The world's highest fertility in Asia's newest nation: an investigation into reproductive behaviour of women in Timor-Leste

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Summary abstract:

Data from the Timor-Leste Demographic and Health Survey 2003 shows that Timor-Leste had the world's highest total fertility rate (7.8). This paper investigates the exceptionally high fertility in Timor-Leste and its apparent increase in recent years especially since receiving the status of a new nation in 1999 after a prolonged political conflict with Indonesia. The drastic changes in the political scenario which immediately led to the collapse of the family planning program and changes in the ethnic composition of the population are considered to have contributed to this increase. Focus group discussions and in-depth interviews clearly show that their reproductive decisions are highly influenced by their deeply rooted pro-natalist cultural norms. Moreover a perceived post-genocidal psychology among the male members who believe that they have lost many members of their families during the conflict and who must be replaced is also shaping their reproductive decisions in favour of pro-natalist ideology.

1. Introduction

The paper investigates the factors influencing reproductive decisions in Timor-Leste (formerly East Timor) - one amongst the newest nations in Asia, which currently has the highest fertility rate in the world. The Timor-Leste Demographic and Health Survey (DHS) 2003 confirms that it has a total fertility rate (TFR) of 7.8 - the highest fertility rate anywhere in the world and far in excess of the levels found in other countries in Southeast Asia (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). An earlier Demographic and Health Survey of Indonesia conducted in 1997 when East Timor was a part of Indonesia showed that although East Timor had the highest fertility of all the provinces of Indonesia with a TFR of 4.43 the current rate (7.8) indicates a sharp rise in the country's TFR. On the other hand, the infant mortality rate (IMR) in East Timor has substantial declined from the levels under Indonesian occupation (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). Generally, a decline in IMR is associated with a decline in TFR, but the present phenomenon is contradictory to the conventional demographic relationship between infant mortality and fertility. It is interesting to note that over the last 15 years there was around 50% decline in both infant and under-five mortality while the fertility rate increased (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004)[1]. The DHS survey of 2003 also reveals Timor-Leste women's preference for large family sizes as indicated by the desire of the majority of the women, even in the higher reproductive age groups, to have additional children in spite of the fact that they have already had given birth to 6 or more children. The DHS 2003 survey further reveals that the intention to use contraception at some time in the future among currently-married women is very low regardless of the number of children these women have (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004).

Although there has not been any in-depth study conducted so far to investigate the reasons behind the apparent rise in fertility in Timor-Leste or the desire for larger number of children among Timor-Leste women, expert demographers such as Terry Hull (Australian Broadcasting Corporation 2004) are of the opinion that the current high fertility is a result of East Timorese psychology of post-genocidal assumptions where many people in East Timor believe that they have lost many members of their families and they have to be replaced in some way. Kiernan (Kiernan 2003) also attributes the high fertility in Timor-Leste as an outcome of rebuilding of families after large scale losses due to ethnic conflicts prior to independence. The situation is similar to that of Cambodia, when after the genocide and extra-ordinary demographic situation of the country during 1975-1979, its fertility increased considerably when normalcy returned (Desbarats 1995; Dasvarma and Ricardo 2002). It is worth repeating here that Timor-Leste (or East Timor) had high fertility prior to independence from Indonesia, when all other provinces of Indonesia had been recording a declining trend in fertility. Contraceptive use in East Timor was also low in the past and the DHS 1997 data revealed that preference for children among East Timorese women was highest in Indonesia (Central Bureau of Statistics Indonesia, State Ministry of Population and National Family Planning Coordinating Board Indonesia et al. 1998). It is also interesting to note that East Timor was the only province in Indonesia with a Catholic majority population, who in general are not known to subscribe to the use of modern contraceptives. Moreover, the government sponsored family planning program in Indonesia, which has been, at least partly, instrumental in the decline of Indonesian fertility since the early 1970s, brought East Timor under its coverage at the very end of the expansion of the family planning program (in the late 1980s).

[1] However, a similar, but opposite finding has been reported from Cambodia, where declines in fertility since the late 1990s is shown not to be associated with similar declines in infant mortality.

The past high fertility in East Timor and its apparent further rise in 2003 imply possible pronatalist behaviour by the Timorese society. The main research question therefore is whether the high fertility in Timor-Leste and its apparent increase during the last few years is a result of deliberate increase in child bearing or it is mainly an outcome that is not uncommon in a early post-conflict environment when socio-economic conditions hits its lowest?

Based on the background information mentioned above, it is intended to address the high fertility situation in Timor-Leste with the following specific objectives:

- To examine the rationality behind reproductive decisions favouring high fertility in Timor-Leste;
- To examine the extent to which post conflict environment may have played a role in explaining Timor-Leste's current high fertility;

2. Historical background and current socio-economic situation

Timor-Leste, with its current population of nearly 1,001,000 (United Nations Development Programme Timor-Leste 2006), lies northwest of Darwin, Australia within an archipelago of Indonesian islands. With a history of 400 years of colonial rule by the Dutch and the Portuguese, East Timor entered into a phase of bloody conflict with Indonesia that would leave 102,800[2] die and approximately 250,000 people, or one quarter of the population, flee to neighbouring West Timor (Earnest and Finger 2006; Neupert and Lopes 2007).

Timor declared itself independent on November 28, 1975 following the collapse of Portugal's Salazar-Caetano regime. But nine days later, Indonesian forces invaded the territory and ultimately took full control of the province in July 1976. After years of continued popular resistance in East Timor, Indonesia agreed in 1999 to let the population of East Timor choose between independence and local autonomy under Indonesia. An overwhelming majority, nearly 80%, voted for independence. In October 1999, the UN General Assembly voted to establish the United Nations Transitional Administration in East Timor and a new nation Timor-Leste was born.

The Nation building exercise of Timor-Leste has identified education, health and agriculture as the major national priorities (Dibley 2003). But the predicted population explosion poses a serious challenge to this nation building process as it seeks to meet the development goals with increasing demand for schools, jobs, health, food and other infrastructural facilities (The World Bank Group 2005). Health and socio-economic indicators in Timor-Leste depict an extremely depressing state of human development in the country. According to the Human Development Report (United Nations Development Programme 2004), East Timor is the worst performer in the East Asia and Pacific region as measured by its Human Development Index (HDI). It has a life expectancy at birth of 55.5 years with malaria. Respiratory tract infections and diarrhea are some of the preventable causes of death. More than half of the population is illiterate and 41% of the population lives under an income poverty level of $US 0.55 a day (Dibley 2003). About three-quarters of the Timorese population live by subsistence agriculture and nutritional problems are widespread (Dibley 2003; Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). Almost half of the children under age five are underweight (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). Malnutrition continues even among children aged more than five and usually, children do not get to eat any food before going to

[2] It is estimated that at least 102,800 conflict related deaths (18,600 killing and 84,200 excess deaths from hunger and illness) (Source: Neupert and Lopes 2007)

school and find it hard to concentrate on their studies (United Nations World Food Programme Undated). In addition to this, more than 30% of the women suffer from chronic energy deficiency (United Nations World Food Programme Undated). The existing high insecurity of food is likely to be aggravated in the near future if the high rate of population growth continues. Apart from nutritional deficiency during pregnancy, most of the Timor Leste women are exposed to have a high risk of birth complications and elevated chances of mortality due to short birth intervals (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). Amidst these worrying signs of socio-economic condition in this new nation, it is of great concern with the prediction that if the current fertility rate and its implied population growth continue, the population of Timor-Leste will double in 17 years (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004).

3. Data source and conceptual framework

The study is based on both on primary as well as secondary data analysis. The primary data has been collected as a part of an ongoing survey of Alola foundation- a prominent local NGO. It was collected through four focus group discussions and in-depth interviews with 70 women in their reproductive ages. Convenience sampling methodology was conducted over a 12 month period in five districts in Timor-Leste. Within the sampling methodology consideration was given to urban and rural settings. Respondents were either recipients of Alola Foundation's maternal & child health programs or were part of the foundations community volunteer network, staff of the Alola Foundation. The source for secondary data analysed in this paper is from Timor-Leste Demographic and Health Survey (TLDHS) 2003. A total of 4211 ever married women in their reproductive age group from 4230 households were interviewed in DHS. The in-depth interviews and the focus group discussions were aimed at getting insightful information on contextual factors contributing to high fertility. The information from TLDHS 2003 will be utilised in this paper to highlight the impact of intermediate variables (age at marriage, breast feeding, contraceptive use and abortion) affecting fertility level in Timor-Leste. Information from a base line survey conducted by Health Alliance International (a non-governmental international organisation) will also be used in the discussion in this paper.

The theoretical basis of this study comes predominantly from Freedman's conceptual framework (Freedman 1963) on the relationship between contextual, socio-economic, cultural norms and perception about population loss and their influence on normative values, intermediate variables (women's age at marriage, contraception, abortion, and breast feeding) and fertility outcomes in transitional societies. As described by Freedman (1963), fertility levels in a society are predominantly the outcomes of existing social norms. But these norms do not directly influence or determine the fertility level in a society; indeed they may not be intended to influence the level of fertility (Bongaarts 1982). It is the influence of the proximate or intermediate variables, which ultimately determines the fertility level in a society.

The exceptionally high fertility among the Timor-Leste's women must in the end be explained by a group of factors. These factors are behavioural and biological in nature that directly determine fertility through their combined effects. Based on an extensive analysis of 41 developing, developed and historical populations, Bongarrts (1982), Bongaarts and Potter (1983) showed that, only four proximate determinants, namely marriage, contraceptive use, abortion and postpartum insusceptibility, explain 96% of the variation in fertility. The small amount of unexplained variation in fertility is due variations in the remaining three proximate determinants – fecundability, sterility and intrauterine mortality. These minor proximate determinants are thought not to vary substantially by country or across time (Bongaarts and Potter 1983; Visaria 1999).

Based on the Bongaarts' well established analysis of proximate determinants of fertility, the present study examines the four proximate variables which would influence fertility in Timor-Leste. These four proximate variables are marriage, postpartum infecundability, contraception, and induced abortion which are predominantly behavioural in nature.

According to Bongarrts' mutiplicative model observed fertility is less than its maximum value (equivalent to the total fecundity rate TF) because of delayed marriage (and marital disruption), contraceptive use, induced abortion and postpartum infecundability induced by breast-feeding and abstinence. If only marital fertility is considered, or in other words, if the fertility-inhibiting effect of celibacy is removed, then the observed fertility (TFR) will be equal to TM (total marital fertility). In the absence of contraception and induced abortion TM would be equal to the total natural marital fertility rate, TN. Furthermore, in the absence of any practice of lactation and postpartum abstinence TN would be equal to TF, the (hypothetical) total fecundity rate. In Bongaarts' proximate determinants framework, the resulting total fecundity rate reflects the combined effects of the remaining intermediate variables, namely fecundability, spontaneous intrauterine mortality, and permanent sterility.

In the model $TFR = TF \times Cm \times Ci \times Ca \times Cc$ the complement of each of the index values Cm, Ci, Ca and Cc gives the estimated percentage reduction in fertility due to each proximate determinant namely age at marriage, postpartum infecundability, induced abortion and contraception respectively.

Over the years there have been major social science research efforts in the area of human fertility with numerous theories explaining fertility behaviour and fertility differentials in different societies but the approach of each theory depends on the particular orientation of each theory's proponent. We still do not have an adequate conceptual framework to analyse unambiguously how cultural, economic, and other institutional factors interact and combine to produce specific fertility outcomes – high or low. Nevertheless there is an emerging consensus that cultural factors play an important role in determining fertility behaviour. Several scholars (Freedman 1963; Easterlin 1978; Easterlin 1985; Caldwell and Caldwell 1987) have made attempts to incorporate more than one body of knowledge such as economics, anthropology and sociology into a single framework. But as discussed by Handwerker (1986) increasing conceptual sophistication has not resolved some of the most fundamental issues surrounding the demographic transition.

There cannot be any argument with the claim that every society has a legitimate interest in its demographic future. From a distance, fertility change that accompanies social and economic changes shows many similarities across different population groups in different parts of the world, a fact that may have encouraged a uniform or very similar population policy design in widely different countries. At closer range the course of fertility transition is influenced by the institutional endowments each society has inherited through its particular historical experience and by the continuing process of institutionalisation of individual behaviour as it adjusts to realities, hopes and expectations (McNicoll 1994). As described by Freedman (1963), fertility levels in society or fertility differentials between populations, are mainly the outcomes of existing social norms. But these norms do not directly influence or determine the fertility level in a society and indeed they may not be intended to influence the level of fertility (Bongaarts 1982). It is the influence of the proximate or intermediate variables, which ultimately determines the fertility level in a society. The relationship among variables is conceptualised by first making a distinction between proximate and contextual factors determining fertility. The contextual factors are assumed to affect fertility only through modifying the proximate factors (Figure 1).

Among the contextual factors, cultural and economic institutions tend to have a direct influence on the norms of family size, sex composition and the intermediate variables. On the

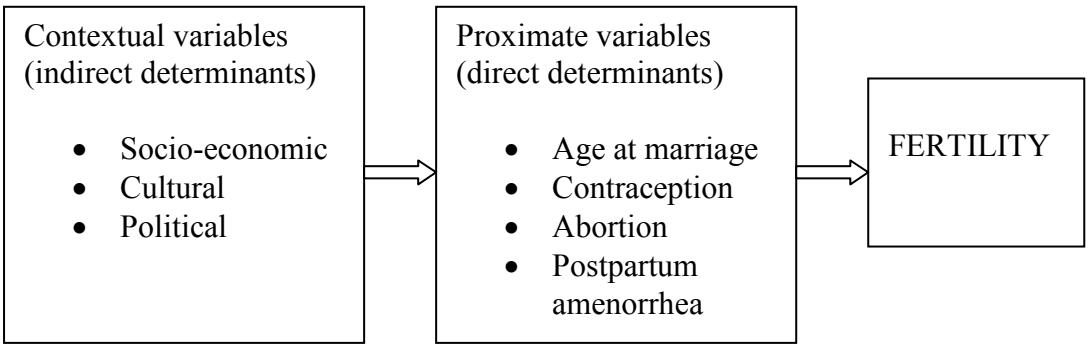
other hand, religion as an institution is much more likely to influence or determine the norms regarding intermediate variables. Differences in ideal or desired number of children and in the willingness and ability to control fertility have been considered as the two main sources of fertility differentials among religious groups (Adegbola 1988; Goldscheider and Mosher 1991).

Kinship structure is a major component of ethnicity, which influences fertility by dictating family norms. Such influence tends to be strong in a traditional society. The nature of kinship structure and its extent determines to a large extent the relative position of the females (as compared to males) in traditional societies. Female autonomy on the other hand has a two-way-relationship with the norms about family size and its sex composition. The influence of female autonomy on the norms regarding the intermediate variables can be direct. Though the relationship between ethnicity and reproduction can be explained mostly through cultural variables, the relationship is itself influenced by the socio-political transition in the society. For example, the minority or majority status of the ethnic group can exert enormous pressure on the norms about family size and sex preference.

The influence of existing economic structure on the norms about family size, sex preference and intermediate variables is more or less direct. In a predominantly agricultural society, a large family size is preferred. Likewise, in a traditional society where males are the breadwinners, wives may not prefer their husbands to practice permanent family planning methods fearing that it might make them physically weak.

The theoretical framework focuses on the dependent variable fertility outcome. Fertility outcome pertains to cumulative fertility (children ever born), and total marital fertility.

Figure 1: Framework of proximate determinants of fertility



4. Fertility levels and fertility preference in Timor-Leste

As mentioned above, the total fertility rate (TFR) of 7.8 children per woman during 2001-2003 was probably the highest fertility rate anywhere in the world (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). It was not only high but also increasing as the data from the same survey shows that TFR for the 12 months prior to the survey was 8.3 children per woman. A similar finding was also observed in another survey conducted during the same period to assess the situation of household welfare in Timor-Leste (ibid). The fertility rate was 4.43 in 1997 (while still under Indonesia's occupation). An analysis of the age specific fertility rates shows that the fertility rates of women in prime reproductive age group 20-24 rose to a peak in the early 1990s, then fell during the time of the referendum and subsequent disruption, and recently rose to an unprecedented level of 310 children per 1000 women (ibid). Unlike many other developing

countries where unwanted fertility constitutes a major component of the total fertility, the high and increasing fertility rate in Timor-Leste can be termed as mostly wanted fertility. This is reflected through the fact that almost 50% of the women who reached end of their reproductive years wanted to have more children. The cross country comparison of DHS data on fertility preference shows that while in most of the Asian countries more than 80% of the women who already had more than six children wanted no more children while only 34% women in this category in East Timor wanted no more children (Table 1).

Table 1: Fertility preference: cross country comparison of DHS data: percentage of currently married women who want no more children

Country	Mothers with 6+ children	Total
Timor-Leste 2003	33.7	17.1
Cambodia 2000	51.6	36.8
PNG 1996	70.6	38.2
Indonesia 2002/03	89.2	54.2
Bangladesh 1999/2000	89.4	58.9
Philippines 1998	89.1	61.9
India 1998/99	83.7	63.6
Nepal 2001	88.6	65.6
Vietnam 2002	91.2	75.4

Source: (Ministry of Health and National Statistics, Timor-Leste et al. 2004)

The information on ideal family size reveals that women in Timor-Leste considered 5.7 children as ideal. It places Timor-Leste as sixth highest world wide in reported mean deal number of children (Measure DHS 2004, stated in Ministry of Health and National Statistics, Timor-Leste et al. 2004, page 121).

The analysis of the data collected in the in-depth interviews which was conducted among 70 ever-married women in the reproductive ages reveals mean number of children ever born (CEB) for women who are at the end of their reproductive ages (40-49) to be 6.0 which is exactly the same as found in DHS 2003 data.

5. Proximate determinants of fertility in Timor-Leste

Out of the five major proximate determinants of fertility, namely age at marriage, use of contraception, postpartum amenorrhea, sterility and abortion, only the first four will be considered in the analysis here. Although TLDH 2003 collected information on abortion from each individual woman, only 8% of women reported any abortion. Moreover information on the types (induced or spontaneous) was not collected.

The fertility reducing impacts of these four proximate determinants are estimated through Bongaarts multiplicative model (mentioned in section 3 above). The results are presented in Table 2. In this model total fecundity (TF) is considered to be 15.3.

From the results presented in Table 2 below, it is possible to conclude that if all women remain married in the reproductive age group 15-49 there would be 4.02 additional births to TFR of 7.4 on average. Hence the contribution of this factor in reducing fertility was 26.2 percent. Similarly the contribution of postpartum infecundity in reducing the fertility was 24.7 percent. The fertility reducing impact of contraception appeared to be almost negligible. The interesting observation from the table above is that he TFR as estimated in Bongaarts' model is 7.4 whereas the actual TFR as estimated in TLDHS was 7.8 indicating slight

overestimation of impact of one of the proximate determinants. However the difference between the two TFR values is quite small.

Table 2: Fertility reduction contribution of the proximate determinants

Proximate Determinants	Individual Effect	Percentage contribution to reduction
Total fecundity (TF)	15.3	100
Percent in union	-4.02	26.2
Postpartum infecundity	-3.76	24.7
Sterility	-0.06	.4
Contraception	-0.06	.4
Total fertility rate (TFR)	7.40	48.3

The following discussions (section 5 and section 6) describe the prevalence of the proximate determinants in Timor-Leste and the contextual factors that have influenced the prevalence or practice of these determinants.

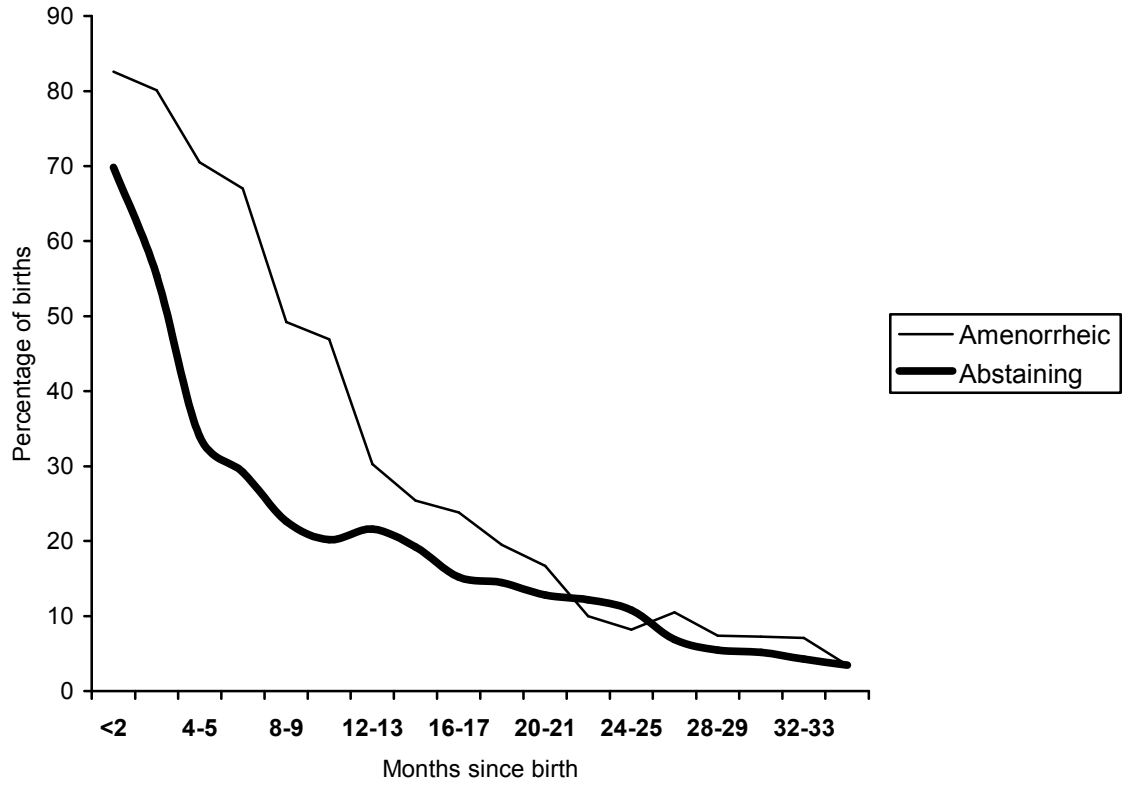
5.1 Post-partum amenorrhea and post-partum abstinence

The postpartum low risk of pregnancy period, in most cases, is approximated by the period of postpartum amenorrhoea. Its duration is usually associated with the prevalence and intensity of breastfeeding. The fertility suppressing effect of breast-feeding is now well established, as a large number of studies confirm that lactation prolongs the period of postpartum amenorrhea (Bongaarts and Potter 1983). It has been noted also that the contraceptive effect of breastfeeding lasts beyond amenorrhea and abstinence. Guz and Hobcraft (1991) found that after the resumption of ovulation, a woman who has stopped breast-feeding is more likely to become pregnant compared with a woman who is still breast-feeding, due to a reduction in the fecundability of breast-feeding women. The postpartum non-susceptible period is shortest (around one and half months) where breast-feeding is hardly practiced at all and longest (upwards of 18 months) where breast-feeding is common and is the sole means of feeding a baby for a long time (Mpiti and Sabiti 1985). In most societies sexual intercourse is not resumed immediately after the occurrence of a birth. There is usually a period of abstinence. If the duration of abstinence is longer than the duration of amenorrhoea, it clearly adds to the length of the birth interval and thus affects fertility negatively. It has no effect if it is shorter than the period of amenorrhoea. Mpiti and Sabiti (1985) suggested that the months added by the practice of postpartum abstinence after the end of amenorrhoea clearly should not be regarded as part of the non-susceptible period as the woman is then susceptible. But because both amenorrhoea and abstinence start at the moment of delivery and they cover partially overlapping time periods, most of the analyses based on WFS and DHS data have treated the postpartum abstinence as a component of postpartum non-susceptible period.

In Timor-Leste the data on breastfeeding practice is sparse. The prevalence rates of breastfeeding of infants in Timor-Leste was undocumented until 2002 when two population surveys were done - the Multiple Indicator Cluster Survey (MICS) 2002 and the Demographic and Health Survey (DHS) 2003. The MICS revealed that 90% of women breastfed at least until 6 months (although not exclusively) whilst results from the DHS showed that only 18% of children under 6 months were exclusively breastfed (United Nations Children's Fund 2003). The 2003 study identified that exclusive breastfeeding lasted 1.4 months which is well short of the World Health Organisation (WHO) recommendations of 6 months exclusive breastfeeding. Once breastfeeding commences DHS data indicates that women continue to give breast-milk for at least three to four months. From about four months onwards most mothers give other foods are introduced for the infant.

Data from TLDHS (2003) show that the median period of insusceptible to risk of pregnancy was just 11.5 years following the birth. Figure 1 shows the percentage of births in three years preceding the survey for which the mother was postpartum amenorrheic, abstaining, and insusceptible, by the number of months since birth. The decline is more rapid in case of abstinence in comparison to amenorrhea following birth. The data also reveals that in Timor-Leste women abstain from sex for about three months, and three quarters have resumed sexual relations within half a year after birth and beyond 18 months postpartum period approximately 75% of women were again susceptible to pregnancy (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004).There is a widespread belief among women in Timor-Leste that six months of exclusive breastfeeding is too long and they feel guilty that the baby might by hungry if they do not introduce supplements when the baby is 4-6 months old. In a study done by TAIS (Timor-Leste Asisténsia Integradu Saúde or Timor-Leste Integrated Maternal and Child Health Care Project) found a common practice that if they became pregnant again then they would stop breastfeeding. This was based on the belief that continuing breastfeeding would be bad for the growing child, since at that point the breast milk is for the growing fetus only. This study also found that supplementary food was introduced to the babies within 4 months or 6 months (TAIS 2007).

Figure 1: Duration of amenorrhea and abstinence for births



Source: Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004

5.2 Age at marriage

Although age at marriage is vital in many societies as a determinant of fertility outcome as marriage is considered to be the entry point for sexual union allowing reproduction, we need to remember that the notion of marriage varies from society to society. In case of Timor-

Leste, western concepts of marriage that have long dominated social statistics do not adequately explain the formation of families (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). Like many other traditional societies in Asia Pacific, marriage is not a single clear-cut event and it displays a pattern of stages (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). The current marital status of women in Timor-Leste can be divided in three categories- customary married, church married and legally registered married. A woman normally has to go through al three phases of marriage recognitions. Customary marriage precedes the other two forms of marriage. However, couples completing customary marriage can start family formation (reproduction) before they are able to complete the church and legal formalities of marriage (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004).

The data from TLDH 2003 reveals that the overall proportion currently married was very high, with the country fitting firmly into the pattern of 'universal marriage' (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). Around 73% of women in the reproductive age group 20-49 were currently married. The mean age at marriage for females was around 21 years. The most interesting finding on the trend of age at first marriage is that it falling over the years. While only 18.3% women in current age group 45-49 were married by age 18, 34.2% women in the younger cohort (current age group 20-24) were married by that age (Table 2). Similar trend was observed in the other three ages at marriage i.e. 20, 22 and 25 indicating that more and more women are getting married at a much younger ages. This was also followed by decline in the age at first sexual intercourse (Table 4). Table 3: Age at first marriage for women in Timor-Leste, 2003

Current age	Percentage of women first married by exact age				
	15	18	20	22	25
20-24	7.6	34.2	53.8	-	-
25-29	9.1	32.9	54.5	69.3	86.8
30-34	7.8	28.3	48.7	65.8	83.0
35-39	8.0	30.2	46.5	59.6	81.3
40-44	8.0	22.8	41.3	57.1	75.0
45-49	5.8	18.3	34.5	45.1	65.7

Source: Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004

Table 4: Mean age at sexual intercourse for women in Timor-Leste, 2003

Current age	Mean age at first sexual intercourse
15-19	26.14
20-24	29.05
25-29	33.31
30-34	32.38
35-39	33.54
40-44	34.26
45-49	32.56

Source: Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004

The mean age at first sexual intercourse for youngest cohort of mothers was around 26 years whereas the oldest cohort of mothers was around 33 years, i.e. the youngest generation of women experiencing first sexual intercourse seven years younger than their oldest counterpart. Although such trend is common in most societies, this is definitely contributing to higher level of fertility outcome in Timor-Leste as only 5.8% of the currently married women in the age group 15-19 used any family planning method.

Qualitative information gathered through focus group discussions indicate a growing feeling among the elderly women that increasing influence from outside world since independence has resulted in exposure to pornographic materials leading to more sexual activities among younger generation.

"But women are developing more quickly now. The girls they do not stay young for so long. The development is different. Girls are having sex earlier now. As young as 12, 13 or 14. And the other thing is that there is more pornography available now. In Indonesian times this was highly censored or restricted. Now, since democracy, the "malay" bought pornography. Young children watch and it is hard to control…….this sort of behaviour is no good. We can't control the pornography. Sometimes we go to the beach and there are magazines. There is also a bin in Tibar and lots of cassettes and DVD's are found there. It is everywhere.

5.3 Use of contraception

Contraceptive behaviour in the developing world has changed markedly over the past three decades. Around 1960 only a tiny fraction of couples in developing countries practiced contraception, and knowledge of methods was very limited. In contrast, at present, contraceptive knowledge is widespread and more than one half of all married women in the developing world are current users of contraception (Source: UN Population Division database 2006). The fertility reducing impact of contraception is clearly demonstrated in Table 5, with regions with higher prevalence experiencing much lower TFR compared to regions with lower contraceptive prevalence.

Table 5: Contraceptive use and fertility 2000

Region	Contraceptive prevalence*	Total Fertility Rate (TFR)
Timor-Leste**	10	7.8
Sub-Saharan Africa	23	5.7
Middle East/North Africa	54	3.7
South Asia	48	3.5
East Asia/Pacific	84	2.0
Latin America/Caribbean	73	2.6
CEE/CIS and Baltik States	66	1.6
Developing Countries	65	3.0
Least Developed Countries	32	5.4
Industrialised Countries	78	1.6
World	67	2.7

*percentage of women in the union aged 15-49 who are using contraception, **the data on Timor-Leste is for the year 2003

Source: UN Population Division database 2001 & Source: Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004

Contraceptive prevalence in Timor-Leste is exceptionally low. Only 10% of currently married women were using contraception and predominant choice of the method was the injectable contraceptive. The dominance of this particular method rooted in the family planning programmes under Indonesian occupation (discussed later in this paper). Moreover data from TLDHS 2003 also showed that the reported intention to use contraception at some time in the future among currently-married women was very low regardless the number of children. As far as knowledge of contraception is concerned, it was very low. Over 60% of the women and 70% of the men failed to recognise any of the family planning methods listed in TLDHS. An Alarming finding in TLDHS 2003 is that in an era of HIV and concern over sexually transmitted infections, only one couple reported use of condoms (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). The reasons for not using contraception reveal an extremely interesting picture as shown in Table 6 below.

Table 6: Percentages of women and men according to reasons for not using contraception

Reasons for not using contraception	Women	Men
Fertility-related reason		
Not having sex	2.1	0.4
Menopause/Hysterectomy	1.2	0.9
Subfecund/Infecund	1.3	2.9
Wants as many children as possible	18.7	15.8
Total (Fertility-related reason)	23.2	19.9
Opposition to use		
Respondent opposed	14.9	18.8
Husband/wife opposed	7.7	1.1
Other opposed	0.1	0.2
Religious prohibition	6.3	9.5
Total (Opposition to use)	29.0	29.6
Lack of knowledge		
Knows no method	8.0	23.1
Knows no source	2.4	1.9
Total (Lack of knowledge)	10.4	25.0
Method related reason		
Health concerns	5.5	1.2
Fear of side effects	24.2	18.4
Too far	1.0	0.3
Cost too much	0.1	0.0
Inconvenient to use	1.4	1.0
Gain/Loss weight	0.6	0.1
Total (Method related reason)	33.0	21.0

Source: Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004

6. The contextual factors that influence the proximate determinants

6.1 The collapse of family planning programmes with the end of Indonesian occupation in Timor-Leste

Under the Indonesian occupation, like other districts of Indonesia Timor-Leste (then now as East Timor) was too covered under the Indonesian national family planning programme, Keluarga Berencana Nasional (KB). An investigation done by the East Timor Centre for Human Rights who published their report in 1997 suggested that the design and implementation of the KB programme in Timor-Leste "consistently violates internationally recognized standards of family planning and reproductive health care" (Sissons 1997). The specific violations that the report had mentioned included:

1. strong evidence of the covert, forcible injection of young women with hormonal contraceptives during 1987-1989.
2. denial of treatment in life-threatening circumstances.
3. failure to provide KB users with basic follow-up care
4. continuing military involvement in both recruitment and service provision, contributing a strong element of structural coercion to the KB program
5. a disturbingly high reliance on injectable contraceptives, which at 62% of all continuing family planning users is double that of the next nearest province, Irian Jaya. This pattern suggests that KB users in East Timor have highly restricted choice of contraceptive methods. (Sissons 1997).

Sissons (1997) mentioned that the above mentioned violations contributed to a strong belief of the local population that the KB programme is used by the Indonesian government as a politically-motivated instrument to deliberately undermine the survival of the East Timorese as a national group. Sissons also said that the KB programme was creating a climate of fear in East Timor through compulsory injections of a controversial contraceptive, Depo-Proverra, and sterlisation without the consent of women which the then Indonesian government dismissed as a "political hoax" (quoted in (Inbaraj 1997).

James Dunn[3], the conducted a study on census statistics there in East Timor since the Indonesian invasion told the New Zealand Parliament in 1994-

"Before 1975, East Timor had a population of 688,000, which was growing at just two percent per annum. Assuming that it did not grow any faster, the population today ought to be 980,000 or more -- almost a million people….if you look at the recent Indonesian census, the Timorese population is probably 650,000. That means it is actually less than it was 18 years ago. I don't think there is any case in post-World War II history where such a decline of population has occurred in these circumstances," he had said. "It's worse than Cambodia and Ethiopia." (quoted in (Inbaraj 1997).

The impact of such coercive contraceptive and sterlisation programmes however having an impact in Timor-Leste today (Ingham 2005). The current paradigm in Timor-Leste is of "people of power", where "the future of the nation is seen to depend on its continuous growth" (Yuval-Davis 1996; quoted in (Ingham 2005). Yoval-Davis mentioned that "a certain critical mass of people (is) seen as crucial for the viability of the nation-building process" and people feel free to build up their population after so many were lost in the long conflict. This build up of strong moral and political resistance against KB programme also got a boost with the strict catholic ideology of supporting high fertility. The following quote which formed a

[3] James Dunn was the Australian consul in East Timor before Indonesian forces invaded the island (Source: Inbaraj, 1997).

part of the evidence of former Governor Mario Carrascalão to the Reception, Truth and Reconciliation Commision in 2003 clearly indicates the link between the catholic faith and the growing resistance against KB programme:

Many Catholics…would argue against the fact that the Catholic religion taught how Jesus Christ said 'grow and multiply', and also because they had lost many children in the war. They would say that while the number of children lost in the war wasn't replaced by an equal number of other children they wouldn't stop having them. This type of resistance would be found amongst the urban population. They were aggressive, and they would even glue to the church walls posters saying 'Indonesians, baby killers' (Yuval-Davis 1996 quoted in (Ingham 2005).

However, Sissons (1997)also admitted that there was insufficient evidence to judge that the KB programme had been used with such intentions, the consistent violation of internationally recognized standards of family planning and reproductive health care under this programme undoubtedly contributed to such perception. Interestingly, the qualitative information from the focus group discussions suggests that some women in Timor-Leste had better access to family planning during Indonesian times.

The following quote from a participant in the focus group discussion supports this argument:

We had more family planning during Indonesian times – every three months we had the injection. Now we don't have this. Family planning is still around though. It is still available and we know about it.

Although it is extremely difficult and also not an intention in this research to investigate such a sensitive accusation against the KB programme, nevertheless it is highly relevant in the context of the objectives of this paper to assert the fact that irrespective of the nature of the KB programme, family planning did exist under the Indonesian rule and had some impact in controlling fertility. However immediately with the end of Indonesian occupation it almost completely collapsed. During the violence of 1999, over 75% of all health facilities were destroyed, fixed consumables, equipment and records lost and 130 of the nation's 160 doctors fled the country (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). This led to complete breakdown of the family planning programme resulting in no access to any form of contraception and reproductive health. It has definitely contributed to the increase in fertility and maternal deaths in post conflict situation.

However the government of the new nation implemented the National Family Planning Programme in 2004. The first evaluation of the National Family Planning Programme in Timor-Leste was initiated in November 2005. According to the evaluation report although the programme is on its way to attaining its goals and objectives the key components of the programme, namely policy awareness, planning of programme objectives, service delivery, health service management and family planning promotion were still far from achieving adequate success (Ministry of Health & National Statistics Timor-Leste 2005).

6.2 Changes in ethnic composition of population

The increase in total fertility rate immediately after independence can also be explained to a large extent by the fact that the ethnic composition (ethnic Timorese with traditionally high fertility and population from other parts of Indonesia with comparatively lower fertility) of this new born nation changed dramatically at the end of Indonesia's occupation. The ethnic population was largely defined by the Atoni and the more dominant Belu, which was a blend of Malay, Melanesian, and Austronesian peoples who were fluent in the Tetum language (Encyclopedia of Nations undated).

In a report produced by the United Nations Expert Group Meeting on International Migration and Development, Martin (2005, p.6) mentions that Governments, sometimes sent migrants to areas with separatist feelings or movements, so that if the area later breaks away and form a new nation, these migrants and their descendents can become "foreigners" without moving (again), as with Russians who were sent to the Baltics or Indonesians sent to East Timor. Although it is difficult to prove whether such intention was there behind Indonesian government sending people from other parts of Indonesia to East Timor, however the was large scale inflow of Indonesian Non-Timorese population to East Timor since Indonesia's invasion. Although it is extremely difficult to find out the actual volume of this immigration, informal interviews with government officials during the fieldwork related to this research revealed that towards the end of Indonesian rule, around 25%-30% of the population and 70% of the total labour force in pre-independent East Timor was from other parts of Indonesia (source: field visit 2006). According to an online source called Nation's Encyclopedia in Timor-Leste at independence in 2002, the approximate ethnic divisions in the population were as follows: 78% Timorese, 20% Indonesian, and 2% Chinese (Encyclopedia of Nations undated).

Terence Hull, an Australian demographer, estimates that the non-Timorese population in the country in 1970 was roughly 1.6 percent of the population, comprised mainly of Chinese, Portuguese, and many immigrants from other parts of Indonesia and by 1990, that percentage had increased to 8.5 percent (Hamilton 2004). These non-Timorese populations (Indonesians) in East Timor had traditionally lower fertility than the local Timorese population. Almost entire Indonesian population left immediately after the new nation was born.

Hamilton (2004) states that roughly 220,000 East Timorese returned spontaneously from West Timor after the acute period of fighting. In 2002, 32,000 people returned to East Timor, taking advantage of assistance from the UNHCR and financial incentives (up to $165 for non-military families) provided by the Indonesian government and other donors.

As a result of out-migration of non-Timorese (with comparatively lower fertility) and return migration of Timorese (with traditionally high fertility) in post-conflict situation TFR in Timor-Leste got inflated.

6.3 Patriarchal nature of reproductive decisions

Being a highly patriarchal society, reproductive decisions in Timor-Leste society tend to be dominated by husbands and in-laws. Explaining the position of women in Timor-Leste society Retboll (2002) mentions:

In East-Timor patriarchal values and culture are very strong. Patriarchy views women as inferior to men. It leads to parents prioritizing sending their sons to school as daughters can lead to a high bride-price if they are married young. As a wife, a woman is expected to obey her husband, without asking questions or expressing any disagreement.

With the presence of highly patriarchal norms where husband's decision dominates, a staggering 61% (source: (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004)) of husbands disapproving family planning has definitely led to high fertility in Timor-Leste. In the focus group discussions although majority women agreed that reproductive decisions were taken not in isolation by their husbands, many of them also expressed that there was a pressure from either husband, or in laws or even her own parents to have more children. The following quotes reflect such a pressure on women:

Who can decide about how many children should be in a family? I as the head of the family, it is me who decides. My wife supports and follows what I decide (male respondent).

The number of children is determined by the husband's parents. We just do whatever they say because they gave the dowry for us (female respondent).

We have to discuss with our husbands about family planning. If they are not happy about this then we do not use it (female respondent).

The findings from in-depth interviews and focus group discussions have also revealed that norms related to bride price put tremendous pressure on women to produce more babies. If the husband did not have brother or sister, he considers it to be his responsibility to produce many children to compensate that and he feels it is his right to produce many children because he already paid dowry to his wife's family. The dowry in that village is now normally paid in cash (around $ 250 to $ 300) though traditionally it is paid in terms of buffalos. Three to four buffalos are given to bride's family as "bride price".

It also depends on the bride price. If there has been a lot paid for the bride then this contributes. For example, if a bride cost a lot of money it is because the family expects her to have a lot of children. If she does not, then the husband can take another wife.

A study conducted by The Asia Foundation (quoted in (United Nations Fund for Population Activities 2005)), it was found that around 19 per cent of the respondents felt that a man had the right to hit his wife. Among these respondents supporting the "right to hit", 32 per cent cited the justification for this right as "a man has paid a bride price for the woman, so she is now his possession". The same study also found that if a woman and a man are unable to conceive a child together, the woman is almost always blamed and may suffer abuse, abandonment or the infidelity of her male partner as a result (United Nations Fund for Population Activities 2005).

6.4 Cultural beliefs promoting pro-natalist behaviour:

Children for Uma Lisan- the Traditional Cultural House:

The report of the baseline survey conducted by HAI (Health Alliance International) in the districts of Aileu and Manatuto found that in more traditional families, the number of children in a family has an important link with the obligations to the *Uma Lisan or* Traditional/Cultural House (Health Alliance International Timor Leste 2006). The report mentions:

There is an 'assignment' of children to the paternal and sometimes the maternal grandparents' Traditional/Cultural Houses to ensure familial continuity of the tradition and to provide protection to the children through animist ceremonies and beliefs associated with the Traditional/Cultural House. The significance of more children is that a couple is able to 'assign' more children to the Uma Lisan significantly reinforcing/increasing the families' ability to carry on culture and tradition linked to the Uma Lisan (Health Alliance International Timor Leste 2006).

The tradition of *Uma Lisan* made it desirable to have at least four children so they could fulfill an important traditional practice and ensure the families continuation in the culture house (Health Alliance International Timor Leste 2006).

The concept of bride-price also plays a vital role in reproductive decisions. The focus group has revealed that husbands consider it as their right to produce as many as they want as a compensation for paying his wife's parents

7. Where from here?

The big question here is how long this exceptionally high fertility situation in Timor-Leste will prevail and what would be its consequences if it prevails for at least another decade? As mentioned earlier in this paper if the current fertility rate and its implied population growth continue, the population of Timor-Leste will double in 17 years. Reflecting on the consequences of the high fertility in Timor-Leste, and hinting on a possibility that the current high fertility is a result of East Timorese psychology of post-genocidal assumptions where many people in East Timor believe that they have lost many members of their families and they have to be replaced in some way, Australian demographer Terence Hull (Australian Broadcasting Corporation 2004)said:

Now there's no question that their personal realities of loss are real, but the demographic realities are not as great as people have in their minds. The real demographic reality is a vast population explosion.

But bringing down the fertility from the current level which is exceptionally high is an extremely difficult challenge considering the fact that Timor-Leste is not only the world's newest country, but it is also the youngest in which 50 percent of the population is under the age of 15. The median age is 14. This factor causes enormous concern regarding employment, education, and housing. Sixty percent of the country's population is unable to maintain an adequate standard of living, surviving on less than two dollars per day. On the other hand the promise of gas and petroleum exports and increased productivity in agricultural sectors, including coffee farming, has yet to materialize, exacerbating the national budget deficit (Hamilton 2004).

The gender aspect of high fertility in Timor-Leste is another area which needs urgent attention. Pregnancy carries a very high level of risk for women in Timor-Leste with an estimated maternal mortality ratio of 400 to 800 per 100,000 live births (Dibley 2003). The conditions surrounding pregnancy, delivery and infant care are of great concern as only less than 20% of the births are assisted by trained health personnel and the vast majority of these births take place in settings without access to timely emergency obstetric care (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004). Apart from nutritional deficiency during pregnancy, most of the Timor Leste women are exposed to have a high risk of birth complications and elevated chances of mortality due to short birth intervals (Ministry of Health and National Statistics Office Timor-Leste, University of Newcastle et al. 2004).

However According to Kirsty Sword Gusmao, wife of Timorese Prime Minister Xanana Gusmao, this is not uncommon in a post-conflict environment such as Timor-Leste's, as even prior to 1999 there was quite a high fertility rate (Australian Broadcasting Corporation 2008). Soon after independence, the Council of Ministers in Timor-Leste approved a strategic Health policy Framework which highlights poverty, maternal and child health as national priorities. As a means to of reaching these national priorities the Government of Timor-Leste has emphasized on family planning programme (Ministry of Health & National Statistics Timor-Leste 2005). In 2004 the Council of Ministers approved the National Family Planning Policy (NFPP) in order to ensure basic right for all couples and individuals to decide freely and responsibly the number and spacing of children and to have information and means to do so (Ministry of Health & National Statistics Timor-Leste 2005). The first evaluation of NFPP was carried out after completion of one year since its implementation in 2004. The evaluation report clearly pointed out low policy awareness and poor programme management, inadequate access and lack of adequate knowledge among family planning service providers as the barriers to successful implementation of NFPP in the first year. However, there has been a change in the focus in the national discourse of family planning in Timor-Leste since

independence. It has shifted from nationalism and resistance under the Indonesian administration and the assertion of Timorese cultural values during UN administration to the centrality of health and family in an independent Timor-Leste (Ingram 2008). As observed in this paper Timor's political history (from colonization to recent ethnic conflicts) has been acted out in demographic responses, the population policy in this newest nation in Asia will need to integrate provisions for community's participation from grassroots. Otherwise such demographic responses to new freedom even though may be short term can lead to long term social disaster.

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