



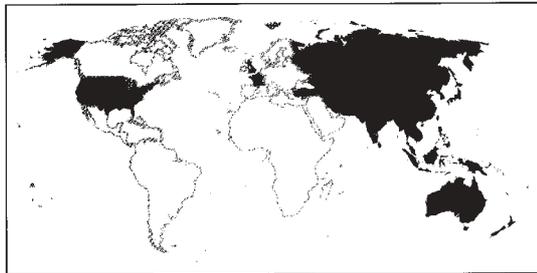
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ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

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COVER PHOTOGRAPH

A group of children in rural India pose enthusiastically for a picture.
(Photograph by Wanphen Sreshthaputra)

Child health in India is at the core of the first article published in this issue of the *Asia-Pacific Population Journal*, which assesses the potential for reducing child and maternal mortality through reproductive and child health intervention programmes in that country.

The second article looks into the readiness, willingness and ability to use contraception in Bangladesh, the third focuses on Singapore's family values and their impact on fertility while the fourth investigates the role of migration in channelling Bangladeshi labour to countries of East and South-East Asia.

Also don't miss this issue's stimulating Viewpoint article on the thought-provoking headline "Will HIV/AIDS Levels in Asia Reach the Level of Sub-Saharan Africa?"

Will HIV/AIDS Levels in Asia Reach the Level of Sub-Saharan Africa?

Major reasons that Asia is unlikely to experience African-level HIV/AIDS epidemics is that there is an ancient concept of nationhood and class societies with elites willing to undertake national leadership in emergencies, together with a different sexual culture.

By John C. Caldwell*

The short answer to the question posed by the paper's title is "no", although any disease that kills millions should be combated with all the means available. I first addressed this question in an editorial in *Social Science and Medicine* a decade

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ago (Caldwell, 1995) and little has changed since then. That view is supported by the evidence found in major recent reports upon which this viewpoint is based (Stanecki, 2004; UNAIDS/WHO, 2004; USAID/US Census Bureau, 2004).

The Asian and Pacific region should not relax. Nevertheless, the comparison of the region's present or likely future with that in Eastern and Southern Africa is absurd and dangerous. It tells us less about the disease than it does about the psychology and politics of donor international agencies and recipient national Governments. The picture presented is of a disease sweeping forward from one area to another as "Spanish" Influenza did in 1918 or the Black Death did in Europe in the mid-fourteenth century. Certainly, this seemed a plausible scenario in the 1980s after AIDS was first identified in Los Angeles, United States of America in 1981. In the course of that decade we found that it existed in most parts of the world, much of the spread doubtless taking place during the 1970s, and the pattern established by the end of the 1980s has, with some intensification, remained in place. The strongest evidence for the "sweeping forward" thesis of the spread of AIDS is provided by the failure of high HIV levels to develop in Southern Africa until the 1990s when the region took over world leadership in the density of infection. Equivalent examples are hard to find.

One can understand the very different levels of HIV only if it is realized that the causative retrovirus is in most societies difficult to transmit. Outside the body it dies very quickly; indeed most of its transmission is from one person to another in body liquids, usually blood, semen or mother's milk. Different societies are characterized by very different chances of this happening. This depends on many factors, of which the nature of the family, the position of women and attitudes to sexuality are paramount. This is shown by a level of adult HIV prevalence in sub-Saharan Africa of 7.4 per cent compared with 0.2 per cent in adjacent North Africa. Adult prevalence in Southern Africa is over 20 per cent, a level which means that almost half of deaths are due to AIDS and that life expectancy may be halved. In comparison, the levels in Japan, China and India are of the order of 0.02 per cent, 0.1 per cent or higher and 0.5 per cent, respectively, not markedly different from Australia and the United States at 0.15 and 0.6 per cent. What shows how precise the conditions must be for major epidemic to take hold is the situation across sub-Saharan Africa itself. Although the societies of Southern and Western Africa are not very different, adult prevalence levels are over 20 per cent in every country of the former and below 3 per cent in the majority of countries in the latter.

National figures, however, often disguise the danger in which sections of the population are placed. HIV levels are above average in most urban populations and

far above average among most sexually active homosexuals, commercial sex workers and intravenous-drug users (IDUs). Typically in sub-Saharan Africa prostitutes are characterized by HIV levels five or more times greater than those of other women. In Kathmandu in Asia seropositive levels for pregnant women, prostitutes and intravenous-drug users are 0.2, 17 and 50 per cent, respectively. In Japan, as in many other parts of the industrialized world, strict use of condoms keeps HIV levels among commercial sex workers to near zero, but the level among homosexuals, some of whom are given to risk-taking, is 2.9 per cent.

How, then, is sub-Saharan Africa so prone to HIV infection? Part of the difference, as Goody (1976) has argued, is that communally owned land, in contrast to ancient *de facto* private property in Asia, meant that control of marriage and hence of female sexuality, even male sexuality, was less rigid than in Asia. This allowed for relative female freedom for aeons but left women (and men) at danger of sexually transmitted infections (STIs) in the nineteenth century as Europeans disrupted African society and to HIV/AIDS towards the end of the twentieth century. In sub-Saharan Africa, around 57 per cent of those infected with HIV are female, partly evidence that women are more susceptible to the virus, but also a sign that the virus is being transmitted in the general community and that levels are high. Its existence in the general community means that control is difficult. In Asia 72 per cent of those infected are males, evidence that much of the transmission is concentrated in brothels or among the IDU or homosexual populations. Thus there are focal points where the disease may be controlled.

The conditions for a high-level, African-type AIDS epidemic include the following: (a) a considerable level of sexual activity outside marriage with female involvement as well as male; (b) some of that activity involving parallel partners; (c) a significant level of male sexual activity involving female commercial sex workers; (d) a carelessness of risk among many participants, often as a result of alcohol consumption; (e) a low level of condom use, often associated with strong male resistance to use; (f) a low level of health services allowing ulcerating STIs, which catalyse HIV infection to persist; (g) a fatalism about death arising partly from earlier very high death rates; and (h) a scepticism about the cause of the disease owing something to the fact that it is almost a decade from infection to symptoms (with only a small proportion of the population being tested for HIV).

Even this concordance of events is often insufficient to set in progress a major HIV epidemic in the general population (i.e., levels of 10 per cent or more of the adult population infected, as in Southern Africa, Kenya, Uganda in the past and the Central African Republic). The additional factor, not in itself a sufficient cause

but multiplying the other factors, is whole societies of uncircumcised males: right down the main AIDS belt from East to Southern Africa the uncircumcising societies evidence higher – often much higher – levels of HIV/AIDS.

The situation in sub-Saharan Africa is improved by there being a relatively low usage of intravenous drugs (which are expensive in a region which can easily resort to locally produced non-injecting drugs like Kola nuts and marijuana). It is aggravated by extraordinary inaction on the part of Governments (Caldwell, 2000). Most of the East and Southern African countries are facing proportional losses of their 1980 populations comparable with the losses of the former Union of Soviet Socialist Republics in the Second World War. In those circumstances one would expect the heads of State to act like wartime leaders and to forcefully lead their ministers and public services into the battle to prevent further spread of HIV/AIDS. Except in Uganda, that has not happened. The leaders regard the battle as hopeless, as something likely to make them speak of forbidden subjects like sex, as promoting action which might annoy powerful religious leaders and (in common with most of their citizenry) as being a lost battle against the biologically based male need to have more than one partner (a not surprising view in the part of the world with the highest levels of polygyny). In the new nations, with leaders coming from specific ethnic groups and being resented by other ethnic groups and in a situation without an ancient class system, there is often an uncertainty about giving long-term moral leadership rather than reaping the short-term benefits of office. The African situation is rendered more difficult by probably the world's strongest aversion to condom use and by the dispersal of commercial and semi-commercial sexual activity so that large easily targeted brothels are the exception. Certainly, much of female semi-commercial sexual activity arises from poverty and the need to secure food for the children and protection for oneself. This picture does not imply that sub-Saharan Africa is an unhappy place. Far from it, indeed there is an element of happy-go-luckiness that assists the spread of the disease. The degree of freedom of women is one reason why migrant Africans tend to fit better into British society than do Bangladeshis or Pakistanis.

That most of Asia is different and will remain so is suggested by relatively and persistently low HIV levels. Field research in South India and Bangladesh showed that young, single rural males periodically made journeys to cities for business reasons or to visit relatives, and infected no one else. In the rare cases where a girlfriend was infected, she in turn infected no one else (Caldwell and

others, 1999). The necessary networks for infection in the general community were not established. There was almost certainly a markedly lower level of parallel sexual partners (except in the case of prostitutes) than in sub-Saharan Africa. In Asian Muslim communities the supervision of females and universal male circumcision means that HIV levels are everywhere below 0.5 per cent and in the Arab South-West below 0.1 per cent. Lack of male circumcision among the majority population of India is probably the main reason its HIV levels are several times those of neighbouring Pakistan or Bangladesh, although high levels exist among tribals in two north-eastern hill states.

Major reasons that Asia is unlikely to experience African-level HIV/AIDS epidemics is that there is an ancient concept of nationhood and class societies with elites willing to undertake national leadership in emergencies, together with a different sexual culture. This is true not only of Brahmin or Confucian leaderships but of their successors in the form of democratic, communist or military leaders. They are helped by two facts: first, a significant level of commercial sexual activity taking place in identifiable brothels; second, a lower level among men of opposition to condom use. Thus the Government of Thailand was able to frighten many men from going to brothels and frighten most brothel owners into insisting on condom use. The national seropositive level was stopped from rising above 2 per cent, and there was not a real epidemic in the general population. Even in Cambodia, where the State has taken a battering and the identity of elites was savagely attacked, HIV levels appear to have been held to 4 per cent. If any other Asian State reached half the Cambodian peak level they probably would put into action programmes similar to the Thai ones.

This is not necessarily true of the whole Asian and Pacific region because Melanesia differs socially and historically from Asia. Socially and in terms of sexual activity it is closer to Africa than Asia. The Governments are new and nations are still being formed. An African-style epidemic could be developing in Papua New Guinea but an inadequate HIV-testing programme obscures the situation. Port Moresby and other urban areas may not be large enough to provide the reservoir of new infections to duplicate the role of African cities in keeping the epidemic going.

It would be unwise to underestimate the health threat that AIDS (and some other diseases like tuberculosis and malaria) poses to Asia. There were over a million new infections in 2004 (compared with over 3 million in sub-Saharan Africa with less than one fifth of Asia's population). The projected HIV/AIDS figures in many mission reports have later had to be scaled down rather than

upward. The frequently proclaimed generalization that there are now more infected women than men in the world glosses over the fact that this is explained solely by the predominance of infected women in sub-Saharan Africa (and possibly Melanesia) and that it has probably always been the case. There is a problem of crying wolf too often and disheartening those involved in the battle against AIDS. The Southern African situation is catastrophic but it does not provide a possible future scenario for Asia. Asia needs not panic programmes but solidly based long-term public health programmes to minimize permanently disease levels.

References

- Caldwell, B.K., J.C. Caldwell, I. Pieris and P. Caldwell (1999). "Sexual regimes and sexual networking: the risk of an HIV/AIDS epidemic in Bangladesh", *Social Science and Medicine*, vol. 48, No. 8, pp. 1103-1116.
- Caldwell, J.C. (1995). "Understanding the AIDS epidemic and reacting sensibly to it", Editorial, *Social Science and Medicine*, vol. 41, No. 3, pp. 299-302.
- _____ (2000). "Rethinking the African AIDS epidemic", *Population and Development Review*, vol. 26, No. 1, pp. 117-135.
- Goody, J.R. (1976). *Production and Reproduction: A Comparative Study of the Domestic Domain* (Cambridge, Cambridge University Press).
- Stanecki, K.A. (2004). *The AIDS Pandemic in the 21st Century* (Washington, D.C., USAID/US Census Bureau).
- UNAIDS/WHO (2004). *AIDS Epidemic Update, December 2004* (Geneva, the Joint United Nations Programme on HIV/AIDS and World Health Organization).
- USAID/US Census Bureau (2004). *Recent Seroprevalence Levels by Country*, September 2004 (Washington, D.C., United States Agency for International Development/US Census Bureau).

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International Labour Recruitment: Channelling Bangladeshi Labour to East and South-East Asia 85

Given that most host countries in East and South-East Asia lack a viable alternative, dependence on migrant workers will be long term even if they choose not to integrate them permanently into their societies. Any migrant worker policy has to recognize that such dependence is here to stay.

By Lian Kwen Fee and Md Mizanur Rahman

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Potential for Reducing Child and Maternal Mortality through Reproductive and Child Health Intervention Programmes: An Illustrative Case Study from India 13

According to the assessment made in 2003 by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), UNDP and ADB, among 47 countries in the ESCAP region with data available, 60 per cent have already met or are expected to meet Goal 4 of the Millennium Development Goals. Progression towards Goal 5 has been slower: one third of the countries have already met the Goal or are expected to meet it. Country-level analysis of available data suggests that among poor countries, Indonesia and Bangladesh stand out as making good progresses in meeting Goals 4 and 5. In those countries, reduction of unwanted and high-risk births through high-level prevalence of contraceptive use seem to have played very important roles in reducing child and maternal mortality.

India is classified as progressing slowly towards Goal 4 and regressing in achieving Goal 5 as of 2003. However, 12 out of 17 major states with data, including some poor states, show declines in under-five mortality exceeding the level required to achieve the Goal. The present analysis shows that early child mortality can be reduced substantially in India, beyond the level necessary to meet Goal 4 through increased utilization of reproductive and child health programmes even when poverty, women's education, and community-level sanitary conditions do not change.

Under-five mortality rate and maternal mortality ratio are highly correlated, and they share common set of determinants. Thus, the intervention programmes that would bring about a reduction in under-five mortality rate are likely to reduce maternal mortality ratio as well.

Readiness, Willingness and Ability to Use Contraception in Bangladesh 45

This study attempted to measure Easterlin's notion of motivation or readiness to control fertility and Coale's two preconditions of fertility decline-willingness, and ability. It examined their impacts on the fertility regulating behaviour of women in view of the rapid fertility decline in Bangladesh. It was observed that with the exception of women without living children, most women want to control their reproduction. For most women fertility regulation was found acceptable on normative and health-related grounds. This is an important finding considering that it has not been examined before. In addition, for most women family planning methods are available, accessible and affordable. It is not possible to know from this study whether and when those conditions have directly played roles in the Bangladesh fertility decline. However, the study implied that the sociocultural changes which are favourable to fertility transition have already taken place in Bangladesh. Regardless of controlling for the background variables, logistic regression analysis indicated that alike readiness and ability, willingness to regulate fertility also leads to significantly higher contraceptive use. The three variables are the principal determinants of contraceptive use and are acting as intervening variables between most of the background variables and contraceptive use. However, changes in the background characteristics are key to changes in the readiness, willingness and ability to use contraception.

Singapore's Family Values: Do They Explain Low Fertility? 65

Many individuals and policy makers in Singapore believe that society's "family values" are being eroded because of processes such as rapid economic development, industrialization and globalization. They believe that this erosion is one of the most important reasons why fewer Singaporeans are getting married and

having fewer or no children, as found in the Singapore Census of Population 2000. This paper analyses the Singapore-leg of the World Values Survey, conducted in 2002, which contains data on how Singaporeans value family, marriage and parenthood. It finds that Singaporeans generally still feel that the family is very important, that marriage is not an outdated institution, and that they would like to bear several children, if possible. Deeper analysis, however, uncovers some differences in opinion between “younger” and “older” Singaporeans, which might suggest that in the future significant value change might take place. This paper concludes that Singapore’s contemporary family values are unlikely to be the primary reason behind the declining fertility and marriage rates. It concludes that Singapore must be facing a “social problem” as there is a sizable gap between society’s aspirations and the reality.

International Labour Recruitment: Channelling Bangladeshi Labour to East and South-East Asia 85

International labour recruitment in Asia has been dominated by recruiting agencies and brokers, who act as intermediaries between workers and foreign employers. This paper argues that the investigation of temporary labour migration flows requires examination of the complex infrastructure of entrepreneurial actors and activities that facilitates labour movement between two countries and that constitutes the migration industry. Focusing on the prevailing temporary labour migration programmes, this paper describes the role of migration institution in the channelling of Bangladeshi labour to the major host countries of East and South-East Asia. The findings suggest that, despite the persistent need for migrant workers, some countries in the region, with the exception of Singapore, pursue non-transparent recruitment policies. This lack of transparency has mainly contributed to the proliferation of unauthorized syndicates, and a network of agents, brokers and travel agencies. Bangladeshi migrant workers risk a large amount of cash to realize a dream overseas and become vulnerable to victimization.

Potential for Reducing Child and Maternal Mortality through Reproductive and Child Health Intervention Programmes: An Illustrative Case Study from India¹

Some countries may have inadequate technical and financial resources for improving reproductive and maternal and child health services. International cooperation both within the Asian and Pacific region and the wider global community may be required to meet the challenges of the Millennium Development Goals at the regional level.

By Minja Kim Choe and Jiajian Chen*

In September 2000, at the United Nations Millennium Summit in New York, leaders of the world's Governments signed the Millennium Declaration and committed themselves to a series of goals and targets that came to be known as the

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Millennium Development Goals (MDGs). The Goals include reducing under-five mortality by two thirds (Goal 4) and reducing maternal mortality ratio by three quarters (Goal 5) between 1990 and 2015 (IMF, OECD, United Nations and World Bank Group, 2000). According to the assessment made in 2003 by ESCAP, UNDP and ADB, among 47 countries in the ESCAP region for which data are available, one half (24 countries) have already achieved Goal 4 and four additional countries are expected to achieve the Goal, leaving 19 countries (40 per cent) making slow progress or regressing. As for Goal 5 (improve maternal health), of the 42 countries for which data are available, seven have already achieved the Goal and another seven are expected to achieve it, leaving 28 countries (two thirds) either making slow progress or regressing. Goal 5 (reduction by three quarters) is more ambitious than Goal 4 (reduction by two thirds) and it is not surprising that fewer countries are progressing well towards the first than towards the latter. India is classified as progressing slowly towards Goal 4 and regressing in achieving Goal 5 as of 2003 (ESCAP, UNDP and ADB, 2005).

In this paper, the authors first examine patterns of major correlates of under-five mortality rate and maternal mortality ratios, as well as the progress towards meeting the Goals of reducing under-five mortality rate and maternal mortality ratio among the countries in the Asian and Pacific region. Doing so, one hopes to get a better understanding of why some countries are progressing well towards meeting some of the Goals while some are lagging behind. It is followed by an in-depth analysis of estimating potential for reducing under-five mortality through reproductive and child health intervention programmes including family planning, antenatal care and child immunization, using India as an illustrative example.

Correlates of under-five mortality rate and maternal mortality ratio

Recent studies of under-five mortality have identified its key determinants as poverty, mother's education, mother's fertility behaviour (such as age pattern of fertility, birth spacing and number of births), environmental conditions (such as source of drinking water and toilet facility), utilization of reproductive and child health services (such as prenatal care, delivery care and child immunization), and utilization of health-care services of sick children (Ahmed, Lopez and Inoue, 2000; Black, Morris and Bryce, 2003; Koenig, Philips, Campbell and D'Souza, 1990; Miller, Trussell, Pebley and Vaughan, 1992; Mosley and Chen, 1984; Setty-Venugopal and Upadhyay, 2002; Tulloch, 1999; WHO, 2002; Winikoff, 1983).

Studies on maternal mortality ratio are not as numerous. One of the difficulties associated with the study of maternal mortality ratio is that it is very

difficult to collect accurate data especially in countries with high levels of maternal mortality ratios (UNICEF, UNFPA and WHO, 2004). Limited studies document that the main causes of maternal mortality are the unexpected complications during pregnancy, childbirth and other terminations of pregnancy, and just after the termination of pregnancy, combined with inadequate medical treatment. Indirectly, knowledge of reproductive health, access to and utilization of reproductive health care, access to and utilization of medical care, and the socio-economic and cultural factors associated with knowledge, access and utilization have been identified as determinants of maternal mortality (UNICEF, UNFPA and WHO, 2004; Tsui, Wasserheit and Haaga, 1997).

Internationally comparable and accurate time series data on under-five mortality rates and maternal mortality ratios together with those determinants would provide an excellent opportunity for in-depth analysis of the causes of progress or lack of progress on those two Goals. But many countries in the Asian and Pacific region have limited data available and those are characterized by varying degrees of accuracy, especially on maternal mortality ratios (ESCAP, UNDP and ADB, 2005). Therefore, the authors examine the patterns of under-five mortality rates and maternal mortality ratios at country-level using simple descriptive statistics and correlation coefficients.

Under-five mortality rates and maternal mortality ratios in Asian countries: country-level analysis of the progress towards the Goals

Data

For this part of the analysis, the countries included in East and North-East Asia are: China; Hong Kong, China; Macao, China; the Democratic People's Republic of Korea; Japan; Mongolia and the Republic of Korea. In South-East Asia they are: Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste and Viet Nam, in South and South-West Asia: Afghanistan, Bangladesh, Bhutan, India, the Islamic Republic of Iran, Maldives, Nepal, Pakistan, Sri Lanka and Turkey, and in North and Central Asia: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Uzbekistan.² Data from 37 countries are used for the country-level analysis. They come from compilations by the United Nations agencies and the Population Reference Bureau (ESCAP, UNDP and ADB, 2005; Population Reference Bureau, 2005) but it is to be noted that data are incomplete for many countries.

Descriptive statistics

Table 1 shows the mean values of indicators of poverty, women's education, environment, women's fertility behaviour, and utilization of reproductive and child health services for two groups of countries classified according to their progress towards or distance from Goal 4 of reducing under-five mortality rate. In general, countries that are not progressing well towards the Goal of reducing under-five mortality are characterized by high levels of mortality, high levels of poverty, low levels of education among women, and poor sanitary conditions. In addition, those countries tend to have high levels of fertility, low levels of contraceptive use, and early childbearing among women. They are also characterized by a low-level utilization of reproductive and child health services. But there are some interesting exceptions. In Bangladesh and Viet Nam, the per capita gross national income (GNI) is less than US\$ 2,500 but the two countries are progressing well towards meeting the Goal 4 of reducing the child mortality. By contrast, Turkmenistan and Kazakhstan have relatively high per capita GNI (more than US\$ 4,500) but the progression towards meeting Goal 4 is slow or regressing. Those exceptions suggest that it may not be necessary to change all determinants of under-five mortality to achieve Goal 4.

Table 2 shows the mean values of the same set of indicators as in table 1 for two groups of countries classified according to their progress towards or distance from Goal 5 of improving maternal health. Here, the pattern is less clear than in table 1. One of the indicators of poverty, the percentage of people with income less than one-dollar-a-day, for example, is larger in the group of countries that are progressing well than in the group of countries that are progressing slowly. This pattern may reflect that one-dollar-a-day may not be a good measure of poverty in some countries. Countries with small proportions of population with less than one-dollar-a-day and high maternal mortality include Kazakhstan, Kyrgyzstan and Viet Nam. It is notable that those countries are also characterized by high prevalence of induced abortions. In Kazakhstan and Kyrgyzstan, about half of pregnancies ended with induced abortions in recent years (Academy of Preventive Medicine, Kazakhstan and Macro International Inc., 1999; Research Institute of Obstetrics and Pediatrics, Kyrgyz Republic and Macro International Inc., 1998). The 2002 Viet Nam Demographic and Health Survey reports that about 22 per cent of pregnancies in the period 1999-2002 were terminated either by menstrual regulation or induced abortions but considers those to be severely under-reported (Committee for Population, Family and Children, Viet Nam and ORC Macro, 2003). The high prevalence of induced abortion is likely to be associated with poor reproductive health of women in general. A closer look at those countries also reveals that they have large proportions of slum residents among their urban population. It is likely that urban slum residents have exceptionally high levels of

maternal mortality. Because the overall level of maternal mortality is generally low, exceptionally high maternal mortality in a special group can result in high maternal mortality ratio at national level. Lastly, the authors note that data on maternal mortality are known to be deficient and inaccurate in many countries

Table 1. Means of selected economic, social, environmental, demographic, and health-care indicators of countries classified by their progress towards meeting Goal 4 (reduce child mortality), countries in the ESCAP region

	Source of data	Mean among countries that have met or are expected to meet the Goal	Mean among countries that are progressing slowly towards the Goal or regressing
Under-five mortality rate (deaths per 1,000 live births)	(a)	25	97
Maternal mortality ratio (deaths per 100,000 live births)	(a)	96	374
Per capita ppp gross national income, 2004 (US \$)	(b)	11,750	2,945
Percentage of population whose income is less than one dollar a day	(a)	9	14
Slum population as percentage of urban population	(a)	22	43
Percentage literate, women aged 15-24	(c)	95	85
Secondary school enrollment rate, women (per cent)	(c)	78	60
Percentage with access to safe drinking water (urban)	(a)	95	86
Percentage with access to safe drinking water (rural)	(a)	81	61
Percentage with access to improved sanitation (urban)	(a)	88	72
Percentage with access to improved sanitation (rural)	(a)	65	40
Total fertility rate	(c)	2.0	3.4
Percentage giving birth in one year, women aged 15-19	(c)	3	5
Percentage using contraceptives, currently married women 15-49	(c)	67	44
Percentage using modern contraceptives, currently married women 15-49	(c)	51	35
Percentage immunized against measles, one-year old children	(a)	90	80
Percentage births attended by skilled health personnel	(a)	86	61
Number of countries		18	19

Sources: (a) ESCAP, UNDP and ADB (2005). *A Future Within Reach: Reshaping Institutions in a Region of Disparities to Meet the Millennium Development Goals in Asia and the Pacific*;
 (b) Population Reference Bureau (2005). *2005 World Population Data Sheet*;
 (c) Population Reference Bureau (2005). *Women of Our World*.

(UNICEF, UNFPA and WHO, 2004; Tsui, Wasserheit and Haaga, 1997). The change in maternal mortality ratio, which is the bases for classifying countries into two groups in the table, is likely to be even less accurate, having to rely on two possibly inaccurate measures.

Table 2. Means of selected economic, social, environmental, demographic, and health-care indicators of countries classified by their progress towards meeting Goal 5 (improve maternal health), countries in the ESCAP region

	Source of data	Mean among countries that have met or are expected to meet the Goal	Mean among countries that are progressing slowly towards the Goal or regressing
Under-five mortality rate (deaths per 1,000 live births)	(a)	56	70
Maternal mortality ratio (deaths per 100,000 live births)	(a)	184	289
Per capita ppp gross national income, 2004 (US \$)	(b)	11,769	4,579
Percentage of population whose income is less than one dollar a day	(a)	15	10
Slum population as percentage of urban population	(a)	29	36
Percentage literate, women aged 15-24	(c)	91	91
Secondary school enrollment rate, women (per cent)	(c)	68	71
Percentage with access to safe drinking water (urban)	(a)	91	89
Percentage with access to safe drinking water (rural)	(a)	72	68
Percentage with access to improved sanitation (urban)	(a)	80	77
Percentage with access to improved sanitation (rural)	(a)	51	50
Total fertility rate	(c)	2.5	2.9
Percentage giving birth in one year, women aged 15-19	(c)	4	4
Percentage using contraceptives, currently married women 15-49	(c)	58	53
Percentage using modern contraceptives, currently married women 15-49	(c)	48	37
Percentage immunized against measles, one-year old children	(a)	86	84
Percentage births attended by skilled health personnel	(a)	72	73
Number of countries		16	21

Sources: (a) ESCAP, UNDP and ADB (2005). *A Future Within Reach: Reshaping Institutions in a Region of Disparities to Meet the Millennium Development Goals in Asia and the Pacific*;
 (b) Population Reference Bureau (2005). *2005 World Population Data Sheet*;
 (c) Population Reference Bureau (2005). *Women of Our World*.

Analysis of correlations

In table 3, the correlation coefficients of four dependent variables are examined (under-five mortality rate, maternal mortality ratio, progress towards the Goal of reducing under-five mortality, and progress towards the Goal of improving maternal health) with the determinants of under-five and maternal mortality. In order to maximize the use of available data, the correlation coefficients are computed one pair at a time.

Under-five mortality rate is correlated with the indicators of income, women's education, national level sanitary conditions in urban and rural parts, fertility behaviour, and utilization of maternal and child health programmes in a manner consistent with previous findings. Poverty, low levels of education among women, poor sanitary conditions, high levels of fertility, high levels of teenage fertility, low levels of contraceptive use, and low levels of utilization of reproductive and child health services are associated with high levels of under-five mortality rate. The magnitudes of the correlation coefficients are high for all correlates and they are all statistically significant ($p < 0.05$). Similarly, maternal mortality ratio has high correlations with all the factors examined, in the same direction as the correlation coefficient with under-five mortality rate, and they are all statistically significant. The correlation between under-five mortality rate and maternal mortality ratio (not in the table) is very high (0.82) and statistically significant.

The last two columns in table 3 show correlation coefficients between whether countries have already met the Goal or are expected to meet it (coded as 1) or not (coded as 0) and the potential determinants. Most of the correlation coefficients between the indicator of progress on Goal 4 (reduce child mortality) and the potential determinants are large and statistically significant.³

By contrast, most of the correlation coefficients between the indicators of progress on Goal 5 (improve maternal health) and the potential determinants are small and statistically insignificant. Only one of the determinants, per-capita GNI has statistically significant correlation with whether the country is progressing well towards reducing maternal mortality ratio or not. The weak relationship between the indicator of progress to Goal 5 and the determinants of maternal mortality may be owing to the measurement problems of the maternal mortality ratio. As discussed, the statistics on maternal mortality ratio are often inaccurate, and the progress on maternal mortality, which involves measurements at two or more time points are much more likely to be inaccurate than the single measure.

When countries are grouped by their level of per capita income, most countries with ppp (adjusted for purchasing power parity) per-capita Gross National Income under US\$ 4,000 in 2004 are progressing slowly or regressing in

Table 3. Correlation coefficients of selected economic, social, environmental, demographic and health-care indicators with under-five mortality rate, maternal mortality ratio, and progress to Goals of reducing them, countries in the ESCAP region

	Under-five mortality rate (deaths per 1,000 live births)	Maternal mortality ratio (deaths per 100,000 live births)	Progress towards Goal of reducing child mortality	Progress towards Goal of improving maternal health
Per capita ppp gross national income, 2004 (US\$)	-0.61*	-0.42*	0.50*	0.41*
Percentage of population whose income is less than one dollar a day	0.54*	0.74*	-0.20	0.20
Slum population as percentage of urban population	0.56*	0.63*	-0.35*	-0.11
Percentage literate, women aged 15-24	-0.43*	-0.80*	0.28	0.00
Secondary school enrollment rate, women (per cent)	-0.67*	-0.84*	0.38*	-0.05
Percentage with access to safe drinking water (urban)	-0.79*	-0.86*	0.30*	0.05
Percentage with access to safe drinking water (rural)	-0.72*	-0.56*	0.46*	0.09
Percentage with access to improved sanitation (urban)	-0.76*	-0.74*	0.45*	0.10
Percentage with access to improved sanitation (rural)	-0.67*	-0.59*	0.50*	0.03
Total fertility rate	0.79*	0.81*	-0.53*	-0.14
Percentage giving birth in one year, women aged 15-19	0.58*	0.73*	-0.37*	-0.01
Percentage using contraceptives, currently married women 15-49	-0.79*	-0.73*	0.62*	0.13
Percentage using modern contraceptives, currently married women 15-49	-0.59*	-0.51*	0.44*	0.30
Percentage immunized against measles, one-year old children	-0.59*	-0.74*	0.31	0.07
Percentage births attended by skilled health personnel	-0.66*	-0.77*	0.40*	-0.02

Sources: (a) ESCAP, UNDP and ADB (2005). *A Future Within Reach: Reshaping Institutions in a Region of Disparities to Meet the Millennium Development Goals in Asia and the Pacific*;
 (b) Population Reference Bureau (2005). *2005 World Population Data Sheet*;
 (c) Population Reference Bureau (2005). *Women of Our World*.

Note: * indicates $p < 0.05$.

both under-five mortality (Goal 4) and maternal mortality (Goal 5), while countries with ppp per-capita Gross National Income of US\$ 4,000 or over in 2004 are progressing well. However, it is notable that among countries with low levels of income, Indonesia and Bangladesh are progressing well towards the two Goals (see appendix tables A1 and A2). A closer look reveals that the characteristics that separate those countries from other low-income countries are high level of contraceptive use and low level of fertility. Viet Nam also has low-income, high level of contraceptive use, low level of fertility. Yet it is progressing well towards Goal 4. However, despite this remarkable progress on this latest Goal, distance from Goal 5 is increasing. As speculated earlier, progress towards Goal 5 may be lagging in Viet Nam owing to the high prevalence of unsafe induced abortion. Those exceptions suggest that high contraceptive prevalence and low level of fertility can reduce child mortality by decreasing high-risk births and unwanted births (Setty-Venugopal and Upadhyay, 2002). This can be achieved even when economic and development conditions are not favourable to low level of child mortality and despite the fact that reduction of maternal mortality may be hindered if the rate of unsafe induced abortion is high.

An attempt was made to conduct country-level multivariate statistical analysis of progress towards Goals 4 and 5 such as fitting regression models in order to estimate the “net effects” of each determinant, controlling for the effects of other determinants. But because many countries have incomplete data (less than 20 countries have complete data available) the estimates become quite unstable. Obviously, in-depth statistical analysis leading to the estimation of the “net effects” of the determinants of under-five mortality rate and maternal mortality ratio or their progresses requires more comprehensive data sources.

Summary of country-level analysis

In summary, country-level analyses show that levels of under-five mortality and maternal mortality are very highly correlated. Poverty, low level of education among women, poor sanitary conditions, high level of fertility, high level of teenage fertility, low level of contraceptive use, and low level of utilization of reproductive and child health services are associated with high level of under-five mortality rate and maternal mortality ratio. The cases of Indonesia and Bangladesh suggest that reduction of under-five mortality rate and maternal mortality ratio can be achieved by altering some determinants through intervention programmes aimed at reducing unwanted and high-risk births.

Although most of the determinants of under-five mortality rate and maternal mortality ratio are correlated, it is likely that reduction of under-five mortality rate and maternal mortality ratio can be achieved by altering some determinants

through increased levels of utilization of reproductive and child health programmes. Estimating the potential contribution of intervention programmes, one needs to have better measures of the “net effects” of the determinants. Such estimates can be computed from multivariate statistical models as illustrated in the following case study of India.

Estimating potential for reducing early childhood mortality: an illustrative case study of India

The case of India

India offers an excellent opportunity for an illustrative analysis to study determinants of under-five mortality and potential for its reduction for at least three reasons. The first reason is related to the level of under-five mortality. At national level, under-five mortality is moderately high and India is progressing slowly towards meeting the corresponding Goal. According to the assessment made by the United Nations agencies, India's under-five mortality in 2003 was 87 per 1,000 live births. This corresponds to the medial level mortality among the 19 countries in the ESCAP region that are making slow progress towards or regressing on Goal 4 (ESCAP, UNDP and ADB, 2005). However, India is a large and complex country and there has been large variations at state level in both the level of mortality and the rate of reduction in mortality in recent years as shown below. The second reason is related to the state-level variations in factors associated with under-five mortality. In India, the state government is largely responsible for implementing reproductive and child health programmes and the utilization of those programmes vary greatly among states. Similarly, other conditions affecting under-five mortality such as the level of poverty, sanitary conditions and mother's education, vary also greatly among states as shown below. Indeed, the variations among states of India in terms of under-five mortality and the major determinants resemble much the cross-national variations among countries observed in the ESCAP region. Third, the National Family Health Surveys (NFHS) conducted in the 1990s offer an excellent data source for rigorous statistical analysis. The data availability is especially important because many of the countries that are making slow progress towards Goal 4 do not have high quality data that would allow in-depth analysis.

Under-five mortality in India

In India, the under-five mortality rate was 123 in 1990. Two thirds reduction to meet Goal 4 means reaching an under-five mortality rate of 41 by 2015. In 2003, this same rate was estimated at 87, which means that it was reduced by 29 per cent in 13 years. In order to meet the Goal of reducing the rate by two thirds in 25 years,

the under-five mortality should have fallen by 35 per cent in 13 years.⁴ In summary, in more than half of the time required to achieve the Goal, less than half of the necessary reduction has been achieved.

Table 4. Child mortality during 1994-1998 and percentage decline in child mortality during the periods between 1988-1992 and 1994-1998

State/Union Territory	Child mortality in 1994-1998	Percentage decline in child mortality in six years	Population in 1991 census (1,000s)
Decline \geq16 per cent			
Kerala	18.8	41	29,099
Himachal Pradesh	42.4	39	5,171
Assam	89.5	37	22,414
Delhi	55.4	33	9,421
West Bengal	67.6	32	68,078
Tamil Nadu	63.3	27	55,859
Haryana	76.8	22	16,464
Orissa	104.0	20	31,660
Karnataka	70.0	20	44,977
Gujarat	85.1	18	41,310
Bihar	105.1	18	86,374
Maharashtra	58.1	17	78,937
Decline < 16 per cent			
Uttar Pradesh	123.0	13	139,112
Andhra Pradesh	85.5	6	66,506
Madhya Pradesh	137.6	-6	66,181
Punjab	72.1	-6	20,282
Rajasthan	114.9	-12	44,006

Sources: IIPS (1995, p. 221) and IIPS and ORC Macro (2000, p. 194) for child mortality; Office of the Registrar General (2005) for population.

Note: Small states in the north-eastern region are not included in the table.

According to the estimates based on National Family Health Surveys of 1992-1993 (NFHS-1) and 1998-1999 (NFHS-2), all India experienced a 13 per cent reduction in under-five mortality from 109.3 in 1992-1993 to 94.9 in 1998-1999, falling somewhat short of the amount of decline required to achieve Goal 4 (a 16 per cent decline in six years is required) and at about the same rate as estimated by ESCAP, UNDP and ADB in 2005. However, 12 out of 17 major states with data show decline in under-five mortality by more than 16 per cent, the level required to achieve the Goal, as shown in table 4.⁵ The statistics from Kerala are

most impressive. In this south-western state, not only did the under-five mortality decline impressively by 41 per cent, it had also reached the level of developed countries by 1998-1999. This achievement is remarkable considering that the per capita Gross State Product in Kerala was only Rs. 16,029⁶ in 1998-1999 (current prices), far below some other states such as Delhi (34,332 rupees), Goa (40,248 rupees), Punjab (21,194 rupees), and Maharashtra (20,148 rupees) (Ministry of Statistics and Programme Implementation, 2005). Another noteworthy fact is that the states that have achieved sufficient amount of reduction in under-five mortality have varying levels of mortality. Under-five mortality in some states are under 50 per 1,000 live births in the 1994-1998 period, but it is between 50 and 100 in a number of states, while in Orissa and Bihar under-five mortality is over 100. States making slow progress or regressing on this Goal also have wide ranging levels of under-five mortality, from 72 to 138. From this pattern one can conclude that the slow progress in reducing under-five mortality at the national level is due to slow progress in some large states which have high levels of under-five mortality such as Uttar Pradesh, Madhya Pradesh and Rajasthan.

India's health programmes

The Government of India's effort to strengthen maternal and child health services began during the First and Second Five-Year Plans (1951-1956 and 1956-1961) under the Ministry of Health, and continued with the Minimum Needs Programmes initiated during the Fifth Five-Year Plan (1974-1979). The primary objective of the effort was to provide basic public health services to vulnerable groups of pregnant women, lactating mothers and pre-school children. In 1992-1993, the Child Survival and Safe Motherhood Programme continued the process of integration by bringing together several key child survival interventions with safe motherhood and family planning activities.

More recently, efforts to improve maternal and child health have been enhanced by the activities implemented by the Family Welfare Programme (Ministry of Health and Family Welfare, 1992). Special schemes included the programme of Oral Rehydration Therapy and the development of Regional Institutes of Maternal and Child Health in states where infant mortality rates are high. The Universal Immunization Programme and the Maternal and Child Health Supplemental Programme within the Post-Partum Programme were also implemented (IIPS, 1995).

In 1996, the integrated Reproductive and Child Health Programme was launched incorporating safe motherhood and child health services (IIPS and ORC Macro, 2000). This new programme seeks to integrate maternal health, child health, and fertility regulation interventions with reproductive health programmes

for both women and men. Important elements of reproductive health programmes include: (a) provision of antenatal care including at least three antenatal visits and two doses of tetanus toxoid vaccine; (b) encouragement of institutional deliveries or home deliveries assisted by trained health personnel; (c) provision of postnatal care; and (d) identification and management of reproductive tract and sexually transmitted infections.

State-level variations in socio-economic, demographic and health indicators

As discussed in the previous section, the health and welfare programmes in India are operated jointly by the federal and state governments yet the state governments play preponderant roles in their implementation. Partly because of this institutional arrangement and owing also to differing historical and cultural backgrounds, Indian states vary greatly in socio-economic, demographic, and health conditions as seen in table 5.

Economic conditions are generally good in the northern states (except Rajasthan) where less than 10 per cent of households were classified as having low standard of living index according to the NFHS-2 survey. Eastern states are economically least advanced with about half of the households classified as having low standard of living index. Women's illiteracy varies greatly according to states, from a low of 10 per cent in Mizoram and 13 per cent in Kerala to a high of 77 per cent in Bihar and 76 per cent in Rajasthan. Other states in central and eastern regions show high levels of illiteracy among women.

In terms of fertility, Goa, Kerala, Himachal Pradesh, Punjab and Tamil Nadu show very low fertility and relatively late ages at marriage. In some states in the southern region such as Karnataka and Andhra Pradesh, total fertility rate is low but early marriage is quite common. By contrast, in some states in the north-eastern region such as Mizoram, Nagaland and Manipur, fertility is high but early marriage is uncommon. In many large states such as Rajasthan, Madhya Pradesh, Uttar Pradesh, and Bihar, fertility is high and early marriage is widespread.

In most of the states in the north, west and south, the prevalence of antenatal tetanus toxoid vaccine (two or more times)⁷ is quite high, reaching 95 per cent in Tamil Nadu and more than 85 per cent in Delhi, Punjab, Goa and Kerala. States in central, eastern and north-eastern areas lag behind substantially. Among big states, it is only 51 per cent in Uttar Pradesh and 52 per cent in Rajasthan. Similar patterns are observed in childhood immunizations,⁸ but the gap is wider ranging from more than 80 per cent in Himachal Pradesh, Goa, Kerala and Tamil Nadu to less than 25 per cent prevalence in Rajasthan, Madhya Pradesh, Uttar Pradesh, Bihar, Arunachal Pradesh, Assam, Meghalaya and Nagaland.

Table 5. Selected socio-economic, demographic and health indicators, major states/unions territories of India, 1998-1999

State/Union Territory	Percentage of households with low standard of living index	Percentage illiterate, ever-married women aged 15-49	Total fertility rate	Percentage of women aged 25-49 married before age 18	Percentage of women receiving two antenatal tetanus toxoid inoculations (a)	Percentage of one-year olds with full immunization (b)
North						
Delhi	3	29	2.4	38	85	70
Haryana	10	55	2.9	60	80	63
Himachal Pradesh	8	36	2.1	38	66	83
Jammu & Kashmir	9	70	2.7	48	78	57
Punjab	4	39	2.2	23	90	72
Rajasthan	23	76	3.8	82	52	17
Central						
Madhya Pradesh	31	69	3.3	79	55	22
Uttar Pradesh	29	70	4.0	80	51	21
East						
Bihar	53	77	3.5	84	58	11
Orissa	51	60	2.5	58	74	44
West Bengal	46	50	2.3	62	82	44
North-east						
Arunachal Pradesh	23	53	2.5	40	46	21
Assam	39	54	2.3	49	52	17
Manipur	34	43	3.0	21	64	42
Meghalaya	44	38	4.6	35	31	14
Mizoram	13	10	2.9	13	38	60
Nagaland	25	40	3.8	24	51	14
Sikkim	13	49	2.8	35	53	47
West						
Goa	15	29	1.8	15	86	83
Gujarat	22	50	2.7	54	73	53
Maharashtra	23	45	2.5	65	75	78
South						
Andhra Pradesh	36	64	2.3	80	82	59
Karnataka	30	55	2.1	61	75	60
Kerala	15	13	2.0	27	86	80
Tamil Nadu	34	48	2.2	42	95	89

Source: IIPS and ORC Macro (2000).

Notes: (a) Among women who gave births during the five-year period before the survey, for the last and next-to-last births.
(b) Among one-year olds at the time of survey.

Analytical strategy

Using data from the National Family Health Survey (NFHS-2) conducted in 1998-1999, the authors first estimated a statistical model to estimate effects of major determinants of early childhood mortality (ages 0-24 months). The estimated statistical models of early childhood was then used for simulation by altering the values of major determinants. Most of the simulation consisted of estimating the reduction of mortality under the hypothetical situation specified by the conditions in Kerala, the state with the lowest level of infant and child mortality in all India. Some additional simulations, involving additional changes in fertility behaviour and reductions of sex differentials in childhood mortality were also undertaken. The simulation exercises showed the extent of potential reduction in early childhood mortality through reproductive and child health intervention programmes.

Data

To estimate the effects of major determinants of early childhood mortality, data from National Family Health Survey (NFHS-2) conducted in 1998-1999 were used. The survey is based on a nationally representative sample of 91,196 households and on all ever-married women aged 15-49 within the households (89,199 women). The sampling fraction varies from state to state, in order to assure that the sample size in each state is large enough to provide statistically meaningful estimates (IIPS and ORC Macro, 2000).

In each state, the rural sample was selected in two stages. The first stage consists of the selection of the primary sampling units (PSUs), which are villages, with probability proportional to population size (PPS). The second stage consists of the random selection of about 30 households within each PSU. In urban areas, a three-stage procedure was followed. In the first stage, wards were selected with PPS sampling. In the next stage, one census enumeration block (CEB) was randomly selected from each sampling ward. In the final stage, households were randomly selected within each sample CEB. On average, 30 households were targeted for selection in each selected enumeration area (IIPS and ORC Macro, 2000).

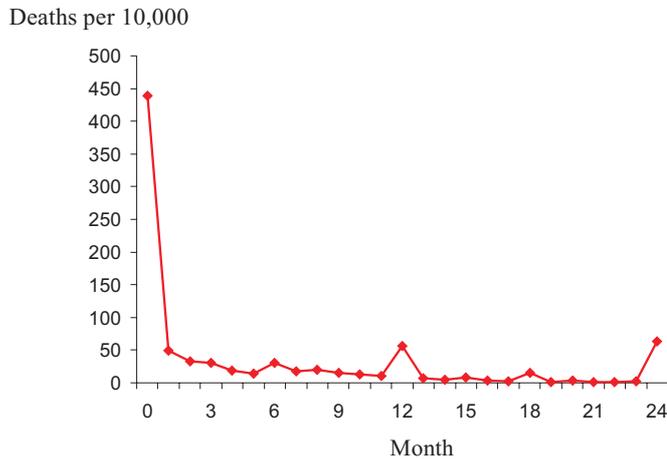
Each household is assigned a state-level weight and an all-India weight. Weights are needed to correct for over-sampling of some groups and under-sampling of others. The all-India weights take into account variability in sampling fractions among the states. The calculation of weights takes into account non-responses as well. In the analysis in the paper, all-India weights, normalized so that the sum of weights is equal to the number of observations in the sample, are used.

Statistical model for early childhood mortality

The survey collected full birth histories of women, including information on birth order, date of birth, sex, whether child was alive at the time of survey and for the children who have died, age at death. For the last and next-to-last births occurring since January 1995, the survey collected information on antenatal care including antenatal visits, tetanus toxoid vaccine, place of delivery, and birth attendance. For the surviving children among those, information on feeding, children's vaccination, morbidity, and care of sick children were also collected.

The authors first created the children file consisting of one record for each child born to women in the survey during the five-year period preceding the survey, extracting information from birth histories of women. Then the child record was used as the unit of analysis. The analysis was limited to children born during the five-year period before the survey because many of the household-level and community-level factors examined were measured at the time of the survey and would not have been accurate for children born long before the survey. Some child-specific factors such as year of birth, survival status of the child, age at death, sex, birth order, mother's age at birth, previous birth interval, sex combination of surviving older siblings at the time of birth, whether any of the older siblings have died at the time of birth of the index child, and previous birth interval are computed and added to the child record.

Figure 1. Monthly probability of dying estimated from NFHS-2 among children born during the five-year period before survey



To estimate the effects of factors on early childhood mortality, the hazard model (Cox model) for the month-specific probability of dying during the first 25 months (months 0 through 24) of life was used. Hazard model is chosen so that the analysis does not have to be limited to children who have been observed for the full 25 months since birth. The hazard model allows for the inclusion of children who were born less than 25 months before the survey (censored cases). The mortality during first 25 months rather than a more usual 24 months was used in order to include reported deaths at age 24 months. Age at death data in India tend to heap at 6, 12, 18 and 24 months as shown in figure 1. Limiting analysis to deaths at 0-23 months, one would be excluding some deaths that occurred at age 19-23 months but reported as occurring at age 24 months. According to the NFHS-2 data, about 90 per cent of under-five mortality in India takes place at ages 0-24 months. Thus, the present analysis should include most of the under-five mortality.

Hazard model requires two dependent variables: survival status and exposure time. The survival status is measured at the end of age 24 months or at the time of survey for those who were born less than 25 months before the survey. The exposure time is the age at death for those who died by the end of age 24 months, and age at survey for those who were surviving.

Three sets of factors were examined: household/mother-level factors, child-level factors, and community-level factors. Our choice of factors is determined on the basis of major literature on under-five mortality in general, and in India (Black, Morris and Bryce, 2003; Mosley and Chen, 1984; Pandey and others, 1998). The household/mother-level factors include the standard of living index of the household created by IIPS (low or not), and the level of mother's education (none, primary and more).

The child-level factors include year of birth, sex of child, and mother's age at birth for all children. For children of birth order two or higher sex combination of surviving older siblings was also included, along with preceding birth interval, birth order, and the dummy variable indicating whether any of the older siblings have died before the birth of the index child. All child-level factors are created to reflect the condition at the time of birth of the index child.

The first community-level factor is the urban-rural designation of the community. Two community-level factors were also included indicating sanitary conditions: percentage of households with piped water and percentages of households with toilet facility. Lastly, two factors indicating the level of utilization of reproductive and child health programmes were included: percentages of women in the community who received at least two tetanus toxoid vaccines among those who gave birth during the five-year period before the survey,⁹ and

percentages of one-year olds in the community who received full childhood vaccinations.¹⁰ It would have been ideal to include the utilization of reproductive and child health programmes as child-level variables as well. Unfortunately, however, this information was collected only for last or next-to-last births, and for childhood vaccination, only for the children who were still surviving at the time of survey, making it impossible to treat them as potential factors of early childhood mortality.

By contrast, using those measures at community-level have benefits. Estimating the effects of the utilization of reproductive and child health programmes at the community-level is sensible because many of the programmes are related to the control of infectious diseases at the community level. The primary sampling units (PSUs) are identified as communities. Usually, one PSU in rural area consists of one village and one PSU in urban area consists of one census enumeration block.

Statistical models were estimated separately for first-born children and children of higher birth order. This allowed authors to estimate the effects of factors such as previous birth interval, death among previous children, and sex combination of older siblings in a straightforward way. Table 6 shows the descriptive statistics of the factors for the two groups of children by birth order.

Standard of living index was created by IIPS based on house type, toilet facility, source of lighting, main fuel for cooking, source of drinking water, whether the house has separate room for cooking, ownership of house, ownership of agricultural land, ownership of irrigated land, ownership of livestock, and ownership of 20 durable goods, classified as low, medium or high. Thirty per cent of children of first-born children and 41 per cent of higher-order children were born to households with low standard of living. The observed difference in the standard of living by birth order is probably owing to the tendency for women in poor families to have more children than women in better-off families.

Mothers' level of education was classified in three categories: no formal education, primary, or higher. Table 6 shows that mothers' education is lower among high-order births (63 per cent with no formal education) than among first births (41 per cent with no formal education). This pattern is not surprising because women with low level of education tend to have more children and thus, more high-order births than the first births. In addition, mothers who gave first birth during the five-year period before the survey are likely to be younger and have higher level of education than those who gave birth to higher-order births.

Table 6. Descriptive statistics of the covariates, Indian children born five years before 1998-1999 NFHS-2 survey

Covariates	Birth order 1	Birth order 2 and over	All children
Household/mother-level factors			
Standard of living index of household is low (per cent)	30	41	38
Mother had no formal education (per cent)	43	63	56
Mother's education is primary (per cent)	16	15	16
Mother's education is more than primary (per cent)	43	22	28
Child-level factors			
Year of birth (mean)	96.19	96.07	96.1
Child is a girl (per cent)	48	--	48
Child is a girl and has no brothers (per cent)	--	14	--
Child is a girl and has at least one brother (per cent)	--	34	--
Mother's age at birth <18 (per cent)	28	--	--
Mother's age at birth <20 (per cent)	--	13	--
Preceding birth interval <24 months (per cent)	--	28	--
Birth order >4 (per cent)	--	25	--
Any death among older siblings (per cent)	--	10	--
Community factors			
Urban community	27	20	22
Percentage households with piped water (mean)	37	29	32
Percentage households with toilet facility (mean)	35	27	29
Percentage mothers with 2 tetanus vaccinations (mean)	72	65	67
Percentage children age 1 with full immunization (mean)	43	33	36

Note: -- indicates not applicable

Indian women begin to have children at a very young age. Twenty-eight per cent of first-born children were born to women below age 18. Among higher-order births, 13 per cent were born to women below 20 years. Indian women also tend to have short birth intervals. Twenty-eight per cent of children of birth order 2 or higher were born less than 24 months after the birth of previous child. Substantial proportion of births is of order 5 or higher reflecting high level of fertility. Ten per cent of second or higher-order children are born to families with some experience of child death.

At the community level, the average prevalence of piped water and toilet facility are about one third. The difference between first-born children and higher-order births are probably owing to the fact that fertility tends to be higher in less developed communities than in more developed communities. Community-level prevalence of antenatal tetanus vaccinations averages about two thirds at 67 per cent. By contrast, the average community-level prevalence of early childhood vaccinations is only slightly over one third at 36 per cent.

Results

The hazard ratios (relative risk) estimated by the hazard model are shown in table 7. Low standard of living increases early childhood mortality only for children of birth order 2 or higher but not for first-born children. It is possible that first-born children, being very precious to the family, receive special care from parents and the standard of living has little effect on their survival during the first two years of life after controlling for the effects of other factors such as mother's education, mother's age at birth, and community factors. Mother's education above primary school level lowers early childhood mortality substantially but primary school level education has no statistically significant effect on children's early childhood mortality. Relatively weak effect of primary level education of mother on child mortality is commonly found in other studies as well (see for example, Desai and Alva, 1998).

Many previous studies have documented high level of son preference and consequent excess female child mortality in India (Arnold, Choe and Roy, 1998; Das Gupta, 1987; Basu, 1989). Results from the present analysis are consistent with these earlier studies: among the first-born children, early childhood mortality is lower among girls as in most other populations, showing no evidence of discrimination against daughters. Among higher-order births, girls experience higher early childhood mortality, and the excess female mortality is more evident if the girl has no surviving brothers, reflecting discrimination against daughters especially when there are other daughters in the family.

Indian women begin their childbearing early as shown in table 6. The results indicate that early childbearing is associated with increased early childhood mortality. First-born children to mothers under age 18 experience 45 per cent higher early childhood mortality risk than children born to older mothers. The adverse effect of early childbearing continues with higher-order births as well, although the relative risk is lower. Other factors associated with fertility behaviour – previous birth interval and high birth order both have statistically significant positive association with early childhood mortality as well. The relative risk of early childhood mortality associated with short birth interval is especially high.

Children born to women who already experienced a death of children have higher risks of early childhood mortality than those born to mothers who have not experience any child death, consistent with findings from earlier studies.

Table 7. Relative risks of dying associated with covariates among Indian children born five years before 1998-1999 NFHS-2 survey, estimated from Cox model by birth order

Covariates	Birth order 1	Birth order 2 and over
Household/mother level factors		
Standard of living index of family is low	1.00	1.24*
Mother's education is primary	0.87	0.92
Mother's education is more than primary	0.62*	0.65*
Child-level factors		
Year of birth	0.98*	0.98*
Child is a girl	0.84*	--
Child is a girl and has no brothers	--	1.35*
Child is a girl and has at least one brother	--	1.16*
Mother's age at birth <18	1.45*	--
Mother's age at birth <20	--	1.15*
Preceding birth interval <24 months	--	1.83*
Birth order >4	--	1.22*
Any death among older siblings	--	1.59*
Community factors		
Urban community	1.09	1.07
Percentage households with piped water	0.78	1.02
Percentage households with toilet facility	0.67*	0.69*
Percentage mothers with 2 tetanus vaccinations	0.94	0.76*
Percentage children age 1 with full immunization	0.54*	0.67*

Notes: -- indicates not applicable

* indicates p<0.05

Turning now to the community-level factors, urbanity of the community and proportion of children born in households with piped water have no effect on early childhood mortality in India. The community-level prevalence of access to toilet facility, however, has large statistically significant negative effect on early childhood mortality. In the present models, community-level prevalence of antenatal tetanus toxoid vaccine has statistically significant effect on early

childhood mortality only for children of birth order two or higher. As discussed earlier, this variable was used as a proxy for the utilization of preventive reproductive health programmes. In India, utilization of antenatal care is often related with complications associated with pregnancies, women experiencing such complications being more likely to seek care. Thus, it may not be a good measure for preventive reproductive health programmes. As expected, child immunization coverage has strong negative effect on early childhood mortality.

Simulation

The impact of the factors on early childhood mortality can be seen clearly when the predicted values of mortality are computed under different scenarios specified by different hypothetical values. In table 8, cumulative predicted probabilities of dying before the end of the 24th month are computed under a selected set of scenarios. The scenarios consist of changing values of statistically significant factors to the level observed in Kerala, where the under-five mortality is lowest among the states of India.

For example, the following question can be raised: What would be the level of early childhood mortality in all India if the proportion of women with more than primary school education were equal to the level observed in Kerala? The mortality from the estimated hazard model in table 7 can be estimated by changing the value of “mother’s education is more than primary” to the value observed in Kerala, leaving all other factors as observed. The results are shown in table 8, scenario (1). The table shows that the cumulative mortality at the end of 24th month would be 64 among first-born children, a 20 per cent reduction from 80. It would be 65 among higher-order births, a 22 per cent reduction from 83. Combining the first- and higher-order births, as the weighted average using the observed distribution of children by birth order, mortality for all children would be 65; that is a 21 per cent reduction from 82. Similar exercises can be carried out by either changing the value of one factor at a time, or a number of factors simultaneously. Separate estimates can be calculated for children of birth order one and higher and for all children using the weighted average of mortality estimated for first- and higher-order births. If the scenario includes changes in fertility behaviour, the weighted average is computed using the observed distribution of children by birth order, or implied distribution as appropriate.

Table 8 shows that if the proportion of women with more than primary school education in all India increased to the level of Kerala, the cumulative mortality at the end of 24th month would be 21 per cent lower than the observed mortality (scenario 1). According to the present data, 43 per cent of mothers of first-born children in all India had more than primary school education compared to 92 per

cent in Kerala. It would be an enormous task to increase women's education in all India to match the level reached in Kerala. But if this could be achieved, the early childhood mortality would fall substantially.

Table 8. Cumulative probability of dying by the end of 24th month under selected scenarios, predicted by the estimated hazard models

Scenario (a)	Predicted cumulative probability of dying by end of 24th month			Per cent reduction in mortality relative to "no change" scenario		
	First births	Other births	All births	First births	Other births	All births
(0) No change	80	83	82	NA	NA	NA
(1) Percentage of women with more than primary education	64	65	65	20	22	21
(2) Percentage of children born in households with low standard of living index	80	79	79	NA	5	4
(3) Percentage of children whose mothers age at birth was very young (< 18 for birth order 1, <20 for birth order 2 and over)	74	80	78	8	4	5
(4) Percentage of children birth order >2 with preceding birth interval <24 months	80	82	81	NA	5	1
(5) Percentage of children birth order >4	80	76	77	NA	8	6
(6) Community-level prevalence of households with toilet facility	66	68	67	18	19	18
(7) Community-level prevalence of more than 2 antenatal tetanus vaccinations	80	79	79	NA	6	4
(8) Community-level prevalence of complete childhood immunization	67	72	71	17	14	14
(9) All fertility factors	74	73	73	8	12	11
(10) All MCH factors	67	68	68	17	18	18
(11) All fertility and MCH factors	62	62	62	23	25	24
(12) All statistically significant factors except year of birth, sex of child, and sex combination of older siblings	42	36	38	47	56	54

Notes: (a) Changes to match the situation in the state of Kerala, India.
NA: indicates not applicable

Reducing the proportion of households with low standard of living from the level observed across India to the level of Kerala would result in some reduction of early childhood mortality but only by 4 per cent (scenario 2). This is not surprising because, as discussed earlier, the economic status of Kerala state is not drastically different from that of India as a whole.

Altering fertility behaviour of all Indian women to the pattern observed in Kerala by reducing early childbearing, short birth intervals, and high order births could reduce early childhood mortality by 5 per cent, 1 per cent and 6 per cent, respectively (scenarios 3, 4 and 5). Altering all fertility behaviour simultaneously would result in a 11 per cent reduction (scenario 9) in early childhood mortality, according to this analysis.

Improving sanitary conditions of communities by increasing the proportion of households with toilet facility to the level of Kerala could reduce early childhood mortality by 18 per cent (scenario 6). Reducing early childhood mortality through improving the sanitary conditions would take as long as increasing mothers' level of education.

Increasing utilization of reproductive and child health programmes by increasing antenatal tetanus toxoid vaccines and child immunizations in all India to the level observed in Kerala would reduce early childhood mortality by 4 per cent and 14 per cent, respectively (scenarios 7 and 8). Changing both would result in 18 per cent reduction (scenario 10) in early childhood mortality.

Changing fertility behaviour and utilization of reproductive and child health programmes simultaneously would reduce early childhood mortality by 24 per cent (scenario 11). In addition, altering all of the factors that affect early childhood mortality to the level observed in Kerala would result in a 54 per cent reduction in early childhood mortality (scenario 12).

Discussion

The simulation exercises discussed in the previous section did not include one major factor of early childhood mortality: sex of child and sex combination of surviving older siblings of children of birth order two or higher. The sex of children cannot be altered easily by population and health programmes. However, those programmes can work towards eliminating son preference behaviour of parents in taking care of their children through community-based communication and education programmes. Eliminating mortality differentials by sex of children and sex combination of older siblings would result in a 11 per cent reduction in early childhood mortality.¹¹

Although many conditions in Kerala are conducive to low level of under-five mortality, there are some exceptions. One of them is the level of poverty as discussed earlier. Another is the supply of piped water. In all India, average percentage of households with piped water in a community is 40 per cent. In Kerala, it is less than 20 per cent. It is worthwhile to note, however, that 61 per cent of households in this state purify the water before drinking it, 77 per cent of them

using boiling as a purifying method (IIPS and ORC Macro, 2001). By contrast, only 39 per cent of households in all India purify the water before drinking it, the most common method of purifying being straining water by cloth (59 per cent). Only 26 per cent of households in all India boil water for purification (IIPS and ORC Macro, 2000). Those differences in the way water is treated before drinking may explain why in the present analysis, the community-level prevalence of piped water was not found to have a statistically significant effect on early childhood mortality. Another possible explanation for the weak association is that an important variable was omitted because data were not available (the variations in personal hygiene behaviour such as washing hands before cooking/eating) may interact with the prevalence of piped water.

In Kerala, although fertility level is below replacement, some aspects of fertility behaviour are not conducive to low level of childhood mortality. One is the prevalence of short birth interval. In all India, 28 per cent of children of birth order two or higher were born in less than 24 months of the birth of the previous child. In Kerala, the proportion is 21 per cent. This analysis found that short preceding birth interval is a statistically significant factor associated with increased early childhood mortality. Our simulation exercise on birth intervals (changing the prevalence of short birth interval to the level of Kerala) does not show full potential for reducing early childhood mortality through altering the child spacing behaviour. How would early childhood mortality change if the short previous birth intervals were eliminated? Table 9 shows the results of simulations from scenarios including this hypothesis. If previous birth intervals of less than 24 months were prevented (set the proportion to zero), the early childhood mortality would be reduced by 6 per cent. If this scenario were combined with fertility behaviour changes regarding early childbearing and prevalence of high order birth that matched the levels of Kerala, the early childhood mortality would be reduced by 16 per cent. Those changes, combined with the improved coverage of antenatal tetanus toxoid vaccines and child immunizations at the level observed in Kerala would reduce early childhood mortality by 30 per cent.

According to the present statistical model, the standard of living index of household has a weak association with early childhood mortality. Most studies, especially those based on country-level analysis document that poverty is probably the most important factor associated with high under-five mortality. Are the present results contrary to this common pattern? The weak association between standard of living index and early childhood mortality the authors found in India is likely to be caused by the measurement of poverty that used the standard of living index. Poverty leads to high level of mortality through malnutrition, poor access to medical care in addition to the factors examined here. The standard of living index, based mostly on

durable goods of the household is likely to be a poor measure of household expenditure which would be more directly associated with those intermediate variables. Furthermore, the standard of living index may have different meanings for urban and rural households and in summary, may be a poor measure of poverty. When a better measure of household-level poverty or expenditure is used, a stronger association with the early childhood mortality may be found.

Table 9. Probability of dying at ages 0-24 under the assumption of eliminating birth intervals < 24 months, predicted by the estimated hazard models

Scenario (a)	Predicted cumulative probability of dying at ages 0-24 months	Per cent reduction in mortality relative to “no change” scenario
(0) No change	82	NA
(1) Eliminate of children birth order >2 with preceding birth interval <24 months	77	6
(2) Reduce children born to young mothers and children of birth order >4 to the level observed in Kerala, and eliminate children of birth order >1 with preceding birth interval <24 months	69	16
(3) Reduce children born to young mothers and children of birth order >4 to the level observed in Kerala, and eliminate children of birth order >2 with preceding birth interval <24 months, and increase antenatal tetanus toxoid inoculation and children's immunization to the level observed in Kerala	58	30

Notes: (a) Changes to match the situation in the state of Kerala, India.

NA: indicates not applicable.

Goal 4 calls for a reduction of under-five mortality by two thirds (67 per cent) by 2015. If the current trend in under-five mortality in India (13 per cent reduction in six years) continues, one can expect a 54 per cent reduction by 2015; about 13 per cent short of the Goal. The present analysis shows that this gap can be closed by effective family planning programmes resulting in reduction of early childbearing, short birth intervals and high-order births, combined with increased utilization of reproductive and child health programmes including antenatal tetanus vaccination and child immunizations. Eliminating discrimination against girl children can reduce early childhood mortality even further.

Whether findings based on the analysis of Indian data will apply in other countries that need to improve child survival substantially remains to be validated by additional evidences. In the meantime, it is encouraging to have an evidence that early childhood mortality can be reduced substantially by family planning and reproductive and child health programmes even under unfavourable conditions in terms of poverty, women's education and community-level sanitary conditions.

The country-level analysis showed that under-five mortality rate and maternal mortality ratios are highly correlated and that they share common set of determinants. Thus, the intervention programmes designed for reducing under-five mortality rate are likely to reduce maternal mortality ratio as well.

Some countries may have inadequate technical and financial resources for improving reproductive and maternal and child health services. International cooperation both within the Asian and Pacific region and wider global community may be required to meet the challenges of the Millennium Development Goals at the regional level.

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Endnotes

1. This article has been submitted to ESCAP as a theme study on Health and Millennium Development Goals: Policies and Strategies to Meet the Millennium Development Goals of Reducing Child Mortality and improving maternal health as part of the ESCAP-UNFPA project on Population, Poverty and Development implemented in 2005.
2. The designation of regions follows the convention used by ESCAP, UNDP and ADB in this report *A Future Within Reach* (2005). Thus, the analysis excludes countries in the Pacific region.
3. It should be noted here that because the indicator of progress towards the Goal is binary (0 or 1), the correlation coefficients are not very large.
4. The constant rate of decline (equivalent to simple-interest approach) was used rather than the constant relative rate of decline (equivalent to the compound-interest approach).
5. Some states show negative reduction in under-five mortality, indicating increase in the under-five mortality. The reasons for the increase in mortality is not clear but the inaccuracy of data may explain part of the unexpected result.
6. Equivalent to approximately US\$ 376. As of January 1999, one U.S. dollar was equivalent to 42.6 Indian rupees.
7. Among women who gave births during the five-year period before the survey, for the last and next-to-last births.
8. Among one-year olds at the time of survey.
9. Based on information of last birth and next-to-last birth for each woman.
10. Based on information from children born during the five-year period before the survey and surviving at the time of survey.
11. The computation, not shown here, assumes that the early childhood mortality of female children would be the same as that of male children, regardless of the sex combination of older siblings.

Appendix A1. Progress towards meeting Goals 4 and 5 as assessed in 2003 by ESCAP, UNDP and ADB: countries in the ESCAP region with 2004 GNI ppp per capita < US\$ 4,000

Country	Goal 4 (under-5 and infant mortality)		Goal 5 (improve maternal health)	
	Already achieved or expected to achieve	Making slow progress or regressing	Already achieved or expected to achieve	Making slow progress or regressing
East and North-East Asia				
Democratic People's Republic of Korea		X		X
Mongolia		X		X
South-East Asia				
Cambodia		X	X	
Indonesia	X		X	
Lao People's Democratic Republic		X		X
Myanmar		X		X
Timor-Leste		X		X
Viet Nam	X			X
South and South-West Asia				
Afghanistan		X		X
Bangladesh	X		X	
Bhutan		X	X	
India		X		X
Maldives		X	X	
Nepal		X	X	
Pakistan		X		X
North and Central Asia				
Azerbaijan		X		X
Georgia		X		X
Kyrgyzstan		X		X
Tajikstan		X		X
Uzbekistan		X	X	

Sources: ESCAP, UNDP and ADB, 2005 (p. 13 for progress); PRB, 2005 for GNI ppp per capita.

- Notes:*
1. The table excludes the countries for which data on either Goal 4 progress or Goal 5 progress are not available.
 2. The table includes Myanmar, Timor-Leste, Afghanistan, Bhutan, and Maldives for which per capita income is unknown.

Appendix A2. Progress towards meeting Goals 4 and 5 as assessed in 2003 by ESCAP, UNDP and ADB: countries and areas in the ESCAP region with 2004 GNI ppp per capita \geq US\$ 4,000

Country/area	Goal 4 (under-5 and infant mortality)		Goal 5 (improve maternal health)	
	Already achieved or expected to achieve	Making slow progress or regressing	Already achieved or expected to achieve	Making slow progress or regressing
East and North-East Asia				
China	X			X
Hong Kong, China	X		X	
Macao, China	X		X	
Japan	X		X	
Republic of Korea	X		X	
South-East Asia				
Brunei Darussalam	X			X
Malaysia	X			X
Philippines	X			X
Singapore	X			X
Thailand	X		X	
South and South-West Asia				
Iran (Islamic Republic of)	X			X
Sri Lanka	X			X
Turkey	X			X
North and Central Asia				
Armenia	X			X
Kazakhstan		X		X
Russian Federation	X			X
Turkmenistan		X	X	

Sources: ESCAP, UNDP and ADB, 2005 (p. 13 for progress); PRB, 2005 for GNI ppp per capita.

Notes: 1. The table excludes the countries for which data on either Goal 4 progress or Goal 5 progress are not available.

2. The table includes Brunei Darussalam for which per capita income is not available.

References

- Academy of Preventive Medicine, Kazakhstan and Macro International Inc. (1999). *Kazakhstan Demographic and Health Survey 1999*. Claverton, Maryland, USA: Academy of Preventive Medicine and Macro International Inc.
- Ahmed, O. B., A. D. Lopez, and M. Inoue (2000). "The decline in child mortality: A reappraisal", *Bulletin of the World Health Organization*, No. 78, pp. 1175-1191.
- Arnold, Fred, Minja K. Choe and T.K. Roy (1998). "Son preference, the family-building process and child mortality in India", *Population Studies*, No. 52, pp. 301-315.
- Basu, Alaka M. (1989). "Is Discrimination in Food Really Necessary for Explaining sex Differentials in Childhood Mortality?", *Population Studies*, No. 43, pp. 193-210.
- Black, Robert E., Saul S. Morris, and Jennifer Bryce (2003). "Where and why are 10 million children dying every year?", *The Lancet*, No. 361, pp. 2226-2234.
- Committee for Population, Family and Children, Viet Nam and ORC Macro (2003). *Vietnam Demographic and Health Survey 2002*. Calverton, Maryland, USA: Committee for Population, Family and Children and ORC Macro.
- Das Gupta, Monica (1987). "Selective Discrimination Against Female Children in Rural Punjab, India", *Population and Development Review*, vol. 13, pp.77-100.
- Desai, Sonalde and Soumya Alva (1998). "Maternal Education and Child Health", *Demography*, vol. 35, No. 1, pp. 71-81.
- Economic and Social Commission for Asia and the Pacific (ESCAP), United Nations Development Programme (UNDP) and Asian Development Bank (ADB) (2005). *A Future Within Reach: Reshaping Institutions in a Region of Disparities to Meet the Millennium Development Goals in Asia and the Pacific*. New York: United Nations.
- International Institute for Population Sciences (IIPS) (1995). *National Family Health Survey (MCH and Family Planning), India 1992-93*. Bombay: IIPS.
- International Institute for Population Sciences (IIPS) and ORC Macro (2000). *National Family Health Survey (NFHS-2), 1998-99: India*. Mumbai: IIPS.
- International Institute for Population Sciences (IIPS) and ORC Macro (2001). *National Family Health Survey (NFHS-2), India, 1998-99: Kerala*. Mumbai: IIPS.
- International Monetary Fund (IMF), Organization for Economic Co-operation and Development (OECD), United Nations (UN) and World Bank Group (WBG). 2000. *2000 A Better World for All: Progress towards the International Development Goals*.
- Koenig, Michael A., James F. Phillips, Oona M. Campbell and Stan D'Souza (1990). "Birth intervals and childhood mortality in rural Bangladesh", *Demography*, vol. 29, No. 2, pp. 251-265.
- Miller, Jane E. (1991). "Birth intervals and perinatal health: An investigation of three hypotheses", *Family Planning Perspectives*, No. 23, pp. 62-70.

- Miller, J.E., James Trussell, Anne R. Pebley and B. Vaughan (1992). "Birth spacing and child mortality in Bangladesh and Philippines", *Demography*, vol. 29, No. 2, pp. 305-318.
- Ministry of Health and Family Welfare, Government of India (1992). *Action Plan for Revamping the Family Welfare Programme in India*. New Delhi, India: Ministry of Health and Family Welfare.
- Ministry of Statistics and Programme Implementation, Government of India (2005). http://mospi.nic.in/10_percapnsdp_cor_9394ser.htm accessed on 11 October 2005.
- Mosley, W. Henry and Lincoln C. Chen (1984). "An analytical framework for the study of child survival in developing countries", *Population and Development Review*, 10 Suppl, pp.: 25-45.
- Office of Registrar General, India (2005). http://www.censusindia.net/t_00_003.html accessed 21 November 2005.
- Pandey, Arvind, and others (1998). *Infant and Child Mortality in India. National Family Health Survey Subject Reports*, Number 11. Mumbai and Honolulu: IIPS and EWC POP.
- Population Reference Bureau (2005). *Women of Our World*. Washington, D.C., U.S.A.: Population Reference Bureau.
- _____ (2005). *World Population Data Sheet*. Washington, D.C., U.S.A.: Population Reference Bureau.
- Research Institute of Obstetrics and Pediatrics, Kyrgyz Republic and Macro International Inc. (1998). *Kyrgyz Republic Demographic and Health Survey, 1997*. Claverton, Maryland, USA: Research Institute of Obstetrics and Pediatrics, Ministry of Health of the Kyrgyz Republic and Macro International Inc.
- Setty-Venugopal, V. and U. D. Upadhyay (2002). "Birth spacing: three to five saves lives", *Population Reports, Series L*, No. 13. Baltimore: Johns Hopkins Bloomberg School of Public Health, Population Information Program.
- Tulloch, J. (1999). "Integrated Approach to Child Health in Developing Countries", *Lancet*, No. 354 (Suppl. 1), pp. 7-24.
- Tsui, A. O., J. N. Wasserheit, and J. G. Haaga, eds. (1997). "Healthy Pregnancy and Childbearing," in *Reproductive Health in Developing Countries: Expanding Dimensions, Building Solutions*. Washington, D.C.: National Academy Press.
- UNICEF, UNFPA and WHO (2004). *Maternal Mortality in 2000: Estimates Developed by SHO, UNICEF, and UNFPA*. Geneva: World Health Organization.
- Winikoff, Beverly (1983). "The effects of birth spacing on child and maternal health", *Studies in Family Planning*, vol. 14, No. 1, pp. 231-245.
- World Health Organization (2002). *Reducing Risk, Promoting Healthy Life*. <http://www.who.int/whr2002.htm>.

Readiness, Willingness and Ability to Use Contraception in Bangladesh

This study has established that most women now want to control their fertility and consider fertility control as normatively acceptable, as well as convenient in terms of availability/accessibility and cost.

By Haider Rashid Mannan and Roderic Beaujot*

In his frequently quoted article, Coale (1973) proposes that one weakness of the demographic transition theory is that it indicates a high degree of modernization as sufficient to cause a fall of fertility, without indicating the degree of modernization that is necessary. By summarizing the findings of historical

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studies of European communities, Coale proposed three broad conditions necessary for fertility transition. He argued that modernization ultimately establishes these conditions, but that they can also occur in communities that have undergone little modernization. Lesthaeghe and Vanderhoeft (1998) later described the three conditions for fertility transition under the heading “readiness”, “willingness” and “ability”. Economic readiness means that fertility control must be advantageous to the actor so that fertility is within the calculus of conscious choice. Willingness means that fertility control must be legitimate and normatively acceptable. The basic question addressed by “willingness” is to what extent fertility control runs counter to established traditional beliefs and codes of conduct, and to what extent there is a willingness to overcome objections and fears. Ability refers to the availability and accessibility of contraceptive techniques. Similarly, Ahmed (1987: 363), applying Easterlin’s supply-demand theory of fertility observes that “studies on contraceptive use most often view three variables-motivation, attitude, and access-as the key determinants”. Motivation stems from having or expecting to have too many children or having them too soon. Although this has similarity with Coale’s notion of “economic readiness”, it does not necessarily capture whether fertility control is economically advantageous to an individual. In this paper the authors name Easterlin’s notion of motivation as simply “readiness” to distinguish it from Coale’s broader notion of “economic readiness”. Attitude refers to broad notions of acceptability of family planning in general and feelings about specific contraceptive methods in particular and is similar to Coale’s notion of willingness. Access or the “costs of fertility regulation”, as described by Easterlin (1975) pertains to the availability of contraceptives and selected services and is similar to Coale’s notion of ability.

Coale’s “economic readiness” and “willingness” conditions relate respectively to economic and cultural dimensions of an innovation. Thus, we expect a greater economic readiness to use contraception for individuals who have more living children, and who have more contact with modern economic conditions where it is advantageous to have fewer children. By contrast, persons who are in more traditional environments are expected to have less willingness to use contraception. Some authors have argued in particular that normative changes have been based on the diffusion of new forms of family behaviour (Knodel, 1974; Lesthaeghe, 1977; Cleland, 1985; Rosero-Bixby and Casterline, 1993). Those changes fall under the category of willingness in terms of Coale’s notion. Knowledge about family planning methods plays an important role in the diffusion process. Coale’s precondition of ability to regulate fertility includes family planning knowledge and helps to explain the diffusion process well (Knodel, 1974).

In general, fertility has declined much more rapidly in Asia and Latin America than in European countries during the demographic transition. In Bangladesh, for example, fertility has declined significantly over a relatively short period of time through massive adoption of modern contraceptives in spite of minimal economic development (Stevens, 1994). There has been debate about whether the Bangladesh fertility decline has been achieved solely owing to massive adoption of modern contraceptives (Carty, Yinger and Rosov, 1993; Cleland and others, 1994; Caldwell and others, 1999). The present study does not attempt to resolve this debate. Instead, it will seek to determine the extent to which questions of readiness and willingness to control fertility are prevailing in the Bangladeshi society following the fertility decline, besides the question of availability and accessibility to contraception. Although ideally it would have been important to determine the extent to which questions of economic readiness are prevailing in the Bangladeshi society following the fertility decline, because of difficulty in proper operationalization of this concept, the study will examine a similar concept; motivation or simply readiness to regulate fertility as described by Easterlin (1975).

Traditional analyses of determinants of contraceptive use have often examined socio-economic and demographic factors as potential determinants of contraceptive use. Those variables have been found to be important determinants of contraceptive use in Bangladesh (Ullah and Chakraborty, 1993; Khan and Rahman, 1997). However, very few studies have examined the effects of readiness, willingness and ability on contraceptive use. Previous researches have examined the relevance of some of the aspects of “willingness” to contraceptive method choice, by measuring the perception of side effects and inconvenience of use (Mannan, 2002). But, the relevance of those aspects and other aspects of “willingness” have not been examined with regard to contraceptive use. Only a single study by Ahmed (1987) examined the impact of motivation or readiness to regulate fertility on contraceptive use, in which it was found that strong motivation to regulate fertility led to higher contraceptive use in rural Bangladesh. Previous researches in Bangladesh have shown that contraceptive access, quality of field workers and quality of clinical services encourage a greater adoption and continuation of contraception (Koenig, 2003; Islam, Barua and Bairagi, 2003) while community contraceptive availability encourages greater adoption (Tsui and others, 1981). Thus, the present study seeks to determine the relative importance of readiness, willingness, ability and socio-economic, sociocultural and demographic variables with regard to contraceptive use in Bangladesh.

Data, measures and methods

The authors used data from the 1996-1997 Bangladesh Demographic and Health Survey (BDHS), which is a national survey conducted under the authority of the National Institute for Population Research and Training (NIPORT) of the Ministry of Health and Family Welfare (Mitra and others, 1997). Using a two stage stratified sample design a total of 9,355 ever-married women aged 10-49 were identified as eligible for the individual interview. Of those, 9,127 or 97.8 per cent were successfully interviewed. The sample is first restricted to the 8,450 currently married women aged 10-49 for whom information was obtained on contraceptive usage. In order to consider solely women for whom current use of contraception is relevant, the analysis is based on the 7,517 currently married fecund women who were not pregnant at the time of the survey. Current use of contraception was used as the dependent variable for the study of contraceptive use because it allows for the analysis of behaviour at the time of the interview and it is less subject to error. Future intention to use contraception would also have been an important dependent variable for the purpose of the study. Lack of data did not allow for the inclusion of this variable in the study.

The ready, willing and able variables were measured as dummy variables following the guidelines by Lesthaeghe and Vanderhoeft (1998). Readiness was measured by concentrating exclusively on subsequent births. In the BDHS questionnaire, non-pregnant women were asked whether they preferred to have a/another child or preferred not to have any more children (Mitra and others, 1997: 221). In addition, women who wanted a/another child were asked when they would like to have the next child. Those who intended to wait for two or more years before having a/another child, or who did not want more children, were considered as being ready for using contraception. Women who wanted a child within two years, or were undecided about their future fertility were considered as being not ready for using contraception. The measure for readiness was based on 7,497 cases. Based on this measure, 82.7 per cent were ready and 17.3 per cent were not ready to use contraception.

The notion of "willingness" refers to considerations of legitimacy and normative acceptability of family planning methods as well as willingness to overcome objections and fears associated with family planning methods. In the BDHS, women were asked whether they approved or disapproved of family planning (Mitra and others, 1997: 222). In addition, they were asked to specify the main reason for not intending to use a method. Women who disapproved of family planning and did not intend to use contraception because of personal opposition, opposition from husband, opposition from others, religious prohibitions, fears for

health which included answers like bad for health, side effects, inconvenient to use, and interference with body's normal processes, were regrouped in the category "non-willingness". The measure for willingness was based on 7,517 cases, of which 95.3 per cent were willing to use contraception.

The notion of "ability" refers to the accessibility of family planning methods. In the BDHS, women were asked which methods they had heard about (Mitra and others, 1997: 205, 211). They were also asked whether they knew of any source from where they could obtain a family planning method. Women who did not intend to use contraception were asked the main reasons for not doing so, the reasons included among others, difficulty of access to family planning services and difficulty pertaining to costs. Respondents who had no knowledge about methods of contraception, no knowledge about family planning services, had difficulty in accessing family planning services or for whom family planning services were too distant, and had difficulty pertaining to costs were classified as "non-able", which amounted to 6.3 per cent of the measure for ability which was based on 7,517 cases. The questionnaire simply asked for the main reason, rather than multiple reasons, for not intending to use contraception. This may result in the overestimation of proportions willing and able. In addition, it would have been better to measure willingness and ability as continuous variables by counting the number of "yes" responses to the reasons related to willingness and ability, but respondents were only asked to specify through a single question the main reason for not intending to use contraception and thus it was not possible to measure those variables in this manner. Also, given the politically sensitive questions, it is difficult to know whether the interview setting may have had any influence on answers to the questions which were related to the measures of willingness and ability.

For testing the association between each covariate and the outcome at the bivariate level, the chi-square test was used. Logistic regression is used for multivariate analysis, with the categorical and interval variables indicated in the tables (see tables 1 and 2). The interval variables were also entered as squared terms to capture their non-linear effects on the dependent variable. To avoid problems of multicollinearity, the linear and squared terms for the interval variables were centred. Since the authors' main objective is to examine the individual effects of readiness, willingness and ability on contraceptive use, their interactions were not considered for easier interpretability of results. The model chi-square statistic has been used for evaluating model fit. It is a likelihood ratio (LR) test between $-2\log LR$ when only the constant term is in the model and $-2\log LR$ when the constant and the covariates are in the model. A LR test can also be used to compare the fit of two nested models. The statistical significance for

each covariate is tested using Wald's statistic. Each covariate is tested at 5 per cent level of significance. For obtaining national estimates based on BDHS, appropriate weights were derived to adjust for oversampling from urban population and non-response (Mitra and others, 1997). All analyses in the present study will thus consider weights.

Sample characteristics and descriptive results

The distributions of the socio-economic, sociocultural, residence/region and demographic variables are shown in tables 1 and 2. The only sociocultural variable which was included in this study is religion. Lack of data did not allow for the consideration of other relevant sociocultural factors such as superstitions or taboos against family planning (eg., folk stories), religiosity, etc. The proportions currently using contraception, ready, willing and able within categories of the variables are also shown in tables 1 and 2. Regarding ready, willing and able, there is no large variation between urban and rural areas, but the Sylhet region shows markedly lower values than the other divisions. While the differences are not large, it appears that religion affects willingness more than the two other variables since religion has statistically significant effect only on willingness. There is markedly lower readiness to use contraception for women who are young, recently married or have no children, but those demographic considerations have much less impact on willingness and ability to use contraception (table 2). Similarly, the lack of living sons seems to affect readiness much more than willingness. Women with secondary or more education show low readiness but high willingness and ability to use contraception.

Contraceptive use increases curvilinearly with current age, number of living children, number of living sons, and duration of marriage. It increases with the educational levels of women and their husbands. Urban women have higher contraceptive use rates than their rural counterparts while women of Sylhet division have considerably lower rates than women of other divisions.

Predictors of readiness, willingness and ability to use contraception

While the proportions who do not qualify as willing and able to use contraception are on the low side for analysis through logistic regression, it is still worth observing the extent to which those ready, willing and able variables can be predicted by the socio-economic, sociocultural and demographic variables (table 3). The results are discussed below.

Table 1. Currently married, fecund and non-pregnant women, showing percentage who are currently using contraception and are ready, willing and able to use contraception, by RWA, region/residential, sociocultural and socio-economic variables, Bangladesh, 1996-1997

Characteristics	Number of cases	Using contraceptive	Ready	Willing	Able
Readiness					
Not ready	1,294 (17.3)	15.1	--	--	--
Ready	6,203 (82.7)	63.7	--	--	--
		p<0.0001			
Willingness					
Not willing	352 (4.7)	8.5	--	--	--
Willing	7,164 (95.3)	57.6	--	--	--
		p<0.0001			
Ability					
Not able	474 (6.3)	8.6	--	--	--
Able	7,043 (93.7)	58.5	--	--	--
		p<0.0001			
Place of residence					
Urban	873 (11.6)	63.7	84.4	97.9	95.9
Rural	6,644 (88.4)	53.6	82.5	95.0	93.4
		p<0.0001	p>0.05	p<0.001	p<0.01
Region of residence					
Sylhet	373 (5.0)	24.7	68.0	82.3	80.5
Barisal	492 (6.5)	56.1	84.9	96.3	92.7
Chittagong	1,489 (19.8)	42.5	80.9	93.6	92.9
Dhaka	2,370 (31.5)	55.8	83.2	96.0	93.3
Khulna	929 (12.4)	68.1	85.0	96.4	96.2
Rajshahi	1,963 (24.8)	64.5	84.9	97.6	96.5
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Women's education					
No schooling	3,958 (52.7)	52.1	83.8	93.5	91.8
Primary incomplete	2,102 (28.0)	56.8	82.7	96.2	94.4
Primary complete and above	1,456 (19.4)	62.0	79.9	98.9	97.7
		p<0.0001	p<0.01	p<0.0001	p<0.0001
Current work status					
Not working	5,106 (67.9)	52.5	81.4	94.9	92.2
Working	2,408 (32.0)	61.3	85.7	96.1	96.8
		p<0.0001	p<0.0001	p<0.05	p<0.0001
Religion					
Muslim	6,715 (89.3)	54.2	82.6	95.1	93.6
Non-Muslim	801 (10.7)	64.6	83.9	97.0	94.8
		p<0.0001	p>0.05	p<0.05	p>0.05

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Table 1. (Continued)

Characteristics	Number of cases	Using contraceptive	Ready	Willing	Able
Husband's education					
No schooling	3,269 (43.5)	51.9	84.6	93.7	91.8
Primary incomplete	1,872 (24.9)	53.3	83.0	95.5	93.5
Primary complete	1,590 (21.2)	58.7	83.2	96.1	95.7
Secondary and above	722 (9.6)	69.4	81.5	98.8	98.9
		p<0.0001	p>0.05	p<0.0001	p<0.0001
Husband's occupation					
Professional/business	1,933 (25.7)	63.6	84.0	96.7	95.8
Others	5,649 (74.3)	55.2	82.2	94.8	93.0
		p<0.0001	p>0.05	p<0.001	p<0.0001
Total	7,517	55.3	82.7	95.3	93.7

Note: The percentages on the parentheses may not add up to 100.00 because of rounding. The percentages for ready are based on 7,497 cases. The p-values are based on chi-square test.

Table 2. Currently married, fecund and non-pregnant women, showing percentage who are currently using contraception and are ready, willing and able to use contraception, by demographic variables, Bangladesh, 1996-1997

Characteristics	Number of cases	Using contraceptive	Ready	Willing	Able
Current age					
Below 15	121 (1.6)	18.2	44.2	95.0	76.0
15-19	1,067 (14.2)	38.5	68.2	96.2	90.6
20-24	1,484 (19.7)	48.0	77.0	96.6	94.6
25-29	1,646 (21.9)	57.8	81.7	96.5	95.9
30-34	1,222 (16.3)	66.9	89.0	96.1	96.6
35-39	955 (12.7)	68.9	92.0	93.9	94.8
40-44	642 (8.5)	62.9	95.2	93.3	91.4
45-49	380 (5.1)	47.6	98.4	87.6	86.3
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Number of living children					
0	770 (10.2)	21.4	234.3	94.3	84.0
1	1,663 (19.5)	47.1	72.9	96.5	94.5
2	1,642 (21.8)	63.8	86.7	96.6	96.0
3	1,316 (17.5)	64.3	92.1	96.3	96.0
4	1,001 (13.3)	64.6	96.3	94.8	94.8
5 or more	1,326 (17.7)	57.6	97.2	92.4	92.4
		p<0.0001	p<0.0001	p<0.0001	p<0.0001

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Table 2. (Continued)

Characteristics	Number of cases	Using contraceptive	Ready	Willing	Able
Number of living sons					
0	2001 (26.6)	38.2	58.5	95.2	90.4
1	2552 (33.9)	60.1	86.8	96.7	95.8
2	1654 (22.0)	65.3	94.7	95.3	95.0
3	801 (10.7)	62.3	95.8	93.3	93.4
4	355 (4.7)	57.0	98.6	92.4	93.8
5 or more	153 (2.0)	49.7	96.1	90.3	88.9
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Child loss experience					
0	5042 (67.1)	55.5	80.1	96.6	94.1
1	1550 (20.6)	58.0	87.5	94.2	94.1
2	598 (7.9)	52.0	89.3	92.0	91.8
3 or more	328 (4.4)	46.0	89.0	86.3	88.1
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Duration of marriage (years)					
Below 5	1257 (16.9)	36.1	63.2	96.3	89.3
5-9	1368 (18.2)	48.6	76.7	96.5	95.2
10-14	1474 (19.6)	57.9	83.2	96.1	96.1
15-19	1182 (15.7)	66.7	89.0	96.2	96.4
20-24	929 (12.4)	67.7	92.2	95.3	95.0
25 or more	1227 (16.3)	59.4	95.6	91.1	90.2
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Total	7517	55.3	82.7	95.3	93.7

Note: The percentages on the parentheses may not add up to 100 because of rounding. The percentages for ready are based on 7,497 cases. The p-values are based on chi-square test.

With regard to readiness, the significant predictor variables are region of residence, women's education, husband's education, number of living children, number of living sons and marital duration. Women are significantly more ready to use contraception with increase in their and their husband's educational levels. This contradicts the results of bivariate analysis. It was observed by bivariate analysis that the relationship between readiness and education (for both women's and their spouse's) changes with number of living children (results not given). Women with fewer living children are less ready while at the same time they are more educated. Among the regions, women of Chittagong division are least ready to use contraception followed by women of Sylhet division. As was expected, individuals with more living children are significantly more ready to use

contraception. The results also show that individuals with more living sons are significantly more ready to use contraception. This result was expected, given the importance of son preference in situations where women are economically and socially dependent on men.

As expected, religion and region of residence are also strong predictors of willingness. Women of Sylhet division are least willing to use contraception followed by women of Chittagong division. The other predictors of willingness are women's education and number of dead children.

For able the significant predictors are region of residence, women's education, husband's education, women's current work status, maternal age and number of living children. Ability increases significantly with education. This is expected because educated people are likely to have more knowledge about contraceptive methods. Working women are significantly more able to use contraception than their non-working counterparts. Those women are likely to have more knowledge about contraceptive methods possibly through greater social interaction. Women of Sylhet division are least able to use contraception. This means that this region is lagging behind other regions of the country in terms of availability/accessibility and knowledge of modern contraceptive methods. Other researches have also shown that family planning programmes have been implemented differently in the various regions (NIPORT, 2001; Freedman, Khoo and Supraptilah, 1981), which affects the notion of ability.

It is noteworthy that religion is a strong predictor of willingness to use contraception, with less willingness among Muslim women, but religion is a weak predictor of readiness and ability to use contraception. By contrast, readiness is much more affected by the number of living children, living sons, duration of marriage and some socioeconomic variables. Thus, the results confirm the greater importance of cultural factors to willingness, and socio-economic and demographic factors to readiness to use contraception.

Table 3. Logistic regression for readiness, willingness and ability to use contraception, Bangladesh, 1996-1997

Variables	Ready Coefficient	Willing Coefficient	Able Coefficient
Residence/regional variables			
Place of residence (Urban)	--	--	--
Rural	-0.2337	-0.472	-0.0058
Region of residence (Sylhet)	--	--	--
Barisal	1.2190*	1.5460*	0.9978*

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Table 3. (Continued)

Variables	Ready Coefficient	Willing Coefficient	Able Coefficient
Chittagong	0.5501**	1.0345*	1.1349*
Dhaka	1.1761*	1.6680*	1.2928*
Khulna	1.3743*	1.6810*	1.9004*
Rajshahi	1.4885*	2.2516*	1.9938*
Sociocultural variables			
Religion (Muslim)	--	--	--
Non-Muslim	0.0977	0.5672***	0.0821
Socio-economic variables			
Women's education (No education)	--	--	--
Primary incomplete	0.1142	0.3301***	0.4455*
Primary complete +	0.2569***	1.3870*	1.0993*
Current work status (Not working)	--	--	--
Working	0.11	0.2456	0.7837*
Husband's occupation (Prof./business)	--	--	--
Others	0.0517	-0.1435	-0.1705
Husband's education (No education)	--	--	--
Primary incomplete	0.1353	0.2361	0.1324
Primary complete	0.2222	0.1688	0.273
Secondary+	0.3570***	0.2971	1.0937*
Demographic variables			
Current age	-0.086	0.1552	0.2885*
Current age squared	0.0016	-0.0026	-0.0043*
Number of living children	1.7272*	0.2192	0.4112*
Number of living children squared	-0.1507*	-0.0173	-0.0343*
Duration of marriage	-0.2112*	-0.0564	-0.0302
Duration of marriage squared	0.0057*	0.0007	-0.0004
Number of living sons	0.7093*	0.1776	0.1434
Number of living sons squared	-0.0979**	-0.0345	-0.0275
Child loss experience	-0.0592	-0.2253***	-0.1422
Child loss experience squared	-0.0033	0.0057	0.0097
Constant	-0.1777	-0.2303	-3.5212*
Model Chi-square	1,859.981	303.239	449.676
Degrees of freedom	24	24	24
Sample size	7,496	7,496	7,496

Note: The reference category for a categorical variable is in the parentheses.

* indicates $p < 0.001$; ** indicates $p < 0.01$; and *** indicates $p < 0.05$.

Relative importance of “ready, willing and able” compared to other predictors of contraceptive usage

The bivariate analysis indicated that contraceptive use increases curvilinearly with current age, number of living children, number of living sons, and duration of marriage. Thus, squared terms are introduced in the logistic models to capture their non-linear relationships with contraceptive use. Three models were used for predicting contraceptive usage: Model A includes the terms for ready, willing and able, Model B has all the socio-economic, sociocultural and demographic variables but no ready, willing and able variables, and Model C is the full model which has all the variables included in Models A and B (see table 4). Based on LR tests all the models are found to be statistically significant indicating a good fit for each model. Since the sample sizes for the three models are similar and Model A is a subset of Model C, a LR test can be used to compare their fit. Similarly, Model B and Model C can be compared by a LR test. A comparison with Model A indicates that when the socio-economic, sociocultural and demographic variables are introduced in Model C, the model chi-square increases by 654.516 with 24 degrees of freedom ($p=0.000$). A comparison between Models B and C indicates that model chi-square increases by 1035.935 with 3 degrees of freedom ($p=0.000$) for the inclusion of ready, willing and able variables to the model with only socio-economic, sociocultural and demographic variables as covariates (Model B). Thus, the variables ready, willing and able together are considerably more important than the socio-economic, sociocultural and demographic variables in terms of model fit. A comparison between models with and without controls for the socio-economic, sociocultural and demographic variables further indicates that the coefficients for ready, willing and able are fairly robust as they only differ in the first or second decimal points. On the other hand, when the ready, willing and able variables are controlled in Model C, the magnitude of the effects of most socio-economic, sociocultural and demographic variables decreases considerably. This suggests that much of the effects of the socio-economic, sociocultural and demographic variables on contraceptive use are absorbed by the ready, willing and able variables. Thus, the effects of the socio-economic, sociocultural and demographic variables on contraceptive use are influenced to a large degree by the three variables. While these may seem to suggest that the ready, willing and able variables act as intervening variables between the more distant background variables and the outcome of contraceptive usage, changes in those background characteristics are key to changes in the readiness, willingness and ability to use contraception as has been found in the previous section.

The results indicated that women who are ready to control fertility are associated with increasing likelihood to use contraceptive than those who are not ready to regulate fertility. This is in accordance with Ahmed's (1987) findings who had found, using Easterlin's framework, that strong motivation to regulate fertility led to higher contraceptive use in rural Bangladesh. It was found that women who are able or have the means to control fertility are associated with increasing likelihood to use contraceptive than those who are not able to regulate fertility. Ahmed (1987) had similarly found earlier that lower costs of fertility regulation led to higher contraceptive use in rural Bangladesh. However, he considered just one indicator; distance to family planning clinics as a proxy for cost of fertility regulation or means to regulate fertility while the present study considered all issues relevant to means to regulate fertility. The study found that women who are willing to regulate fertility are associated with higher likelihood to use contraceptive than those who are not willing to regulate fertility. None of the previous studies in Bangladesh including the one by Ahmed (1987) examined the impact of normative willingness on contraceptive use. A few studies have examined the influence of individual's religious beliefs and religiosity on contraceptive use (Bernhardt and Uddin, 1990; Kamal and Slogget, 1993), in which it was found that those variables do not pose a significant barrier to contraceptive use. However, individual's religious beliefs and religiosity are only a few predictors of willingness to regulate fertility (the other predictors are likely to be superstitions against family planning, social conservatism, etc.) and thus cannot fully explain individual's willingness to regulate fertility.

The authors further found that urban, better educated, non-Muslim, and currently working women are associated with higher odds to practice contraceptive than those who are rural, less educated, Muslim, and not currently working. Wives of professionals/businessmen are more likely to practice contraception than those whose husbands are engaged in other occupations. In Bangladesh, women who belong to the former category are likely to have higher socio-economic status. There is also a strong regional variation in current use. Women of Sylhet and Chittagong divisions have considerably lower use rates than those of other divisions. It has been suggested that women of those two divisions are religiously more conservative and have traditional values regarding family formation (Khan and Raeside, 1998). The present study also supported this as women of those two divisions were found to be less willing to use contraception than those of other divisions. Low levels of education and low former-sector employment may also partly contribute to the low use of contraceptives among Sylhet women. Both bivariate and multivariate analyses in this study suggested that women of Sylhet division are significantly less ready and able to regulate fertility than those of other

divisions. It has been found that family planning programmes have been implemented differently across the various regions of the country and Sylhet and Chittagong divisions are lagging behind other divisions in terms of family planning service delivery (NIPORT, 2001; Freedman, Khoo and Supraptilah, 1981).

Regardless of whether the ready, willing and able variables are controlled in the analysis, the likelihood of contraceptive use is higher for women having urban residence, non-Muslim religious denomination and husbands being employed as professionals/businessmen as compared with their counterparts having rural residence, Muslim religious denomination and husbands being employed in services other than professional or business, respectively. Controlling for other variables in the analysis, contraceptive usage increases significantly with educational levels of women and that of their husbands, current age, duration of marriage and number of living sons, while it declines with child loss experience. For each of the interval variables, the squared term has a sign that is opposite the linear term, implying a decreasing effect, but none of the squared terms are statistically significant in the final models.

Regarding changes in the effects of the socio-economic, sociocultural and demographic variables when the ready, willing and able variables are controlled for in the analysis, possibly the most notable point is the narrowing down of regional variations in contraceptive use when the ready, willing and able variables are controlled in the analysis. This is possibly because the effect of region of residence on current use is partly transmitted through the ready, willing and able variables. It should be mentioned that the analysis in the previous section indicated that region of residence had strong effect on each of those three variables. However, the regional variations in contraceptive use do not totally diminish when the ready, willing and able variables are controlled in the analysis. Thus, the ready, willing and able variables do not entirely account for the regional variations in contraceptive use. This unexplained variation could be owing to several reasons. First, the creation of Sylhet division, which isolates the sections of the former Chittagong division that have the lowest use rates, results in wider divisional differences than existed previously (Mitra and others, 1997:55). Furthermore, this unexplained variation could be owing to the different socio-economic status of the respondents across the regions. In particular, the socio-economic scenario of Sylhet division is different from the rest of the country in several aspects including because it has a larger percentage of affluent expatriate and semi-expatriate population which may not have similar views regarding fertility control compared to the much larger non-expatriate population of the country. In this study, socio-economic status of women were partly controlled for. However, further studies need to be undertaken to understand the reasons for lower use rate among

women of Sylhet division in particular. Such an understanding may help to provide appropriate services and possibly bring the Sylhet division in line with the rest of the country in terms of contraceptive use. The magnitude of the effect of number of living children on current use reduces drastically and diminishes when the ready, willing and able variables are introduced in the final model. This is probably because the effect of number of living children on current use is largely transmitted through the ready variable as was found in the previous section. Although infant and child mortality has been declining in Bangladesh, it is still high by international standards (Mitra and others, 1997). In this study, child loss experience has been found to have a strong negative significant effect on current use regardless of the presence of the ready, willing and able variables. When the effect of child loss experience on readiness, willingness and ability to use contraception was examined, it was found to have negative effects on all of them, however, the effect was statistically significant only for willingness. The results thus seem to suggest that the effect of infant and child mortality on contraceptive use is only partly transmitted through willingness to use contraception and because of this, the magnitude of its effect on contraceptive use does not change much when the three variables are controlled in the analysis. Similarly, the effects of current age and marital duration on contraceptive use remain strong after controlling for the three variables. When the effects of current age and marital duration on readiness, willingness and ability were examined, they were found to be statistically significant only for ability and readiness, respectively.

Table 4. Logistic regression for current use of contraception, Bangladesh, 1996-1997

Variables	Model A Coefficient	Model B Coefficient	Model C Coefficient
Easterlin/Coale variables			
Readiness (Not ready)	--	--	--
Ready	2.199*	--	2.126*
Willingness (Not willing)	--	--	--
Willing	2.002*	--	2.029*
Ability (Not able)	--	--	--
Able	2.396*	--	2.111*
Residence/regional variables			
Place of residence (Urban)	--	--	--
Rural	--	-0.502*	-0.479*
Region of residence (Sylhet)	--	--	--
Barisal	--	1.247*	0.920*
Chittagong	--	0.668*	0.416*

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Table 4. (Continued)

Variables	Model A Coefficient	Model B Coefficient	Model C Coefficient
Dhaka	--	1.300*	0.985*
Khulna	--	1.863*	1.527*
Rajshahi	--	1.799*	1.365*
Sociocultural variables			
Religion (Muslim)	--	--	--
Non-Muslim	--	0.421*	0.427*
Socio-economic variables			
Women's education (No education)	--	--	--
Primary incomplete	--	0.288*	0.261*
Primary complete and above	--	0.494*	0.375*
Current work status (Not working)			
Working	--	0.181*	0.136***
Husband's occupation(Prof./business)			
Others	--	-0.265*	-0.301*
Husband's education (No education)			
Primary incomplete	--	-0.084*	-0.146*
Primary complete	--	0.050	0.009
Secondary and above	--	0.271*	0.163
Demographic variables			
Current age	--	0.161*	0.192*
Current age squared	--	-0.002*	-0.003*
Number of living children	--	0.476*	0.022
Number of living children squared	--	-0.055*	-0.011
Duration of marriage	--	0.015	0.0528***
Duration of marriage squared	--	0.000	-0.000
Number of living sons	--	0.350*	0.1918**
Number of living sons squared	--	-0.051*	-0.023
Child loss experience	--	-0.173**	-0.167**
Child loss experience squared	--	-0.001	0.003
Constant	-6.010*	-4.103*	-9.345*
Model chi-square	1,639.319	1,257.900	2,293.835
Degrees of freedom	3	24	27
Sample size	7,477	7,362	7,343

Note: The reference category for a categorical variable is in the parentheses.
* indicates p<0.001, ** indicates p<0.01; and *** indicates p<0.05.

Conclusion

The present study attempted to measure motivation or readiness, willingness and ability to regulate fertility and examine their impacts on fertility regulating behaviour of women in view of the rapid fertility decline in Bangladesh. All analyses in the present study were limited to fecund and non-pregnant women. The “ready” precondition has received considerable attention in the economic literature while the “able” precondition has been extensively examined in the family planning literature. By contrast, “willingness” has not received ample attention mainly because it is harder to measure. The results of the present study indicate that a vast majority of women satisfy those three conditions. With the exception of women without living children, most women want to control their reproduction. Most women consider fertility regulation as legitimate and acceptable on normative and health related grounds, that is, they are willing to adopt fertility regulation, counter to established traditional beliefs, codes of conduct, moral objections and health concerns. This is an important result as none of the previous studies in Bangladesh including the one by Ahmed (1987) examined all issues related to willingness to regulate fertility. In addition, it was found that for most women family planning methods are available, accessible and convenient in terms of costs. Thus, this study has established that most women now want to control their fertility and consider fertility control as normatively acceptable, as well as convenient in terms of availability/accessibility and cost. In other words, the sociocultural changes which are favourable to fertility transition have already taken place in Bangladesh. The results confirmed the greater importance of cultural factors to willingness, and socio-economic and demographic factors to readiness to use contraception. It was also found that while they are willing and able, the majority of women with no living children are not ready to use contraception. This is also partly why more women are willing to control fertility than they are ready.

The results of multivariate analysis suggested that readiness and willingness show up as independent factors to ability to practice and therefore they may have been part of the fertility transition at some point. However, the authors are unable to suggest at what point of the transition readiness and willingness directly played roles in the fertility decline. The fact that the analysis shows ability, willingness, readiness to be strongly associated with contraceptive use, at a time when more than 50 per cent of eligible women were using contraception, and had been for some time, does not constitute a full test of Easterlin’s theory since one does not know which of the changes occurred when. It is possible that those changes in attitudes occurred after changes in fertility control. To explore this further, the Matlab longitudinal data can be used although the results will not be entirely

nationally representative. The present study seems to suggest that fertility transition is well underway in Bangladesh as a vast majority of eligible women satisfy the three preconditions of fertility decline. Looking back at the national estimates for Total Fertility Rate (TFR) imply that the rapid decline in TFR from around five to around three first occurred in 1993-1994 based on the Bangladesh Demographic and Health Survey (BDHS) and after that it has remained almost stable. To explore whether in addition to ability, readiness or willingness or both have also played roles in the fertility transition, one needs at least to measure those variables based on national population surveys conducted during the pre-transition and post-transition periods. However, lack of BDHS prior to the major fertility decline mentioned above somewhat restricts such analysis. As explained earlier, given the limitation of data, the authors particularly overestimated the percentage who were willing and able and thus the impact of those variables on contraceptive use are likely to be overestimated in this study. However, this is the best one could do with nationally representative data from Bangladesh. Also, from the point of view of study design ideally the pre-conditions should be measured prior to the measures of fertility control, and ideally, prior to the onset of fertility change and this would require longitudinal data. But, in this study cross-sectional data are used so that preconditions and fertility are measured simultaneously. Unfortunately, there are no such longitudinal data at the national level in Bangladesh. Alternatively, one can use the Matlab data collected by the ICDDR,B for performing this analysis. However, results based on such data will not be representative of the entire country. Finally, contraceptive use has not increased much in Bangladesh following the last major fertility transition (decline) and therefore we do not expect that the effects of the three variables on contraceptive use have changed dramatically since the 1996-1997 BDHS. It is not expected that using data from more recent surveys would give substantially different results from those obtained in this study.

References

- Ahmed, B. (1987). Determinants of contraceptive use in rural Bangladesh: the demand for children, supply of children, and costs of fertility regulation, *Demography*, vol. 3, No. 24, pp. 361-373
- Bernhardt, M.H. and M.M. Uddin (1990). Islam and family planning practices in Bangladesh, *Studies in Family Planning*, vol. 5, No. 21, pp. 287-292.
- Caldwell, J.C. and others (1999). The Bangladesh fertility decline: An interpretation, *Population and Development Review*, vol. 1, No. 23, pp. 67-84.
- Carty, W.P., N.V. Yinger and A. Rosov (1993). Success in a challenging environment: Fertility decline in Bangladesh, Washington DC: Population Reference Bureau.
- Cleland, J.C., J.F. Phillips, S. Amin and G.M. Kamal (1994). The determinants of reproductive change in Bangladesh: Success in a challenging environment, Washington DC: The World Bank.
- Cleland, J.C. (1985). Marital fertility decline in developing countries: Theories and the evidence: In Cleland, John and J. Hobcraft, eds., *Reproductive change in developing countries* (Oxford, Oxford University Press).
- Coale, A.J. (1973). The demographic transition reconsidered. Proceedings of the International Population Conference: 53-72. Liege, Belgium. International Union for the Scientific Study of Population.
- Easterlin, R.A. (1975). An economic fertility framework for analysis, *Studies in Family Planning*, vol. 6, No. 3, pp. 54-63.
- Freedman, R.S., S. Khoo and B. Suprptilah (1981). Modern contraceptive use in Indonesia: A challenge from conventional wisdom. WFS Scientific Reports, No.20. Voorburg, The Netherlands: International Statistical Institute.
- Islam, M.M., M.K. Barua and R. Bairagi (2003). Quality Characteristics of Field Workers and Contraceptive Use Dynamics: Lessons from Matlab, Bangladesh, *Asia-Pacific Population Journal*, vol. 18, No.1, pp. 43-62.
- Kamal, N. and A. Slogget (1993). The influence of religiosity, mobility and decision making on contraceptive use. In *Secondary Analysis of the Bangladesh Fertility Survey Data 1989*. National Institute of Population Research and Training (NIPORT), Dhaka, Bangladesh.
- Khan, H.T. and R. Raeside (1998). The Determinants of First and Subsequent Births in Urban and Rural Areas of Bangladesh, *Asia-Pacific Population Journal*, vol. 13, No. 2, pp. 39-72.
- Khan, M.A. and M. Rahman (1997). Determinants of Contraceptive Method Choice in Rural Bangladesh, *Asia-Pacific Population Journal*, vol. 12, No. 3, pp. 65-82.

- Koenig, M.A. (2003). The impact of quality of care on contraceptive use: Evidence from longitudinal data from rural Bangladesh, Johns Hopkins Bloomberg School of Public Health, Department of Population and Family Health Sciences, Baltimore, Maryland, USA.
- Knodel, J. (1974). *The decline of fertility in Germany, 1871-1939* (Princeton, Princeton University Press).
- Lesthaeghe, R. and C. Vanderhoeft (1998). Ready, willing and able: A conceptualization of transitions to new behavioural forms. Paper presented for the National Academy of Sciences meeting on the "Social Dynamics of Fertility Change in Developing Countries", Washington DC, USA.
- Lesthaeghe, R. (1977). *The decline of Belgian fertility, 1800-1970* (Princeton, Princeton University Press).
- Mannan, H.R. (2002). Factors in contraceptive method choice in Bangladesh: Goals, competence, evaluation and access, *Contraception*, vol. 65, No. 5, pp. 357-364.
- Mitra, S.N., A. Al-Sabir, A.R. Cross and K. Jamil (1997). Bangladesh Demographic and Health Survey, 1996-97. Calverton, Maryland and Dhaka, Bangladesh: National Institute of Population Research and Training (NIPORT), Mitra and Associates, and Macro International Inc.
- National Institute of Population Research and Training (NIPORT) (2001). Bangladesh Demographic and Health Survey, 1999-2000. Macro International Inc., Calverton, Maryland and Mitra and Associates, Dhaka, pp. 45-76.
- Rosero-Bixby, L. and J.B. Casterline (1993). Modelling diffusion effects in fertility transition, *Population Studies*, vol. 47, No. 1, pp. 147-167.
- Stevens, W.K. (1994). Poor land's success in cutting birth rate upsets old theories. In Griffiths, R.J. (ed.), *Developing World 95/96*, Sixth Edition: 201-202, Guilford: The Pushkin Publishing Group.
- Tsui, A.O., D.P. Hogan, J.D. Teachman and C. Welte-Chanes (1981). Community availability of contraceptives and family limitation, *Demography*, No. 18, pp. 615-625.
- Ullah, M.S. and N. Chakraborty (1993). Factors Affecting the Use of Contraception in Bangladesh: A Multivariate Analysis, *Asia-Pacific Population Journal*, vol. 8, No. 3, pp. 19-30.

Singapore's Family Values: Do They Explain Low Fertility?

Most Singaporeans identified positively with the nuclear family structure and "standard" family roles. Also, Singaporeans are generally pro-children. In this context, it is difficult to support those views that argue that Singaporeans have become highly individualistic and hedonistic.

By Alexius A. Pereira*

To the Government of Singapore, the country's declining marriage and fertility rates are serious national problems. It believes that those trends will have negative consequences for economic growth and Singapore's overall quality of life in the future as Singapore faces a "greying population". In 2003, there were 21,962 marriages registered, lower than 2002 (23,189), the 1990s (average 24,000) and the 1980s (average 23,000) (Singapore Department of Statistics, 2004: 14). Between 1970 and 1975, Singapore's total fertility rate averaged 2.6; in 1980, it was 1.80; in 1986, 1.43; in 1990, 1.83; in 2000, 1.60; and in 2003, it had fallen to 1.24.¹ During the same period, the population census also found that there was a

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higher proportion of Singaporeans remaining unmarried. In the Singapore Census of Population 2000, for the age group 30-34, one in three Singaporean males and one in five Singaporean females were unmarried (Singapore Department of Statistics, 2001: 2). The State is particularly concerned that Singapore's future economy will be unable to sustain an ageing population, where 20 per cent of the population would be aged 65 and older by 2030 (Singapore Department of Statistics, 2002: 6).

The State has implemented a wide variety of measures over the past 20 years in an attempt to reverse the declining marriage and fertility rates. Those measures have included fiscal incentives as well as ideological persuasion (mainly through campaigns such as the "Romancing Singapore" festival). However, by 2004, official statistics showed that the fertility rate had fallen even further, and that there were even more "singles" in Singapore than ever. This had led one prominent Singaporean statistician (Paul Cheung, Chief Statistician, Singapore Department of Statistics, 1983-2004) to opine:

In the 1980s, many singles were single by circumstance. If they did get married, they would probably have two or three kids. So the Social Development Unit came in and stabilised things, and the birth rate actually rose for a few years... But now [2004], more people choose to stay single. And couples choose to have one or no kids. Their lifestyle choices have changed. So influencing the birth rate now will require different methods. (Singapore Straits Times, 23 May 2004)

In other words, while it might have been true that Singaporeans in the recent past agonized over their inability to get married and have children, the new view argues that most contemporary Singaporeans intentionally do not want to get married or to have children. Many policymakers believe that this new view on the family is owing to changes in Singapore's family values. The Government's view is clearly laid out in the executive summary of *Family Matters*, a State-commissioned report of the Public Education Committee on Family:²

1. Values guide the decisions that we make: our relationships, our work and life as a whole; as well as the responsibilities that come with them. Just as families are the basic building blocks of the society, values are the foundations that underpin the family. Family values are the set of tenets necessary for holding a family together. The emphasis given to teaching values in schools and the promotion of Singapore Family Values underscore their importance.

2. Singapore society has seen tremendous changes in the past few decades. Globalisation (*sic*), technological change and the Internet have expanded our spheres of influence beyond our immediate environment. Work and family have become highly interdependent with the rise of dual-income families. Parents face the “time-bind”, which often results in inadequate value transmission to their children. These challenges have the potential to erode the values that ensure the well-being of families.
3. In recent years we have seen a gradual shift in long-held attitudes towards relationships, marriage and family. More Singaporeans are remaining single, delaying marriage and having fewer children. Many place priorities on careers and other life goals, while holding high but often unrealistic expectations about their life partners. Youth are adopting increasingly liberal views towards sexual intimacy, marriage commitment, childbearing, etc. Efforts must be expended now to foster positive attitudes and strengthen our social institutions. (PECF, 2002: 11)

In response to this, the Government of Singapore implemented a broad range of measures to reinforce the family institution as a key strategy to reverse the declining marriage and fertility rates. In his first National Day Rally Speech, the country's third Prime Minister Lee Hsien Loong promised to make “Singapore: A Great Place for Families”, which has become the tagline for the new “pro-family” policies (see <http://www.family.gov.sg/>). In addition to even more fiscal incentives for procreation, the State has taken the lead in completely restructuring the civil service to create a “pro-family” environment, beginning with the implementation of a “five-day working week”, with weekends set aside for “family time” (see <http://aboutfamilylife.org.sg/>). The state also feels very strongly that family values must be “strengthened”, introducing a variety of programmes to promote marriage and childbearing.

Research question

It is fairly clear that several influential individuals and senior policymakers in Singapore believe that the society's family values have been eroded, and this erosion has been a key factor in causing the decline in marriage and fertility rates. The cause of the erosion, according to the State, is “economic development”, and the more recent process of globalization. This study will therefore focus on examining Singapore's family values at the turn of the millennium. More specifically, it intends to analyse and explain whether Singaporeans actually value the family (as an institution), marriage, parenthood, motherhood, childbearing, and

other issues regarding the family. It posits that if Singaporeans hold pro-family views, it can be concluded that Singapore's family values are strong, and vice versa. Towards this end, this study therefore intends to identify and account for Singapore's family values at the beginning of the new millennium. Since the Government of Singapore assumes that "younger" Singaporeans appear to be facing a greater risk of value erosion (as a consequence of modernization, industrialization or globalization), it is also worth examining whether there is a difference in value system between "younger" and "older" Singaporeans.

Theory of intergenerational value change

It is worth noting that the position adopted by the contemporary Government is one where it feels that "value change" seems to be the primary reason behind fertility decline. As sociologists have long noted, there could possibly be many different reasons behind fertility decline (see Van Krieken, 1997 for a summary). Indeed, most sociologists would argue that fertility decline arises from a combination of factors, some sociological, others economic, political and even historical (Alter, 1992; Gillis, 1996). Hence, it is worthwhile to examine the Government of Singapore's logic of "value change", which seems to be drawn from existing theories of "intergenerational value change". The central argument of those theories, which originated from various strands of modernization theory, is that the processes of industrialization and economic growth will lead to greater "individualization" in society. According to Beck:

Traditional bonds (kin, clan, community) tear apart as industrial and postindustrial society emerges. The feasibility of living a more or less detached life is aided by the modern state (1992: 32).

Similarly, Beck-Gernsheim (2002) holds that family life today is characterized by the "post-familial family", where the "traditional" family a lifelong officially legitimated community of father-mother-child, held together through emotion and intimacy is being replaced by a diverse array of lifestyles. She explains that "individualization", also brought about by changes in modern social institutions such as the State, is the key driver behind this mindset change; the result is that people now think and act as individuals rather than based on strong kinship ties and family obligations (Beck-Gernsheim, 2002: 41).

Inglehart (and associates) holds a similar view on value change. With industrialization and economic growth, people place "less emphasis on traditional cultural norms ... especially those norms that limit self-expression" (Inglehart 1997:33-35). In this sense, Beck and Inglehart indirectly agree that the family is less socially crucial than it once was, as it is no longer the key economic or

socialization unit in modern (and post-modern) societies. As Zimmerman (2001) argues, changes in the economy, which in turn lead to changes in the demographic structure of society and changing roles of women, lead to people valuing the family differently. The rise of capitalism and the Industrial Revolution brought challenges to the social norms that "...buttress traditional family values and patriarchal norms of male dominance" (Inglehart and Norris, 2003:16). As more women enter the labour force, with increasing education and qualifications and the emergence of feminist movements, gender roles will have to change and adapt to the new economic structure. Thus, modernization theorists suggest that social trends like late marriage, late parenthood, smaller family units, the "double-income-no-kids" (DINKs) syndrome and increase in divorce rates are becoming more common nowadays and can be attributed to the process of "individualization". In particular, the authors believe the "affluence effect" is the most pronounced factor behind individualization, as affluence allows individuals and family "... to experiment with different forms of self-expression and individuality ... sweeping aside traditional values rooted in generations of want and scarcity" (Zimmerman, 2001:74). As such, with individualization taking hold, modernization theorists would argue that the notion of having "obligations" would eventually erode. Previously, "obligations" were central to social life in traditional societies, as individuals were necessarily held by their obligations towards family, religion or political authorities. With greater individualism, people now have the power of "choice" over what they do. The final link between value change and declining fertility is therefore the belief that marriage, starting a family and childbearing are now personal choices rather than social obligations.

The theory of intergenerational value thus posits that individualization would be more pronounced in the generational group that experienced industrialization and economic growth directly. With greater propensity towards individualization, the generation in question would be more likely to feel that the family (marriage, family structure and roles) and childbearing are less important in their lives. Although those views have been criticized as being "too monochrome and too one-dimensional" (Smart and Shipman, 2004: 506), there is no doubting that modernization theories do have "ideological appeal", especially to the so-called "conservative segments of society" (Gillis, 1996; Zimmerman, 2001). This is because values are used as guides for behaviours, as they tell people what they ought or ought not to do; they "incorporate ideas, symbols, and beliefs that help people make sense of their lives and the world" (Zimmerman, 2001:65-6). Thus, family values are supported by norms, rules and laws that act as moral compasses to "help" people realize the "ideal family" type. Family values are thus conceptions of what is desirable and looking after the family well-being represents the goal of

family policy. Clearly, in such a discourse, the fingerprints of certain interest groups which might be the State, or segments of the State captured by interest coalitions are evident. In such a scenario, the notion of “value change” often tends to imply a “change for the worse”. Hence, some sort of intervention (or policy) is necessary, as seen in the case of the Government’s pro-family policies.

This paper will examine Singapore’s family values, which are defined as how individuals value the institution of the family, rather than “what family life ought to be”. More specifically, it hopes to analyse whether the Singapore’s family values are “strong” or whether the opposite situation of “individualization” has taken place. If “individualization” has taken place, it could therefore be proposed as a primary explanation for Singapore’s declining marriage and fertility rates.

Methodology

The study is based on an analysis of the Singapore-leg of the World Values Survey, conducted in 2002. According to the International Network of Social Scientists, the organization in charge of the survey:

The World Values Survey is a worldwide investigation of sociocultural and political change. It is conducted by a network of social scientist at leading universities all around world. The survey is performed on nationally representative samples in almost 80 societies on all six inhabited continents. A total of four waves have been carried since 1981 (<http://www.worldvaluessurvey.org/>).

An abridged version of the survey was conducted in Singapore by a team from the Department of Sociology, National University of Singapore.³ The WVS-Singapore 2002 was constructed to emulate the proportions of major social categories of the Singapore population, including by gender and ethnicity (see table 1). This dataset consisted of views by Singaporeans on various aspects of the family.

Table 1. WVS-Singapore 2002 Sample, by gender and ethnic group

	Male	Female	Total	Ethnicity (Percentage)
Indian	39	53	92	6.1
Chinese	603	602	1,205	79.9
Malay	98	104	202	13.4
Others	6	7	13	0.9
Total	746	766	1,512	100
Gender (percentage)	49.3	50.7	100	

This study was interested in examining whether Singapore actually “suffered” from weak family values. As mentioned earlier, “weak family values” would refer to individuals placing less importance on various aspects of the family, such as getting married or bearing children. Weak family values can also be understood as implying the presence of “individualization” among the population. Therefore, the first area of inquiry would be to identify how Singaporeans value the family “as an institution”. Do Singaporeans think the family is important? How important is it when compared against other institutions and social groups (such as friends and work colleagues)? The second area of inquiry would involve identifying how Singaporeans value marriage as an institution. Do Singaporeans think the family is an outdated institution? How do Singaporeans feel about women who want to be unmarried single parents by choice? The third area of inquiry would involve identifying how Singaporeans value the nuclear family, as a structure, as well as parenthood. What do Singaporeans think is the “ideal” structure for the family? Must it involve both a husband and a wife? What is the “ideal” number of children a family ought to have, if any? Can career women be as effective in bringing up children? Is being a housewife considered fulfilling?

In addition, since the basic line of inquiry seeks to test the theory of intergenerational value change, in lieu of applicable comparative data, this study artificially segments the sample into two generational cohorts (younger generation and older generation). If there are differences in views between the two cohorts, it might indicate that there are generational differences and therefore possibly a change in values across generations. This however cannot be taken as definite proof of generational change, as only a time-series comparison would qualify. In addition, there are further limitations to this study, which seeks aggregate indicators through the homogenization of the sample. This is because Singapore (and therefore the WVS sample) is highly heterogeneous, in terms of ethnicity, religious affiliation, as well as in terms of class and educational differences. Yet, since this is a preliminary study, it is more important to tease out wider aggregate trends first, in order to get a sense of what Singaporeans feel before more detailed disaggregated analysis follows. Thus, the only social variable examined is that of gender, as the study is interested in finding out whether there were any significant differences between the views of men and women. Gender differences are possible because the issue of the family is intrinsically linked to gender and gender roles within the family.

Data

The family

At the aggregated societal level, data generated from the WVS-Singapore 2002 gave very clear indicators about the family values held by Singaporeans.⁴ Firstly, over 91 per cent of the respondents indicated that they felt that the family was “very important” (see table 2). However, it is significant to note that this figure is slightly lower than the mean of 31 countries (93.2 per cent indicated that family was “very important”) in the WVS⁵ (Fourth Wave) conducted between 2000 and 2001. Interestingly, the Singaporean aggregate response was lower than the response from the United States of America (95.3 per cent), South Africa (95.7 per cent) and Nigeria (98.9 per cent), but higher than China (60.2 per cent), and the Republic of Korea (89.6 per cent) (WVS, 2000).

Table 2. Views on “the family” as an institution (percentage)

	Male	Female	Combined
Very important	90.8	92.7	91.8
Rather important	8.7	6.7	7.7
Not very important	0.5	0.5	0.5
Not at all important	0.0	0.0	0.0
Total	100.0	100.0*	100.0

Note: Figure due to rounding.

When compared to other social institutions, the “family” was ranked as being the most important (see table 3).

Table 3. Percentage of respondents indicating that these social aspects are “very important” (percentage)

	Male	Female	Combined
Family	90.8	92.7	91.8
Work	59.4	45.5	52.3
Friends	41.7	37.4	39.5
Religion	33.5	38.3	35.9
Leisure time	27.4	27.9	26.3
Politics	10.9	9.0	10.0

Singaporeans also generally felt that “there ought to be more emphasis placed on family life”, especially when compared to other aspects of social life (see table 4).

Table 4. Priorities in social life (percentage)

	Combined (male/female)		
	Good	Don't mind	Bad
More emphasis on family life	92.8 (91.7/93.8)	4.6 (5.1/4.0)	2.3 (3.0/1.6)
More emphasis on the development of technology	66.8 (70.5/63.3)	28.6 (26.3/30.8)	4.1 (2.7/5.4)
Greater respect for authority	52.1 (53.2/51.1)	40.3 (39.0/41.7)	7.1 (7.6/6.7)
Less emphasis on money and material possessions	37.9 (35.8/39.9)	45.9 (47.6/44.3)	16.1 (16.6/15.7)
Less importance placed on work	28.6 (27.6/29.7)	37.4 (37.3/37.4)	33.7 (34.8/32.6)

Singaporeans also appeared to prioritize social contact with family members. Nearly three quarters of the sample indicated that they “frequently” spent time with family members, whereas only half indicated that they frequently spent time with friends (see table 5).

Table 5. Social contact – at least weekly (percentage)

	Male	Female	Combined
Spend time with parents or other relatives	72.7	76.3	74.5
Spend time with friends	59.9	43.8	51.8
Spend time socially with colleagues from work or profession	30.0	23.0	26.4
Spend time with people at place of worship or religious organization	19.0	18.2	18.6
Spend time socially with people at sports clubs, voluntary or service organization	13.3	6.3	9.7

Based on those responses, it can be concluded that Singaporeans appear to value the family, as an institution, very highly. They also view various aspects of family life, such as contact with family members, as being important in their lives.

Marriage

More than three quarters of the respondents think that marriage is not an outdated institution (see table 6). However, over 70 per cent of respondents who were single (at the time of the survey) disagreed that “marriage was an outdated institution”.

Table 6. Views on “marriage is an outdated institution” by marital status (percentage)

Marital status	Combined (male/female)	
	Percentage of sample	Disagree
Married	45.1 (40.7/49.5)	83.2 (84.2/82.3)
Divorced	1.5 (1.2/1.7)	67.9 (77.8/61.5)
Separated	0.5 (0.7/0.3)	65.8 (60.0/100.0)
Widowed	1.6 (0.4/2.7)	98.9 (100.0/100.0)
Single	51.2 (56.8/45.8)	72.6 (71.9/73.4)
	Total: 100 (49.3/50.7)	Mean: 77.8 (77.1/78.4)

In addition, when the respondents were asked: “If someone says a child needs a home with both a father and a mother to grow up happily, would you tend to agree or disagree?”, over 93 per cent (standard deviation of 0.512) indicated that they agreed. This implies that Singaporeans valued the “nuclear” family structure, which consists of a husband and a wife, along with their children, living in a household. Further, most Singaporeans disapproved of women as single parents by choice (defined as a woman choosing to have children without having a stable relationship with a man) (see table 7).

Table 7. Views on “family structure” – agree (percentage)

	Male	Female	Combined
Nuclear family structure important	95.3	91.6	93.4
Single-parenthood for women by choice is wrong	74.1	68.1	71.1

The WVS-Singapore 2002 also found that Singaporeans tended to hold rather “modern” views towards family roles (see table 8). Over 70 per cent of the respondents felt that a working mother could establish just as warm a relationship with their children, than a mother that does not work (outside the home). In addition, over 80 per cent of respondents felt that both the husband and the wife should contribute to the household income. Finally, nearly two thirds of the respondents indicated that being a “housewife” was just as fulfilling as working for pay.

Table 8. Views on “family roles” – agree (percentage)

View	Male	Female	Combined
Working mother alright	67.5	73.4	70.5
Housewife fulfilling	68.6	68.6	68.6
Both spouses should contribute to household income	77.8	82.5	80.2

Interestingly, those views on “family roles” saw some variation between the male and female responses. For instance, a slightly larger proportion of women than men felt that “a working mother could establish just as warm a relationship with their children”, and also the view that “both spouses should contribute to the household income”. Overall, the views on family roles can generally be understood as being fairly “modern” views, as opposed to “traditionally conservative” views, which would disapprove of working women. By contrast, the views indicated that most Singaporeans felt that women could adopt both roles (career woman or housewife), and that it was entirely the woman’s own choice, as opposed to only being allowed to perform traditional female roles (mother, wife and homemaker). This therefore indicates that employment, by itself, is not viewed as being an obstacle to getting married as well as having or raising children.

Childbearing

On the issue of having children, very few Singaporeans indicated that they did not wish to have children (1.3 per cent of the sample), whereas over 80 per cent of the sample felt that the “ideal size of the family” included having either two or three children (see table 9).

Table 9. Views on “ideal size of family” (percentage) by marital status

Number of children (male/female)	Combined (male/female)		
	Married (n = 683)	Single (n = 829)	Total (n = 1,512)
None	0.9 (0.6/1.1)	1.6 (1.7/1.4)	1.3 (1.3/1.2)
One	2.5 (3.5/1.7)	3.6 (4.3/2.7)	3.1 (4.0/2.2)
Two	45.0 (42.3/47.2)	53.9 (56.4/51.0)	49.9 (50.7/49.1)
Three	33.9 (34.9/33.0)	28.0 (27.7/28.4)	30.7 (30.6/30.7)
Four	14.1 (14.1/14.1)	9.1 (6.2/12.4)	11.3 (9.4/13.2)
Five or more	2.4 (3.1/1.7)	3.9 (3.7/4.1)	2.2 (2.1/2.3)
Mean	2.74	2.55	2.65
Median	3.00	2.00	2.00
Mode	2	2	2
Standard Deviation	1.103	1.146	1.162
Variance	1.217	1.314	1.349

It was also interesting to note that there were only minor differences in views between those who were married at the time of the survey and those who were single. In aggregate terms, it could be argued that those that were single generally preferred having slightly fewer children than those that were married. However,

most singles did not indicate that they did not want children at all. When comparing the responses of the “ideal” number of children with the actual number of children the respondents had, there were some variances (see table 10).

Table 10. Ideal number of children, for married respondents (n = 683)

Number of children	Combined (male/female)	
	Actual	Ideal
None	12.3 (15.6/9.6)	0.9 (0.6/1.1)
One	19.9 (20.1/19.6)	2.5 (3.5/1.7)
Two	36.2 (37.1/35.6)	45.0 (42.3/47.2)
Three	22.5 (16.9/27.0)	33.9 (34.9/33.0)
Four	4.8 (7.1/3.1)	14.1 (14.1/14.1)
Five or more	4.3 (3.2/5.1)	3.6 (4.5/3.0)
Total	100	100

There could be some possible explanations for this outcome. First, the desired number of children can be explained as being higher than the actual number because some families may continue to have children (i.e., in the future). The second possible reason is that Singaporeans would like to have more children than they currently have, but choose not to do so, for various reasons. In this sense, the second reason could be a policy concern.

On a related issue, only slightly more than half the respondents felt that childbearing, by itself, is not necessary for a woman to feel “fulfilled” (54.5 per cent agreed to the statement “Childbearing is necessary for a woman to feel fulfilled”) (see table 11). This would suggest that nearly half of the sample were of the view that having children was more a personal choice than a social obligation. While it might follow that respondents having indicated that women needed to have children to feel fulfilled will perceive that it is important to have children, it is more significant that most of those that indicated that having children is a personal

choice still stated that they valued having children. Thus, it could be concluded that most Singaporeans valued having children.

Table 11. Views on childbearing (percentage)

	Combined (male/female)		
	Necessary	Not necessary	Don't know
Childbearing is necessary for women to feel fulfilled	54.5 (52.3/56.6)	42.7 (43.1/42.2)	2.9 (4.6/1.2)
Standard deviation	1.354		

Up to this point, the emergent data suggest that there was not too much variation between the views of men and women in the survey. As mentioned earlier, the most significant difference of opinion was found with issues concerning gender roles within the family.⁶

Generational change?

While the aggregate data from the Singapore-leg of the World Values Survey suggest that Singaporeans generally value the family, childbearing and marriage, it is important to examine whether there is any difference in opinions between age groups. Age groups are important to this analysis because the Government of Singapore and various other state agencies seem to think that so-called “younger” Singaporeans appear to face a higher risk of value erosion or “individualization”, as suggested in the PECF’s recommendations (article 3, as mentioned earlier). For this preliminary study, “younger” Singaporeans are defined as being born after Singapore’s independence in 1965 (i.e. those who are aged 37 years old and under), while those born before independence (i.e. those who are aged 38 years old and over) would be considered “older” Singaporeans.⁷ The year of independence as the dividing point was chosen as it was assumed that each group would have been growing up and socialized under different circumstances. Those born before independence would probably have faced Singapore’s earlier economic hardships, whereas those born after independence were probably growing up during Singapore’s economic boom. If there was no difference of opinion between the two age groups, then it could be suggested that there was no value change across time. Although there is a statistical problem in categorizing the age groups as the Singapore-leg of the WVS included 978 respondents aged 37 years old and under during the year 2002, while there were 532 respondents who were aged 40 years old and over the resultant data are still useful in shedding some light on that issue.

The oldest respondent was born in 1922, making him around 80 years old at the time of the survey, there were 83 respondents who were 15 years old (the minimum age to participate in the survey). The mean age of all the respondents was between 32 and 33 years old.

For this analysis, the responses by each age group to several key issues were compared, and then ranked on the basis of the degree of difference of opinion. Just by comparing means, it was interesting that there was almost no difference in the two age groups' opinion that "a working mother can establish a warm relationship with her children", but by contrast, there was a very significant difference of opinion as regards "childbearing is necessary for women to feel fulfilled" (see table 12).

Table 12. Views on family life, by age cohorts and gender (percentage)

	Younger			Older		
	Men	Women	Total	Men	Women	Total
n	516	462	978	229	303	532
Agree that childbearing is necessary for women to feel fulfilled	43.4	46.9	45.0	72.5	71.6	72.0
Agree that marriage is an outdated institution	25.0	21.6	23.4	12.2	17.2	15.0
Approve of single parent mother by choice	18.2	24.1	21.0	11.8	13.8	12.9
Nuclear family important	94.0	90.5	92.3	98.3	93.4	95.5
Agree that being a housewife can be fulfilling	69.2	65.2	67.4	67.2	73.7	70.9
Family is very important	90.3	92.0	91.1	92.1	93.7	93.0
Agree that a working mother can establish a warm relationship with children	70.5	72.0	71.2	60.5	75.5	69.1

Note: "Younger" category: Respondents aged 37 years old and below as of the year 2002; "older" category: respondents aged 38 years old and above as of the year 2002.

There also appears to be some difference of opinion between the two age groups over the issue of marriage as an outdated institution. Younger respondents were willing to agree that marriage was an outdated institution compared to older respondents, with almost a 10 per cent difference in opinion. Although the overall number of respondents for both groups is still relatively low, it again suggests that there is some value change. The implication here is that younger Singaporeans

seem to now accept alternative institutions to marriage, such as cohabitation (without marriage) and singlehood. The other issue which generated a significant difference in opinion is that it is acceptable for women to be single parent by choice (nearly 8 per cent difference). More specifically, younger Singaporeans appear more open to that possibility, whereas older Singaporeans generally expressed disapproval at such a personal choice.

It was also interesting to examine the difference in opinion on the issue of the “ideal number of children in a family” between the age groups (see table 13). In general, younger Singaporeans indicated that they viewed having two children per family as being ideal, whereas older Singaporeans were split between two and three children per family.

Table 13. Ideal number of children in the family, by age cohort and gender (percentage)

	Younger			Older		
	Men	Women	Total	Men	Women	Total
n	516	462	978	229	303	532
None	1.9	0.9	1.4	0.0	2.0	1.1
One child	3.3	2.4	2.9	5.7	1.7	3.4
Two children	57.2	57.1	57.2	36.2	37.0	36.7
Three children	28.7	27.5	28.1	35.4	35.6	35.5
Four children	5.8	10.2	7.9	17.5	17.8	17.7
Five or more children	1.9	1.1	1.5	3.9	3.7	4.3
Don't Know\ no answer	1.2	0.9	1.0	1.3	1.3	1.3
Total	100	100	100	100	100	100
Mean	2.48	2.53	2.51	2.91	2.94	2.92
SD	1.096	0.990	1.047	1.276	1.329	1.305

There are several possible explanations for this difference of opinion. On the one hand, it could be argued that older Singaporeans hold traditional values, which in the Asian case would refer to valuing large families and having large numbers of children per family, whereas younger Singaporeans are more modern in that they prefer smaller close-knit nuclear families, usually consisting of parents and two children. Alternatively, there is the possibility that an economic reason is behind the difference, as younger Singaporeans feel

that contemporary Singapore's cost of living is very high, and therefore it is uneconomical to have more than two children per family. Conversely, older Singaporeans would view the fact that having more children was economically functional, as the children would jointly contribute to supporting the parents in their old age. At this stage, it is impossible to pinpoint the actual reason for this difference in opinion without engaging in deeper qualitative research on the issue. However, what is clear is that there are some differences of opinion concerning certain issues, which could be an indicator of value change across generations. Given that the main differences in views were on the issues of women's childbearing being a choice, that marriage is an outdated institution, and acceptance of single parenthood by choice, this suggests that indeed some degree of individualization has taken place for the "younger" generation.

Conclusion and policy implications

At an aggregate level, the data from the WVS-Singapore 2002 suggest that most Singaporeans strongly value the family and marriage as an institution, as well as family life as being "very important". Most Singaporeans identified positively with the nuclear family structure and "standard" family roles. Also, Singaporeans are generally pro-children. In this context, it is difficult to support those views that argue that Singaporeans have (already) become highly individualistic and hedonistic. For example, Singaporeans have not given any indication that they favour a lifestyle of single-parenthood or unmarried cohabitation. There is also no indication that Singaporeans solely think of themselves, their work or friends, ahead of family members.

Thus, at the aggregate level, those views mirror earlier findings from studies done after the 1990 Singapore Census of Population, which found that marriage and parenthood were important "personal goals" for the large majority of Singaporeans (see Quah, 1998 and 1999). This suggests that Singapore faces a "social problem", which can be defined as a sizable gap between the ideals and the reality in society (Coleman, 1998). It is clear that most Singaporeans value marriage, parenthood and childbearing, but somehow do not seem able to achieve those personal goals. It could be further argued that the problem is increasing because the social outcomes today are even further away from the ideals than in the corresponding period a decade earlier. In this sense, low marriage and fertility rates are both a national as well as a personal issue. As a personal issue, it is probably highly likely that most Singaporeans do feel some degree of anxiety and stress over not being able to get married or to have children (or as many children as they would like to).

Viewed from a different angle, this research proposes that Singapore's low fertility is therefore not because of a high degree of individualism among the people. This finding probably gives greater impetus to the State's current pro-family strategy, which is trying to assist Singaporeans in balancing their work and personal lives, and coping with the perceived high economic costs of having and raising children. However, from a policy perspective, it is recommended that the strategy needs to have greater direct impact. This is because at the moment, the various policies within this strategy are mostly guidelines and recommendations rather than enforceable laws. Since the introduction of those policies, the organizations that have been putting in place the improved "work-life" arrangements are the State's own agencies, ministries and statutory boards. Outside of the mandatory extension of maternity leave (which is upheld by the law), all the other "pro-family" recommendations remain generally optional for firms in the private sector. Still, the State's strategy remains important, as it demonstrates that the Government is trying to create a pro-family sociocultural environment. The potential social problem here would be that since economic issues are deemed to be more important than family life, which might be perceived as being impossible to achieve, the next generation could completely give up even trying to form a family. In this sense, the State's current policy will be useful to those who would like to form a family but they might view their career aspirations and other economic issues as potential obstacles.

Viewed from the State's perspective, there probably is some urgent need to further promote Singapore as a "pro-family" society. This is because this research also found that there are already some mindset differences between younger and older Singaporeans, especially on issues such as childbearing, whether marriage is outdated as an institution, and being a single parent by choice. The widest difference of opinion was on the issue of childbearing for women as a personal choice, where the difference between the cohorts was about 26 per cent. The difference on all other issues was less than 10 per cent, with four issues returning less than 5 per cent difference. So while family values appear to be generally "strong" if the entire sample is viewed as a single cohort, it suggests that the mindset of individualism has already taken hold among some "younger" Singaporeans. While the degree of individualism does not appear to be very strong at the moment, there is the "danger" that this might become the "norm" among younger Singaporeans in the future. How does the State stem or even reverse this trend? Given that younger Singaporeans generally demonstrate that they have "fairly strong" family values, while older Singaporeans have "very strong" family values, the policy implication is that the State should focus on making Singapore a pro-family society rather than embark upon an ideological campaign to "improve

family values". This is mainly because the latter could have the opposite effect on what is generally a highly educated and affluent society, which might not view "orders" from above too favourably. Hence, the State must make hay while the sun shines; Singapore currently has strong family values, Singaporeans would like to get married and to have children, and appear to be asking for "help" to do so. If the State can help those people resolve their personal problems, it is more likely that they will retain and transmit strong family values to the next generation.

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Endnotes

1. Compiled from various reports published by the Singapore Department of Statistics (<http://www.singstat.gov.sg>)
2. This is how the PECF report describes itself: Released on 15 April 2002, this report represents the work of more than 150 individuals (comprising members of the various PEC Committees) from over 100 different organizations. It serves as a public education blueprint that complements the Government's initiatives in creating a total social environment conducive to marriage, families and the raising of children. The Public Education Committee on Family was formed in September 2000 to support the Ministerial Committee and Working Committee on Marriage and Procreation (<http://aboutfamilylife.org.sg>)
3. The author is a team member of the Singapore-leg of the World Values Survey 2002.
4. Unless otherwise specified, all data presented are drawn from the WVS-Singapore 2002.
5. The so-called Fourth Wave of the WVS was conducted between 1999 and 2001 and covers 16 countries, some for the first time and others for the fourth time. Singapore's data will be added to the fourth wave. See <http://www.worldvaluessurvey.org/> for more details on the WVS itself.
6. Statistically, the largest gender difference found in this survey was concerning the view: "Marriage is an outdated institution", for the subgroup of "divorced" respondents. However, this might be an anomaly as there were very few respondents (9 male, 13 female), thus probably skewing the response rate.
7. The age of the respondents for all the data reflects their age in the year 2002, when the World Values Survey was conducted in Singapore.

References

- Alter, G. (1992). "Theories of fertility decline: A nonspecialist's guide to the current debate", in Gillis, J. R., L.A. Levine, and D. Levine (eds.) *The European Experience Of Declining Fertility, 1850-1970: The Quiet Revolution*, Cambridge: Blackwell, pp. 13-30.
- Beck, U. (1992). *Risk Society*, London: Sage.
- Beck-Gernsheim, E. (2002). *Reinventing the Family*, Cambridge: Polity Press.
- Coleman, J. W. (1998). *Social Problems: A Brief Introduction*, New York: Longman.
- Gillis, J. R. (1996). *A World of Their Own Making: Myth, Ritual and the Quest for Family Values*, New York: Basic Books.
- Inglehart, R. (1997). *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies*, Princeton, N.J.: Princeton University Press.
- Inglehart, R. and P. Norris (2003). *Gender Equality and Cultural Change Around the World*. Cambridge, U.K.; New York: Cambridge University Press.
- PECF (Public Education Committee on Family) (2002). "Family Matters!", Report of the Public Education Committee on Family (commissioned by the Ministry of Community, Youth and Sports, Singapore), Public Education Committee on Family: Singapore, ([http://www.mcys.gov.sg/MCDSFiles/download/Family%20Matters%20\(Full\).pdf](http://www.mcys.gov.sg/MCDSFiles/download/Family%20Matters%20(Full).pdf))
- Quah, S. (1999). *Study of the Singapore Family*. Singapore: Ministry of Community Development.
- _____ (1998). *Family in Singapore: Sociological perspectives (2nd ed)*, Singapore: Times Academic Press.
- Schwartz, S. H. (1994). "Are there universal aspects in the structure and content of human values?", *Journal of Social Issues*, No. 50, pp. 19-45.
- Singapore Department of Statistics (2004) *Report on Marriages and Divorces 2003*. Singapore: Singapore Department of Statistics.
- _____ (2002). "Twenty-Five Years of Below Replacement: Implications for Singapore", paper presented at Workshop on Fertility Decline, Below Replacement Fertility and the Family in Asia: Prospects, Consequences and Policies - Twenty-Five Years of Below Replacement Fertility, 10-12 April 2002, National University of Singapore, Singapore.
- _____ (2001). *Singapore Census of Population 2000: Advance Data Release No. 8 (Marriage and Fertility)*, Singapore: Singapore Department of Statistics.
- Smart, C. and B. Shipman (2004). "Visions in monochrome: families, marriage and the individualization thesis", *British Journal of Sociology*, vol. 4, No.55, pp. 491-509.
- UNDP (United Nations Development Programme) (2003). *Human Development Report*. Geneva and New York: UNDP, 2003
- Van Krieken, R. (1997). "Sociology and the reproductive self: demographic transitions and modernity", *Sociology*, vol. 3, No. 31, pp. 445-471.
- World Bank (2002). *World Development Report*. New York: Oxford University Press.
- Zimmerman, S. (2001). *Family Policy: Constructed Solutions to Family Problems*. Thousand Oaks, California: Sage.

International Labour Recruitment: Channelling Bangladeshi Labour to East and South-East Asia

Given that most host countries in East and South-East Asia lack a viable alternative, dependence on migrant workers will be long term even if they choose not to integrate them permanently into their societies. Any migrant worker policy has to recognize that such dependence is here to stay.

By Lian Kwen Fee and Md Mizanur Rahman*

International labour migration in Asia has experienced the most rapid growth in the last few decades. There are two major destination regions for labour migrants in Asia: Middle East and East and South-East Asia. In addition to countries of the Middle East, since the early 1980s we observe a sustained growth of foreign

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manpower in the prosperous countries of East and South-East Asia, particularly Singapore, Malaysia, the Republic of Korea and Japan. Those countries have followed specific temporary migrant worker programmes in recruiting foreign workers although the name and nature of the programmes vary. One can identify two types of temporary labour migration programmes implemented in the region – the “work permit” and the “trainee” programmes. Each migrant worker programme offers different rights and privileges to migrants. Malaysia and Singapore hire foreign workers under the “work permit” system, which provides special benefits to them as workers. But the Republic of Korea and Japan pursue a conservative policy with regard to the admission of foreign workers. They hire foreign workers mainly under the “trainee” system, which restricts benefits as trainees are not formally recognized as workers. In general, labour migration policies in the receiving countries in Asia can be broadly summarized as follows: limiting labour migration, limiting the duration of migration and limiting integration (Piper, 2004: 75).

Recruitment constitutes an important part of the processes of this labour migration. It is dominated by recruiting agencies and brokers, who act as intermediaries between workers and foreign employers and those agencies and brokers are responsible for the mobilization, recruitment, documentation and transportation of workers overseas (see Jones and Pardthaisong, 1998; Skeldon, 1997). Whether it is an authorized or unauthorized form of labour migration, the role of the migration institution is vital in the channelling of migrant workers, without it few migrants would have the information or contacts needed for successful migration. Given the reality of rapidly increasing numbers of recruiting agencies in the home and host countries in the region,¹ this paper examines the perpetuation of labour migration through the prism of institutional theory. Although some literature explicitly suggests that Asian labour migration is a consequence of the rapid development of the “migration industry” (see Goss and Lindquist, 2000; Skeldon, 1997), research has not adequately focused on the role of institutions in contemporary labour migration. The authors attempt to advance the knowledge by focusing on the recruitment of Bangladeshi migrant workers to the countries of East and South-East Asia, particularly Singapore, Malaysia, the Republic of Korea and Japan. Those four host countries have been selected because they are the principal destinations for Bangladeshi migrant workers in this part of the world.

While this paper largely discusses the role of migration institutions in channelling Bangladeshi migrants under different migrant worker programmes, it also focuses on the general consequences of such programmes and the policy principles that can be pursued by these host countries to meet the demand for

migrant labour in order to minimize negative consequences. The paper is divided into four sections: the first deals briefly with the significance of institutional theory to labour migration; the second deals with various labour recruitment institutions in Bangladesh; the third focuses on the role of different institutional actors in the Bangladeshi labour migration to East and South-East Asia; and, finally, the conclusion suggests policy recommendations.

Significance of institutional theory to labour migration

The greater part of migration research focuses on the causes for international migration. To explain the causes of migration, macro-level theories address the organization of socio-economic relations, the geographic division of labour and the political mechanisms of power and domination (Portes and Walton, 1981; Amin, 1974; Wallerstein, 1974). Micro-level theories largely explain migration as a consequence of either economic cost-benefit calculation of individuals or as a strategy of households to diversify incomes and minimize risks – such as unemployment, loss of income, or crop failures (Todaro, 1976; Lewis, 1954; Stark, 1991). However, Massey and his associates (1994) argue that the conditions that cause migration may be different from those that perpetuate migration. Two theoretical traditions have been developed to explain the forces that perpetuate and sustain migration, network and institutional theory. Researches have shown in great detail that migrants are linked to each other through social networks and those networks are the social infrastructure that sustains the migratory process (Massey, Alarcon, Durand and Gonzalez, 1987; Boyd, 1989; Faist, 2000). Some authors also refer to networks, social capital and individual human capital as the “engines of immigration” (Phillips and Massey, 2000).

This paper argues that despite the contribution of the network analyses, the investigation of perpetuation and sustenance of temporary labour migration flows in Asia requires examination of the complex infrastructure of entrepreneurial actors and activities that constitute the migration institution. Institutional theory moves beyond individual or structural approaches to understanding the perpetuation of international labour migration (Sobieszczyk, 2000: 393). According to Goss and Lindquist (1995: 336), an international migrant institution is usually a complex organization consisting of knowledgeable individuals and agents of organizations (from migrant associations to multicultural corporations) and other institutions (from kinship to the State). Individuals' migration experiences help to support migration institutions because successful migrants are likely to make profit, become brokers of information and provide advice to others. Institutional theory assumes that migrant recruitment policies and practices often serve to create a black market in labour movement because of the high profits to be

made by meeting the demand for overseas employment (Massey and others 1994; 1993). Some authors also refer to it as the “other engine of migration” (Hernandez-Leon, 2005:2).

Some attempts have been made to focus on the role of institutions in facilitating labour migration within East and South-East Asia. For example, Spaan (1994, 1999) examines the specific role that middlemen and brokers play in international migration. He provides insights into the role of different actors in stimulating Javanese international migration to Singapore, Malaysia and the Arab Gulf. In another, Sidney Jones (2000) discusses the various actors involved in Indonesian labour migration to Malaysia. Jones and Pardthalsong (1998) in their studies on Thai international labour migration offer an interesting explanation of different migrant institutions in Thailand and their role in the migration process. In another study, Sobieszczyk (2000) discusses in detail the development and functions of migrant institutions in Thailand. Okunishi (1996) provides an interesting analysis of different labour contracting systems in Japan. Wee and Sim’s (2004) work focuses on the role of transnational networks in female labour migration. They argue that this transnational network has functioned as a bridge between the workers, especially female workers, and international labour markets. Recently, Battistella and Asis (2003) examined unauthorized migration in South-East Asia and provided an update on migration policies and paths within the region. While those studies mainly deal with labour recruitment from and within East and South-East Asia, there exists a dearth of scholarship on the recruitment of migrant workers from any South Asian country to this region. This study attempts to contribute to this under-researched area.

Labour recruitment system

Bangladesh

Bangladesh is a major emigrant country in Asia. According to one estimate, the total cumulative figure for Bangladeshi migrants overseas until 2004 was approximately 4 million and for East and South-East Asia alone it was around 450,000² (table 1). Remittance has been a major source of foreign currency earnings. Bangladesh received around US\$ 32 billion as remittances from its overseas migrant population between 1976 and 2004. Around 200,000 Bangladeshis annually migrated overseas for temporary employment in the 1990s. At the end of 2001 a new Ministry, namely the Ministry of Expatriates’ Welfare and Overseas Employment (MEWOE) was created to protect the interests and rights of Bangladeshi migrant workers (Bruyn and Kuddus, 2005). Bangladeshi migrants have started coming to the countries of East and South-East Asia mainly after the Gulf crisis in 1990. In the migration process, prospective migrants

normally use services of five public and private institutions, which control the functional linkages between Bangladeshi workers and employers overseas. They are: (a) the BMET (Bureau of Manpower Employment and Training); (b) BOESL (Bangladesh Overseas Employment Services Limited); (c) Recruiting agents; (d) Sub-agents; and (e) finally, migrant-trafficking syndicates.

Two governmental bodies that fall under the MEWOE and deal with international labour migration are BMET and BOESL. BMET was established in 1976 with the specific purpose of meeting the manpower requirement of the country and for export of manpower overseas (Khondker, 2004; Rahman, 2003). On the Government's side, the BMET monitors and supervises the overall recruitment process. It issues and renews the licenses of recruiting agencies, grants permission to agencies to recruit, provides immigration clearances after verifying visa papers and employment contracts. In 1984, the Government established the BOESL as a limited company. The main purpose of creating this company was to provide honest, efficient and quick services to valued foreign employers in the matter of recruitment and deployment of manpower (see Siddiqui, 2001). The agency coordinates with the Bangladeshi missions abroad in assessing the needs of labour and puts up advertisements in newspapers for recruitment. M. Alimullah Miyan (2003: 12) argues that BOESL operates as a model institution in the manpower sector to work in healthy competition with the private agencies. The BOESL usually deals with professionals and skilled migration.

Private recruiting agencies have come into being in the late 1970s to serve as an important source of information for the growing prospective migrants. Those agencies act as middlemen between foreign employers and local prospective migrants. The recruiting agencies disseminate information through public advertisement and prospective migrants contact them through brokers or sub-agents to secure overseas employment. They charge the prospective migrant workers for their services. After recruitment of workers, the list of recruits along with signed contracts and other documents are submitted to BMET for clearance. A sizeable number of individuals also manage to secure job contracts directly from the employers overseas through personal networks. However, they are also obliged to approach the authorized recruiting agencies to obtain clearance from BMET. Thus, under certain circumstances the relationship between the migration industry and migrant networks is one of complementarity. However, the role of recruiting agents remains vital in the migration process. The recruiting agencies were organized under the Bangladesh Association of International Recruiting Agencies (BAIRA) in 1984 with representatives from 23 recruiting agencies. The association had a membership of 475 agencies in 1998 and 700 in 2003.³

Table I. Flow of Bangladeshi migration by country of employment

Year	Saudi Arabia	Kuwait	United Arab Emirates	Qatar	Iraq	Libyan Arab Jamahiriya	Bahrain	Oman	Malaysia	Republic of Korea	Singapore	Brunei Darussalam	Others	Total	Remittances (million US\$)	
1976	217	643	1,989	1,221	587	173	335	113					809	6,087	23.71	
1977	1,379	1,315	5,819	2,262	1,238	718	870	1,492					632	15,725	82.79	
1978	3,212	2,243	7,512	1,303	1,454	2,394	762	2,877	23				1,029	22,809	106.90	
1979	6,476	2,298	5,069	1,383	2,363	1,969	827	3,777			110		223	24,495	172.06	
1980	8,695	3,687	4,847	1,455	1,927	2,976	1,351	4,745	3		385		2	30,073	301.33	
1981	13,384	5,464	6,418	2,268	13,153	4,162	1,392	7,352			1,083		1,111	55,787	304.88	
1982	16,294	7,244	6,863	6,252	12,898	2,071	2,037	8,248			331		524	62,762	490.77	
1983	12,928	10,283	6,615	7,556	4,932	2,209	2,473	11,110	23		718		913	59,220	627.51	
1984	20,399	5,627	5,185	2,726	4,701	3,386	2,300	10,448			792		550	77,694	500.00	
1985	37,133	7,384	8,336	4,751	5,051	1,514	2,965	9,218			25		254	68,658	576.20	
1986	27,235	10,286	8,790	4,847	4,728	3,111	2,597	6,255	530				711	74,017	747.60	
1987	39,292	9,559	9,953	5,889	3,847	2,271	2,055	440					709	68,121	763.90	
1988	27,622	6,524	13,437	7,390	4,191	2,759	3,268	2,219	2				654	101,724	757.84	
1989	39,949	12,404	15,184	8,462	2,573	1,609	4,830	15,429	401		229		654	101,724	757.84	
1990	57,486	5,957	8,307	7,672	2,700	471	4,563	13,980	1,385		776		517	103,814	781.54	
1991	75,656	28,574	8,583	3,772		1,124	3,480	23,087	1,628		642		585	147,131	769.30	
1992	93,132	34,377	12,975	3,251		1,617	5,804	25,825	10,537		313		228	188,124	901.97	
1993	106,387	26,407	15,810	2,441		1,800	5,396	15,866	67,938		1,739		328	244,508	1,009.09	
1994	91,385	14,912	15,051	624		1,864	4,233	6,470	47,826	1,558	391		1,335	222	186,326	1,153.54
1995	84,009	17,492	14,686	71		1,106	3,004	20,949	35,174	3,315	3,762		2,659	303	187,543	1,201.52
1996	72,734	21,042	23,812	112		1,966	3,759	8,691	66,631	2,759	5,304		3,062	383	1,355.34	1,355.34
1997	106,534	21,126	54,719	1,873		1,934	5,010	5,985	2,844	889	27,401		303	798	231,077	1,525.03
1998	158,715	25,444	38,796	6,806		1,254	7,014	4,779	551	578	21,728		169	418	267,667	1,599.24
1999	185,739	22,400	32,344	5,611		1,744	4,639	4,045		1,501	9,596		1	204	268,182	1,806.63
2000	144,618	594	34,034	1,433		1,010	4,637	5,258	17,237	990	11,095		1,420	89	222,686	1,954.95
2001	137,248	5,341	16,252	223		450	4,371	4,561	4,921	1,561	9,615		2,958	1,192	188,965	2,071.03
2002	163,269	15,769	25,462	552		1,574	5,421	3,854	85	28	6,856		154	204	225,256	2,847.79
2003	162,131	26,722	37,346	94		2,855	7,482	4,029	28	3,771	5,304		980	211	254,190	3,177.63
2004	139,031	41,108	47,012	1,268		606	9,194	4,435	224	215	6,948		1,802	3,424	272,958	3,573.76
Total	2,045,428	397,687	499,429	93,895	66,343	52,937	107,524	236,239	258,040	17,166	116,296	15,412	18,619	3,924,027	32,330.08	

Source: http://www.bmet.org.bd/Flow_Migration.htm, accessed in June 2005.

Note: Table excludes countries such as the United Kingdom, Lao People's Democratic Republic, Mauritius, Jordan, Italy, Spain, Madagascar, Lebanon, Namibia and the category of Miscellaneous provided by BMET for two reasons: they represent very insignificant numbers and this figure would not fit out in one page without excluding them.

Sub-agents form another level of institutional structure surrounding migration. The term sub-agents refers here to those individuals who work in collaboration with authorized or unauthorized recruiting agents as a link to prospective migrants, recruitment agencies and overseas employers. Those sub-agents are commonly known as brokers (*dalals*). There are mainly of two types: local brokers and migrant brokers. Local brokers as the name suggests are from the communities of origin of prospective migrants. Migrant brokers are those enterprising migrants who are working overseas for a considerable period. Because of their long migration experience, they acquire sufficient knowledge about both authorized and unauthorized channels of migration, and later use them for profits. The final group is the migrant-trafficking syndicate. Migrant-trafficking syndicates involved in unauthorized migration are mainly authorized and unauthorized travel agents. They are engaged in a range of illegal activities like falsifying documents, changing the names and photos of workers on documents, misusing visas and circumventing restrictions imposed by receiving countries.

Singapore

Since the late 1980s foreign labour has had a significant influence in Singapore's economy. The main reason for relying on foreign manpower in Singapore is relatively simple. Hui (2002) argues that the small size of the domestic population could not have supported the rapid expansion of the economy. Singapore's economic growth between 1990 and 1998 averaged 7.9 per cent per annum. He showed that, over this same period, more than 604,000 new jobs were created against an increase of 458,000 in the domestic population and an increase of about 300,000 in the domestic labour force. Clearly, without the inflow of foreign manpower to supplement the domestic labour force, the phenomenal growth in employment and GDP over that period would not have been possible (Hui, 2002). Singapore pursues a transparent recruitment policy and has changed it at times to meet the demand for foreign workers (see Wong, 1997). The present work pass system provides four classes of foreign labour: Class P, Class Q, Class S and Class R (for details see, Rahman and Lian, 2005). P-Passes are for professionals, entrepreneurs and investors; Q-Pass for skilled workers; S-Pass for technicians; and R-Passes for semi-skilled and unskilled workers including domestic helpers. Presently, there are around 620,000 foreign workers in Singapore (*The Sunday Times*, (Singapore) 13 November 2005). Of the 620,000 foreign workers, 540,000 are work permit holders and the remaining 80,000 are employment pass holders.

Singapore is a major receiving country for Bangladeshi migrant workers. Presently, there might be as many as around 40,000 Bangladeshi migrant workers.⁴ They predominantly come under the R-Pass category and are engaged

mainly in the construction sector. Spaan's figure was adopted to describe the recruitment network of authorized migrants to Singapore (figure 1). As Bangladeshi labour migration to Singapore is predominantly authorized migration, recruiting agencies play a major role in the migration process. In general, a prospective migrant visits the local broker to initiate migration. Those local brokers work for both migrant brokers and recruiting agents from Dhaka. Partial payment is a precondition for initiating the recruitment process. Once they receive partial payment from prospective migrants, the brokers contact the recruiting agents or migrant brokers depending on the prior agreement for job placement. Once the recruiting agent or migrant broker receives the necessary papers and partial fees from the local agents, they approach recruiting agents in Singapore for an In-Principle Approval (IPA) for hiring foreign workers (Khondker, 2004; Rahman, 2003).

Figure 1. Recruitment network of authorized migrant workers to Singapore

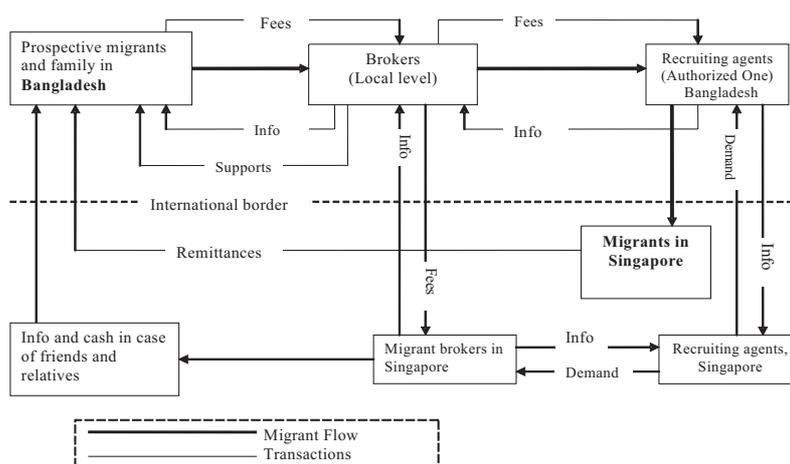


Figure 1: Recruitment network of authorized migrant workers to Singapore
 Note: The figure is adapted from Ernst Spaan, 1994

A prospective migrant requires an IPA to enter Singapore. This is issued by Singapore's Ministry of Manpower for a particular company on the basis of genuine need for foreign workers. Recruiting agents in Singapore apply for IPAs. Because of the limited number of jobs in Singapore and the huge supply of manpower in Bangladesh, some local agents get involved in unhealthy practices, which expose some prospective migrants to victimization. A first time unskilled migrant usually pays between US\$ 3,500 and 5,000 as fees for a two-year contract. However, for the

skilled and second time migration the fees vary noticeably (they can be as low as a few hundred dollars). When a prospective migrant reaches Singapore, his employer receives him at the airport and assumes all responsibilities including medical examination, work permit, accommodation, and transportation to workplace. Upon the completion of contract, it is the employers who are responsible for their repatriation. Thus, low-skilled foreign manpower is managed as a temporary and controlled phenomenon in Singapore (Yeoh, 2004: 19).

Malaysia

In the late 1970s, the international relocation of manufacturing industries and the restructuring of the economy and society under the New Economic Policy (1971-1990) created a large number of jobs for semi-skilled and unskilled workers that many Malays were not willing to take. This generated a huge demand for low skilled foreign workers. However, the Government of Malaysia only acknowledged the need for foreign labour in the mid-1980s and the Cabinet Committee on Foreign Workers implemented a five-year policy on non-traditional source workers in 1991. Initially, the Government permitted the hiring of foreign workers in plantation and construction. Later, it also allowed hiring foreign workers in other industries like manufacturing and services (Khondker, 2004). There were over 807,000 legally employed semi-skilled and unskilled foreign workers in 2001 (Kassim, 2002). Malaysia is a recipient of a large number of unauthorized migrant workers. Kassim (2002) reports that the authorities have identified and apprehended over 2.25 million unauthorized foreign workers under the various programmes in operations carried out between 1992 and 2001. To cope with such unauthorized migration, Malaysia passed the Immigration Act 2002, which imposes severe penalty on irregular migrants (see for details, Battistella and Asis, 2003).

Bangladesh was able to enter into an agreement with Malaysia for the systematic transfer of labour in 1992 (Abul-Aziz, 2001). Following this agreement, a large number of migrants started entering Malaysia through the authorized channel. Bangladesh entered into another agreement with Malaysia in 1994 for the annual importation of 50,000 workers, mostly for the construction industry (Ahmed, 1998). Athukorala and Manning (1999: 177) report that 307,000 Bangladeshi migrant workers were issued work permits between 1992 and 1998 for work in Malaysia. Bangladeshi migrants are mainly employed in the plantation, manufacturing and construction industries. In 1997, Malaysia stopped recruiting Bangladeshi workers following a huge influx of unauthorized migration and amid reports of Bangladeshi workers marrying Malaysians. Bangladesh and Malaysia signed another Memorandum of Understanding (MOU)

in October 2003 concerning the hiring of Bangladeshis, which is yet to be implemented.

In the 1990s, recruitment was carried out by private recruiting agencies and brokers in Bangladesh and Malaysia. Malaysia had about 300 licensed recruiting agencies to handle foreign worker intake (*The New Straits Times*, “Foreign Workers must know Malay, English”, 12 November 2002). Authorized recruitment was similar to Singapore; recruiting agents employed local brokers to identify the prospective migrants and offered commission for their work. Local brokers usually charged between US\$ 2,000 and 3,000 for authorized migration and between US\$ 1,500 and 2,500 for unauthorized migration. Partial payment was obligatory to initiate the migration process. The local brokers provided the necessary information and, sometimes, financial assistance with higher interest rates to the prospective migrants. Sometimes local brokers, without the consent from prospective migrants pursued unauthorized means of migration for higher profits. Prospective migrants were largely ignorant of the routes of migration – authorized or unauthorized at the initial stage of their migration. They usually discovered their status once they were in Malaysia. Even if they had known, they would have hardly challenged the migrant-trafficking syndicates for fear of losing the fees paid in advance. Thus, it is the local brokers who often determine the fate of prospective migrants and the means of migration. The local brokers are usually rural elites and their power stems from the traditional authority structure of villages in Bangladesh. They often escape from prosecution owing to the lack of evidence of transactions between prospective migrants and local brokers. After the financial crisis in 1997, labour migration to Malaysia suddenly ceased, forcing aspiring migrants to seek the assistance of migrant-trafficking syndicates. Those syndicates use two routes: one is through legal visa procedure (usually applying for tourist, student or business visa) and the other, unauthorized via second country, particularly Thailand (Ullah, 2006; Sabur, 1997). Once in Malaysia, they contact migrant brokers or their relatives to help them find employment and accommodation.

Republic of Korea

The Republic of Korea experienced a severe labour shortage of unskilled workers in the small- and medium-sized industries in the late 1980s (Athukorala and Manning, 1999). As a result, migrant workers came to fill the void in small manufacturing companies. According to the Ministry of Justice of the Republic of Korea, the number of migrant workers rapidly increased: 6,409 in 1987 and 245,399 in 1997 (OECD, 2002). Presently, there are around 421,000 foreign workers in the Republic of Korea (*The Korea Times*, 3 March 2005). Principally, they are of two types: migrant workers and industrial trainees. The first category comprises

professionals, technical workers and language teachers (Lee, 2002; Seol, 2000). The second category comprises trainees. The Republic of Korea introduced a labour import scheme known as the “Foreigners Industrial Training Programme (FITP)” in 1991. This FITP was expanded in 1993. In 1994, the Government permitted the Korean Federation of Small Business (KFSB) to recruit and manage prospective trainees from 11 countries under 27 privately owned “international manpower recruiting agencies” (Park, 1994). The manpower shortages were so serious that the Programme beneficiaries had to be extended to include the coastal fisheries in 1996 and the construction industry in 1997 (Yoo, 2004).

Apart from those authorized foreign workers, there are a large number of unauthorized foreign workers in the Republic of Korea. Unauthorized foreign workers are usually those who over-stayed their visas or who changed their sponsored employers in the case of trainees. The number of unauthorized migrant workers was 188,000 in 2004 (*The Korean Times*, 3 March 2005). Yoo (2004) reports that the Government of the Republic of Korea tried to convert the Industrial Trainee Programme into the Guest Worker System since 1995, but failed to do so because of opposition from business. However, since 2003, a public consensus has grown in favour of the guest worker system for migrant workers. As a result, the Act Concerning the Employment of Permit for Migrant Workers was enacted in 2003, and implemented in 2004 (see Yoo, 2004: 4). The guest worker system however did not replace the Foreigner Industrial Trainee programme (FITP). Along with the guest worker system, the FITP is also in operation. The Government of the Republic of Korea has already signed a MOU with six Asian countries namely Thailand, Viet Nam, Mongolia, Sri Lanka, Indonesia and the Philippines for the deployment of some 25,000 workers in the country (*The Korea Times*, 16 August 2004). Although Bangladeshi migrant workers have contributed to the development of small- and medium-sized industries under the trainee programme since its inception, they are deprived of serving as guest worker under the recent guest worker programme for unknown reasons.

Bangladeshi workers began migrating to the Republic of Korea immediately after the introduction of FITP in the early 1990s. According to BMET, only 11,760 workers migrated there for work from 1994 to 2000 (Khondker, 2004). However, a Korean official source cites the cumulative figure for Bangladeshi over-stayers in the peninsula between 1992 and 2000 as 69,600 (OECD 2000: 211). This means that a large number of migrant workers took the unauthorized migration path to the Republic of Korea. For the purpose of recruitment of Bangladeshi nationals, a few selected recruiting agencies were permitted to send workers there. This created an opportunity to monopolize recruitment by those selected agencies and to make huge profit off

migrants. As the number of annual intake was limited to 5,000, many prospective migrants became frustrated and looked for alternative channels. Authorized migration is straightforward. Prospective migrants showed their interest to the designated recruiting agents by paying service fees well in advance. The designated recruiting agencies sent the necessary documents to the Korean Federation of Small Business (KFSB) for the completion of the recruitment procedures. Once the agencies received the processed papers from the KFSB, they sent the prospective migrants by air. Although authorized migration was supposed to be almost free of cost, migrants were charged between US\$ 2,500 and 3,500 in the early 1990s and between US\$ 5,000 and 8,000 in the late 1990s. Currently, they charge up to around US\$ 10,000⁵ from each migrant. Currently, unauthorized migration is the only alternative for Bangladeshi migrants. Therefore, migrant-trafficking syndicates and migrant brokers have come forward to filling the demand. Presently, migrant-trafficking syndicates charge between US\$ 10,000 to 14,000 for each migrant. The payment of such large amounts of cash to migrant-trafficking syndicates renders prospective migrants vulnerable to victimization. They are willing to take the risk because the rewards are high if successful.

Japan

Japan's economic success started attracting migrant workers from its neighbouring countries in the 1980s (Nagayama, 1996). A large number of migrant workers entered Japan during this period to join in the construction and manufacturing sectors. Foreign workers in Japan can be divided into two groups: authorized and unauthorized. Authorized foreign workers consist of Japan-born Koreans and Chinese (*Zainichi Gaikokujin*), foreign-born Japanese (*Nikkeijin*), and trainees and entertainers from Asia (Iguchi, 2002). In 2004, foreigners comprise 1.5 per cent of Japan's population (*Asian Migration News*, 15 June 2004). While foreign-born Japanese are invited with long-term settlement facilities, trainees are hired to meet the short-term manpower need. The Japan International Training Cooperation Organization (JITCO), is responsible for processing migrant trainees. The objective of the trainee programme is ostensibly to train workers from developing countries to learn skills in Japan that can be used later back home for economic development. However, like in the Republic of Korea, trainees in Japan hardly receive any "training". Instead they work as regular workers and receive allowances for their work.

There are a large number of unauthorized migrant workers in Japan. Unauthorized migrant workers are mainly those who leave the sponsored employers as trainees, overstay their visas (usually tourist, business or student

visas), or enter Japan with forged passports or by other unauthorized means. According to data from the Immigration Bureau, the number of irregular migrants in Japan, as of 1 January 2005, totaled 207,299 persons (*Asian Migration News*, 31 March, 2005). Thus, it is obvious that Japan has responded to the need for unskilled labour by: (a) relying on ethnic Japanese from South America; (b) trainee scheme to bring in “trainees” assigned to farms, forestry and fishery sectors, and small companies and (c) turning a blind eye to more than 200,000 over-stayers who are working in construction and other manual work. Scholars, such as Spencer (1992), Nagayama (1992), Morita and Sassen (1994), Yamanaka (1993), Shimada (1994), who work on migration issues in Japan concluded that irregular migration stemmed from the tight immigration policy (see Battistella and Asis, 2003).

Bangladeshis began migrating to Japan in the early 1980s and it was predominantly unauthorized migration. Mahmood (1994) estimates that 33,573 Bangladeshi entered Japan between 1985 and 1990. According to another estimate, between 1990 and 1998, the cumulative figure for Bangladeshi over-stayers was 63,170 (Iguchi, 2002:127). However, many of those unauthorized migrants were deported later. According to one estimate, around 5,078 Bangladeshi over-stayers were deported between 1996 and 2000 (Kondo, 2002:427). As authorized labour migration is not available for Japan, access to migrant-trafficking syndicates is critical to successful migration. Migrant-trafficking syndicates usually use two routes to send prospective migrants to Japan. First, they attempt to obtain a tourist, student or business visa from Bangladesh. If the syndicates fail to get visas for prospective migrants, they try for transit visa upon arrival at the international airports in Japan. They usually use Thailand; Malaysia; Hong Kong, China; and Singapore as springboards to enter Japan on arrival transit visa. Presently, migrant-trafficking syndicates charge as much as \$ 20,000 for each prospective migrant. Prospective migrants may be abandoned at any point. Therefore, clandestine migration to Japan is a risky venture. Failure means economic disaster for the migrants and their families.

Conclusion and policy implications

By the 1980s the performance of the economies of East and South-East Asia including the Republic of Korea, Japan, Singapore and Malaysia had reached a level that further growth could only be sustained through the recruitment of substantial migrant labour. Such workers were urgently needed to fill the void created by the domestic population who regarded employment in construction, manufacturing, shipping and plantation as dirty, difficult and dangerous. Both Singapore and Malaysia, because of their colonial origins, have relied on the contribution of migrants to economic development. The traditional sources of

such labour were South Indian, South Chinese and Indonesian. By contrast, the Republic of Korea and Japan have until recently drawn on domestic workers to meet their labour needs. The two South-East Asian countries referred to in this paper are essentially migrant societies with multi-ethnic populations. The two East Asian societies are culturally homogenous and their exposure to ethnically diverse migrant communities such as Bangladeshis is a recent experience. This important difference is reflected in the policies adopted by their respective Governments with regard to migrant labour. Singapore and Malaysia have more open policies towards the recruitment of foreign labour migrants than either the Republic of Korea or Japan.

Singapore has a rational foreign worker recruitment programme. It is finely tuned and responsive to the needs of a changing labour market, which may range from specialist and entrepreneurial skills to semi-skilled and unskilled workers in construction and domestic services. It has implemented a work pass system that grades potential migrants according to the levels of skill they possess. At the lowest end, unskilled workers are given the opportunity to upgrade their skills and benefit from their improved status, a provision that is not available in other countries. Strict and effective enforcement of labour regulations together with the availability of clear information to brokers and recruiting agents have contributed to a transparent policy of migrant worker recruitment. The result is that Bangladeshi workers are predominantly recruited through authorized channels.

Since its economy expanded rapidly in the late 1970s, foreign workers have entered Malaysia illegally in significant numbers. This is partly owing to a coastline that in many instances is only a boat ride for Indonesian, Thai and Filipino migrants and partly to a liberal policy towards such workers and the absence of a transparent recruitment policy. It was only in 1991 that it introduced a policy of hiring migrants from non-traditional sources such as Bangladesh, but this was discontinued after the financial crisis of 1997. By then, however, Bangladesh migrant networks had been well established to circumvent the authorized channels of migration. Formal recruitment was resumed in 2001 but in limited numbers after lobbying from the plantation and construction industries. There is a mix of legal and illegal workers in the country and brokers are familiar with utilizing both authorized and unauthorized facilities to recruit workers. This simply reflects an inconsistent labour policy as well as the lack of regular enforcement.

Both the Republic of Korea and Japan experienced a significant inflow of migrant workers in the second half of the 1980s, as a consequence of severe labour shortages in their small to medium size companies in construction and manufacturing. Despite the urgent need for such workers in their economies,

longstanding public antipathy towards the presence of foreigners in those societies has made it difficult for the State to introduce policies to regularize the status of migrant labour. For this reason, Japan established a programme supposedly to train foreigners to be sent to work in overseas Japanese companies. The trainee programme was later adopted by the Republic of Korea. In reality it was a backdoor way to facilitate the entry of migrant workers. The trainees eventually leave the programmes to work illegally in industry for better wages. While the Republic of Korea has a very limited scheme for the authorized recruitment of migrants from non-traditional sources such as Bangladeshis, it together with Japan relies predominantly on illegal workers. Publicly, the Governments of the two countries have a stringent policy towards foreign migrant labour. In practice, both adopt a liberal application of trainee recruitment and visas to facilitate the use of illegal migrant workers. Under those circumstances brokers have come to play an influential role in making available unauthorized facilities for the entry of those workers.

In all the four countries surveyed it is clear that the recruitment of Bangladeshi migrant workers, both authorized and unauthorized, is institutionalized within an extensive network of agents, brokers and syndicates. The network extend from the villages, districts and Dhaka of Bangladesh to the airports of the receiving countries; and it provides a valuable source of information, contacts and support to facilitate the entry of prospective migrants and their eventual settlement, however temporary. The airports of those countries as well as others such as Bangkok, Jakarta and Manila also serve as staging points from which Bangladeshis make numerous attempts to enter the Republic of Korea and Japan. The effectiveness of this institutional complex is appreciated if we take into account that specific districts in Bangladesh are identified as particular sources of migrant labour for each of the four countries. The recruitment system that has evolved over the years, even more so if they are unauthorized, has to be understood as an integral part of the social organization of Bangladeshi migration – encompassing household strategies, the ties of the extended family and the migrant community in the host society. How well developed this organization is varies from country to country and will hopefully be the subject of further research.

Table 2 summarizes the recruitment process of Bangladeshis in Singapore, Malaysia, the Republic of Korea and Japan. Bangladeshi migrant workers, whether documented or undocumented, are found in all receiving countries in East and South-East Asia. They have used the available “temporary migrant worker programmes” to enter as migrant workers or “trainees” except in Japan where there is no legal programme for them, especially for those who are semi-skilled or unskilled. Based on the recruitment experiences of Bangladeshi migrant workers in those regions, “temporary migrant worker programmes”

(including those disguised as trainee systems) are plagued with similar consequences as Ruhs (2002) identified in North America, Europe and Asia.⁶ Namely, these are the emergence of illegal foreign workers; exposure of migrant workers to various forms of exploitation; tendency of foreign workers to extend the duration of stay; emergence of “immigrant jobs” in the receiving countries (Piore, 1979); and finally, local workers’ opposition against the “foreign worker employment programme”.

Temporary migrant workers programmes should be designed to serve the interests of both sending and receiving countries. Devising systematic migrant worker programmes that respect humanitarian considerations and recognize genuine demand is timely. To address unauthorized migration, there is also an urgent need to revisit some “migrant workers programmes”, especially in light of criticisms of the treatment of legal migrant workers or trainees and the programmes themselves. Given that most host countries in East and South-East Asia lack a viable alternative, dependence on migrant workers will be long term even if they choose not to integrate them permanently into their societies. Any migrant worker policy has to recognize that such dependence is here to stay. Ruhs (2002) advocates that all the stakeholders affected by this phenomenon should have an input in policy-formation.

Castles (2000:12), drawing on Kassim’s work on Malaysia, comments “basing policies on the assumption that the use of migrant workers is temporary, when they in fact meet long-term structural needs, leads to non-compliance with official policies on the part of both employers and immigrant workers. The result is that regulations are often ignored and become unenforceable”. The proliferation of unauthorized syndicates, and a network of agents, brokers and travel agencies involved in sending Bangladeshi migrant workers to South-East and East Asia is a direct consequence of this. For a start the trainee programme adopted by Japan and the Republic of Korea should be replaced by a migrant worker programme attuned to the needs of those economies. This is unlikely to happen in the short term given the political sensitivities of the two Governments. Such a programme should accommodate workers from unskilled to skilled, up to professional level; and provide opportunities for workers to upgrade their skills through formal assessment and improved benefits. This programme was introduced in Singapore in the late 1990s. Furthermore, foreign workers who have been illegally employed for a minimum number of years should either be allowed to exit with dignity or issued work permits since they have been acculturated in the host society and have acquired the necessary skill and experience. Those measures will contribute some way to minimizing the use of unauthorized means of migrant labour recruitment and its abuses.

Table 2. International labour recruitment in East and South-East Asia with reference to Bangladeshi migrants

Items	Singapore	Malaysia	Republic of Korea	Japan
Status given to migrant worker	Work permit	Work permit	Trainee	Trainee; Not applicable for Bangladeshis
Responsible government body	Work permit Department Ministry of Manpower	Immigration Department Ministry of Home Affairs	KITCO under KFSB	JITCO:NA for Bangladeshis
Major nationals recruited	Malaysians, Filipinos, Bangladeshis, Indians, Thais, Chinese, Indonesians	Indonesians, Bangladeshis, Thais, Filipinos, Indians, Pakistanis, Nepalese	Chinese (Korean origin), Filipinos, Thais, Indonesians, Bangladeshis, Pakistanis	Foreign-born Japanese, Koreans, Filipinos, Chinese
Economic costs of migration	For first-time migrants, between US\$ 3,500 and 5,000. For second migration (if skilled) below around \$ 1000.	Documented migration: Between US\$ 2000 and 3,000; Undocumented migration: between US\$ 1,500 and 2,500	Documented migration: around US\$6,000 to 10,000; Undocumented migration: between US\$ 10,000 and 14,000	Undocumented migration: as much as US \$ 20,000
Predominate role in recruitment :	Recruiting agencies (around 1,000 agencies)	Recruiting agencies (around 300 agencies)	KFSB (Korean Federation of Small Business)	JITCO Not applicable for Bangladeshis
Dominant channel of migration	Authorized	Authorized and unauthorized	Authorized and unauthorized	Unauthorized
Predominant type of migrants	Authorized	Authorized and unauthorized	Unauthorized	Unauthorized
Attitude to irregular migrants	Strict	Varied	Liberal	Liberal (Varied)
Routes	Air	Air and land	Air	Air and sea
Facilitators of Recruitment	Recruiting agents	Recruiting agents & migrant-trafficking syndicates	Designated recruiting agents & migrant-trafficking syndicates	Migrant-trafficking syndicates
Skill Requirements	Semi-skilled and unskilled	Semi-skilled and unskilled	Unskilled	Unskilled; Not applicable for Bangladeshis

Endnotes

1. For example, in Bangladesh there are currently around 800 registered recruiting agencies and around 3,600 travel agencies (1,667 authorized and 2,000 unauthorized) that are engaged in authorized and unauthorized channeling of migrant workers (http://www.hrexport-baira.org/history_background.htm accessed in January 2005). In the Philippines, there are around 2,960 government-registered recruiting agencies only that are engaged in channeling migrant workers overseas (<http://www.poea.gov.ph/cgi-bin/agList.asp?mode=all> accessed in January 2005). In Singapore, there were around 1,100 recruiting agencies in 1999 to serve the manpower need (*The Straits Times*, 24 October 1999, "Big Money in Labour Import Racket").
2. This cumulative figure comes from the Bureau of Manpower Employment and Training (BMET), the official source of Bangladesh. The BMET is responsible for keeping records of authorized migrant workers but does not keep records for return migrants. Therefore, the authors assume that the actual number of Bangladeshi migrants in this region will be higher than the BMET source suggests.
3. See BAIRA homepage, http://www.hrexport-baira.org/aims_objective.htm accessed in June 2005.
4. "Every year, more than 30,000 Bangladeshi workers ... come here (Singapore)" (18 December 1999, "The Journey of Hope" *The Straits Times*). Usually, Bangladeshi migrants come on a two-year contract. Therefore, one estimates that there have been around 40,000 Bangladeshi migrants in Singapore in a given year since the mid-1990s.
5. The authors found several cases during their fieldwork in 2003 where prospective migrants paid even more than US\$ 10,000. The fees for migration to the Republic of Korea increased gradually over time. Interviews reveal that in 2000 it was between US \$ 6,000 and 8,000.
6. Ruhs (2002) examines the consequences of "temporary foreign worker programmes" in five different countries (Germany, Kuwait, Singapore, Switzerland and the United States of America) and finds: the emergence of "immigrant sectors" in the host country's labour market; the vulnerability of migrant workers to various forms of exploitation in recruitment and employment; the tendency of temporary foreign worker programmes to become longer in duration and bigger in size than initially envisaged; native workers' opposition against the introduction or expansion of a temporary foreign worker programme; and the emergence of illegal foreign workers who, together with local employers, circumvent the programme.

References

- Abdul-Aziz Abdul-Rashid (2001). "Bangladeshi migrant workers in Malaysia's construction sector", *Asia-Pacific Population Journal*, vol.16, No. 1.
- Ahmed, S. Nahar (1998). "The impact of the Asian crisis on migrant workers: Bangladesh perspectives", *Asian and Pacific Migration Journal*, vol.7, Nos. 2-3.
- Amin, S. (1974). "Modern migrations in western Africa", in S. Amin, ed., *Modern Migrations in Western Africa* (London, Oxford University Press).
- Asian Migration News www.scalabrini.org/~smc/amnews/amnarch.htm, by-weekly information service hosted by the Scalabrini Migration Center, the Philippines, all issues (1997 to 2006) are available online, accessed on 23 March 2006.
- Athukorala, Prema-Chandra and Chris Manning (1999). *Structural Change and International Migration in East Asia: Adjustment to Labour Scarcity* (London, Oxford University Press).
- Battistella, Graziano and Maruja M.B. Asis, eds. (2003). *Unauthorized Migration in South-East Asia* (Quezon City, Philippines, Scalabrini Migration Center).
- Boyd, Monica (1989). "Family and personal networks in international migration: recent developments and new agendas", *International Migration Review*, vol. 23, No. 3.
- Bruyn, Tom de and Umbareen Kuddus (2005). *Dynamics of Remittance Utilization in Bangladesh*, IOM Migration Research Series, No. 18, pp. 1- 93.
- Castles, Stephen (2000). "Migration as a factor in social transformation in East Asia", Conference paper on Migration and Development, Princeton University 4-6 May 2000.
- Faist, Thomas (2000). *The Volume and Dynamics of International Migration and Transnational Social Space* (Oxford, Clarendon Press).
- Goss, Jon and Bruce Lindquist (2000). "Placing movers: An overview of the Asian-Pacific migration system", *The Contemporary Pacific*, vol. 12, No. 2, pp. 385-414.
- _____ (1995). "Conceptualizing international labour migration: A structuration perspective", *International Migration Review*, vol. 29, No. 2, (Summer, 1995), pp. 317-351.
- Hernandez-Leon, Ruben (2005). "The migration industry in the Mexico-U.S. migratory system", Working Paper CCPR 049 (2005), California Center for Population Research, University of California, Los Angeles.

- Hui, Weng-Tat (2002). "Foreign manpower policy in Singapore", in *Singapore Economy in the 21st Century: Issues and Strategies*, eds., Tee, Koh Ai, Lim Kim Lian, Hui Weng Tat, Bhanoji Rao, and Chng Meng Kng (Singapore, McGraw Hill).
- Iguchi, Yasushi (2002). "Foreign workers and labour migration policy in Japan", in Yaw A. Debrah (ed.), *Migrant Workers in Pacific Asia* (Great Britain, Frank Cass Publishers).
- Jones, Sidney (2000). "Making money off migrants: the Indonesian exodus to Malaysia", Hong Kong: Asia 2000 Ltd. and University of Wollongong: Centre for Asia Pacific Social Transformation Studies.
- Jones, Huw and Teing Pardthaisong (1998). "The commodification of international migration: findings from Thailand", *Tijdschrift voor Economische en Sociale Geografie*, vol. 90, No. 1, pp. 32-46.
- Kassim, Azizah (2002). "Economic slowdown and its impact on cross-national migration and policy on alien employment in Malaysia", *Migration and the Labour Market in Asia: Recent Trends and Policies*, Organisation for Economic Co-Operation and Development, pp. 325-339.
- Khondker, Habibul Haque (2004). "New trends and changing landscape of Bangladeshi migration", in *International Migration from South Asia*, ed., Hisaya Oda (Japan, Institute of Developing Economies).
- Kondo, Atsushi (2002). "The development of immigration policy in Japan", *Asian and Pacific Migration Journal*, vol. 11, No. 4, pp. 415-436.
- Lee, June J. H. (2002). *A Review of Data on Trafficking in the Republic of Korea*, Prepared for IOM, Geneva, International Organization for Migration.
- Lewis, W. Arthur (1954). "Economic development with unlimited supplies of labour", *Manchester School of economic and Social Studies*, vol. 22, pp. 139-191.
- Mahmood, Raisul Awal (1994). "Adaptation to a new world: Experience of Bangladeshis in Japan", *International Migration*, vol. 32, No. 4, p. 194.
- Massey, Douglas S. and others (1993). "Theories of international migration: a review and appraisal", *Population and Development Review*, vol. 19, No. 3, September.
- _____ (1994). "An evaluation of international migration theory: The north Mexican case", *Population and Development Review*, vol. 20, No. 4, December.

- Massey, Douglas S., Rafael Alarcon, Jorge Durand, and Humberto Gonzalez (1987). *Return to Aztlan: The Social Process of International Migration from Western Mexico*, University of California Press.
- Miyan, M. Alimullah (2003). "Dynamics of labour migration – Bangladesh context", Conference Paper, IUBAT, December 31, 2003 <http://www.kli.re.kr/iira2004/pro/papers/MAlimullahMiyan.pdf> accessed March 2005.
- Morita, Kiriro and Saskia Sassen (1994). "The new illegal immigration in Japan 1980-1992", *International Migration Review*, vol. 28, No. 1, pp. 153-163.
- Nagayama, Toshikazu (1996). "Foreign workers recruiting policies in Japan", *Asian and Pacific Migration Journal*, vol. 5, Nos. 2-3, pp. 241-264.
- _____ (1992). "Clandestine migrant workers in Japan," *Asian and the Pacific Migration Journal*, vol. 1, Nos. 3-4, pp. 623-636.
- OECD (2002). *Migration and the Labour Market in Asia: Recent Trends and Policies*, Organization for Economic Cooperation and Development.
- _____ (2000). *Migration and the Labour Market in Asia*.
- Okunishi Yoshio (1996). "Labour contracting in international migration: the Japanese case and implications for Asia", *Asian and Pacific Migration Journal*, vol. 5, Nos. 2-3, pp. 219-240.
- Phillips, Julie and Douglas S. Massey (2000). "Engines of immigration: stocks of human and social capital in Mexico", *Social Science Quarterly*, vol. 81, pp. 33-48.
- Piore, Michael J. (1979). *Birds of Passage: Migrant Labour and Industrial Societies* (Cambridge: Cambridge University Press).
- Piper, Nicola (2004). "Rights of foreign workers and the politics of migration in South-East and East Asia", *International Migration*, vol. 42, No. 5, pp. 71-95.
- Portes, Alejandro and John Walton (1981). *Labour, Class and the International System* (New York, Academic Press).
- Rahman, Md Mizanur (2003). "Bangladeshi Workers in Singapore: A Sociological Study of Temporary labor Migration", Ph.D. Dissertation, Department of Sociology, National University of Singapore.
- Rahman, Md Mizanur and Lian Kwen Fee (2005). "Bangladeshi workers in Singapore: the view from inside", *Asia-Pacific Population Journal*, forthcoming.

- Ruhs, Martin (2002). *Temporary Foreign Worker Programmes: Policies, Adverse Consequences, and the Need to Make them Work*, Working Paper No. 56, June, 2002, The Center for Comparative Immigration Studies, University of California-San Diego.
- Sabur, M. A. (1997). "The plight of Bangladeshi migrant workers", *Asian Migrant*, vol. 10, No. 2, April-June, pp. 64-65.
- Seol, Dong-Hoon (2000). "Foreign workers in Korea: Issues and discussions", *Philippine Journal of Third World Studies*, vol. 15, No. 1, pp. 115-138.
- Shimada, Haruo (1994). *Japan's "Guest Workers": Issues and Public Policies* (Tokyo: University of Tokyo Press).
- Siddiqui, Tasneem (2001). *Transcending Boundaries: Labour Migration of Women from Bangladesh* (Dhaka, University Press Limited).
- Skeldon, Ronald (1997). *"Migration and Development: A Global Perspective"* (Harlow, Longman).
- Sobieszczyk, Teresa (2000). "Pathways abroad: Gender and international migration recruitment choices in northern Thailand", *Asian and Pacific Migration Journal*, vol. 9, No. 4, pp. 391-428.
- Spaan, Ernst (1994). "Taikongs and calos: the role of middlemen and brokers in Javanese international migration", *International Migration Review*, vol. 28, pp. 93-113.
- _____ (1999). *Labour Circulation and Socio-economic Transformation: The Case of East Java, Indonesia*, Report No. 56, Netherlands Interdisciplinary Demographic Institute (NIDI), The Hague.
- Stark, Oded (1991). *The Migration of Labour* (Oxford, Basil Blackwell).
- Spencer, Steven A. (1992). "Illegal migrant labourers in Japan: Coping with a new invasion," *International Migration Review*, vol. 26, No. 3, pp.754-786.
- Todaro, Michael P. (1976). *International Migration in Developing Countries: A Review of Theory, Evidence, Methodology and Research Priorities*. A WEP Study, Geneva: International Labour Office.
- Ullah, AKM Ahsan (2006). "Bangladeshi labour migrants in Malaysia: the experience on the routes", unpublished Conference Paper, Association for Cultural Studies Crossroads Conference, 20-23 July 2006, Istanbul Bilgi University.
- Wallerstein, Immanuel (1974). *The Modern World System I: Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century* (New York, Academic Press).

- Wee, Vivienne and Amy Sim (2004). "Transnational networks in female labour migration" in Aris Ananta and Evi Nurvidya Arifin, eds., *International Migration in South-East Asia*, Institute of South-East Asian Studies: Singapore.
- Wong, Diana (1997). "Transience and settlement: Singapore's foreign labour policy", *Asian and Pacific Migration Journal*, vol.6, No. 2.
- Yamanaka, Keiko (1993). "New immigration policy and unskilled foreign workers in Japan," *Pacific Affairs*, vol. 66, No. 1, pp. 72-90.
- Yeoh, Brenda S.A. (2004). "Migration, international labour and multicultural policies in Singapore", Working Paper Series, No. 19, Asia Research Institute, National University of Singapore.
- Yoo, Kil-Sang (2004). "Migrant workers' labour market in Korea", Conference Paper, 5th Asian Regional Congress of the International Industrial Relations Association (IIRA) held in Seoul on June 23-26, 2004, convened by the Korea Labour Institute (KLI) and the Korea Industrial Relations Association (KIRA).

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