

SYNOPSIS OF THESIS

FERTILITY TRANSITION IN NORTH-EAST INDIA: HISTORICAL AND COMPARATIVE PERSPECTIVES

The so-called north-eastern region of India (NER hereafter), which gained a definite geopolitical identity only after India's Independence, comprises currently of the eight states: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. Among many aspects and dimensions of inquiry and research on the region, its demography – for almost obvious reasons – is central to a deeper understanding of its problems and possible remedies. Unfortunately, the existing literature on the demographic trends and characteristics of this region is conspicuously thin. In fact, it is only recently that a few academic attempts at the examination of some specific demographic indicators e.g. reproductive behaviour, mortality, status of women, and migration have been made – but these have been mostly limited to some specific locations and/or tribes of the contemporary states of NER. Arguably, the relative parity in the nature and extent of economic development of the states of NER, the distinct socio-cultural moorings of its peoples, especially when compared to 'mainstream' India, and most remarkably, the shared experiences of its inhabitants in the historical past and indeed, to a great extent in the present, justifies its treatment as one distinct region. It is specifically from this perspective that the present research investigates the pattern and determinants of fertility transition in NER; placing the experience of the region (and its

constituent states) during the colonial (beginning 1901) and independent eras, in a comparative perspective vis-à-vis India.

Needless to say, data availability permits the use of empirical models for investigating the determinants of fertility in NER for the latter period only. However, this does not preclude us from the empirical analysis of reproductive behaviour of the pre-Independence period entirely. Drawing on official/census statistics and alternative indirect estimates, we examine the patterns and trends in fertility, mortality and migration in NER during the colonial and post-colonial periods. A particularly remarkable finding from the former period is that of a differential in reproductive performance of the region vis-à-vis all-India. In fact, our own calculation of the total fertility rate for Assam and all-India for the years 1911 and 1931 using Rele method shows that it might have been higher in the former region as compared to the latter by nearly a child. This is indeed a significant finding, especially in view of the fact that previous research on the subject has largely focused on immigration into NER as possibly the lone cause of its relatively higher population growth vis-à-vis India. However, our analysis finds that comparatively higher fertility of NER possibly also had a role to play in it. The rather lower levels of socio-economic development and higher infant mortality rates of the region compared to all-India provide clues as to why such differentials might have existed during that time. Of course, our research, like others on the topic, also finds that immigration, which had little influence on the population growth trends at the all-India level, had an overwhelming influence in determining the demography of NER.

The post-Independence period presents us with some larger surprises. While relatively higher birth rates among the major states of NER coupled with heavy immigration flows, continued to push population growth rates above the national average throughout this period, there was a dramatic change in the destination of the primarily non-tribal immigrants from the tribal-minority regions in the pre-Independence period to the tribal-majority states after Independence. Indeed, the ramifications of these developments have been the motivation behind extensive academic debates and writings on the socio-political turmoil and its possible solutions and resolutions in NER. However, an equally (if not more) disquieting development, quite distinct even though not entirely divorced from the issue of immigration, is the abrupt halt in fertility decline among the states of the region, while still at mid-transitional levels. Data from three consecutive rounds of the National Family Health Surveys (NFHS) found that none of the states experienced a steady decline in fertility for the entire period from 1990 to 2005, which was marked by statistically significant slowdown, and in some cases even reversal of the fertility decline witnessed during the preceding decades in these states. Indeed, fertility trends constructed from indirect estimates for the concerned period substantiate the finding of a stall, and lead us to conclude that even though fertility had started declining in the region and nearly all its constituent states at nearly the same time as the rest of India (the exceptions being Meghalaya and Nagaland, where fertility began to decline only by the beginning of the 1980s), NER witnessed a stalling in fertility decline at considerably higher levels than replacement level fertility from the middle of the 1990s.

We begin the investigation into the determinants of fertility in NER with an examination of its intermediate determinants utilizing Bongaarts' Aggregate Fertility Model. Non-availability of data restricts the application of the model to the period 1990 to 1998 (However, the index of noncontraception could be determined for the following period i.e. from 1998 to 2005 also). Among the various proximate determinants, the index of noncontraception is found to be the most important factor influencing fertility. Interestingly perhaps, nuptiality is also found to be an important determinant of fertility- and especially important in determining its decline- among the states of NER. However, we find very little change in most of the proximate determinants during the period 1990 to 1998, and in fact, our estimate of the combined index- measuring the joint influence of the indices of proportion married, noncontraception and postpartum infecundability- shows practically no change or even a slight rise overtime among the concerned states confirming the existence of a fertility stall.

Stepping closer towards the contextual factors influencing fertility, we examine the relative influence of fertility preferences, and family planning programmes in determining fertility trends among the states of the region. We carry out the analysis utilizing state-level data drawn from the NFHS. Perhaps not unexpectedly, we find that even though both factors work in tandem in reducing or stalling fertility in quite a few instances, in a large number of cases, they reveal opposing effects on fertility. Interestingly enough, we find that in most cases of a rise in fertility, it is some deficiency in the family planning programme and the associated rise in unwanted fertility that has an overriding influence, reversing the effect of the change in fertility preferences towards a smaller number of children in these cases, and leading to fertility stall.

Nevertheless, we also come across situations where the latter influence prevails, leading to a decline in fertility. In other words, this preliminary analysis finds a significant role of fertility preferences along with family planning programmes in determining the course of fertility transition among the states of the region. Among various indicators of socio-economic development that influence fertility preferences in our model, we find that the stall in fertility decline (especially during the period 1990 to 1998) is associated with increases in infant and child mortality. Interestingly perhaps, states that did not experience a stalling in fertility decline went through relatively rapid increases in female literacy rate.

Moving further with our search into the socio-economic and cultural correlates of fertility, we introduce a panel data model to explain district level variations in total fertility rate in NER for the period 1991 and 2001. While most of our explanatory variables have been gleaned from standard secondary sources like the census, comparable estimates of the total fertility rate at the district level for 1991 and 2001 were unavailable for the concerned period. Hence, we use our own indirect estimates of fertility based on the Arriaga-Arretx method (which can be considered as a refinement over the original Brass P/F method of estimation in relaxing the assumption of constant fertility). In fact, ours is perhaps the first instance of an attempt towards quantifying the various social, economic and cultural influences on fertility in NER, and the results prove that the effort has possibly been worthwhile.

Remarkably, while variables capturing overall levels of economic growth, like urbanization, are found to be of little consequence in determining fertility in NER, those that are more closely associated with socio-cultural factors are found to be of greater

consequence. In line with several other studies on the determinants of fertility in India, and indeed, several countries throughout the world, we find that women's status, as for instance captured in this case by female literacy and gender gap in literacy, contributes significantly to lowering fertility in NER, thus confirming the near universal positive impact of higher female status/autonomy on fertility decline. Especially significant is the finding of a significant effect of higher female education on reducing fertility across all the models estimated in the analyses, which dispels any lingering doubts about a 'spurious' relationship between the former and the latter caused by an omitted third variable.

However, quite distinct from this aspect of female empowerment, is the role attributed to the culturally determined status of women that affects various dimensions of their lives including fertility choice. In this connection, even though several historical studies on social organization indicate relatively balanced gender relations and an absence of son preference in the region, a few contemporary studies indicate a possibly changing scenario. Interestingly perhaps, we do not find any significant impact of the variables of son preference on fertility in NER. This is a notable finding, and setting aside any possible defects in the choice of our indicator of son preference, our results indicate that even if such processes may be underway, they have not assumed such proportions yet so as to effect higher fertility. Nevertheless, worrisome trends of changing gender relations in NER, especially among tribes, are also identified in our study.

As partial evidence of the aforesaid trends in the region, we find that a higher proportion of Scheduled Tribes leads to higher fertility in NER. This finding is again of

crucial significance as it reflects, at least to a certain extent, a tearing away from past cultural practices related to lower fertility among tribes, a conclusion reached by several painstaking inquiries on the subject in the past. Interestingly, we do not find support for the generally held view that adherence to Christianity has a fertility enhancing effect in NER. Quite to the contrary, we find that it is associated with lower fertility in the region. A possible reason could be the higher age at marriage in this community. However, the interaction term in the model, capturing the joint influence of Christianity and Scheduled Tribes, indicates that specifically among the tribes of NER, Christianity does lead to higher fertility. This finding offers partial support to our hypothesis regarding the apparently higher fertility among many religion-converted tribes of NER; that conditioning factors like the level of socio-economic development and socio-political aspirations could be the reason behind the higher fertility among them, as against the pro- fertility influence of religious doctrines *per se*.

Remarkably too, the significance of the indicator of ethnic diversity, shows that there are clear regional patterns of fertility within NER- with the states with a relatively higher degree of ethnic diversity, that by no coincidence also happen to be those with a relatively small proportion of tribes, being associated with lower fertility. This provides some support to our proposition that in certain situations, such as the one we encounter in the tribal-majority states of NER, ethnic clashes triggered by demographic imbalance due to huge in-migration, and the accompanying perceptions of marginalization in the State's political processes, can lead to pro-natalist proclivities in the concerned groups under circumstances where political representation is linked to the size of population,

and the society is passing through a stage where political supremacy remains a contested issue.

This research makes several interesting points. From a policy perspective, improvement in the family welfare programme with a thrust on its IEC (information, education and communication) component has the potential of reducing fertility primarily by reducing unwanted fertility. The study also brings out that greater effort has to be made towards bringing down the infant and child mortality rates and increasing the female literacy rate in the North-eastern states of India if there has to be sustained fertility decline in the region in the coming years. Importantly perhaps, this thesis makes a case for a deeper understanding of the basic issues of socio-political organization, not only in their own right, but as they affect myriad dimensions of people's lives- both personal and social. Specifically, we find that there may be direct, and not so direct, channels through which ongoing conflict and duress along with the forces of modernization in NER (that may entail emulating many mainstream socio-cultural practices) may be affecting fundamental aspects like gender relations in the region. The silent but significant changes confronting the peoples of the region, as for instance, in socio-cultural practices governing fertility behavior, calls for greater attention and a holistic approach to the various demographic, economic and social issues facing NER to-day.