends in fertility in NAD, and the proximate determinants of fertility such as contraceptive prevalence rate (CPR). In terms of socio-cultural factors, it may be noted that in general most people in NAD subscribe to the positive value of many children. Every family wishes to have both sons and daughters (Yayasan Bhakti Wawasan Nusantara 1992, p. 345). However, there are no restrictions in NAD on using contraceptives as long as they do not contradict the teachings of Islam under which the use of permanent contraceptive methods is still seen as an exception. This is based on a decision made by the Religious Affairs Board (Majelis Ulama Indonesia or MUI) of Nanggroe Aceh Darussalam Province at their meeting held during 3-8 November 1974. The MUI is a patron of the Family Planning Program in the province (BKKBN NAD, 2008).

The Research questions

The main research question is "Why is there an anomaly between the trends in fertility and other demographic variables in Nanggroe Aceh Darussalam?".

The specific research questions are:

1. What are the effects of proximate determinants of fertility in Nanggroe Aceh Darussalam in 2007?

2. Which proximate determinants are common to both fertility and infant mortality in NAD?

3. What are the most influential socio-economic factors affecting fertility and infant mortality in NAD?

4. Is there any relationship between the high fertility observed in Nanggroe Aceh Darussalam, and some of the common socio-cultural factors regarding the value of children, particularly the desire for every family to have both sons and daughters?

1.4. Justification of the Research

1. The total fertility rate (TFR) in Nanggroe Aceh Darussalam in 2007 is still high at 3.1. As mentioned earlier, it is the eleventh highest TFR among the 33 provinces of Indonesia, and is above the national average of 2.6.

2. The sudden rise of fertility in NAD in 2007, after the gradual decline from 1968, needs to be examined in terms of causal factors, considering that contraceptive use is still increasing and infant mortality continues to decline.

1.5. Research Objectives

1. To analyse the contribution of the proximate determinants of fertility to the present level of fertility in Nanggroe Aceh Darussalam.
2. To analyse the determinants common to fertility and infant mortality in Nanggroe Aceh Darussalam.
3. To determine whether socio-cultural factors in Nanggroe Aceh Darussalam, particularly in the context of Islamic law, result in high fertility in this province.

1.6. Methodology

The 2007 Indonesia Demographic and Health Survey (IDHS 2007) provides fertility rates which are calculated directly from birth histories of its sample respondents, that is, ever married women in their reproductive age (15-49 years old). It presents the levels, trends and differentials of fertility based on the number of living children, age, sex, survival status and age at death for those who died (IDHS 2007, p.47). Data are then calculated to formulate current fertility (age-specific fertility rate, total fertility rate), and completed fertility (children ever born).

Biases may occur from underreported early still births and misreported dates of birth. The quality of data is also limited by the ever married status of the respondents, which means disregarding the fertility of single women in the corresponding age group (15-49 years old). However, since in Indonesia most births are within marriage, those births of single women are negligible (IDHS 2007, p.47). Furthermore, the 2007 IDHS potentially overestimates the fertility rate because of its difference with the population censuses and surveys in the distribution of single and married women, especially in the 20-29 age group, whose fertility is the highest (IDHS 2007, p. 47, footnote 1).

The units of analysis employed in this research are ever married women aged between 15-49 years who were interviewed in the 2007 Indonesian Demographic and Health Survey. For Nanggroe Aceh Darussalam province in particular, the sample size is 514 ever married women. The variables which will be used are derived from Women's Questionnaire in the 2007 IDHS.

This research will analyse all proximate determinants minus that of induced abortion and selected contextual determinants of fertility in NAD. To analyse how much influence each proximate determinant contributes to the fertility of NAD, Proxdemo, a special software produced by The Futures Group 1997 is used in this research. This method of analysis is based on the theoretical framework proposed by Bongaarts (1978, p.106) to investigate the extent of how each proximate determinant can affect the fertility level of a population. This will be explained further in the literature review in Chapter Two.

According to Bongaarts (1982, p.180), the total fertility rate (TFR) is the last result after all the fertility inhibiting factors have been taken into account. If the factor proportions of women married is not distinguished from those who are single, the rate would rise to a level which is known as total marital fertility rate (TM). When the factors of contraception use and induced abortion are also removed, the rate will subsequently increase to the Total Natural Marital Fertility Rate (TN). And finally if the natural factors, especially the postpartum infecundability, are further eliminated then the women will reach their maximum biological capability to reproduce children as measured by the total fecundity rate (TF). While those rates of TFR, TM and TN have huge variability among different populations, TF has an average value of 15.3 for every population (Bongaarts 1982, p.180).

All of the rates discussed above are used to construct each index which corresponds to the proximate determinants of fertility (Bongaarts 1982, p.181):

$$TFR/TM = C_m$$
$$TM/TN = C_c \times C_a$$
$$TN/TF = C_i$$

The Total Fertility Rate (TFR) is then formulated as follows (Bongaarts 1982, p.181):

$$TFR = C_m \times C_c \times C_a \times C_i \times TF$$

where TFR = Total Fertility Rate

C_m = index of marriage

C_c = index of contraceptive prevalence rate

C_a = index of induced abortion

C_i = index of postpartum infecundability

TF = Total Fecundity Rate = 15.3

All the indices vary between 0 and 1. If all the indices have values of 0, their fertility inhibiting effect is the maximum. This corresponds to the situation when no one is married, everybody uses contraception, everyone practices induced abortion and everyone has completed postpartum infecundability (sexual abstinence plus amenorrhea due to lactation). Conversely, when all the indices have values of 1, the particular population has a minimum capability to control fertility because all reproductive-age women are married, none of them use contraception, there no induced abortion and there is no practice of postpartum abstinence and breastfeeding (Bongaarts 1982, p.181). In other words, when the indices approach 0, they tend to lower fertility. And when the indices approach 1, they tend to raise the fertility of a population.

To further analyse which common factors have the strongest influence on the anomaly of high fertility and low infant mortality in Aceh in 2007, the analysis will be enriched by bivariate and multivariate analysis of all possible factors that is in accordance with the theoretical framework discussed in Chapter Two.

Chapter Two

LITERATURE REVIEW

2.1. Introduction

This chapter reviews the selected literature relevant to the subject of this research project. It addresses the main research question of this thesis, namely, "why is fertility in Nanggroe Aceh Darussalam high relative to its expected level given the very low infant mortality in the country". The review begins with a presentation of the proximate determinants of fertility (Bongaarts 1978) and continues with a discussion of other distant determinants which operate only through the proximate determinants in order to influence fertility. The literature review also covers relevant theories regarding infant mortality and its relationship with fertility. Based on these reviews, a conceptual framework for this study is proposed. It may be recalled that infant mortality and fertility exhibit an anomalous relationship in Nanggroe Aceh Darussalam, henceforth referred to as Aceh. The literature review will end with a discussion of the socio-cultural basis of reproductive behaviour of the people in this province for the period prior to 2007.

2.2. Proximate Determinants of Fertility

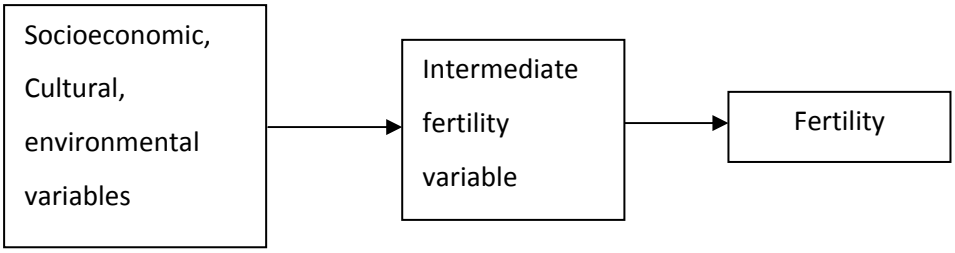
This section outlines the development of Bongaarts' framework which is now used widely to explain the proximate determinants of fertility. This will be followed by related examples from various places to show how different levels of each factor affect fertility.

2.2.1. Development of Bongaarts' framework

The level of fertility in any population, or subgroup of a population at any particular time and place, is determined by a number of factors (Bongaarts 1978, p. 125). Some of these factors contribute as direct causes of fertility which are known as the proximate determinants of fertility (Bongaarts 1978, pp.105-106). The other factors, namely the indirect factors, operate to influence

fertility only through these proximate factors. A simple illustration of this mechanism is given in Figure 2.1 below:

Figure 2.1. Simple relationships among the determinants of fertility



Source: Bongaarts 1978, p.106

The first effort to express a set of proximate determinants was published as a set of intermediate fertility variables by Davis and Blake (1956, p. 212) which included 11 direct factors. These intermediate variables and their components are shown in Table 2.1:

Table 2.1. Intermediate fertility variables by Davis and Blake (1956)

I. Factors affecting exposure to intercourse ("intercourse variables")
A. Those governing the formation and dissolution of unions in the reproductive period
1. Age of entry into sexual unions
2. Permanent celibacy: proportion of women never entering sexual unions
3. Amount of reproductive period spent after or between unions
a. When unions are broken by divorce, separation, or desertion
b. When unions are broken by death of husband
B. Those governing the exposure to intercourse within union
4. Voluntary abstinence
5. Involuntary abstinence (from impotence, illness, unavoidable but temporary separations)
6. Coital frequency (excluding periods of abstinence)
II. Factors affecting exposure to conception ("conception variables")
7. Fecundity or infecundity, as affected by involuntary causes
8. Use or non-use of contraception
a. By mechanical and chemical means
b. By other means
9. Fecundity or infecundity, as affected by voluntary causes (sterilization, sub-incision, medical treatment, etc.)

III. Factors affecting gestation and successful parturition ("gestation variables")
10. Foetal mortality from involuntary causes
11. Foetal mortality from voluntary causes

Source: Davis and Blake (1956, p. 212)

Even though this analytical framework can be applied to comparative sociological studies in every society by their plus or minus effect on fertility, Bongaarts (1978, p.106) considered the set of intermediate variables outlined by Davis and Blake to be quite complex for quantification. Therefore, he simplified it as follows in Table 2.2:

Table 2.2. Proximate determinants of fertility by Bongaarts (1978)

I. Exposure factor
1. Proportion married
II. Deliberate marital fertility control factors
2. Contraception
3. Induced abortion
III. Natural marital fertility factors
4. Lactational infecundability
5. Frequency of intercourse
6. Sterility
7. Spontaneous intrauterine mortality
8. Duration of the fertile period

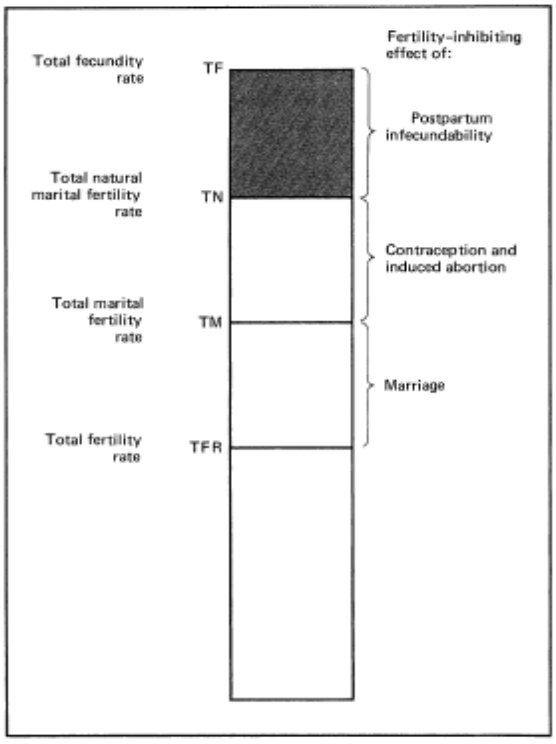
Source: Bongaarts (1978, p. 106)

Both Davis and Blake's work and Bongaarts's model are considered to guide findings of the inhibitors to women's fertility. These inhibitors operate through the natural exposure of continuous stages of fertility, namely: sexual unions or marriages, pregnancy, conception and gestation. This results in a set of four dominant factors from Bongaarts's model that are selectively based on their sensitivity to fertility and variability among populations (Bongaarts 1982, p. 180, Table 1), namely: the proportion of married women, contraceptive use, prevalence of induced abortion, and

postpartum infecundability. The first goal in preventing fertility occurrence is to control the exposure effect which means preventing any kinds of early sexual unions or marriages. It then aims to regulate the reproductive behaviour by means of deliberate fertility control measures; by contraceptive use to prevent pregnancies; or by induced abortion to terminate pregnancies at such an early age. Finally it acts as an additional inhibitor for the natural side of marital fertility such as postpartum infecundability, involuntary sterility, and spontaneous abortion. If all those inhibiting factors are absent for a woman, it means that she has the maximum biological capability to give birth to as many children as she is able to. Because the reproductive age of a woman ranges from 15-49 years old, without the effect of those inhibiting factors, she could give birth to as many as 13-17 children in her lifetime (Bongaarts 1982, p.180).

The theory above is best described by the following figure, in which some of the terminologies are formulated and explained previously in the methodology section of Chapter One. The figure below shows the relationship between the fertility inhibiting-effects of intermediate variables and various measures of fertility:

Figure 2.2. Relationship between the fertility inhibiting-effects of intermediate variables and various measures of fertility



Source: Bongaarts (1982, p. 180)

Bongaarts (1978, pp. 126-127) concluded that his framework was useful in clarifying the relationship between socioeconomic determinants and fertility; in tracking changes in fertility level from available changes in all proximate determinants; and conversely, in predicting how much modification of the proximate determinants is needed to reach a certain level of population fertility in the future.

However, of all the reproductive behaviour indicated by the proximate determinants, the prevalence of contraception is the best way to predict a population's fertility (Bongaarts 1987, p. 133). This was supported by the estimation of total fertility rate using the simple regression method in 1980, which concluded that each 10 % increment in contraceptive prevalence will reduce fertility by about 0.62 births per woman (Bongaarts 1987, p. 133). This fell within one birth, in terms of real application, and became consistently evident for a large number of populations, especially in Thailand and Taiwan (Bongaarts 1987, p. 133). If we apply this simple method to the situation in Aceh, where contraceptive prevalence increased from 37.1 % in 1997 (1997 IDHS report; 1998, p. 72) to 47.4 % in 2007 (2007 IDHS report; 2008, p.266), this indicates an increase of 27.8 % in contraceptive prevalence between 1997 and 2007. According to Bongaarts's calculation (1987, p. 133), this 27.8 % increase in contraceptive prevalence should reduce fertility by 1.7 births per woman from a level of 3.0 in 1997. In other words, the TFR in Aceh should be 1.3., Bongaarts's method is based on a simple regression and may not be applicable in all situations, however the increase in CPR should have some impact in reducing the TFR of Aceh. A possible explanation is that the fertility inhibiting effect of increased CPR on the fertility of Aceh is being counterbalanced by the fertility supporting effect of some other factors.

Nevertheless in many developing countries, where fertility transition is still in the early phase, fertility rates are high when they are compared to the level of contraceptive use (Bongaarts 1987, pp. 133-135). In these countries contraception is used to prevent pregnancies after the desired number of children is reached (Veasna 2004, p. 31). Furthermore, in various surveys between 1976 and 1984, there were five countries which experienced exceptionally high fertility ranging between 1.7 and 2.0 higher than estimation, namely: Yemen, Kenya, Syria, Jordan and Zimbabwe (Bongaarts 1987, p. 134). Since the contraceptive use factor has already been eliminated, it is reasonable to point out that the excess level of fertility is controlled by natural fertility, that is, a short period of breastfeeding and early marriage (Bongaarts 1987, pp. 135-136). In relation to this, the duration of breastfeeding in Aceh has declined by 0.7 months, age at first marriage, however, has increased by 1.7 years as shown below:

Table 2.3. Age at first marriage and duration of breastfeeding, Aceh 1997-2007

Year of survey	Median years of age at first marriage	Median months duration of breastfeeding
1997 IDHS	18.5	20.4
2007 IDHS	20.2	19.7

Source: 1997 IDHS report (1998, pp. 118, 200) and 2007 IDHS report (2008, pp. 278, 309)

2.2.2. Examples from Different Studies Using Bongaarts's framework

The huge applicability of fertility analysis using Bongaarts's framework of proximate determinants has attracted many researchers to conduct similar studies in different countries. In Cuba, from 1965 until 1982 fertility declined and reached its lowest level in 17 years. This was then maintained by the widespread practice of legal induced abortion to assist possibility of failure in modern contraceptive use. However, fertility in Cuba are more dependent on contraception and marriage patterns rather than on abortion and breastfeeding (Hollerbach 1984, p. 12).

In China, according to a 1982 fertility survey, the total fertility rate varied from 2.9 in rural areas to 1.4 in urban areas. This very low level of fertility in China was calculated using the total fecundity formula of Bongaarts's framework by Wang et al. (1987, p. 222). The result revealed that induced abortion has the most powerful effect in reducing fertility in China, followed by contraception and non-marriage, while postpartum infecundability and spousal separation can be negligible.

In Sub-Saharan Africa, fertility has also decreased but not as fast as that in most countries in Asia and Latin America. The most notable practice of reducing fertility in this region is through postpartum sexual abstinence which is followed by ongoing breastfeeding for the health concern to babies (Bongaarts 1984, p. 522). Spousal separation by migration of male labour may play a significant part as well (Bongaarts 1984, p. 524). However, despite increasing developmental indicators throughout this region, most child-bearing aged women have been in sexual unions since they were young (Bongaarts 1984, p. 521). They have very limited knowledge and practice of contraception and, so, in induced abortion (Bongaarts 1984, p.526), these last three factors have no important role in fertility decline in Sub-Saharan Africa.

Another example from Arabic countries such as Egypt and Morocco (Eltigani 2000, p. 73) demonstrated that both countries had experienced a rise in the singulate mean age at marriage (SMAM) in the population from the late 1970s until the mid 1990s. Egypt increased its SMAM by one year while Morocco increased by five years.

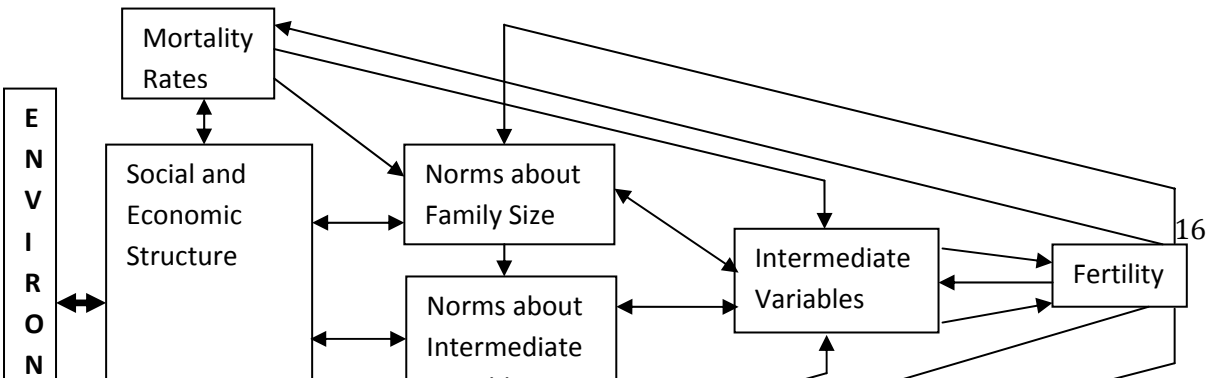
Nevertheless, what happened in Aceh, where contraceptive prevalence contradicts the fertility level, is supported by a similar episode in Bangladesh. Saha et al. (2007, p. 31) stated that contraceptive use in Bangladesh has an inconsistent relationship with fertility. From the mid-1970s until the early 1990s there was a significant fertility decline from around six to 3.4 children but there was an increase in contraceptive use from 10% to 45% in this country. In the late 1990s however, the fertility remained stable at 3.3 when the contraceptive use level reached 54%. Becker 1991 (cited in Saha et al. 2007, p. 31) suggested that this was due to a change in desired fertility, which had a more powerful effect in reducing fertility than family planning program or even contraceptive use did. Saha et al. (2007, p.34) believed that the reason behind this phenomenon in Bangladesh was the lack of quality family planning services and the preference for male children against infant and child mortality. However, because of the limited use of contraception in this country, the major determinant of fertility was breastfeeding (Huffman 1987, p. 447). As mentioned earlier in Chapter One, between 1997 and 2007, there was a slight increase in fertility in Aceh despite the considerable increase in contraceptive use.

2.3. Distant/Contextual Determinants of Fertility

As previously mentioned, fertility in a population is determined by a number of proximate factors. These factors create a pattern in the reproductive behaviour which Freedman (1963 cited in Saikia 2004, p.65) suggested was further determined by the social norms in the population. Social norms, especially in traditional societies, have a tying-effect to individual couples in terms of if or when they are going to marry, initiate sexual intercourse, choose to abort (Freedman 1963 cited in Saikia 2004, pp. 64-66), use contraception, and breastfeed their children.

Subsequently, Freedman (1975, p. 15) developed a framework to analyse how social norms are involved in fertility control behaviour.

Figure 2.3. Freedman's model for the sociological analysis of fertility levels



Source: Freedman 1975, p.15

Freedman (1975, pp. 13-18) discussed in detail all the variables that affected fertility. He agreed with Davis and Blake (1956) that intermediate variables were the major factors that connected all social determinants with fertility. Nevertheless, he believed that intermediate variables were not always used deliberately to determine fertility, because while similar values of some intermediate variables may result in different levels of fertility among different populations, the various combinations of values for these variables may conversely cause similar levels of fertility.

Furthermore, Freedman (1975, pp. 13-18) suggested that cultural factors had an inevitable effect on base fertility, even though they only affected fertility through one or more intermediate variables. These cultural factors were divided into social norms regarding family size and intermediate variables. The difference between both groups was that while social norms regarding intermediate variables were much less consistent, social norms about family size were usually more fixed in a society from 'at least three or four' until 'as many as possible' (Freedman 1975, p. 15).

Moreover, according to Freedman (1975, pp. 13-18), social structures or institutions influenced norms concerning family size through the consistent values of family, social rewards and punishments. Again, constructions of social norms about intermediate variables were less consistent, especially during periods of rapid social change. The social practices varied from the direct explicit government policy of the family planning program, family consensus about family planning, religious practices of traditional family planning, and implicit economic policy in supplying inadequate nutrition that may reduce fecundity.

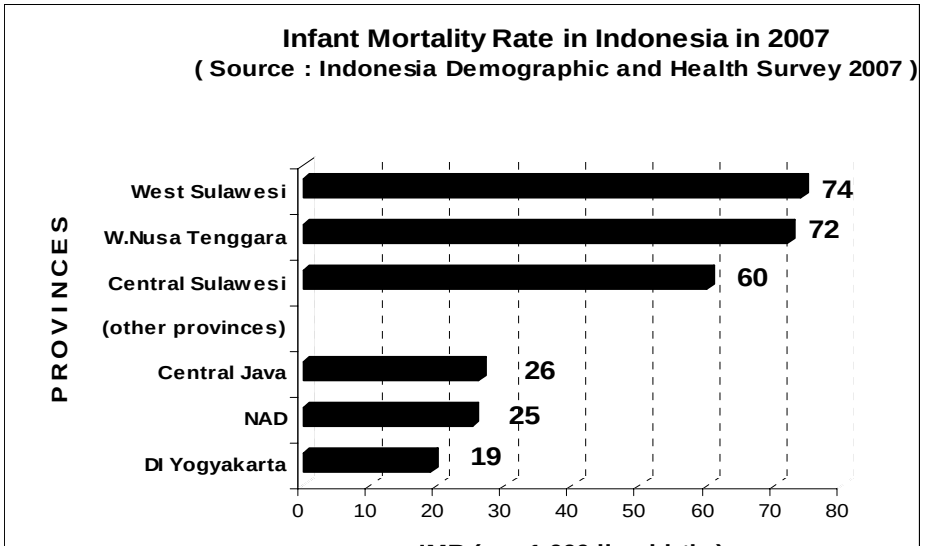
In the context of Aceh, this theory may be more applicable because while contraceptive prevalence and age at first marriage continued to increase between 1997 and 2007, the fertility level did not decrease to the expected level. In fact, it even increased slightly, indicating that there were

cultural factors or social norms that played a role in these contrasting trends in Aceh during this period. So many inconsistencies may also have developed from the rapid social changes due to the military conflict and tsunami disaster. The IDHS 2002-2003 survey, which was not carried out for the above reasons, should have raised questions of whether, and to what extent, these trends in intermediate variables and fertility could be explained. For example, the contraceptive prevalence rate (CPR) increased if we compared the figures in 1997 and 2007. But if, in 2002-2003, the CPR significantly rose from 1997 and then dropped sharply into 2007, it perhaps can be explained by change in reproductive behaviour of parents before and after the military conflict and the tsunami disaster. When both events occurred the children mortality was high, but then the children who have died were replaced immediately by high childbearing which was indicated by drop in CPR, after the military conflict and tsunami disaster over. Furthermore, Islamic religious practices as major social norms in Aceh may help the widespread idealism among Acehnese people, because they believe that each child comes with their own wealth from God, therefore most children's births are welcome in any family. Last but not least, the decentralisation policy put in place by the Indonesian government since 1999 has transformed the highly centralised family planning programs into decentralised programs arranged by local government authorities (Syarief 2008, p. xxi). This has its own threat to the sustainability of the family planning programs (Hayes et al. 2003, p. 8).

2.4. Infant Mortality

From the current IDHS 2007 data, the Infant Mortality Rate (IMR) in Aceh is the second lowest in Indonesia with 25 infant deaths per 1,000 live births after Yogyakarta, which is estimated to have experienced only 19 infant deaths per 1,000 live births. Meanwhile, West Nusa Tenggara (Nusa Tenggara Barat/NTB), which had the highest infant mortality rate until 2002-2003, has now improved only slightly to record the second highest IMR with 72 infant deaths per 1,000 live births, after the new province of West Sulawesi with 74 infant deaths per 1,000 live births (See Figure 2.5).

Figure 2.4. Infant mortality rate (IMR) in Indonesia in 2007



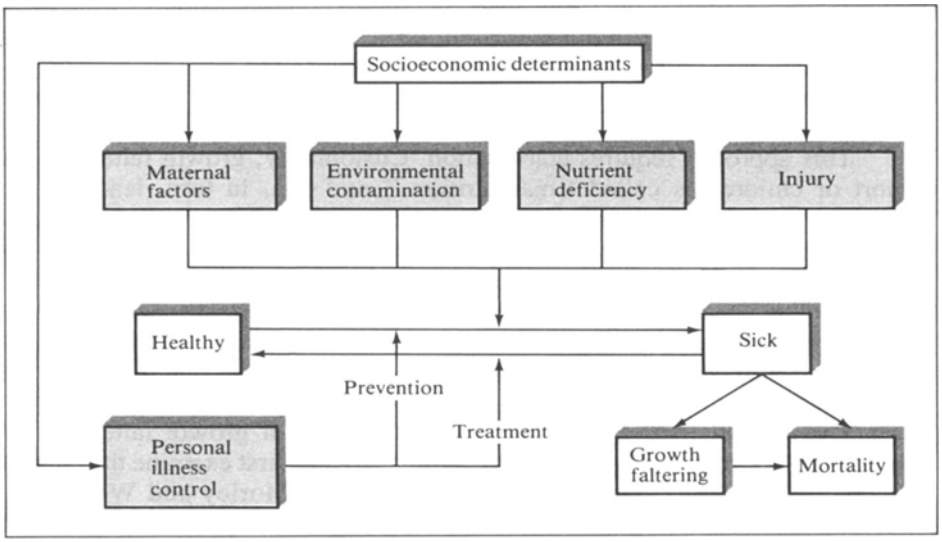
Source : Indonesian Demographic and Health Survey (IDHS) 2007, p.121

According to National Developmental Planning Board of Republic Indonesia/Bappenas Republik Indonesia (2008, p. 53) the major causes of infant death in Indonesia are perinatal complications, acute respiratory tract infections, diarrhoea, tetanus, gastrointestinal and brain infections.

During the twentieth century, life expectancy in humans doubled from about 30 years to about 75-80 years (Gwatkin 1980, pp.615-616). Because of rapid development in public health and disease control after the Second World War, the developing world experienced a decline in mortality three times faster than comparable Western countries. Nevertheless, since the 1970s, the pace of decline has slowed in various parts of the developing world (Gwatkin 1980, pp. 637-638).

The most common framework for analysing child survival was proposed by Mosley and Chen (1984, p. 29). This framework pattern is almost identical to the simple framework for fertility determinants. However, mortality analysis involves more complex biological aspects than fertility analysis does; therefore it is more difficult to quantify (Mosley & Chen 1984, p. 29). There are five proximate determinants which directly influence infant mortality as indicated in the diagram below (Figure 2.6). Other factors such as socioeconomic determinants affect infant and child mortality through these proximate determinants. The proximate determinants include maternal factors, environmental contamination, nutrient deficiency, injury and personal illness (Mosley & Chen 1984, p. 29).

Figure 2.5. Integrated approach of proximate determinants of child survival



Source: Mosley and Chen (1984, p. 29)
Note: Five proximate determinants of child survival are those which shown in grey boxes.

In the 2007 IDHS (pp. 119-120) the proximate factors of maternal characteristics are measured as the age of mother, parity, and birth interval (Mosley & Chen 1984, p. 32), whereas the socioeconomic factors are place of residence, mother's educational attainment, and wealth index quintile (USAID 2008, p. 7). Some other factors such as birth weight, antenatal care, and delivery assistance are also discussed.

2.5. Relationship between Infant Mortality and Fertility

Most of the theoretical models about the relationship between mortality and fertility examine fertility behaviour responses to the actual or expected child deaths. They do this by considering the achievement of family formation goals in terms of preferences for family size, sex composition, and timing (Preston 1978, Ben-Porath 1976, and Wolpin 1984 cited in Frankenberg 1998, p. 316).

According to Freedman (1975, p. 15), in a society where the mortality level is high, fertility is also high so as to anticipate the possibility of low child survival; therefore, it is common for the social structure to set the desired number of children. Freedman suggests that the desirable number of children may be either 'at least three or four children' or 'as many as possible'.

Many researchers have been trying to find the relationship between mortality analysis and fertility which is classified through three dominant pathways (Frankenberg 1998, pp. 316-317 and Cleland 2001, pp. 60-61):

1. Reproductive physiology which surrounds childbearing from effect of lactation on ovulation; Knodel and van de Walle (1967, p. 112) pointed out that breastfeeding is an important variable to link child mortality with subsequent fertility. This is due to the effect of breastfeeding in increasing child survival and delaying the return of ovulation at the same time, thus causing a further delay of the next birth (Saikia 2004, p. 69). This, in turn, also decreases the chance of child mortality, but this seems also not happen in Aceh where infant mortality is low despite the decline in duration of breastfeeding and the percentage of exclusive breastfeeding. However, birth intervals of fewer than 24 months also decreased by 1.6% during the period of 1997-2007. This may be caused by factors other than breastfeeding such as the success of contraceptive use.

2. Behavioural fertility response or replacement strategy to child loss ('The Replacement Effect'); This strategy involved people who had an additional child to replace other children who had previously died, and to achieve the target number of living children (Frankenberg 1998, pp. 316-317).

3. Behavioural fertility response to expected mortality (hoarding) or anticipation of the future loss of children ("the insurance effect"); In this strategy, people have a larger number of children than their desired number so as to anticipate that some children will die before reaching adulthood (Frankenberg 1998, p. 317).

On one hand, Davis (1963, p. 352) demonstrated his theory of multi-phasic response to support the linkages that improved survival does not only reduce the need for more children, but also impact to the conscious choice not to add children. It is simply due to the effect of the 'train of disadvantages', that is, that mortality reduction will cause more childrearing, more education, and more effort to maintain the socio-economic status of the family. It also effects to less share and delay of inheritance because of more siblings and improved parental survival. This happens to every class in any society as of the common change in present social values that with economic improvement, individual people need to get more prosperity than those in the past. This brings to another consequence that their future children should not have less economic status than they do. Thus, the outcome of reproductive behaviour appears as fewer children is preferable.

On the other hand however, Cleland (2001, pp. 60-61) argued that there is no empirical evidence about linkages between mortality analysis and fertility. The majority of the results for the

three mechanisms mentioned above are not strong enough to be convincing (Cleland 2001, p. 60). For instance, breastfeeding can only reduce child mortality and cause longer birth intervals, but at its best, it can only reduce fertility from ten to eight children (Cleland 2001, p. 60). Moreover, parents who previously lost a child are only 20-30 % more likely to have another child than those who had not lost children (Preston 1978 cited in Cleland 2001, p. 61). Cleland (2001, p. 62) further stated that there was only little evidence to prove that individuals were motivated to anticipate possible child loss in the future by having more children. This observation weakened the link between child mortality and fertility. Even at the population level, there was no strong direct relationship between mortality decline and fertility decline as the response. In some populations fertility decline occurred when mortality was still high, while in other populations fertility remained high until infant mortality declined and approached 50 per 1,000 live births (Cleland 2001, p. 62). In the case of Aceh, the IMR is already 25 per 1,000 live births while fertility slightly increased in 2007 after its continual decrease since 1971. However, 'the replacement effect', which was suggested by Preston (1978), was more likely to be applicable to explain the sudden increase in fertility in Aceh in 2007. This may be due to the increasing need to replace those children who have died as a result of military conflict in 1989-1998, or the 2004 tsunami disaster.

A study in 41 developing countries by the United Nations Population Prospects regarding net reproduction rate (NRR), which represents a mortality measure, revealed a decline in fertility when the NRR dropped below 2.0 in Myanmar, Chile, India and Indonesia (Cleland 2001, p. 63). Many scholars still believe the proposition of demographic transition theory. They include Galloway, Lee and Hammel (1998 cited in Cleland 2001, p. 63), who stated that there was an ultimate interlink between long term decline in mortality and long term decline in fertility.

After examining many other factors that were involved in this relationship and its timing, that is, socio-economic, cultural and political factors, Cleland (2001, pp. 78-82) finally agreed with Davis (1963) that mortality decline is the simplest factor responsible for widespread contraceptive use and fertility decline. He then demonstrated that longer life expectancy has created pressure at the familial level to maintain the quality of family rather than the quantity of its members. This new aspiration is accepted by people all over the world in any circumstance.

Another study by Frankenberg (1998, pp. 323-324) revealed that from between 1984 and 1991, there was a decline in fertility with the measurement of number of children born among 41-46 year old reproductive women in Indonesia. However, the decline was only 19 % for women whose first children died, and was not as sharp as the decline for those, that is 26 %, whose first children

survived. In other words, the experience of child death increased the number of children born in order to attain the target number of living children (Frankenberg 1998, p. 325).

Lloyd and Ivanov (1988, p. 141) claimed that improvement in child survival did not necessarily lead to a decline in fertility especially when the fate or replacement behaviour affected family building; but when the family building was instead constructed by design, fertility was influenced by family planning program through the opportunity of contraceptive use. Nevertheless, policies and programs aimed at high fertility were more effective when the parents were confident that their children would survive, or, that there was a reduction in child mortality risk (Montgomery & Cohen 1998, p. 3).

Further work by Mosley (1985, pp. 189-203) has developed an integrated framework that encompasses both the fertility and child survival intermediate variables. This model is based on the assumptions that both mortality and fertility are often considered as separate variables that come from different levels of human life. That is, mortality involves individual level factors while fertility is determined mostly by household or social organisation factors. This dichotomous in assumption, in turn, impact to non-holistic interventions from the government. According to Mosley (1985, p. 195), there are nine proximate determinants derived from both Bongaarts's fertility framework and Mosley and Chen's framework for child survival. These are categorised into four broad categories: conception exposure, lactation, ecological risk, and direct intervention factors. All of the factors are described in Table 2.4:

Table 2.4. Relationship of proximate determinants framework for fertility (Bongaarts) and child survival (Mosley & Chen)

Proximate determinants	**Child survival variables (selected list)**	**Fertility variables**
Conception exposure factors		
1. Sexual union	Maternal age, parity	Marital union
2. Intercourse frequency	Birth interval	Fecundability
Lactation factors		
3. Breastfeeding	Dietary intake, birth interval	Lactational amenorrhea
Ecological risk factors		
4. Dietary deficiency	Consumption of calories, protein, micronutrients	Fecundability (starvation)
5. Environmental contamination	Contamination of air, water/food/ fingers/skin/soil/inanimate objects, insect vectors	Fecundability/Sterility (venereal disease, tuberculosis, etc.)
	or	

	Incidence/prevalence of respiratory infections, diarrheas/intestinal parasites, tetanus/skin infections, malaria, etc.	Spontaneous abortions (malaria etc.)
6. Accidents	Accidental injuries	Fecundability/Sterility/ Spontaneous abortions (birth injuries)
Direct intervention factors		
7. Personal preventive measures	Immunizations, antenatal care, childbirth care	Contraception, Sterilization
8. Curative measures	Treatments used	Fecundability
9. Intentional injury	Infanticide, female circumcision	Induced abortion

Source: Mosley (1985, p.195)

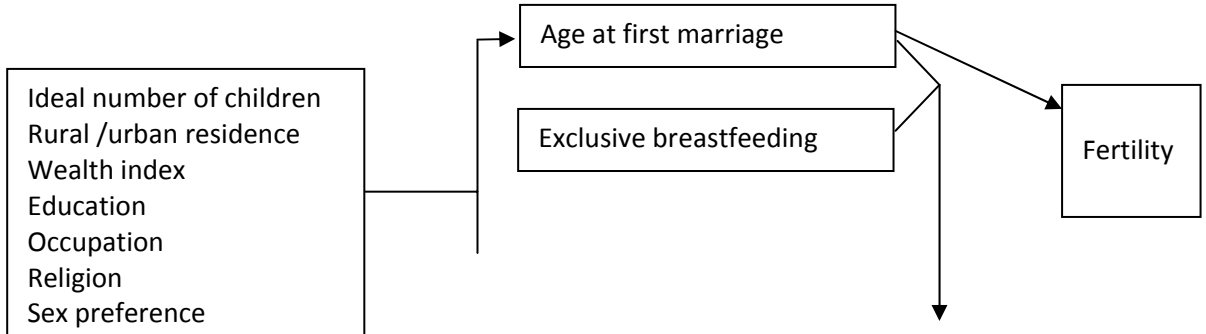
Among the factors above, only the direct interventions have mixed effects on fertility and mortality. The one supports to the condition in Aceh is antenatal and childbirth care with effective curative treatments. This intervention will decrease mortality and increase fertility at the same time, by assuring successful pregnancy outcomes and prevention of injuries to the maternal reproductive organs (Mosley 1985, p.196).

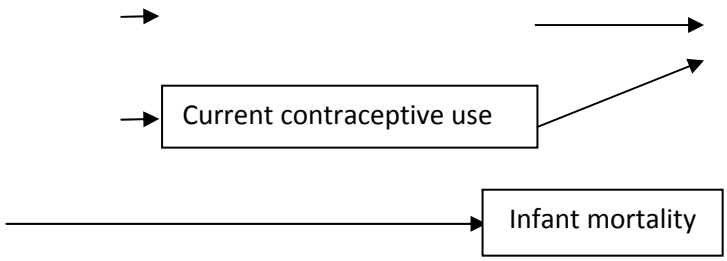
Another factor assumed to be important in linking fertility and infant mortality here is birth interval as many factors associated with child mortality risk are associated with birth interval, independent of parity (Frankenberg 1998, p. 322). This assumption is based on fact that couples may choose resources that will reflect in their choice of fertility level (Frankenberg 1998, p. 322).

2.6. Conceptual Framework for this Study

Some of the proximate determinants of fertility proposed by Bongaarts are those which are included in Mosley and Chen's framework for determining infant mortality: age at first marriage (maternal factor) and breastfeeding (nutrition). Based on that assumption, this research, therefore, develops a combined framework from both, with a modification from Freedman's framework for the contextual determinants of fertility.

Figure 2.6. Proposed Framework for Analysing Determinants of Fertility and its Anomaly with Infant Mortality in Aceh in 2007





Source: The author's framework based on Freedman (1975), Bongaarts (1978) and Mosley and Chen (1984)

This proposed framework aims to combine the three theoretical frameworks in a simple form in order to answer the research questions. Firstly, the social norms about family size and about intermediate variables are substituted as one variable, namely, the ideal number of children. This variable is placed together with other social structure variables to form a group of independent variables. Therefore, the independent variables are ideal number of children, rural or urban residence, wealth index, education, occupation, religion, sex preference, and family planning programs. Secondly, each of these independent variables is connected to each of intermediate variables of fertility (as the dependent variables) in order to simplify the bivariate and multivariate analyses. There are only three intermediate variables of fertility that are used here: age at first marriage, exclusive breastfeeding, and current contraceptive use, as there is no available data about induced abortion from the IDHS 2007 in Aceh. Thirdly, the intermediate variables of fertility will be then analysed to investigate how each of them contribute to affect the current fertility level in Aceh by using Proxdemo computer software.

Another factor to be analysed here is that of infant mortality. As differences in completed family size by child mortality experience are indicative of fertility response behaviour (Frankenberg 1998, p. 322), thus independent variables from socioeconomic factors are also analysed for their relationship with infant mortality. Infant mortality is also determined by some relevant combination factors that are both included in the intermediate variables of fertility proposed by Bongaarts (1978) and the proximate determinants of infant mortality proposed by Mosley and Chen (1984). Therefore, the combined predictor variables chosen are age at first marriage (maternal factor) and exclusive breastfeeding (nutrition).

2.7. Socio cultural base of Reproductive Behaviour in Aceh in 2007

According to Suryadinata et al. (2003, pp. 158-160), the province of Aceh is multi-ethnic with the largest ethnic group, constituting 50.32%, being Acehnese.

Table 2.5. Six Largest Populations by Ethnic Group in Aceh in 2000

Ethnic Group	Aceh (%)	Indonesia (%)
Acehnese	50.32	0.43
Javanese	15.87	41.71
Gayo	11.46	0.10
Alas	3.89	0.03
Singkil	2.55	0.02
Simeulue	2.47	0.02
Batak	2.26	3.02
Minangkabau	1.09	2.72

Source : Ananta (2007, p.24)

It is important to note that in the tsunami-affected district area of Banda Aceh, the Acehnese comprise 85.51% of all Indonesian citizens in this province (Suryadinata et al. 2003, p. 158). The district of Aceh Besar, also hit by the tsunami, comprises a larger portion of Acehnese at 95.16% (Ananta 2007, p. 24). Furthermore, there are only 0.05% foreigners in Aceh, and emigration (161,581 people) outweighs immigration (15,361 people) by more than ten times (Suryadinata et al 2003, p. 158). This may imply that Aceh is not very much influenced by other cultures from outside the province and relies much more on its own socio-cultural background, as Ananta (2003, p. 22) states that the most dominant religious belief is Islam (97.03%). Islam is embedded in Acehnese history and culture, which is strengthened by the special implementation of Law No.44/1999 about Islamic Law (*shari'a*) in this province by the Government of Indonesia (Ananta 2003, p. 22). As previously mentioned in Chapter One, the government of Aceh, together with the Religious Affairs Board, make regulations based on Islamic law about every aspect of life including fertility control as a reproductive behaviour. This regulation has allowed the use of non-permanent contraception to control fertility in this province.

Ananta (2003, p. 22) also pointed out that the three most populous districts in Aceh: North Aceh (12.25 per cent), Pidie (11.77 per cent), and Bireuen (8.73 per cent), are located in the conflict area that was caused by the separatist movement of Gerakan Aceh Merdeka (GAM). The most densely populated district by 2,916 persons per square kilometre, however, is Banda Aceh - the capital city which was the city most devastated by the tsunami. Therefore, there may be a deliberate attempt to have high fertility in order to compensate for the loss of life during the long GAM movement or the tsunami disaster.

Chapter Three

THE PROXIMATE DETERMINANTS OF FERTILITY AND INFANT MORTALITY IN NANGGROE ACEH DARUSSALAM IN 2007

3.1. Introduction

This chapter discusses the analysis of the proximate determinants of fertility and child mortality in Aceh. The analysis of the proximate determinants of fertility is based on Bongaarts proximate determinants framework (1978) which is quantified with the help of a computer software known as ProxDemo (The Futures Group 1997). This computer software provides the amount of decline in total fecundity (i.e., maximum possible fertility in the absence of any fertility control behaviour) which each of the proximate determinants causes to get the fertility observed in a population. The analysis of the determinants of child mortality is based on those determinants of child mortality formulated by Mosley and Chen (1984) which are common to the Bongaarts proximate determinant of fertility. These common determinants are marriage (represented by age at first marriage in the Mosley and Chen framework) and breastfeeding or postpartum insusceptibility (represented by nutritional deficiency in the Mosley and Chen framework). This chapter further analyses the socioeconomic factors which are related to the high fertility and low infant mortality in Aceh in 2007. Section 3.2 explains how each of Bongaarts' proximate determinants affects fertility. Section 3.3 explores how socioeconomic factors as independent variables influence each of the proximate determinants of fertility and child mortality as the dependent variables. All of the variables are analysed using a computer software application to do statistical data analysis, i.e. the SPSS or Statistical Package for the Social Sciences (Kinnear and Gray 1999, p.4), which covers various types of analysis ranging from univariate, bivariate and multivariate analysis to determine which factor has how much influence on both fertility and the child mortality experience in Aceh.

In order to investigate which dominant factor caused the anomaly between high fertility and low infant mortality in Aceh in 2007, it is necessary to apply the analysis to all the dependent variables, namely: age at first marriage; durational breastfeeding (i.e., not exclusive breastfeeding); current use of contraception, and child loss experience. Any dominant factor revealed to have had a significant and strong relationship with these dependent variables are then examined to explain the causes of the anomaly.

3.2. Analysis of Proximate Determinants of Fertility in Aceh in 1997 and 2007

The individual and the cumulative effects of each proximate determinant contributing to the reduction in fertility from its assumed maximum value can be obtained by using the Proxdemo computer software (The Futures Group 1997). The values of each proximate determinant entered into the Proxdemo spreadsheet automatically calculate the total fecundity, which in this case comes out to be 8.70 instead of the 15.30 according to Bongaarts' theory (see Section 1.6, Chapter 1). A part of this difference may be due to possible missing data, such as that on abortion.

The results of the ProxDemo analysis (Table 3.1) show that among all the proximate determinants, the percent of women in marital union contributes the largest individual effect in lowering the fertility from the theoretical maximum of 8.70 in Aceh in both 1997 and 2007. However, the reducing effect of this factor decreased by 0.7 point from 3.11 to 2.41 during 1997-2007 (Table 3.1). This has happened despite an increase in the proportions married from 64.2% in 1997 to 72.3% in 2007. However, the increase in proportions married was possibly counter balanced by an increase in the median age at marriage from 18.5 to 20.2 years in the same period.

Table 3.1: The effects of the Proximate Determinants of the Total Fertility Rate, Aceh 1997-2007

	Individual Effect		Cumulative Effect	
	1997	2007	1997	2007
Total fecundity	8.70	8.70	8.70	8.70
Percent in union	-3.11	-2.41	5.58	6.29
Post partum infecundability	-2.13	-2.33	3.45	3.96
Induced abortion	0.00	0.00	3.45	3.96
Sterility	0.05	0.09	3.50	4.05
Contraception	-0.50	-0.94	3.00	3.11

Contraception accounts for the second largest individual effect in fertility reduction. But, unlike the decrease in the fertility reducing effect of percent in union, the fertility reducing effect of contraception increased by 0.44 point from 0.50 in 1997 to 0.94 in 2007. This corresponds to an increase in the contraceptive prevalence rate (CPR) for any method in this period from 37.1% to 47.4% , and for any modern method from 36.3% to 45.4%. However, despite the significant increase in its fertility reducing effect, and in the level of CPR, its effect on fertility is relatively small because the average effectiveness of the mix of contraceptives has been only 0.354 in 1997 and 0.455 in 2007 (see Appendix 3.1).

The third factor which had a little effect in lowering fertility in Aceh between 1997 and 2007 was that of postpartum infecundability (PPI). In fact, it increased slightly by about 0.2 point from 2.13 to

2.33 between 1997 and 2007. Between 1997 and 2007, the median duration of postpartum amenorrhea decreased from 5.7 to 4.3 months; postpartum abstinence decreased from 2.9 to 1.9 months; and postpartum insusceptibility also decreased from 5.9 to 5.2 months. Likewise, the duration in months of breastfeeding dropped from 20.4 to 19.7 months, and the percentage of women who practiced exclusive breastfeeding also declined slightly from 95.1% to 93.1%. Thus, the exclusiveness of breastfeeding should play an important role here as LAM only has a contraceptive effect in reducing fertility in certain conditions, that is, breastfeeding exclusively for at least the first six months of the baby's life, and with no other fluid given than the mother's breast milk. Because the prevalence of exclusive breastfeeding in 2007 was lower than in 1997, it had a little effect in increasing the fertility rate in Aceh. Nevertheless, the anomalous effect on the increase of PPI to fertility may be imposed by the huge decline in the effect that marriage has on fertility as mentioned earlier in this section.

The final factor, as data relating to abortion is not available, is the effect of sterility to fertility reduction. Sterility is defined as that proportion of women aged between 45-49 years who remain childless in a certain group of the population. In Aceh, sterility decreased from 2.1% in 1997 to 1.5% in 2007, and this corresponded to the increase in fertility rate. Therefore, this factor showed a positive result in the cumulative effect which supported the increase in the fertility.

3.3. Univariate analysis of fertility and mortality variables in Aceh in 1997-2007

Univariate analysis involves frequency distributions of all the variables discussed. Each variable is grouped into two or more categories and then each category is measured by the frequency of its occurrence. Thus, the frequency distribution of fertility and mortality variables that are included in this research, with associated categories which are recoded by SPSS from the 2007 IDHS data set, are described in Table 3.2.

The table begins with a display of a weighted sample of 514 ever married women in Aceh in 2007, who answered the Household Questionnaire and the Individual Women's Questionnaire at the 2007 IDHS (2007 IDHS Report, 2008 p. 232). The table continues with a description of all the variables that are analysed in this research to determine their influence on the current state of fertility and child mortality or child death experience in Aceh. The socio-economic variables included in the analysis are: the ideal number of children, type of place of residence, wealth index, educational attainment, employment status, type of occupation, religion, sex preference and family planning programs i.e. visits by family planning field workers. The proximate variables include: age at first marriage,

durational breastfeeding and current use of contraception. The fertility levels namely the total number of children ever born (CEB) and child death experience are the last variables to be analysed.

Table 3.2: Frequency distribution analysis of factors influencing fertility and mortality in Aceh in 2007

No	Variables	Categories	Number of Women	Percent
1	Total Aceh NAD	Total weighted sample	514	100.0%
2	Ideal number of children	3 or fewer	128	24.9%
		4 or more	386	75.1%
3	Type of place of residence	Rural	407	79.3%
		Urban	106	20.7%
4	Wealth index	poorer and middle quintiles	412	80.2%
		richer quintiles	102	19.8%
5	Educational attainment	no education	30	5.9%
		low education (incomplete primary and incomplete secondary)	347	67.5%
		complete secondary or higher	137	26.6%
6	Employment status	not currently working	243	47.3%
		currently working	271	52.7%
7	Type of occupation	not working	236	46.0%
		Labourers	164	31.9%
		service and management	113	22.0%
8	Religion	Islam	513	99.9%
		Protestant	1	0.1%
9	Sex preference	Yes	123	23.9%
		No	391	76.1%
10	Visited by family planning workers in last 12 months	No	491	95.6%
		Yes	22	4.2%
		Missing	1	0.2%
11	Age at first marriage	19 or lower	285	55.4%
		20 or higher	229	44.6%
12	Durational breastfeeding	5 months or shorter or never breastfed	24	4.7%
		6 months or longer or still breastfeeding	244	47.4%
		Missing	246	47.9%
13	Current use of contraception	No	290	56.5%
		Yes	224	43.5%
14	Total children ever born	2 or fewer	267	51.9%
		3 or more	247	48.1%
15	Child loss experience	Yes	70	13.7%
		No	443	86.3%

Source: Calculated from 2007 IDHS data set

The variable ideal number of children is categorized into two groups; three or fewer children, and four or more children (see Appendix 1). Although the Indonesian government's current family

planning slogan is '*Dua anak lebih baik*' (it is better to have only two children), as discussed in earlier chapters, in Aceh several factors have determined the minimum size of people's families to at least three or four children, especially those factors associated with the replacement effect of having more children to substitute those who have since died. The findings of 2007 IDHS reveal that there were three times more people in Aceh who wanted four or more children than those who wanted three or fewer children.

Eighty percent of the respondents lived in rural areas. It is hypothesised that the predominance of the rural population would be reflected in the overall wealth index, educational attainment, employment status, type of occupation, sex preference and family planning program of the whole of Aceh NAD. This will be discussed in detail later.

As hypothesised, it appeared from the analysis that there were four times as many Acehnese households in the bottom three on the wealth index level, the poorest, poorer and middle quintiles of wealth, than there were in the top two quintiles of wealth, the richer and richest quintiles (Table 3.2).

In this research education has been classified into three categories (no education, low education, and completed secondary or higher), in order to determine whether or not education, no matter how low it was, had any impact on the fertility decisions and mortality prevention in Aceh. The result was that the highest percentage of educational attainment was constituted by people with low education, which ranged from incomplete primary level to incomplete secondary school by 67.5%. The next highest was 26.6% of people with higher education, which was defined as complete secondary level or higher. The lowest proportion was people with no education by only 6%.

By employment status of respondents, people in Aceh are distributed quite evenly with 52.7% currently working and the remainder not working. However if the workers are analysed by type of occupation, those who work as labourers outweigh those who work in the service industry and management positions by around 10 percentage points.

As raised in Chapter 1, the Aceh government is bound by the Islamic religion in making laws and regulations. An overwhelming majority (99.9%) of the respondents at the 2007 IDHS have Islam as their religion. Therefore the religious aspects of socio cultural factors are expected to have an impact on their demographic performance in Aceh.

Most people in Aceh (76% of the respondents) do not have sex preference for their children. This means that around one in four respondents (or 24%) still subscribe to the view that the sex of their living children is important in deciding whether to have more children or not (See Table 3.2).

Respondents were categorised on the basis of having been visited by family planning workers in the last 12 months. The family planning program provides for regular visits to households by the family planning field workers, but in this case 95% of the respondents had never been visited in the last 12 months. This may be due to an undesirable outcome of the Indonesian government's policy on decentralisation giving autonomy to the districts. This is counter-productive to the sustainability of family planning workers because of many better opportunities for them to work in other fields.

In Table 3.2, age at first marriage, durational breastfeeding, and current use of contraception represent the proximate determinant of fertility (Bongaarts 1978), while the first two also represent the proximate determinants of infant and child mortality (Mosley and Chen 1984).

In Aceh, about 55.4% of the women in the sample got married when they were 19 years old or younger; therefore 44.6% of them got married at age 20 years or older. Durational breastfeeding is used as a variable in this research instead of exclusive breastfeeding because the number of cases showing exclusive breastfeeding is too small for a meaningful analysis. Current use of contraception among the respondents is low at 43.5%.

Lastly, the variables which have an anomaly in demographic performance, namely fertility (represented by the total number of children ever born) and child mortality (represented by the mothers' experience of child death) in Aceh are studied also in this section. For total number of children ever born, the slogan for family planning program by Indonesian government is used by categorizing them into two groups: those with two children or fewer; and those with three children or more. The respondents are distributed almost equally in these two groups (52% with two or fewer children and 48% with three or more children), i.e., nearly one half of the women have a high fertility. On the other hand, a much smaller percentage of women (13.7%) had experienced the death of a child. This exemplifies the anomaly of high fertility and low child mortality in Aceh.

3.4. Bivariate analysis of fertility and mortality variables in Aceh in 1997-2007

In the bivariate analysis, the method to be used depends on whether the data are nominal, ordinal, interval, or ratio, and the number of categories to each variable. In the Chi-Square Tests table, a certain factor is interpreted to have a statistically significant relationship with the dependent

variable if the significance probability is less than 0.000 to 0.005, (or p = 0.000, p <0.001, or p<0.005). By this method, the observed frequency number is not the one expected by chance if the significance probability falls in the range mentioned above (Morgan et al. 2007, p. 103). In addition to the value of p, the value of Chi-square of 30 or more is also taken generally to indicate a strong association. The strength of association between two variables can also be tested by the value of Chi-square.

Table 3.3 presents the results of bivariate analysis of factors that influenced age at first marriage, which is one of the proximate determinants of fertility in Aceh in 2007. The factor: ideal number of children was not included because it is not applicable to determine age at first marriage. From the analysis by using the cross tabulation, it is found that the socioeconomic variables that had a significant relationship with age at first marriage (i.e., where p <0.05), were type of place of residence, wealth index, and educational attainment. Among them, the strongest relationship to age with first marriage, measured by the Chi-Square value, was shown by educational attainment. This was followed by wealth index and type of place of residence. Therefore, the greatest difference in distribution of respondents by their age at first marriage was between people of no education, low education and completed secondary or higher. A weaker difference was between people of lower and upper status in the wealth index quintiles, and the weakest difference was between people of urban and rural settings in Aceh in 2007.

Table 3.3: Bivariate analysis of factors influencing age at first marriage

No.	Variable	Chi-Square (x^2) Value	Significance
1.	Type of place of residence	17.850	0.000
2.	Wealth index	29.351	0.000
3.	Educational attainment	94.767	0.000
4.	Employment status	0.000	0.996
5.	Type of occupation	3.427	0.180
6.	Religion	1.243	0.265
7.	Sex preference	2.705	0.100
8.	Family planning program	0.129	0.719

Source: Computed from 2007 IDHS data set

Table 3.4 presents the bivariate analysis of factors that influenced durational breastfeeding as the other proximate determinants of fertility in Aceh in 2007. By using the same method of analysis where the level of significance is under 0.05 (i.e., $p<0.05$), the there was only one socioeconomic variable that had a significant relationship with durational breastfeeding, namely the type of place of residence. The strongest relationship to durational breastfeeding among all the variables considered was also shown by this variable, although it is not a strong relationship per se (the Chi-square value is only 4.932). Therefore, the only difference in distribution of respondents by their durational breastfeeding was between people of urban and rural setting in Aceh in 2007.

Table 3.4: Bivariate analysis of factors influencing durational breastfeeding

No.	Variable	Chi-Square (x^2) Value	Significance
1.	Ideal number of children	0.816	0.366
2.	Type of place of residence	4.932	0.026
3.	Wealth index	0.042	0.837
4.	Educational attainment	0.898	0.638
5.	Employment status	3.176	0.075
6.	Type of occupation	2.771	0.250
7.	Religion	0.099	0.753
8.	Sex preference	0.346	0.557
9.	Family planning program	1.133	0.287

Source: Computed from 2007 IDHS data set

In Table 3.5 we can see the bivariate analysis of factors that influenced the current use of contraception as the next proximate determinants of fertility in Aceh in 2007. Also from the cross tabulation analysis, only one socioeconomic variable revealed to have a significant relationship to the current use of contraception is sex preference. A cross tabulation (not shown here) reveals that of the 224 current contraceptive users, 186 or 83% did not have any sex preference. The variable "sex preference" in this case actually means "no sex preference", and its significant association with current use of contraceptives (Table 3.5) means that these women use contraceptives because they

have no sex preference. Among all the variables included in this analysis, sex preference displayed the strongest relationship with current use of contraception.

Table 3.5: Bivariate analysis of factors influencing current use of contraception

No.	Variable	Chi-Square (x^2) Value	Significance
1.	Ideal number of children	2.857	0.091
2.	Type of place of residence	1.697	0.193
3.	Wealth index	2.161	0.142
4.	Educational attainment	5.400	0.067
5.	Employment status	2.629	0.105
6.	Type of occupation	0.084	0.959
7.	Religion	1.297	0.255
8.	Sex preference	10.582	0.001
9.	Family planning program	3.804	0.051

Source: Computed from 2007 IDHS data set

Finally, Table 3.6 presents the results of a bivariate analysis of factors that influence child death experience in Aceh in 2007. Besides the socioeconomic variables as in the previous tables, some

proximate determinants of fertility i.e. age at first marriage and durational breastfeeding are also analysed for their influence on child loss experience. The analysis by cross tabulations generated by SPSS concludes that there are two variables that have significant relationship to child loss experience ($P<0.05$). These variables are educational attainment and age at first marriage. However, the variable exhibiting the strongest relationship with child death experience is educational attainment, followed by age at first marriage. The findings imply that, a greater difference in distribution of respondents by their child death experience is between people of no education, low education and complete secondary or higher. A smaller difference is between people who got married at age 19 or younger and people who got married at age 20 or older.

Table 3.6: Bivariate analysis of factors influencing child death experience

No.	Variable	Chi-Square (x^2) Value	Significance
1.	Ideal number of children	2.820	0.093
2.	Type of place of residence	1.417	0.234
3.	Wealth index	1.594	0.207
4.	Educational attainment	10.911	0.004
5.	Employment status	2.407	0.121
6.	Type of occupation	3.344	0.188
7.	Religion	0.158	0.691
8.	Sex preference	3.548	0.060
9.	Family planning program	0.007	0.933
10.	Age at first marriage	7.580	0.006
11.	Durational breastfeeding	0.933	0.334

Source: Computed from 2007 IDHS data set

3.5. Multivariate analysis of fertility and mortality variables in Aceh in 1997-2007

In the previous section, the bivariate analysis examined which socio-economic factors (or independent variables) were statistically significantly related with the dependent variables, namely age at first marriage, durational breastfeeding, current use of contraception and child death experience. The bivariate analysis also examined the strength of the relationships of the independent variables with the dependent variables mentioned above. Among the independent variables, type of place of residence is significantly related with durational breastfeeding and sex preference is significantly related with current use of contraception. On the other hand age at first marriage and child death experience are influenced by several inter-related factors which act simultaneously. Therefore, a multivariate analysis is necessary to assess the influence of these factors acting simultaneously on age at first marriage and the child death experience.

The multivariate analysis used depends on the type of variable and number of categories which the dependent variable has. When the dependent variable is categorical, the most suitable multivariate analysis is logistic regression. When the dependent variable is dichotomous, i.e., when the dependent variable two categories, binary logistic regression is the most appropriate method of analysis (Pallant 2007, pp. 166-179). However, when the dependent variable has more than two categories, the most appropriate method of analysis is multinomial logistic regression (Kinnear & Gray 2008, pp. 533-536).

From both the proximate determinants of fertility and the bivariate analysis of the proximate determinants of fertility and child death experience, two variables stand out as having statistically significant relationships with the dependent variable, fertility. These two variables are marriage (represented by age at first marriage in the bivariate analysis and by the percent of women in union in the ProxDemo analysis) and education. Percent in union has the greatest affect on fertility directly among all the proximate determinants. Age at first marriage shows a statistically significant relationship with child death experience in the bivariate analysis. Secondly, educational attainment has a statistically significant relationship with one of the proximate determinants namely age at first marriage and with one dependent variable, namely child death experience (see bivariate analysis). Thus, it is reasonable to assume that educational attainment and age at first marriage are the most important factors in explaining the high fertility and low infant mortality in Aceh in 2007. This will be illustrated by the following multivariate analysis.

By Table 3.7 presents the influence of socio-economic factors, derived from the bivariate analysis, on age at first marriage. Among the socioeconomic variables, namely, type of place of residence, wealth index, and educational attainment, the multivariate analysis reveals that the only significant influence on age at first marriage ($p < 0.001$) is shown by educational attainment. In terms of likelihood, each of the women in Aceh in 2007 who had a low level of education and a high level of education were 0.1 % less likely to get married at age 19 or younger compared to those with no education. The implication of this finding is that compulsory education for all women should be maintained and increased if possible, in order to maintain a high age at first marriage, which has demonstrated its greatest effect in the control of fertility in Aceh.

Table 3.7: The influence of socio-economic factors on the probability of lower age at first marriage, Aceh 2007

Socio-economic factors	Logistic coefficient (B)	Odds ratio	Significance (P)
- Constant	1.222	3.393	0.000
- Type of place of residence	---	---	0.890
1) Rural	-0.040	0.961	---
2) Urban	---	---	---
- Wealth index	---	---	0.204
1) Poorer and middle quintiles	0.376	1.456	---
2) Richer quintiles	---	---	---
- Educational attainment	---	---	0.000
1) No education	---	---	---
2) Low education	-2.247	0.106	---
3) Complete secondary or higher	-1.995	0.136	---
Total cases	929		
- 2 Likehood	606.857		
- Model χ^2 (df)	99.190(4)		

Source: Calculated from the 2007 IDHS dataset.

Table 3.8 shows the results of a multivariate analysis of socio-economic factors influencing the probability of durational breastfeeding. The only socioeconomic variable from bivariate analysis which has a statistically significant relationship with durational breastfeeding ($p < 0.05$) is type of place of residence. In terms of likelihood, women in Aceh in 2007 who lived in rural areas were 0.393 times as likely to breastfeed for shorter periods as those who lived in urban areas. Conversely, urban women were more likely to breastfeed for shorter periods than rural women. This may be due to the working status of women. Women who lived in urban areas were more likely to work outside their homes than those who lived in rural areas, which would have interrupted continual breastfeeding of their babies by urban women, and as a result, might cause early weaning in urban areas. Women who lived in rural areas were more likely to practice breastfeeding for six months or longer which has a contraceptive effect. Moreover, the findings from Table 3.2 show that they accounted for three times as many as those in urban. This confirms the finding of the ProxDemo analysis that there is a relatively small contribution of postpartum insusceptibility (of which breastfeeding is a major component) in reducing fertility in Aceh in 2007.

Table 3.8: The influence of socio-economic factors on the probability of shorter durational breastfeeding, Aceh 2007

Socio-economic factors	Logistic coefficient (B)	Odds ratio	Significance (P)
- Constant	2.564	12.985	0.000
- Type of place of residence	---	---	0.040
1) Rural	-0.934	0.393	---
2) Urban	---	---	---
Total cases	929		
- 2 Likehood	692.481		
- Model χ^2 (df)	3.879(1)		

Source: Calculated from the 2007 IDHS dataset.

Table 3.9 presents the results of a multivariate analysis of socio-economic factors influencing the probability of contraceptive use. The only socioeconomic variable from the bivariate analysis which has a statistically significant relationship with contraceptive use ($p < 0.001$) is that of sex preference. Women who had a preference for either a girl or a boy were 2 times more likely than women with no sex preference to use contraceptives. The explanation for this finding is obvious: couples who aim for a particular sex of their children tend to continue to have more children until they get the child of their preferred sex, and are, therefore, less likely to use contraception. As confirmed by the ProxDemo findings, current contraceptive use has a relatively strong contribution in reducing fertility in Aceh, but this contribution is not as strong as that of percent in union.

Table 3.9: The influence of socio-economic factors on the probability of not using contraception, Aceh 2007

Socio-economic factors	Logistic coefficient (B)	Odds ratio	Significance (P)
- Constant	-0.809	0.445	0.000
- Sex preference	---	---	0.001
1) Boys/girls preference	0.711	2.036	---
2) No sex preference	---	---	---
Total cases	929		
- 2 Likehood	692.481		
- Model χ^2 (df)	10.922(1)		

Source: Calculated from the 2007 IDHS dataset.

Finally, Table 3.10 presents the results of a multivariate analysis of socio-economic factors influencing the probability of child death experience. Of the two variables entered in this

multivariate analysis, namely women's education and age at first marriage, the former has a significant influence on child death experience ($p < 0.05$). Women with low education and with completed secondary and higher education were respectively 0.284 and 0.399 as likely to have experienced child death as women with no education. This meant that the more educated the women in Aceh, whether at a low or high level, the less likely they were to lose children through death during their infancy. In terms of age at first marriage, women marrying at ages 19 and younger were 1.6 times more likely to have experienced child death as women who married at ages 20 or more. The implication of these two findings is that compulsory education for all women should be maintained not only to raise the age at first marriage in order to lower fertility, but also to further reduce infant mortality in Aceh.

Table 3.10: The influence of socio-economic factors on the probability of child death experience, Aceh 2007

Socio-economic factors	Logistic coefficient (B)	Odds ratio	Significance (P)
- Constant	2.431	11.366	0.000
- Educational attainment	---	---	---
1) No education	---	---	0.058
2) Low education	-1.258	0.284	0.035
3) Complete secondary or higher	-0.920	0.399	0.028
- Age at first marriage	---	---	0.114
1) 19 or younger	0.472	1.603	---
2) 20 or older	---	---	---
Total cases	929		
- 2 Likehood	395.955		
- Model χ^2 (df)	14.648(3)		

Source: Calculated from the 2007 IDHS dataset.

3.6. Discussion and conclusion

All the analyses which are presented above have revealed two factors responsible for the high fertility and low infant mortality in Aceh between 1997 and 2007. One of these factors, namely age at first marriage is a proximate determinant of fertility and the other namely educational attainment is a distant determinant of infant mortality. However, they still fall short of fully explaining the anomaly of high fertility and low infant mortality in Aceh because, while high education may have influenced in lowering the infant mortality, it is unlikely to be a predisposing factor of the current high fertility in Aceh. Therefore one has to look for other factors which may provide the desired

explanation. The period covered by the present analysis, 1997-2007 overlaps with the period 1989-1998 when the people of Aceh were passing through a military conflict and the year 2004 when a *tsunami* struck major parts of the province resulting in the loss of hundreds of thousands of lives. As previously discussed in Chapter Two, the pressures on daily lives created by the military conflict and natural disaster could have caused fertility to be depressed but a return to normalcy would result fertility to revert back to its pre-disaster high levels (Freedman 1975, p.17).

Both the military conflict and tsunami disaster are considered to influence the rapid social change especially in fertility behaviour in Aceh between 1997 and 2007. Because of the military conflict in 1989-1998, proportions of women married in Aceh in 1997 is relatively small at 64.2%. This may be due to the unconducive situation to form families and maintain marriages at that time, and possibly as a consequence of this, the total fertility rate in Aceh fell to a relatively low level from 3.3 in 1992 to 3.0 in 1995 and further to 2.81 in 1997[1] (see Table 1.2, Chapter 1). The infant mortality rate, as derived from the 1997 IDHS was still high at 45.5 infant deaths per 1,000 live births which could have been caused a lack of health care and other factors associated with the conflict. When the conflict ended, just like the post-war baby boom era in the developed countries in the late 1940s to early 1950s, many more people in Aceh got married resulting in the proportions women married rising to 72.3%, followed by an increase in the total fertility rate to 3.1. At the same time, health facilities could start functioning again to improve infant and child health and reduce the infant mortality rate to 25 per 1,000 live births.

The rapid social change as discussed above must have played an important role in influencing another factor that has driven fertility behaviour directly, namely the desired number of children. Table 3.11 shows that the majority of women and men of Aceh desired to stop further childbearing only after having four living children, whereas the majority of women and men in Indonesia desired to limit further childbearing when they had two living children. Further, in both Aceh and Indonesia, for every category of the number of living children there more women who desired no further childbearing than there were men. In general, for all numbers of living children (see the last column of Table 3.11), there were proportionately more women who desired no more children than there were men. In other words, it may be inferred from this table that men desired more children than women, and in a strongly patriarchal society such as that of Aceh this would have a major influence in raising the fertility rate.

[1]The TFR of 2.81 estimated from the 2000 census may not be reliable as large areas of the province could not be enumerated due to the conflict.

Table 3.11 Desire to limit childbearing (percentage who wants no more children) among currently married women and men in Aceh and Indonesia in 2007, based on number of living children

Area, women/men	Number of living children							Total
	0	1	2	3	4	5	6+	
Aceh, women	1.9	9.5	18.5	45.2	**58.7**	62.8	65.8	32.7
Indonesia, women	3.9	14.9	**59.8**	72.5	76.7	80.4	81.2	50.2
Aceh, Men	0.0	1.7	9.9	16.5	**50.4**	52.1	58.2	20.7
Indonesia, men	2.9	11.0	**49.0**	64.3	68.2	69.7	65.8	42.5

Source: Computed from2007 IDHS dataset

In terms of achieved fertility (net of child mortality) women in Aceh have higher median number of living children (2.79) compared to that of women of Indonesia as a whole (2.51) (see Table 3.12). Thus, women of Aceh are farther than the women of Indonesia in realising the motto of 'dua anak lebih baik' (it is better to have two children) being propagated by the Indonesian family planning program.

Table 3.12 Number of living children among currently married women in Aceh and Indonesia in 2007

Area	Number of living children							Median
	0	1	2	3	4	5	6+	
Aceh	9.8	22.4	22.3	17.9	12.7	7.7	7.2	2.79
Indonesia	8.2	26.5	29.9	18.1	8.9	4.2	4.2	2.51

Source: Computed from2007 IDHS dataset

The trends in some of the proximate determinants of infant mortality proposed by Mosley and Chen (1984) during 1997-2007 are presented in Table 3.13.

Table 3.13 Selected proximate determinants of infant mortality in Aceh 1997-2007

Selected proximate determinants of infant mortality	1997	2007
Nutrition: initial breastfeeding within 1 day of birth (%)	53.7	65.5
Nutrition: median months of exclusive breastfeeding	0.5	0.6
Environment: piped/closed water source (%)	66.0	53.7
Environment: sanitary toilet (%)	25.6	33.6
Personal illness control: immunization (% 12-23 month old babies immunised)	46.1	26.8

Source: Computed from the 1997 and 2007 IDHS datasets

According to Table 3.13 there are two proximate factors that support the decline in infant mortality in Aceh between 1997 and 2007, namely initial breastfeeding within one day of birth and the sanitary toilet factor, the prevalence of both of which increased during the period. Initial breastfeeding within one day of birth provides the child with the colostrums rich in antibodies and growth factors which predisposes the child to be healthy and helps prevent mortality, while sanitary toilet facilities reduce the child's chances of exposure to water-borne and vector-borne diseases. The prevalence of other proximate factors, namely availability of piped/closed water and immunisation has declined during 1997-2007.

The combination of a number of methods of analysis employed in this research is intended to find whether or not, in Aceh in 2007, there were common factors that underlay the existence of an anomaly of high fertility with low infant mortality. The methods of analyses used varied from ProxDemo software to bivariate and multivariate analysis with binary logistic regression method. The former aimed to determine the extent of the influence of the proximate determinants on fertility, while the latter were conducted to find the factor or factors which was/were statistically significant and had the strongest relationship with both fertility and infant mortality.

Based on all the analyses, the common factors that are found to be related to both fertility and infant mortality in Aceh are educational attainment and the women's and marriage (represented by percent in marital union in ProxDemo and by age at first marriage in the bivariate and multivariate analyses). The factor of marriage influences both fertility and infant mortality. It has the strongest

effect in reducing fertility in Aceh according to ProxDemo software analysis, but has a weaker relationship with women's child mortality experience if compared to education of mothers. Nevertheless, it reveals that when women marry at ages 20 years or older, their chances of having fewer children is higher than if they marry earlier. Likewise, the longer the delay in marrying, the less likely it is that their children will die in infancy.

That being said, the mothers' level of educational attainment has been shown to have the most significant and strongest relationship with both fertility and mortality experience in Aceh. This factor has the strongest association with the experience of child loss, as according to this research, people with no education have a higher proportion of children who died than those who had a high or low level of education. Moreover, also found in this research is the fact that education also has the greatest influence in determining the mother's age at first marriage as the more educated people are, the more they are likely to arrange their reproductive life in such a way that quality of life becomes more of a priority than quantity. This, in turn, will govern and influence their reproductive decision-making to have fewer children who have more chances of surviving and having a good quality of life.

However, for a more comprehensive explanation of this anomaly, further studies involving in-depth interviews should be conducted to find out why women and men of Aceh want to have more children even though infant mortality has been reduced quite substantially.

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Chapter Four

CONCLUSION

4.1. Introduction

This chapter presents a summary of the major findings of the analysis of fertility and mortality in Aceh. It also discusses the implications for future research and for program strategies which would be required in order to again reduce fertility in Aceh, while at the same time maintain and improve the condition of low infant mortality.

The present study has been aimed at addressing the question of an anomaly of high fertility but low infant mortality in the province of Nanggroe Aceh Darussalam (NAD). It has attempted to identify the factors responsible for this anomaly by examining the determinants of fertility and infant mortality in the context of Bongaarts' (1978) proximate determinants framework on fertility and the Mosley and Chen (1984) framework of proximate determinants of child mortality. After identifying a common set of factors that influenced both fertility and infant mortality in NAD, the discussion was extended to the social factors and the special circumstances prevailing in Aceh that have shaped decision-making concerning reproductive behaviour in the province. The study is based on an original analysis of data collected for the province of NAD at the 2007 Indonesia Demographic and Health Survey (2007 IDHS). The units of analysis employed in this research are ever married women in Aceh aged between 15 and 49 years.

In order to analyse fertility, both directly and indirectly influencing factors were examined. The directly influencing factors or the proximate determinants of fertility were analysed by using the ProxDemo software, which computes the effect of each proximate determinant on fertility according to Bongaarts's framework mentioned above. The proximate determinants considered were marriage (represented in this case by proportions of women in marital union), postpartum insusceptibility (an index based on durational breastfeeding and post-partum amenorrhoea), proportion of women currently using contraceptives and sterility (childlessness). Further, bivariate analysis and multivariate logistic regression analysis were carried out to determine the influence of socio-economic factors on each of the three proximate determinants of fertility, namely marriage (represented in this case by age at first marriage), post-partum insusceptibility (represented by durational breastfeeding) and the proportion of women currently using contraception. These proximate determinants comprised the dependent variables. The socio-economic factors consisted

of: the ideal number of children, type of place of residence (rural or urban), wealth index, educational attainment, employment status, type of occupation, religion, sex preference and visits by family planning field workers. These socio-economic factors comprised the independent variables which are assumed to affect fertility indirectly through the proximate determinants.

The analysis of infant mortality was done in the context of the Mosley and Chen framework (1984). The dependent variable in this case was the proportion of women who had lost a child through death. It should be pointed out that the women's experience of child death should really be confined to the death of children under the age of one year to conform to the definition of infant mortality, but in the present case, the deaths of children under five years of age (i.e., child deaths) were considered instead of deaths under one year due to the small sample size. The independent variables consisted of: the ideal number of children, type of place of residence (rural or urban), wealth index, educational attainment, employment status, type of occupation, religion, sex preference, visits by family planning field workers, age at first marriage and durational breastfeeding.

4.2. Major findings

The analysis based on the ProxDemo software revealed that both in 1997 and 2007, the proximate determinant with the largest influence on the total fertility rate (TFR) was proportions in marital union, followed by proportion of women currently using contraception and post-partum insusceptibility in that order. Sterility was found to have a negligible effect on TFR.

The bivariate analysis revealed that only a few of these socio-economic factors had a statistically significant relationship with the proximate determinants. For example, educational attainment, wealth index and type of place of residence were significantly related with age at first marriage; type of place of residence was significantly related with durational breastfeeding; and sex preference was significantly related with the proportion of women currently using contraception. The multivariate analysis was carried out only for age at first marriage for which there were three statistically significant independent variables, namely educational attainment, wealth index and type of place of residence. The multivariate analysis revealed that only educational attainment was statistically significantly related with age at first marriage.

In terms of the analysis of infant mortality, the bivariate analysis revealed that educational attainment and age at first marriage were significantly related with the mother's experience of child death. Both these variables were included in the multivariate analysis, which showed that only educational attainment was significantly related with the women's experience of child death.

More specifically, it was found that women who were more educated (regardless of the level of education) were ten times less likely to get married at a young age (i.e., at ages less than 19) than those who had no education at all. Similarly, the likelihood of the women who have attained high or low levels of education having experienced child mortality in the future, varied from 2.5 to 3 times less compared to their counterparts who had no levels of education attained. These findings were further confirmed by the fact that women who got married young (at 19 years old or younger), were about one and a half times more likely to lose their children than those who were older. These relationships may be overlapping with each other, but since education influences when women decide to get married, education is considered to have much more influence than age at first marriage in reproductive decision making of Acehnese women.

Among the relative significant factors that also affect fertility in Aceh are the current use of contraception, determined by the couples' sex preference of their future children, and durational breastfeeding, which is differentiated by type of place of residence. Individual couples with a sex preference for their next child are twice more likely to avoid contraception and try for pregnancy again leading to the likelihood of more children born compared to those who had no sex preference. This was perhaps due to the effect of schooling on decisions influencing lower fertility. Unfortunately, urban women who were more likely to be better educated, were three times as likely as rural women to shorten breastfeeding to less than 6 months. Shorter breastfeeding is known to have an impact on reducing birth intervals, with a higher possibility to increase fertility.

The factors analysed above provided only a partial explanation to the anomaly of high fertility and low infant mortality in Aceh. Therefore, other information was looked at in search of more explanation of this phenomenon. For example, it was found that the majority of women and men of Aceh wished to stop further child bearing only after having at least four living children. The corresponding number for women and men of Indonesia was at least two living children. Further, in terms of the ideal number of children, three fourths (75%) of the women in Aceh wanted to have four or more children. In Indonesia only a fifth (20%) of the women wanted four or more children. The mean ideal number of children in Aceh was 4.1, whereas the corresponding figure for Indonesia was 2.8.

4.3. Research implications

Most of the demographic trends in Aceh in 2007 were highly dependent on the rapid social change in this province due to the military conflict between 1989 and 1998, and the *tsunami* disaster of 2004. While it is very important to investigate how social change affects reproductive decision-

making among Acehnese people, it is also critical to examine how social background governs fertility behaviour in a country. Therefore, in the future, studies should be conducted to examine the demographic trends in Aceh, particularly, in terms of the factors of fertility and infant mortality.

Among the results of this research, contraceptive use was found to be less significant than age at first marriage in influencing fertility. In fact, contraception is recognised as the most powerful factor in reducing fertility (Bongaarts 1978, p. 109). This implies the need to study which factors, other than sex preference, contribute to decisions governing the use of contraceptives of more than half of all Acehnese married couples who choose not to use contraception.

A more far-reaching qualitative study is required to address the question of whether short-term breastfeeding among urban women is related to their need to complete high education and to go to work. The question of why breastfeeding does not have the expected significant influence on both fertility and mortality as indicated by Mosley (1985, p. 106), is also in need of an answer.

Finally, for a more comprehensive explanation of the anomaly of high fertility and low infant mortality, further studies involving in-depth interviews should be conducted to find out why women and men of Aceh want to have more children even though infant mortality has been reduced quite substantially. Do they want to compensate for the losses suffered during the military conflict and the natural disaster or are they simply following deeply rooted cultural and religious beliefs about the desirability of having large families?

4.4. Policy implications

The main anomalous situation observed in Aceh is the persistence of fertility at a level above the two-child norm, being advocated by the family planning program, against a declining trend in infant mortality.

Since the proportions married was found to be the most influential proximate determinant of fertility and age at first marriage was the most influential proximate determinant of child mortality, efforts should be made to further raise the age at marriage. As a socio-economic variable education affected age at first marriage and child mortality. The combination of these two findings suggest that age at first marriage can be raised by the implementation of compulsory basic to secondary education for every citizen, especially women. Higher education will help those women delay getting married after graduating from school, while at the same time, it can help change their mindset of how vital quality of family rather than quantity of family is, in order to pursue happiness.

Contraceptive use was found to have the second largest effect on fertility, but its prevalence in Aceh is still low. In this context, it is important to revitalise the family planning field activities, such as home visits by the family planning field workers.

Education can also influence the couple's attitude to sex preference of their future children which, it is hoped, will have an impact on the increased use of contraception in Aceh. The higher the level of education a person attains, the more open he/she is to the fact that increasing a women status does not only impact on a better life for the individual woman, but also for that of her family.

Breastfeeding, which contributes to post-partum insusceptibility has not had much influence on fertility in Aceh, but it has been suggested in Chapter 3 that initial breastfeeding within 1 day of birth might have contributed to the decline in infant mortality. Therefore, it is paramount to continue the encouragement of exclusive breastfeeding among rural women and, especially, urban women by providing a family-friendly environment in public places to support exclusive breastfeeding practices.

4.5. Conclusion

Despite the likelihood that low infant mortality causes lower subsequent fertility in many populations, Aceh province experienced the contrary: a slight increase in fertility in the period between 1997 and 2007. Even though there are many factors are expected to be the causes of such phenomena, this study revealed that age at first marriage is the proximate determinant which has the greatest effect on the influence of fertility in comparison with that of contraceptive use and durational breastfeeding. From the socio-economic perspective, education is found to be the most statistically significant and strongest relationship which impacts most women's decision governing at what age they should first get married in Aceh. Similarly, child mortality has a very strong relationship with the mothers' education level and their age at first marriage. As a result, in order to lower the fertility level, the programs required are those which encourage mandatory basic to secondary education for women especially, so as to delay their first marriage. This would, then, be more likely to lower fertility for the whole population while at the same time helping to maintain the low level of infant mortality.

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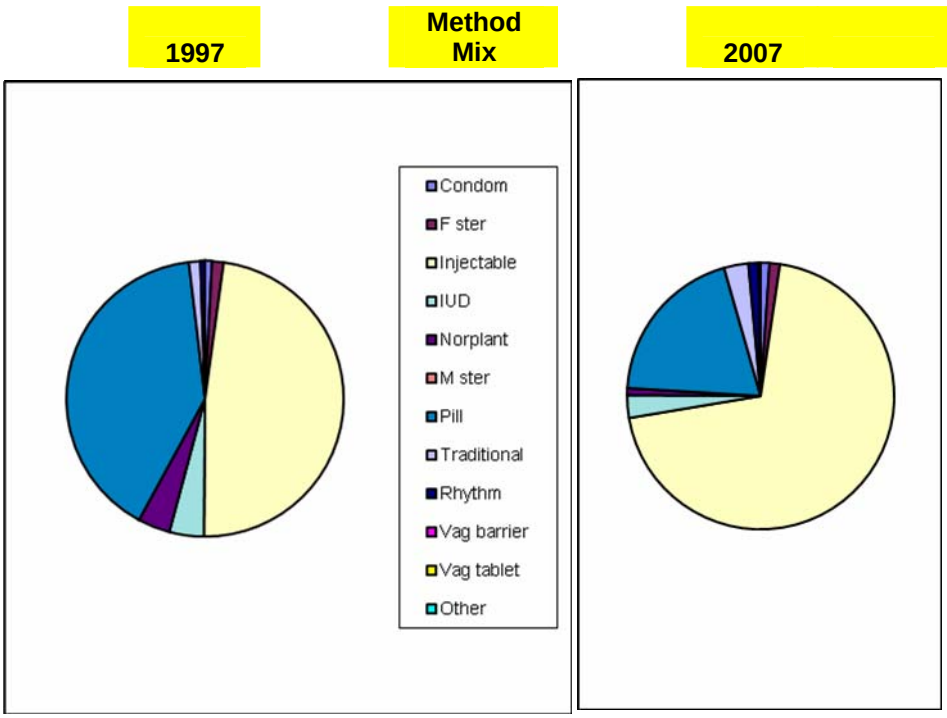
APPENDICES TO CHAPTER THREE

Appendix 3.1. ProxDemo Analysis Tables and Charts

3.1.1. Method mix of contraception and the effectiveness of the methods, Aceh 1997-2007

Method Mix	Percent of users using each method		Effectiveness	1997	2007
	1997	2007			
Condom	0.3	0.5	0.81	0.002	0.004
Female sterilization	0.5	0.6	1.00	0.005	0.006
Injectable	17.8	33.2	1.00	0.178	0.332
IUD	1.5	1.3	0.96	0.014	0.012
Norplant	1.4	0.4	1.00	0.014	0.004
Male sterilization	0.0	0.0	1.00	0.000	0.000
Pill	14.9	9.3	0.92	0.137	0.086
Traditional	0.5	1.4	0.50	0.003	0.007
Rhythm	0.2	0.6	0.50	0.001	0.003
Vaginal barrier	0.0	0.0	0.92	0.000	0.000
Vaginal tablet	0.0	0.0	0.81	0.000	0.000
Other	0.0	0.1	0.50	0.000	0.001
Total	37.1	47.4	Average	0.354	0.455

3.1.2. Method mix of contraception chart



3.1.3. Proximate determinants of fertility values, Aceh 1997-2007

	% in union	PPI (months)	Total abortion rate	Sterility	Contraception prevalence	TFR	TF
1997	64.2%	13.9	0	2.1%	37.1%	3.00	8.70
2007	72.3%	13.3	0	1.5%	47.4%	3.11	

3.1.4. Proximate determinants equations and indexes

Cm = percent of women of reproductive age in union
Ci = 20 / (18.5 + PPI)
Ca = TFR / (TFR + 0.4 * (1 - Prevalence) * TAR)
Cs = (7.63 - 0.11 * Sterility) / 7.3
Cc = 1 - 1.08 * Prevalence * Effectiveness
TFR = Cm * Ci * Ca * Cs * Cc * TF

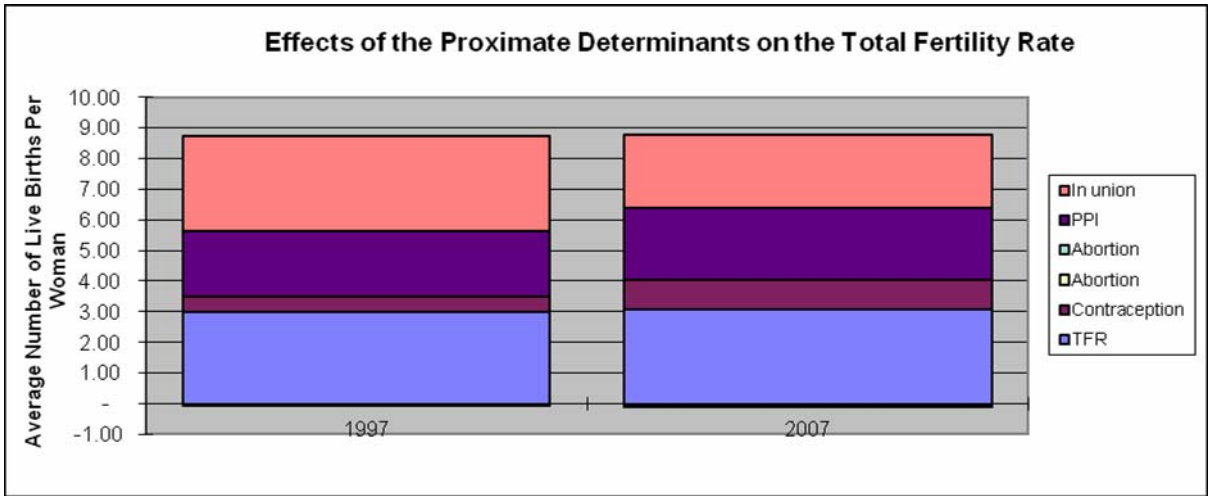
where :
Cm = index of marriage
Ci = index of post partum insusceptibility
Ca = index of abortion
Cs = index of sterility
Cc = index of contraception
TFR = total fertility rate
TF = total fecundity
PPI = duration of post partum insusceptibility (in months)
TAR = Total abortion rate
Sterility = Percent of women aged 45-49 who are childless
Prevalence = Percent of women of reproductive age using contraception
Effectiveness = Average effectiveness of contraception

Indexes	1997	2007
Cm	0.642	0.723
Ci	0.618	0.630
Ca	1.000	1.000
Cs	1.014	1.023
Cc	0.858	0.767
TF	8.698	
TFR	3.00	3.11

3.1.5. Effects of the Proximate determinants of the total fertility rate

	Individual Effect		Cumulative Effect	
	1997	2007	1997	2007
Total fecundity	8.70	8.70	8.70	8.70
Percent in union	-3.11	-2.41	5.58	6.29
Post partum infecundability	-2.13	-2.33	3.45	3.96
Induced abortion	0.00	0.00	3.45	3.96
Sterility	0.05	0.09	3.50	4.05
Contraception	-0.50	-0.94	3.00	3.11

3.1.6. Proximate determinants of fertility chart



Appendix 3.2. Frequency distribution of fertility and infant mortality variables in Nanggroe Aceh Darussalam in 2007 (Univariate Analysis)

3.2.1. Region

Region

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	DI Aceh	514	100.0	100.0	100.0

3.2.2. Ideal number of children

Ideal number of children (grp)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	.8	.8	.8
	2	60	11.7	11.7	12.5
	3	64	12.4	12.4	24.9
	4	179	34.8	34.8	59.8
	5	55	10.8	10.8	70.5
	6+	65	12.6	12.6	83.1
	Non-numeric response	87	16.9	16.9	100.0
	Total	514	100.0	100.0	

Ideal number of children (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3 or fewer	128	24.9	24.9	24.9
	4 or more	386	75.1	75.1	100.0
	Total	514	100.0	100.0	

3.2.3. Type of place of residence

Type of place of residence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	407	79.3	79.3	79.3
	urban	106	20.7	20.7	100.0
	Total	514	100.0	100.0	

3.2.4. Wealth index

Wealth index

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poorest	179	34.8	34.8	34.8
	Poorer	140	27.2	27.2	62.0
	Middle	93	18.1	18.1	80.2
	Richer	71	13.8	13.8	94.0
	Richest	31	6.0	6.0	100.0
	Total	514	100.0	100.0	

Wealth Index (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	poorer and middle quintiles	412	80.2	80.2	80.2
	richer quintiles	102	19.8	19.8	100.0
	Total	514	100.0	100.0	

3.2.5. Educational attainment

Educational attainment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No education	30	5.9	5.9	5.9
	Incomplete primary	70	13.6	13.6	19.5
	Complete primary	150	29.3	29.3	48.7
	Incomplete secondary	127	24.7	24.7	73.4
	Complete secondary	91	17.7	17.7	91.1
	Higher	45	8.9	8.9	100.0
	Total	514	100.0	100.0	

Educational attainment (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no education	30	5.9	5.9	5.9
	low education	347	67.5	67.5	73.4
	complete secondary or higher	137	26.6	26.6	100.0
	Total	514	100.0	100.0	

3.2.6. Employment

Employment status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not currently working	243	47.2	47.3	47.3
	currently working	271	52.7	52.7	100.0
	Total	513	99.9	100.0	
Missing	System	0	.1		
Total		514	100.0		

3.2.7. Type of occupation

Respondent's occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not working	236	46.0	46.0	46.0
	Professional, technical	27	5.3	5.3	51.3
	Managers and administration	7	1.3	1.3	52.6
	Clerical	9	1.7	1.7	54.3
	Sales	51	9.9	9.9	64.2
	Service	20	3.8	3.8	68.1
	Agricultural worker	147	28.7	28.7	96.8
	Industrial worker	16	3.1	3.1	99.8
	Other	1	.1	.1	99.9
	DK	0	.1	.1	100.0
	Total	514	100.0	100.0	

Type of occupation (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not working	236	46.0	46.0	46.0
	labourers	164	31.9	31.9	78.0
	service and management	113	22.0	22.0	100.0
	Total	514	100.0	100.0	

3.2.8. Religion

Religion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Islam	513	99.9	99.9	99.9
	Protestant	1	.1	.1	100.0
	Total	514	100.0	100.0	

3.2.9. Sex preference

Ideal number of either sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	391	76.1	76.1	76.1
	1	4	.9	.9	76.9
	2	7	1.3	1.3	78.2
	3	7	1.4	1.4	79.6
	4	9	1.8	1.8	81.4
	5	4	.9	.9	82.3
	6	4	.8	.8	83.0
	12	1	.1	.1	83.1
	Up to God / Allah	25	4.8	4.8	88.0
	Other	54	10.5	10.5	98.5
	DK	8	1.5	1.5	100.0
	Total	514	100.0	100.0	

"either" means the number of children with no sex preference

Sex preference (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	boys or girls preference	123	23.9	23.9	23.9
	no sex preference	391	76.1	76.1	100.0
	Total	514	100.0	100.0	

3.2.10. Family planning program in the last 12 months

Visited by Family Planning worker last 12 months

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	491	95.6	95.7	95.7
	Yes	22	4.2	4.3	100.0
	Total	513	99.9	100.0	
Missing	9	1	.1		
Total		514	100.0		

3.2.11. Age at first marriage

Age at first marriage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10	0	.0	.0	.0
	11	3	.6	.6	.6
	12	5	.9	.9	1.5
	13	12	2.4	2.4	3.9
	14	29	5.6	5.6	9.4
	15	36	7.0	7.0	16.4
	16	43	8.3	8.3	24.7
	17	48	9.3	9.3	34.0
	18	63	12.3	12.3	46.3
	19	47	9.1	9.1	55.4
	20	47	9.1	9.1	64.5
	21	35	6.8	6.8	71.3
	22	30	5.9	5.9	77.2
	23	30	5.8	5.8	83.1
	24	19	3.8	3.8	86.8
	25	16	3.1	3.1	90.0
	26	11	2.1	2.1	92.1
	27	13	2.6	2.6	94.7
	28	6	1.2	1.2	95.9
	29	8	1.5	1.5	97.4
	30	6	1.1	1.1	98.5
	31	1	.3	.3	98.7
	32	1	.2	.2	99.0
	33	1	.3	.3	99.2
	34	1	.1	.1	99.4
	35	2	.4	.4	99.7
	37	1	.1	.1	99.9
	39	1	.1	.1	100.0
	Total	514	100.0	100.0	

Age at first marriage (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19 or younger	284	55.4	55.4	55.4
	20 or older	229	44.6	44.6	100.0
	Total	514	100.0	100.0	

3.2.12. Durational breastfeeding

Durational breastfeeding

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5 months or shorter or never breastfed	24	4.7	9.0	9.0
	6 months or longer or still breastfeeding	244	47.4	91.0	100.0
	Total	268	52.1	100.0	
Missing	System	246	47.9		
Total		514	100.0		

Any fluid given before breastmilk

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	156	30.3	56.1	56.1
	No	122	23.7	43.9	100.0
	Total	277	54.0	100.0	
Missing	System	236	46.0		
Total		514	100.0		

Exclusive breastfeeding (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non-exclusive	103	20.0	64.0	64.0
	Exclusive	58	11.2	36.0	100.0
	Total	160	31.2	100.0	
Missing	System	353	68.8		
Total		514	100.0		

** Exclusive breastfeeding is no fluid given except breastmilk for at least 6 months of age of a baby*

3.2.13. Current use of contraception

Contraception use by method

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no method	290	56.5	56.5	56.5
	traditional method	10	1.8	1.8	58.3
	modern method	214	41.7	41.7	100.0
	Total	514	100.0	100.0	

Current use of contraception (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	290	56.5	56.5	56.5
	Yes	224	43.5	43.5	100.0
	Total	514	100.0	100.0	

3.2.14. Total children ever born (fertility)

Total children ever born

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	46	9.0	9.0	9.0
	1	109	21.2	21.2	30.1
	2	112	21.7	21.7	51.8
	3	89	17.3	17.3	69.1
	4	65	12.7	12.7	81.8
	5	49	9.6	9.6	91.4
	6	20	3.8	3.8	95.2
	7	8	1.7	1.7	96.9
	8	8	1.6	1.6	98.4
	9	5	.9	.9	99.3
	10	2	.5	.5	99.8
	11	1	.1	.1	99.9
	12	0	.1	.1	100.0
	Total	514	100.0	100.0	

Total children ever born (recoded)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 or fewer	267	51.9	51.9	51.9
	3 or more	247	48.1	48.1	100.0
	Total	514	100.0	100.0	

3.2.15. Child death experience

Sons who have died

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	466	90.8	90.8	90.8
	1	42	8.2	8.2	99.0
	2	3	.7	.7	99.7
	3	0	.1	.1	99.8
	4	1	.2	.2	100.0
	Total	514	100.0	100.0	

Daughters who have died

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	479	93.3	93.3	93.3
	1	32	6.3	6.3	99.6
	2	2	.4	.4	100.0
	Total	514	100.0	100.0	

Child death

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	443	86.3	86.3	86.3
	1	55	10.7	10.7	97.0
	2	12	2.4	2.4	99.3
	3	1	.2	.2	99.6
	4	2	.4	.4	100.0
	Total	514	100.0	100.0	

Child death experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	70	13.7	13.7	13.7
	no	443	86.3	86.3	100.0
	Total	514	100.0	100.0	

Appendix 3.3. Bivariate analysis of proximate determinants of fertility and child death experience, Aceh 1997-2007

3.3.1. Relationship between socio economic variables and age at first marriage

3.3.1.1. Relationship between type of place of residence and age at first marriage

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of place of residence * Age at first marriage	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Type of place of residence * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Type of place of residence	Rural	Count	245	162	407
		% within Type of place of residence	60.2%	39.8%	100.0%
		% within Age at first marriage	86.0%	70.7%	79.2%
		% of Total	47.7%	31.5%	79.2%
	Urban	Count	40	67	107
		% within Type of place of residence	37.4%	62.6%	100.0%
		% within Age at first marriage	14.0%	29.3%	20.8%
		% of Total	7.8%	13.0%	20.8%
Total		Count	285	229	514
		% within Type of place of residence	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%
		% of Total	55.4%	44.6%	100.0%

Type of place of residence * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Type of place of residence	Rural	Count	245	162	407
		% within Type of place of residence	60.2%	39.8%	100.0%
		% within Age at first marriage	86.0%	70.7%	79.2%
		% of Total	47.7%	31.5%	79.2%
	Urban	Count	40	67	107
		% within Type of place of residence	37.4%	62.6%	100.0%
		% within Age at first marriage	14.0%	29.3%	20.8%
		% of Total	7.8%	13.0%	20.8%
		Count	285	229	514
		% within Type of place of residence	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	17.850[a]	1	.000		
Continuity Correction[b]	16.939	1	.000		
Likelihood Ratio	17.820	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	17.815	1	.000		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 47.67.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.186	.043	4.292	.000[c]

Type of place of residence * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Type of place of residence	Rural	Count	245	162	407
		% within Type of place of residence	60.2%	39.8%	100.0%
		% within Age at first marriage	86.0%	70.7%	79.2%
		% of Total	47.7%	31.5%	79.2%
	Urban	Count	40	67	107
		% within Type of place of residence	37.4%	62.6%	100.0%
		% within Age at first marriage	14.0%	29.3%	20.8%
		% of Total	7.8%	13.0%	20.8%
		Count	285	229	514
		% within Type of place of residence	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%

Ordinal by Ordinal	Spearman Correlation	.186	.043	4.292	.000[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Type of place of residence (rural / urban)	2.533	1.633	3.930
For cohort Age at first marriage = 19 or younger	1.610	1.245	2.083
For cohort Age at first marriage = 20 or older	.636	.526	.768
N of Valid Cases	514		

3.3.1.2. Relationship between wealth index and age at first marriage

Case Processing Summary

	Cases		
	Valid	Missing	Total

	N	Percent	N	Percent	N	Percent
Wealth Index * Age at first marriage	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Wealth Index * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Wealth Index	poorer and middle quintiles	Count	252	160	412
		% within Wealth Index	61.2%	38.8%	100.0%
		% within Age at first marriage	88.7%	69.6%	80.2%
		% of Total	49.0%	31.1%	80.2%
	richer quintiles	Count	32	70	102
		% within Wealth Index	31.4%	68.6%	100.0%
		% within Age at first marriage	11.3%	30.4%	19.8%
		% of Total	6.2%	13.6%	19.8%
Total		Count	284	230	514
		% within Wealth Index	55.3%	44.7%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%
		% of Total	55.3%	44.7%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	29.351[a]	1	.000		
Continuity Correction[b]	28.159	1	.000		

Likelihood Ratio	29.538	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	29.294	1	.000		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 45.64.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.239	.042	5.568	.000[c]
Ordinal by Ordinal	Spearman Correlation	.239	.042	5.568	.000[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Wealth Index (poorer and middle quintiles / richer quintiles)	3.445	2.169	5.473
For cohort Age at first marriage = 19 or younger	1.950	1.448	2.624
For cohort Age at first marriage = 20 or older	.566	.473	.677
N of Valid Cases	514		

3.3.1.3. Relationship between educational attainment and age at first marriage

Case Processing Summary

	Cases

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Educational attainment * Age at first marriage	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Educational attainment * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Educational attainment	no education	Count	22	8	30
		% within Educational attainment	73.3%	26.7%	100.0%
		% within Age at first marriage	7.7%	3.5%	5.8%
		% of Total	4.3%	1.6%	5.8%
	low education	Count	235	112	347
		% within Educational attainment	67.7%	32.3%	100.0%
		% within Age at first marriage	82.7%	48.9%	67.6%
		% of Total	45.8%	21.8%	67.6%
	complete secondary or higher	Count	27	109	136
		% within Educational attainment	19.9%	80.1%	100.0%
		% within Age at first marriage	9.5%	47.6%	26.5%
		% of Total	5.3%	21.2%	26.5%
Total		Count	284	229	513
		% within Educational attainment	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%
		% of Total	55.4%	44.6%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	94.767[a]	2	.000

Likelihood Ratio	98.431	2	.000
Linear-by-Linear Association	80.768	1	.000
N of Valid Cases	513		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.39.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.397	.039	9.783	.000[c]
Ordinal by Ordinal	Spearman Correlation	.410	.039	10.150	.000[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value
Odds Ratio for Educational attainment (no education / low education)	[a]

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.

3.3.1.4. Relationship between employment status and age at first marriage

Case Processing Summary

	Cases

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Employment status * Age at first marriage	513.188[a]	99.9%	.406	.1%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Employment status * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Employment status	not currently working	Count	134	108	242
		% within Employment status	55.4%	44.6%	100.0%
		% within Age at first marriage	47.2%	47.2%	47.2%
		% of Total	26.1%	21.1%	47.2%
	currently working	Count	150	121	271
		% within Employment status	55.4%	44.6%	100.0%
		% within Age at first marriage	52.8%	52.8%	52.8%
		% of Total	29.2%	23.6%	52.8%
Total		Count	284	229	513
		% within Employment status	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%
		% of Total	55.4%	44.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.000[a]	1	.996		

Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.000	1	.996		
Fisher's Exact Test				1.000	.534
Linear-by-Linear Association	.000	1	.996		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 108.03.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.000	.044	.005	.996[c]
Ordinal by Ordinal	Spearman Correlation	.000	.044	.005	.996[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Employment status (not currently working / currently working)	1.001	.706	1.418
For cohort Age at first marriage = 19 or younger	1.000	.856	1.169
For cohort Age at first marriage = 20 or older	1.000	.824	1.212
N of Valid Cases	513		

3.3.1.5. Relationship between type of occupation and age at first marriage

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of occupation * Age at first marriage	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Type of occupation * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Type of occupation	not working	Count	127	109	236
		% within Type of occupation	53.8%	46.2%	100.0%
		% within Age at first marriage	44.7%	47.6%	46.0%
		% of Total	24.8%	21.2%	46.0%
	Labourers	Count	100	64	164
		% within Type of occupation	61.0%	39.0%	100.0%
		% within Age at first marriage	35.2%	27.9%	32.0%
		% of Total	19.5%	12.5%	32.0%
	service and management	Count	57	56	113
		% within Type of occupation	50.4%	49.6%	100.0%
		% within Age at first marriage	20.1%	24.5%	22.0%
		% of Total	11.1%	10.9%	22.0%
Total		Count	284	229	513
		% within Type of occupation	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%
		% of Total	55.4%	44.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)

Pearson Chi-Square	3.427[a]	2	.180
Likelihood Ratio	3.442	2	.179
Linear-by-Linear Association	.046	1	.830
N of Valid Cases	513		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 50.44.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.009	.044	.214	.831[c]
Ordinal by Ordinal	Spearman Correlation	.001	.044	.026	.980[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value
Odds Ratio for Type of occupation (not working / labourers)	[a]

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.

3.3.1.6. Relationship between religion and age at first marriage

Case Processing Summary

	Cases

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Religion * Age at first marriage	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Religion * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Religion	Islam	Count	284	228	512
		% within Religion	55.5%	44.5%	100.0%
		% within Age at first marriage	100.0%	99.6%	99.8%
		% of Total	55.4%	44.4%	99.8%
	Protestant	Count	0	1	1
		% within Religion	.0%	100.0%	100.0%
		% within Age at first marriage	.0%	.4%	.2%
		% of Total	.0%	.2%	.2%
Total		Count	284	229	513
		% within Religion	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%
		% of Total	55.4%	44.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.243[a]	1	.265		
Continuity Correction[b]	.012	1	.914		
Likelihood Ratio	1.616	1	.204		
Fisher's Exact Test				.446	.446
Linear-by-Linear Association	1.240	1	.265		
N of Valid Cases	513				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .45.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.049	.025	1.114	.266[c]
Ordinal by Ordinal	Spearman Correlation	.049	.025	1.114	.266[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
For cohort Age at first marriage = 20 or older	.445	.404	.491
N of Valid Cases	513		

3.3.1.7. Relationship between sex preference and age at first marriage

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Sex preference * Age at first marriage	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Sex preference * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or older	
Sex preference	boys or girls preference	Count	76	47	123
		% within Sex preference	61.8%	38.2%	100.0%
		% within Age at first marriage	26.8%	20.5%	24.0%
		% of Total	14.8%	9.2%	24.0%
	no sex preference	Count	208	182	390
		% within Sex preference	53.3%	46.7%	100.0%
		% within Age at first marriage	73.2%	79.5%	76.0%
		% of Total	40.5%	35.5%	76.0%
Total		Count	284	229	513
		% within Sex preference	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%
		% of Total	55.4%	44.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.705[a]	1	.100		
Continuity Correction[b]	2.374	1	.123		
Likelihood Ratio	2.729	1	.099		
Fisher's Exact Test				.119	.061
Linear-by-Linear Association	2.700	1	.100		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 54.91.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.073	.043	1.646	.100[c]
Ordinal by Ordinal	Spearman Correlation	.073	.043	1.646	.100[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Sex preference (boys or girls preference / no sex preference)	1.415	.935	2.142
For cohort Age at first marriage = 19 or younger	1.159	.980	1.369
For cohort Age at first marriage = 20 or older	.819	.639	1.050
N of Valid Cases	513		

3.3.1.8. Relationship between family planning programs and age at first marriage

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Family planning program * Age at first marriage	513.005[a]	99.9%	.589	.1%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Family planning program * Age at first marriage Crosstabulation

			Age at first marriage		Total
			19 or younger	20 or lower	
Family planning program	no	Count	271	220	491
		% within Family planning program	55.2%	44.8%	100.0%
		% within Age at first marriage	95.4%	96.1%	95.7%
		% of Total	52.8%	42.9%	95.7%
	yes	Count	13	9	22
		% within Family planning program	59.1%	40.9%	100.0%
		% within Age at first marriage	4.6%	3.9%	4.3%
		% of Total	2.5%	1.8%	4.3%
Total		Count	284	229	513
		% within Family planning program	55.4%	44.6%	100.0%
		% within Age at first marriage	100.0%	100.0%	100.0%
		% of Total	55.4%	44.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.129[a]	1	.719		
Continuity Correction[b]	.020	1	.888		
Likelihood Ratio	.130	1	.718		
Fisher's Exact Test				.828	.447
Linear-by-Linear Association	.129	1	.719		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.82.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.016	.044	-.359	.720[c]
Ordinal by Ordinal	Spearman Correlation	-.016	.044	-.359	.720[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Family planning program (no / yes)	.853	.358	2.032
For cohort Age at first marriage = 19 or younger	.934	.654	1.334
For cohort Age at first marriage = 20 or older	1.095	.657	1.827
N of Valid Cases	513		

3.3.2. Relationship between socioeconomic variables and durational breastfeeding

3.3.2.1. Relationship between ideal number of children and durational breastfeeding

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Ideal number of children * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Ideal number of children * Durational breastfeeding Crosstabulation

			Durational breastfeeding		
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	Total
Ideal number of children	3 or fewer	Count	9	67	76
		% within Ideal number of children	11.8%	88.2%	100.0%
		% within Durational breastfeeding	36.0%	27.5%	28.3%
		% of Total	3.3%	24.9%	28.3%
	4 or more	Count	16	177	193
		% within Ideal number of children	8.3%	91.7%	100.0%
		% within Durational breastfeeding	64.0%	72.5%	71.7%
		% of Total	5.9%	65.8%	71.7%
Total		Count	25	244	269
		% within Ideal number of children	9.3%	90.7%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.3%	90.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.816[a]	1	.366		
Continuity Correction[b]	.449	1	.503		
Likelihood Ratio	.782	1	.377		
Fisher's Exact Test				.360	.247
Linear-by-Linear Association	.813	1	.367		
N of Valid Cases	269				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.06.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.055	.065	.901	.368[c]
Ordinal by Ordinal	Spearman Correlation	.055	.065	.901	.368[c]
N of Valid Cases		269			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Ideal number of children (3 or fewer / 4 or more)	1.486	.627	3.525
For cohort Durational breastfeeding = 5 months or shorter or never breastfed	1.428	.660	3.092
For cohort Durational breastfeeding = 6 months or longer or still breastfeeding	.961	.876	1.055
N of Valid Cases	269		

3.3.2.2. Relationship between type of place of residence and durational breastfeeding

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of place of residence * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of place of residence * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

Type of place of residence * Durational breastfeeding Crosstabulation

			Durational breastfeeding		Total
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	
Type of place of residence	rural	Count	15	199	214
		% within Type of place of residence	7.0%	93.0%	100.0%
		% within Durational breastfeeding	62.5%	81.6%	79.9%
		% of Total	5.6%	74.3%	79.9%
	urban	Count	9	45	54
		% within Type of place of residence	16.7%	83.3%	100.0%
		% within Durational breastfeeding	37.5%	18.4%	20.1%
		% of Total	3.4%	16.8%	20.1%
Total		Count	24	244	268
		% within Type of place of residence	9.0%	91.0%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.0%	91.0%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of place of residence * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

Pearson Chi-Square	4.932[a]	1	.026		
Continuity Correction[b]	3.819	1	.051		
Likelihood Ratio	4.283	1	.038		
Fisher's Exact Test				.034	.031
Linear-by-Linear Association	4.914	1	.027		
N of Valid Cases	268				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.84.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.136	.073	-2.233	.026[c]
Ordinal by Ordinal	Spearman Correlation	-.136	.073	-2.233	.026[c]
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Type of place of residence (rural / urban)	.377	.155	.915
For cohort Durational breastfeeding = 5 months or shorter or never breastfed	.421	.195	.909
For cohort Durational breastfeeding = 6 months or longer or still breastfeeding	1.116	.985	1.264
N of Valid Cases	268		

3.3.2.3. Relationship between wealth index and durational breastfeeding

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Wealth index * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Wealth index * Durational breastfeeding Crosstabulation

			Durational breastfeeding		
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	Total
Wealth index	poorer quintiles	Count	15	157	172
		% within Wealth index	8.7%	91.3%	100.0%
		% within Durational breastfeeding	62.5%	64.6%	64.4%
		% of Total	5.6%	58.8%	64.4%
	middle and richer quintiles	Count	9	86	95
		% within Wealth index	9.5%	90.5%	100.0%
		% within Durational breastfeeding	37.5%	35.4%	35.6%
		% of Total	3.4%	32.2%	35.6%
Total		Count	24	243	267
		% within Wealth index	9.0%	91.0%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%

Wealth index * Durational breastfeeding Crosstabulation

			Durational breastfeeding		
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	Total
Wealth index	poorer quintiles	Count	15	157	172
		% within Wealth index	8.7%	91.3%	100.0%
		% within Durational breastfeeding	62.5%	64.6%	64.4%
		% of Total	5.6%	58.8%	64.4%
	middle and richer quintiles	Count	9	86	95
		% within Wealth index	9.5%	90.5%	100.0%
		% within Durational breastfeeding	37.5%	35.4%	35.6%
		% of Total	3.4%	32.2%	35.6%
		Count	24	243	267
		% within Wealth index	9.0%	91.0%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.0%	91.0%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.042[a]	1	.837		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.042	1	.837		
Fisher's Exact Test				.827	.500
Linear-by-Linear Association	.042	1	.837		
N of Valid Cases	267				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.54.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.013	.062	-.205	.838[c]
Ordinal by Ordinal	Spearman Correlation	-.013	.062	-.205	.838[c]
N of Valid Cases		267			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Wealth index (poorer quintiles / middle and richer quintiles)	.913	.384	2.173
For cohort Durational breastfeeding = 5 months or shorter or never breastfed	.921	.419	2.023
For cohort Durational breastfeeding = 6 months or longer or still breastfeeding	1.008	.931	1.092
N of Valid Cases	267		

3.3.2.4. Relationship between educational attainment and durational breastfeeding

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Educational attainment * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Educational attainment * Durational breastfeeding Crosstabulation

			Durational breastfeeding		
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	Total
Educational attainment	no education	Count	0	7	7
		% within Educational attainment	.0%	100.0%	100.0%
		% within Durational breastfeeding	.0%	2.9%	2.6%
		% of Total	.0%	2.6%	2.6%
	low education	Count	16	168	184
		% within Educational attainment	8.7%	91.3%	100.0%
		% within Durational breastfeeding	66.7%	68.9%	68.7%
		% of Total	6.0%	62.7%	68.7%
	complete secondary or higher	Count	8	69	77
		% within Educational attainment	10.4%	89.6%	100.0%
		% within Durational breastfeeding	33.3%	28.3%	28.7%
		% of Total	3.0%	25.7%	28.7%
Total		Count	24	244	268
		% within Educational attainment	9.0%	91.0%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.0%	91.0%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.898[a]	2	.638
Likelihood Ratio	1.514	2	.469
Linear-by-Linear Association	.557	1	.455
N of Valid Cases	268		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is .63.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.046	.058	-.746	.456[c]
Ordinal by Ordinal	Spearman Correlation	-.043	.060	-.696	.487[c]
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value
Odds Ratio for Educational attainment (no education / low education)	[a]

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.

3.3.2.5. Relationship between employment status and durational breastfeeding

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Employment status * Durational breastfeeding	267.301[a]	52.0%	246.294	48.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Employment status * Durational breastfeeding Crosstabulation

			Durational breastfeeding		
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	Total
Employment status	not currently working	Count	19	140	159
		% within Employment status	11.9%	88.1%	100.0%
		% within Durational breastfeeding	76.0%	57.6%	59.3%
		% of Total	7.1%	52.2%	59.3%
	currently working	Count	6	103	109
		% within Employment status	5.5%	94.5%	100.0%
		% within Durational breastfeeding	24.0%	42.4%	40.7%
		% of Total	2.2%	38.4%	40.7%
Total		Count	25	243	268
		% within Employment status	9.3%	90.7%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.3%	90.7%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.176[a]	1	.075		
Continuity Correction[b]	2.460	1	.117		
Likelihood Ratio	3.376	1	.066		
Fisher's Exact Test				.089	.056
Linear-by-Linear Association	3.164	1	.075		
N of Valid Cases	268				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.17.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.109	.055	1.786	.075[c]
Ordinal by Ordinal	Spearman Correlation	.109	.055	1.786	.075[c]
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Employment status (not currently working / currently working)	2.330	.899	6.039
For cohort Durational breastfeeding = 5 months or shorter or never breastfed	2.171	.896	5.259
For cohort Durational breastfeeding = 6 months or longer or still breastfeeding	.932	.866	1.002
N of Valid Cases	268		

3.3.2.6. Relationship between type of occupation and durational breastfeeding

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of occupation * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Type of occupation * Durational breastfeeding Crosstabulation

	Durational breastfeeding	Total

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of occupation * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	
Type of occupation	not working	Count	15	112	127
		% within Type of occupation	11.8%	88.2%	100.0%
		% within Durational breastfeeding	62.5%	46.1%	47.6%
		% of Total	5.6%	41.9%	47.6%
	labourers	Count	4	75	79
		% within Type of occupation	5.1%	94.9%	100.0%
		% within Durational breastfeeding	16.7%	30.9%	29.6%
		% of Total	1.5%	28.1%	29.6%
	service and management	Count	5	56	61
		% within Type of occupation	8.2%	91.8%	100.0%
		% within Durational breastfeeding	20.8%	23.0%	22.8%
		% of Total	1.9%	21.0%	22.8%
Total		Count	24	243	267
		% within Type of occupation	9.0%	91.0%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.0%	91.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.771[a]	2	.250

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.066	.062	1.084	.280[c]
Ordinal by Ordinal	Spearman Correlation	.074	.062	1.209	.228[c]
N of Valid Cases		267			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Likelihood Ratio	2.926	2	.232
Linear-by-Linear Association	1.173	1	.279
N of Valid Cases	267		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.48.

Risk Estimate

	Value
Odds Ratio for Type of occupation (not working / labourers)	[a]

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.

3.3.2.7. Relationship between religion and durational breastfeeding

Case Processing Summary

	Cases		
	Valid	Missing	Total

	N	Percent	N	Percent	N	Percent
Religion * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Religion * Durational breastfeeding Crosstabulation

			Durational breastfeeding		
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	Total
Religion	Islam	Count	24	243	267
		% within Religion	9.0%	91.0%	100.0%
		% within Durational breastfeeding	100.0%	99.6%	99.6%
		% of Total	9.0%	90.7%	99.6%
	Protestant	Count	0	1	1
		% within Religion	.0%	100.0%	100.0%
		% within Durational breastfeeding	.0%	.4%	.4%
		% of Total	.0%	.4%	.4%
Total		Count	24	244	268
		% within Religion	9.0%	91.0%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.0%	91.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.099[a]	1	.753		
Continuity Correction[b]	.000	1	1.000		

Likelihood Ratio	.188	1	.665		
Fisher's Exact Test				1.000	.910
Linear-by-Linear Association	.098	1	.754		
N of Valid Cases	268				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .09.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.019	.010	.313	.754[c]
Ordinal by Ordinal	Spearman Correlation	.019	.010	.313	.754[c]
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
For cohort Durational breastfeeding = 6 months or longer or still breastfeeding	.910	.876	.945
N of Valid Cases	268		

3.3.2.8. Relationship between sex preference and durational breastfeeding

Case Processing Summary

	Cases		
	Valid	Missing	Total

	N	Percent	N	Percent	N	Percent
Sex preference * Durational breastfeeding	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Sex preference * Durational breastfeeding Crosstabulation

			Durational breastfeeding		
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	Total
Sex preference	boys or girls preference	Count	4	51	55
		% within Sex preference	7.3%	92.7%	100.0%
		% within Durational breastfeeding	16.0%	21.0%	20.5%
		% of Total	1.5%	19.0%	20.5%
	no sex preference	Count	21	192	213
		% within Sex preference	9.9%	90.1%	100.0%
		% within Durational breastfeeding	84.0%	79.0%	79.5%
		% of Total	7.8%	71.6%	79.5%
Total		Count	25	243	268
		% within Sex preference	9.3%	90.7%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.3%	90.7%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.346[a]	1	.557		
Continuity Correction[b]	.108	1	.743		

Likelihood Ratio	.365	1	.546		
Fisher's Exact Test				.795	.387
Linear-by-Linear Association	.344	1	.557		
N of Valid Cases	268				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.13.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.036	.056	-.586	.558[c]
Ordinal by Ordinal	Spearman Correlation	-.036	.056	-.586	.558[c]
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Sex preference (boys or girls preference / no sex preference)	.717	.236	2.182
For cohort Durational breastfeeding = 5 months or shorter or never breastfed	.738	.264	2.061
For cohort Durational breastfeeding = 6 months or longer or still breastfeeding	1.029	.944	1.121
N of Valid Cases	268		

3.3.2.9. Relationship between family planning programs and durational breastfeeding

Case Processing Summary

	Cases		
	Valid	Missing	Total

	N	Percent	N	Percent	N	Percent
Family planning program * Durational breastfeeding	267.117[a]	52.0%	246.477	48.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Family planning program * Durational breastfeeding Crosstabulation

			Durational breastfeeding		Total
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	
Family planning program	no	Count	24	232	256
		% within Family planning program	9.4%	90.6%	100.0%
		% within Durational breastfeeding	100.0%	95.5%	95.9%
		% of Total	9.0%	86.9%	95.9%
	yes	Count	0	11	11
		% within Family planning program	.0%	100.0%	100.0%
		% within Durational breastfeeding	.0%	4.5%	4.1%
		% of Total	.0%	4.1%	4.1%
Total		Count	24	243	267
		% within Family planning program	9.0%	91.0%	100.0%
		% within Durational breastfeeding	100.0%	100.0%	100.0%
		% of Total	9.0%	91.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.133[a]	1	.287		

Continuity Correction[b]	.277	1	.599		
Likelihood Ratio	2.118	1	.146		
Fisher's Exact Test				.606	.348
Linear-by-Linear Association	1.129	1	.288		
N of Valid Cases	267				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is .99.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.065	.012	1.063	.289[c]
Ordinal by Ordinal	Spearman Correlation	.065	.012	1.063	.289[c]
N of Valid Cases		267			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
For cohort Durational breastfeeding = 6 months or longer or still breastfeeding	.906	.871	.943
N of Valid Cases	267		

3.3.3. Relationship between socioeconomic variables and current contraceptive use

3.3.3.1. Relationship between ideal number of children and current contraceptive use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Ideal number of children * Current use of contraception	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Ideal number of children * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Ideal number of children	3 or fewer	Count	64	64	128
		% within Ideal number of children	50.0%	50.0%	100.0%
		% within Current use of contraception	22.1%	28.6%	24.9%
		% of Total	12.5%	12.5%	24.9%
	4 or more	Count	226	160	386
		% within Ideal number of children	58.5%	41.5%	100.0%
		% within Current use of contraception	77.9%	71.4%	75.1%
		% of Total	44.0%	31.1%	75.1%
Total		Count	290	224	514
		% within Ideal number of children	56.4%	43.6%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.4%	43.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.857[a]	1	.091		

Continuity Correction[b]	2.520	1	.112		
Likelihood Ratio	2.842	1	.092		
Fisher's Exact Test				.100	.056
Linear-by-Linear Association	2.852	1	.091		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 55.78.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.075	.044	-1.692	.091[c]
Ordinal by Ordinal	Spearman Correlation	-.075	.044	-1.692	.091[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Ideal number of children (3 or fewer / 4 or more)	.708	.474	1.058
For cohort Current use of contraception = no	.854	.704	1.035
For cohort Current use of contraception = yes	1.206	.978	1.488
N of Valid Cases	514		

3.3.3.2. Relationship between type of place of residence and current contraceptive use

Case Processing Summary

	Cases

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of place of residence * Current use of contraception	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Type of place of residence * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Type of place of residence	Rural	Count	236	171	407
		% within Type of place of residence	58.0%	42.0%	100.0%
		% within Current use of contraception	81.4%	76.7%	79.3%
		% of Total	46.0%	33.3%	79.3%
	urban	Count	54	52	106
		% within Type of place of residence	50.9%	49.1%	100.0%
		% within Current use of contraception	18.6%	23.3%	20.7%
		% of Total	10.5%	10.1%	20.7%
Total		Count	290	223	513
		% within Type of place of residence	56.5%	43.5%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.5%	43.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.697[a]	1	.193		

Continuity Correction[b]	1.423	1	.233		
Likelihood Ratio	1.688	1	.194		
Fisher's Exact Test				.226	.117
Linear-by-Linear Association	1.694	1	.193		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 46.08.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.058	.044	1.302	.193[c]
Ordinal by Ordinal	Spearman Correlation	.058	.044	1.302	.193[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Type of place of residence (rural / urban)	1.329	.866	2.040
For cohort Current use of contraception = no	1.138	.928	1.396
For cohort Current use of contraception = yes	.856	.684	1.073
N of Valid Cases	513		

3.3.3.3. Relationship between wealth index and current contraceptive use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Wealth index * Current use of contraception	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Wealth index * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Wealth index	poorer quintiles	Count	188	131	319
		% within Wealth index	58.9%	41.1%	100.0%
		% within Current use of contraception	64.8%	58.5%	62.1%
		% of Total	36.6%	25.5%	62.1%
	middle and richer quintiles	Count	102	93	195
		% within Wealth index	52.3%	47.7%	100.0%
		% within Current use of contraception	35.2%	41.5%	37.9%
		% of Total	19.8%	18.1%	37.9%
Total		Count	290	224	514
		% within Wealth index	56.4%	43.6%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.4%	43.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)

Pearson Chi-Square	2.161[a]	1	.142		
Continuity Correction[b]	1.900	1	.168		
Likelihood Ratio	2.157	1	.142		
Fisher's Exact Test				.144	.084
Linear-by-Linear Association	2.157	1	.142		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 84.98.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.065	.044	1.470	.142[c]
Ordinal by Ordinal	Spearman Correlation	.065	.044	1.470	.142[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Wealth index (poorer quintiles / middle and richer quintiles)	1.308	.914	1.873
For cohort Current use of contraception = no	1.127	.958	1.325
For cohort Current use of contraception = yes	.861	.707	1.049
N of Valid Cases	514		

3.3.3.4. Relationship between educational attainment and current contraceptive use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Educational attainment * Current use of contraception	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Educational attainment * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Educational attainment	no education	Count	22	8	30
		% within Educational attainment	73.3%	26.7%	100.0%
		% within Current use of contraception	7.6%	3.6%	5.8%
		% of Total	4.3%	1.6%	5.8%
	low education	Count	199	148	347
		% within Educational attainment	57.3%	42.7%	100.0%
		% within Current use of contraception	68.6%	66.4%	67.6%
		% of Total	38.8%	28.8%	67.6%
	complete secondary or higher	Count	69	67	136
		% within Educational attainment	50.7%	49.3%	100.0%
		% within Current use of contraception	23.8%	30.0%	26.5%
		% of Total	13.5%	13.1%	26.5%
Total		Count	290	223	513
		% within Educational attainment	56.5%	43.5%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.5%	43.5%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)

Pearson Chi-Square	5.400[a]	2	.067
Likelihood Ratio	5.571	2	.062
Linear-by-Linear Association	4.706	1	.030
N of Valid Cases	513		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.04.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.096	.043	2.177	.030[c]
Ordinal by Ordinal	Spearman Correlation	.092	.044	2.099	.036[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value
Odds Ratio for Educational attainment (no education / low education)	[a]

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.

3.3.3.5. Relationship between employment status and current contraceptive use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Employment status * Current use of contraception	513.188[a]	99.9%	.406	.1%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Employment status * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Employment status	not currently working	Count	128	115	243
		% within Employment status	52.7%	47.3%	100.0%
		% within Current use of contraception	44.1%	51.3%	47.3%
		% of Total	24.9%	22.4%	47.3%
	currently working	Count	162	109	271
		% within Employment status	59.8%	40.2%	100.0%
		% within Current use of contraception	55.9%	48.7%	52.7%
		% of Total	31.5%	21.2%	52.7%
Total		Count	290	224	514
		% within Employment status	56.4%	43.6%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.4%	43.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.629[a]	1	.105		
Continuity Correction[b]	2.348	1	.125		
Likelihood Ratio	2.630	1	.105		
Fisher's Exact Test				.110	.063
Linear-by-Linear Association	2.624	1	.105		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 105.90.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.072	.044	-1.623	.105[c]
Ordinal by Ordinal	Spearman Correlation	-.072	.044	-1.623	.105[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Employment status (not currently working / currently working)	.749	.528	1.063
For cohort Current use of contraception = no	.881	.755	1.028
For cohort Current use of contraception = yes	1.177	.967	1.432
N of Valid Cases	514		

3.3.3.6. Relationship between type of occupation and current contraceptive use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of occupation * Current use of contraception	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Type of occupation * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Type of occupation	not working	Count	132	104	236
		% within Type of occupation	55.9%	44.1%	100.0%
		% within Current use of contraception	45.7%	46.4%	46.0%
		% of Total	25.7%	20.3%	46.0%
	labourers	Count	92	72	164
		% within Type of occupation	56.1%	43.9%	100.0%
		% within Current use of contraception	31.8%	32.1%	32.0%
		% of Total	17.9%	14.0%	32.0%
	service and management	Count	65	48	113
		% within Type of occupation	57.5%	42.5%	100.0%
		% within Current use of contraception	22.5%	21.4%	22.0%
		% of Total	12.7%	9.4%	22.0%
Total		Count	289	224	513
		% within Type of occupation	56.3%	43.7%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.3%	43.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.084[a]	2	.959
Likelihood Ratio	.084	2	.959
Linear-by-Linear Association	.067	1	.796
N of Valid Cases	513		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 49.34.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.011	.044	-.258	.796[c]
Ordinal by Ordinal	Spearman Correlation	-.011	.044	-.243	.808[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value
Odds Ratio for Type of occupation (not working / labourers)	[a]

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.

3.3.3.7. Relationship between religion and current contraceptive use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Religion * Current use of contraception	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Religion * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Religion	Islam	Count	290	223	513
		% within Religion	56.5%	43.5%	100.0%
		% within Current use of contraception	100.0%	99.6%	99.8%
		% of Total	56.4%	43.4%	99.8%
	Protestant	Count	0	1	1
		% within Religion	.0%	100.0%	100.0%
		% within Current use of contraception	.0%	.4%	.2%
		% of Total	.0%	.2%	.2%
Total		Count	290	224	514
		% within Religion	56.4%	43.6%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.4%	43.6%	100.0%

Chi-Square Tests

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Religion * Current use of contraception	513.594[a]	100.0%	0	.0%	513.594	100.0%

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.297[a]	1	.255		
Continuity Correction[b]	.017	1	.897		
Likelihood Ratio	1.664	1	.197		
Fisher's Exact Test				.436	.436
Linear-by-Linear Association	1.295	1	.255		
N of Valid Cases	514				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .44.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.050	.025	1.138	.256[c]
Ordinal by Ordinal	Spearman Correlation	.050	.025	1.138	.256[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
For cohort Current use of contraception = yes	.435	.394	.480
N of Valid Cases	514		

3.3.3.8. Relationship between sex preference and current contraceptive use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Sex preference * Current use of contraception	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Sex preference * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Sex preference	boys or girls preference	Count	85	38	123
		% within Sex preference	69.1%	30.9%	100.0%
		% within Current use of contraception	29.3%	17.0%	23.9%
		% of Total	16.5%	7.4%	23.9%
	no sex preference	Count	205	186	391
		% within Sex preference	52.4%	47.6%	100.0%
		% within Current use of contraception	70.7%	83.0%	76.1%
		% of Total	39.9%	36.2%	76.1%
Total		Count	290	224	514
		% within Sex preference	56.4%	43.6%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.4%	43.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.582[a]	1	.001		
Continuity Correction[b]	9.915	1	.002		
Likelihood Ratio	10.850	1	.001		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	10.562	1	.001		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 53.60.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.143	.042	3.281	.001[c]
Ordinal by Ordinal	Spearman Correlation	.143	.042	3.281	.001[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Sex preference (boys or girls preference / no sex preference)	2.030	1.319	3.123
For cohort Current use of contraception = no	1.318	1.133	1.533
For cohort Current use of contraception = yes	.649	.489	.863
N of Valid Cases	514		

3.3.3.9. Relationship between family planning programs and current contraceptive use

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Family planning program * Current use of contraception	513.005[a]	99.9%	.589	.1%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Family planning program * Current use of contraception Crosstabulation

			Current use of contraception		Total
			no	yes	
Family planning program	no	Count	282	209	491
		% within Family planning program	57.4%	42.6%	100.0%
		% within Current use of contraception	97.2%	93.7%	95.7%
		% of Total	55.0%	40.7%	95.7%
	yes	Count	8	14	22
		% within Family planning program	36.4%	63.6%	100.0%
		% within Current use of contraception	2.8%	6.3%	4.3%
		% of Total	1.6%	2.7%	4.3%
Total		Count	290	223	513
		% within Family planning program	56.5%	43.5%	100.0%
		% within Current use of contraception	100.0%	100.0%	100.0%
		% of Total	56.5%	43.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.804[a]	1	.051		
Continuity Correction[b]	2.995	1	.084		
Likelihood Ratio	3.775	1	.052		
Fisher's Exact Test				.076	.042
Linear-by-Linear Association	3.797	1	.051		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.56.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.086	.044	1.954	.051[c]
Ordinal by Ordinal	Spearman Correlation	.086	.044	1.954	.051[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Family planning program (no / yes)	2.361	.973	5.732
For cohort Current use of contraception = no	1.579	.904	2.760
For cohort Current use of contraception = yes	.669	.480	.932
N of Valid Cases	513		

3.3.4. Relationship between socioeconomic variables and child death experience

3.3.4.1. Relationship between ideal number of children and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Ideal number of children * Child death experience	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Ideal number of children * Child death experience Crosstabulation

			Child death experience		Total
			yes	No	
Ideal number of children	3 or fewer	Count	12	116	128
		% within Ideal number of children	9.4%	90.6%	100.0%
		% within Child death experience	16.9%	26.2%	24.9%
		% of Total	2.3%	22.6%	24.9%
	4 or more	Count	59	327	386
		% within Ideal number of children	15.3%	84.7%	100.0%
		% within Child death experience	83.1%	73.8%	75.1%
		% of Total	11.5%	63.6%	75.1%
Total		Count	71	443	514
		% within Ideal number of children	13.8%	86.2%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.8%	86.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.820[a]	1	.093		
Continuity Correction[b]	2.346	1	.126		
Likelihood Ratio	3.030	1	.082		
Fisher's Exact Test				.105	.059
Linear-by-Linear Association	2.815	1	.093		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 17.68.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.074	.039	-1.681	.093[c]
Ordinal by Ordinal	Spearman Correlation	-.074	.039	-1.681	.093[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Ideal number of children (3 or fewer / 4 or more)	.573	.298	1.105
For cohort Child death experience = yes	.613	.341	1.104
For cohort Child death experience = no	1.070	.997	1.147
N of Valid Cases	514		

3.3.4.2. Relationship between type of place of residence and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of place of residence * Child death experience	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Type of place of residence * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Type of place of residence	rural	Count	60	347	407
		% within Type of place of residence	14.7%	85.3%	100.0%
		% within Child death experience	84.5%	78.3%	79.2%
		% of Total	11.7%	67.5%	79.2%
	urban	Count	11	96	107
		% within Type of place of residence	10.3%	89.7%	100.0%
		% within Child death experience	15.5%	21.7%	20.8%
		% of Total	2.1%	18.7%	20.8%
Total		Count	71	443	514
		% within Type of place of residence	13.8%	86.2%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.8%	86.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.417[a]	1	.234		
Continuity Correction[b]	1.067	1	.302		
Likelihood Ratio	1.504	1	.220		
Fisher's Exact Test				.272	.150
Linear-by-Linear Association	1.414	1	.234		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.78.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.052	.040	1.190	.235[c]
Ordinal by Ordinal	Spearman Correlation	.052	.040	1.190	.235[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Type of place of residence (rural / urban)	1.509	.763	2.983
For cohort Child death experience = yes	1.434	.782	2.630
For cohort Child death experience = no	.950	.881	1.025
N of Valid Cases	514		

3.3.4.3. Relationship between wealth index and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Wealth Index * Child death experience	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Wealth Index * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Wealth Index	poorer and middle quintiles	Count	60	351	411
		% within Wealth Index	14.6%	85.4%	100.0%
		% within Child death experience	85.7%	79.2%	80.1%
		% of Total	11.7%	68.4%	80.1%
	richer quintiles	Count	10	92	102
		% within Wealth Index	9.8%	90.2%	100.0%
		% within Child death experience	14.3%	20.8%	19.9%
		% of Total	1.9%	17.9%	19.9%
Total		Count	70	443	513
		% within Wealth Index	13.6%	86.4%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.6%	86.4%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Wealth Index * Child death experience	513.594[a]	100.0%	.000	.0%	513.594	100.0%

Pearson Chi-Square	1.594[a]	1	.207		
Continuity Correction[b]	1.213	1	.271		
Likelihood Ratio	1.707	1	.191		
Fisher's Exact Test				.259	.134
Linear-by-Linear Association	1.591	1	.207		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.92.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.056	.040	1.262	.207[c]
Ordinal by Ordinal	Spearman Correlation	.056	.040	1.262	.207[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Wealth Index (poorer and middle quintiles / richer quintiles)	1.573	.775	3.191
For cohort Child death experience = yes	1.489	.790	2.805
For cohort Child death experience = no	.947	.878	1.021
N of Valid Cases	513		

3.3.4.4. Relationship between educational attainment and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Educational attainment * Child death experience	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Educational attainment * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Educational attainment	no education	Count	7	24	31
		% within Educational attainment	22.6%	77.4%	100.0%
		% within Child death experience	9.9%	5.4%	6.0%
		% of Total	1.4%	4.7%	6.0%
	low education	Count	56	291	347
		% within Educational attainment	16.1%	83.9%	100.0%
		% within Child death experience	78.9%	65.5%	67.4%
		% of Total	10.9%	56.5%	67.4%
	complete secondary or higher	Count	8	129	137
		% within Educational attainment	5.8%	94.2%	100.0%
		% within Child death experience	11.3%	29.1%	26.6%
		% of Total	1.6%	25.0%	26.6%
Total		Count	71	444	515
		% within Educational attainment	13.8%	86.2%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.8%	86.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.911[a]	2	.004
Likelihood Ratio	12.291	2	.002
Linear-by-Linear Association	10.646	1	.001
N of Valid Cases	515		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.27.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.144	.039	3.294	.001[c]
Ordinal by Ordinal	Spearman Correlation	.145	.037	3.325	.001[c]
N of Valid Cases		515			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value
Odds Ratio for Educational attainment (no education / low education)	[a]

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.

3.3.4.5. Relationship between employment status and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Employment status * Child death experience	513.188[a]	99.9%	.406	.1%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Employment status * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Employment status	not currently working	Count	27	215	242
		% within Employment status	11.2%	88.8%	100.0%
		% within Child death experience	38.6%	48.5%	47.2%
		% of Total	5.3%	41.9%	47.2%
	currently working	Count	43	228	271
		% within Employment status	15.9%	84.1%	100.0%
		% within Child death experience	61.4%	51.5%	52.8%
		% of Total	8.4%	44.4%	52.8%
Total		Count	70	443	513
		% within Employment status	13.6%	86.4%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.6%	86.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.407[a]	1	.121		
Continuity Correction[b]	2.024	1	.155		
Likelihood Ratio	2.431	1	.119		
Fisher's Exact Test				.125	.077
Linear-by-Linear Association	2.402	1	.121		
N of Valid Cases	513				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 33.02.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.068	.043	-1.552	.121[c]
Ordinal by Ordinal	Spearman Correlation	-.068	.043	-1.552	.121[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Employment status (not currently working / currently working)	.666	.397	1.116
For cohort Child death experience = yes	.703	.449	1.102
For cohort Child death experience = no	1.056	.986	1.131
N of Valid Cases	513		

3.3.4.6. Relationship between type of occupation and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Type of occupation * Child death experience	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Type of occupation * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Type of occupation	not working	Count	28	208	236
		% within Type of occupation	11.9%	88.1%	100.0%
		% within Child death experience	40.0%	47.0%	46.0%
		% of Total	5.5%	40.5%	46.0%
	Labourers	Count	29	135	164
		% within Type of occupation	17.7%	82.3%	100.0%
		% within Child death experience	41.4%	30.5%	32.0%
		% of Total	5.7%	26.3%	32.0%
	service and management	Count	13	100	113
		% within Type of occupation	11.5%	88.5%	100.0%
		% within Child death experience	18.6%	22.6%	22.0%
		% of Total	2.5%	19.5%	22.0%
Total		Count	70	443	513
		% within Type of occupation	13.6%	86.4%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.6%	86.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.344[a]	2	.188
Likelihood Ratio	3.226	2	.199
Linear-by-Linear Association	.084	1	.772
N of Valid Cases	513		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.42.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.013	.042	-.290	.772[c]
Ordinal by Ordinal	Spearman Correlation	-.021	.042	-.473	.637[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value
Odds Ratio for Type of occupation (not working / labourers)	[a]

a. Risk Estimate statistics cannot be computed. They are only computed for a 2*2 table without empty cells.

3.3.4.7. Relationship between religion and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Religion * Child death experience	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Religion * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Religion	Islam	Count	70	442	512
		% within Religion	13.7%	86.3%	100.0%
		% within Child death experience	100.0%	99.8%	99.8%
		% of Total	13.6%	86.2%	99.8%
	Protestant	Count	0	1	1
		% within Religion	.0%	100.0%	100.0%
		% within Child death experience	.0%	.2%	.2%
		% of Total	.0%	.2%	.2%
Total		Count	70	443	513
		% within Religion	13.6%	86.4%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.6%	86.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.158[a]	1	.691		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.294	1	.588		
Fisher's Exact Test				1.000	.864
Linear-by-Linear Association	.158	1	.691		
N of Valid Cases	513				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .14.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.018	.009	.397	.691[c]
Ordinal by Ordinal	Spearman Correlation	.018	.009	.397	.691[c]
N of Valid Cases		513			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
For cohort Child death experience = no	.863	.834	.894
N of Valid Cases	513		

3.3.4.8. Relationship between sex preference and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Sex preference * Child death experience	513.594[a]	100.0%	.000	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Sex preference * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Sex preference	boys or girls preference	Count	23	100	123
		% within Sex preference	18.7%	81.3%	100.0%
		% within Child death experience	32.9%	22.5%	23.9%
		% of Total	4.5%	19.5%	23.9%
	no sex preference	Count	47	344	391
		% within Sex preference	12.0%	88.0%	100.0%
		% within Child death experience	67.1%	77.5%	76.1%
		% of Total	9.1%	66.9%	76.1%
Total		Count	70	444	514
		% within Sex preference	13.6%	86.4%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.6%	86.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.548[a]	1	.060		
Continuity Correction[b]	3.003	1	.083		
Likelihood Ratio	3.339	1	.068		
Fisher's Exact Test				.070	.044
Linear-by-Linear Association	3.541	1	.060		
N of Valid Cases	514				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.75.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.083	.048	1.886	.060[c]
Ordinal by Ordinal	Spearman Correlation	.083	.048	1.886	.060[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Sex preference (boys or girls preference / no sex preference)	1.683	.975	2.907
For cohort Child death experience = yes	1.556	.986	2.454
For cohort Child death experience = no	.924	.843	1.013
N of Valid Cases	514		

3.3.4.9. Relationship between family planning program and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Family planning program * Child death experience	513.005[a]	99.9%	.589	.1%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Family planning program * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Family planning program	no	Count	67	424	491
		% within Family planning program	13.6%	86.4%	100.0%
		% within Child death experience	95.7%	95.9%	95.9%
		% of Total	13.1%	82.8%	95.9%
	yes	Count	3	18	21
		% within Family planning program	14.3%	85.7%	100.0%
		% within Child death experience	4.3%	4.1%	4.1%
		% of Total	.6%	3.5%	4.1%
Total		Count	70	442	512
		% within Family planning program	13.7%	86.3%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.7%	86.3%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.007[a]	1	.933		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.007	1	.934		
Fisher's Exact Test				1.000	.566
Linear-by-Linear Association	.007	1	.933		
N of Valid Cases	512				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.87.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.004	.045	-.083	.934[c]
Ordinal by Ordinal	Spearman Correlation	-.004	.045	-.083	.934[c]
N of Valid Cases		512			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Family planning program (no / yes)	.948	.272	3.306
For cohort Child death experience = yes	.955	.327	2.788
For cohort Child death experience = no	1.007	.843	1.204
N of Valid Cases	512		

3.3.5. Relationship between selected proximate determinants of fertility and child death experience

3.3.5.1. Relationship between age at first marriage and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age at first marriage * Child death experience	513.594[a]	100.0%	0	.0%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Age at first marriage * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Age at first marriage	19 or lower	Count	50	235	285
		% within Age at first marriage	17.5%	82.5%	100.0%
		% within Child death experience	70.4%	52.9%	55.3%
		% of Total	9.7%	45.6%	55.3%
	20 or higher	Count	21	209	230
		% within Age at first marriage	9.1%	90.9%	100.0%
		% within Child death experience	29.6%	47.1%	44.7%
		% of Total	4.1%	40.6%	44.7%
Total		Count	71	444	515
		% within Age at first marriage	13.8%	86.2%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	13.8%	86.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.580[a]	1	.006		
Continuity Correction[b]	6.889	1	.009		
Likelihood Ratio	7.837	1	.005		
Fisher's Exact Test				.007	.004
Linear-by-Linear Association	7.566	1	.006		
N of Valid Cases	515				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 31.71.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.121	.041	2.768	.006[c]
Ordinal by Ordinal	Spearman Correlation	.121	.041	2.768	.006[c]
N of Valid Cases		515			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Age at first marriage (19 or lower / 20 or higher)	2.118	1.231	3.643
For cohort Child death experience = yes	1.921	1.190	3.103
For cohort Child death experience = no	.907	.848	.971
N of Valid Cases	515		

3.3.5.2. Relationship between durational breastfeeding and child death experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Durational breastfeeding * Child death experience	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

a. Number of valid cases is different from the total count in the crosstabulation table because the cell counts have been rounded.

Durational breastfeeding * Child death experience Crosstabulation

			Child death experience		Total
			yes	no	
Durational breastfeeding	5 months or shorter or never breastfed	Count	4	20	24
		% within Durational breastfeeding	16.7%	83.3%	100.0%
		% within Child death experience	13.8%	8.4%	9.0%
		% of Total	1.5%	7.5%	9.0%
	6 months or longer or still breastfeeding	Count	25	219	244
		% within Durational breastfeeding	10.2%	89.8%	100.0%
		% within Child death experience	86.2%	91.6%	91.0%
		% of Total	9.3%	81.7%	91.0%
Total		Count	29	239	268
		% within Durational breastfeeding	10.8%	89.2%	100.0%
		% within Child death experience	100.0%	100.0%	100.0%
		% of Total	10.8%	89.2%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.933[a]	1	.334		
Continuity Correction[b]	.387	1	.534		
Likelihood Ratio	.828	1	.363		
Fisher's Exact Test				.308	.252
Linear-by-Linear Association	.930	1	.335		
N of Valid Cases	268				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.60.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Durational breastfeeding * Child death experience	267.706[a]	52.1%	245.888	47.9%	513.594	100.0%

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.059	.072	.964	.336[c]
Ordinal by Ordinal	Spearman Correlation	.059	.072	.964	.336[c]
N of Valid Cases		268			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Durational breastfeeding (5 months or shorter or never breastfed / 6 months or longer or still breastfeeding)	1.752	.554	5.536
For cohort Child death experience = yes	1.627	.617	4.285
For cohort Child death experience = no	.928	.773	1.116
N of Valid Cases	268		

Appendix 3.4. Multivariate analysis of proximate determinants of fertility and child death experience, Aceh 1997-2007

3.4.1. The influence of socioeconomic variables to the age at first marriage

Logistic Regression

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	929	100.0
	Missing Cases	0	.0
	Total	929	100.0
Unselected Cases		0	.0
Total		929	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
19 or lower	0
20 or higher	1

Categorical Variables Codings

		Frequency	Parameter coding	
			(1)	(2)
Educational attainment	no education	53	1.000	.000
	low education	627	.000	1.000
	complete secondary or higher	249	.000	.000

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted		
			Age at first marriage		Percentage Correct
			19 or lower	20 or higher	
Step 0	Age at first marriage	19 or lower	284	0	100.0
		20 or higher	229	0	.0
	Overall Percentage				55.4

a. Constant is included in the model.

b. The cut value is .500

Classification Table[a,b]

Observed			Predicted		
			Age at first marriage		Percentage Correct
			19 or lower	20 or higher	
Step 0	Age at first marriage	19 or lower	284	0	100.0
		20 or higher	229	0	.0
	Overall Percentage				55.4

a. Constant is included in the model.

Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 0	Constant	-.216	.089	5.911	1	.015	.806

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Residence	17.784	1	.000
		wealthindex2	28.712	1	.000
		education3	93.964	2	.000
		education3(1)	4.311	1	.038
		education3(2)	65.416	1	.000
	Overall Statistics		95.269	4	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	99.190	4	.000
	Block	99.190	4	.000
	Model	99.190	4	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	606.857[a]	.176	.235

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
	Step	99.190	4	.000
	Block	99.190	4	.000

Classification Table[a]

			Predicted		
			Age at first marriage		Percentage Correct
	Observed		19 or lower	20 or higher	
Step 1	Age at first marriage	19 or lower	257	27	90.3
		20 or higher	120	109	47.6
	Overall Percentage				71.3

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Residence	-.040	.290	.019	1	.890	.961
	wealthindex2	.376	.296	1.611	1	.204	1.456
	education3			56.424	2	.000	
	education3(1)	-2.247	.488	21.183	1	.000	.106
	education3(2)	-1.995	.269	54.938	1	.000	.136
	Constant	1.222	.264	21.486	1	.000	3.393

a. Variable(s) entered on step 1: residence, wealthindex2, education3.

3.4.2. The influence of socioeconomic variables to the durational breastfeeding

Logistic Regression

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	492	53.0
	Missing Cases	437	47.0
	Total	929	100.0
Unselected Cases		0	.0
Total		929	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	492	53.0
	Missing Cases	437	47.0
	Total	929	100.0
Unselected Cases		0	.0
Total		929	100.0

5 months or shorter or never breastfed	0
6 months or longer or still breastfeeding	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	Parameter coding (2)
Educational attainment	no education	53	1.000	.000
	low education	627	.000	1.000
	complete secondary or higher	249	.000	.000

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Durational breastfeeding: 5 months or shorter or never breastfed	Predicted: Durational breastfeeding: 6 months or longer or still breastfeeding	Percentage Correct
Step 0	Durational breastfeeding	5 months or shorter or never breastfed	0	24	.0
		6 months or longer or still breastfeeding	0	244	100.0
	Overall Percentage				91.0

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	Df	Sig.	Exp(B)

Classification Table[a,b]

Observed			Predicted		
			Durational breastfeeding		
			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	Percentage Correct
Step 0	Durational breastfeeding	5 months or shorter or never breastfed	0	24	.0
		6 months or longer or still breastfeeding	0	244	100.0
	Overall Percentage				91.0

a. Constant is included in the model.

Step 0	Constant	2.315	.214	117.369	1	.000	10.122

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Residence	4.450	1	.035
	Overall Statistics		4.450	1	.035

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	3.879	1	.049
	Block	3.879	1	.049
	Model	3.879	1	.049

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	157.994[a]	.014	.032

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed	Predicted	
	Durational breastfeeding	Percentage

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
	Step	3.879	1	.049
	Block	3.879	1	.049

			5 months or shorter or never breastfed	6 months or longer or still breastfeeding	
Step 1	Durational breastfeeding	5 months or shorter or never breastfed	0	24	.0
		6 months or longer or still breastfeeding	0	244	100.0
	Overall Percentage				91.0

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	residence	-.934	.455	4.210	1	.040	.393
	Constant	2.564	.265	93.532	1	.000	12.985

a. Variable(s) entered on step 1: residence.

3.4.3. The influence of socioeconomic variables to the current use of contraception

Logistic Regression

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	929	100.0
	Missing Cases	0	.0
	Total	929	100.0
Unselected Cases		0	.0
Total		929	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
No	0
Yes	1

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted		
			Current use of contraception		Percentage Correct
			No	yes	
Step 0	Current use of contraception	no	290	0	100.0
		yes	224	0	.0
	Overall Percentage				56.5

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.260	.089	8.517	1	.004	.771

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	sexpreference	10.651	1	.001
	Overall Statistics		10.651	1	.001

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	10.922	1	.001
	Block	10.922	1	.001
	Model	10.922	1	.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	692.481[a]	.021	.028

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
	Step	10.922	1	.001
	Block	10.922	1	.001

Classification Table[a]

			Predicted		
			Current use of contraception		Percentage Correct
	Observed		no	yes	
Step 1	Current use of contraception	No	290	0	100.0
		Yes	224	0	.0
	Overall Percentage				56.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	sexpreference	.711	.220	10.430	1	.001	2.036
	Constant	-.809	.195	17.143	1	.000	.445

a. Variable(s) entered on step 1: sexpreference.

3.4.4. The influence of socioeconomic variables to the child death experience

Logistic Regression

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	929	100.0
	Missing Cases	0	.0
	Total	929	100.0
Unselected Cases		0	.0
Total		929	100.0

a. If weight is in effect, see classification table for the total number of cases.

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	929	100.0
	Missing Cases	0	.0
	Total	929	100.0
Unselected Cases		0	.0
Total		929	100.0

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

		Frequency	Parameter coding	
			(1)	(2)
Educational attainment	no education	53	1.000	.000
	low education	627	.000	1.000
	complete secondary or higher	249	.000	.000

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted		
			Child loss experience		Percentage Correct
			yes	no	
Step 0	Child death experience	Yes	0	70	.0
		No	0	443	100.0
	Overall Percentage				86.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	1.839	.128	205.593	1	.000	6.292

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	education3	10.606	2	.005

Classification Table[a,b]

Observed			Predicted		
			Child loss experience		Percentage Correct
			yes	no	
Step 0	Child death experience	Yes	0	70	.0
		No	0	443	100.0
	Overall Percentage				86.3

a. Constant is included in the model.

	education3(1)	1.712	1	.191
	education3(2)	5.345	1	.021
	Marriage	7.905	1	.005
Overall Statistics		13.164	3	.004

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	14.648	3	.002
	Block	14.648	3	.002
	Model	14.648	3	.002

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	395.955[a]	.028	.051

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Child loss experience		Percentage Correct
			yes	no	
Step 1	Child death experience	Yes	0	70	.0
		No	0	443	100.0
	Overall Percentage				86.3

a. The cut value is .500

Variables in the Equation

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	14.648	3	.002
Block	14.648	3	.002

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	education3			5.712	2	.058	
	education3(1)	-1.258	.596	4.456	1	.035	.284
	education3(2)	-.920	.419	4.812	1	.028	.399
	marriage	.472	.299	2.494	1	.114	1.603
	Constant	2.431	.426	32.551	1	.000	11.366

a. Variable(s) entered on step 1: education3, marriage.