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Demographic manifestations of son-preference in England and Wales

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Introduction

Young girls' excess mortality is a long-run demographic manifestation of son-preference and has been reported in many countries, notably in South and East Asia (Das Gupta, 1987; Croll, 2000, Hesketh and Xing 2006). In India, China and South Korea[1], with the widespread availability of prenatal sex determination techniques such as ultrasound screening since the 1980's, female-selective abortion has contributed to significantly increase the sex-ratio at birth (number of boys per 100 girls), especially at higher birth orders when only daughters were born (Zeng et al., 1993; Park and Cho, 1995; Das Gupta and Bhat 1997). Female-selective abortion is seen as a mean to increase the chance of having a son. Sex-selective abortion (SSA) in India appears to add, or to some extend substitute other forms of gender discrimination, including girl neglect, abandonment and infanticide (Das Gupta, M. Bhat, 1997). Female selective abortions reflect strong gender discrimination. The imbalance in the sex-ratio at birth (SRB), its ethical implications and its consequences for the next generation of adults has become a major concern in India.

A study by Dubuc and Coleman (2007), based on the exhaustive annual vital data registration in England and Wales from the Office for National Statistics (ONS) on sex, birthplace of mother, and birth order within marriage from 1969 to 2005, showed an increase in the sex-ratio of births to India-born mothers living in England and Wales. Between 1990 and 2005, the sex ratio at birth (SRB) to India-born mothers rose sharply (Figure 1) from an average of 104 in 1969-1989 to 108 in the following period. This trend is particularly due to a strong increase in the sex-ratio of higher birth orders (Figure 1). When considering only the births of the third child or over, the sex-ratio rises, averaging 113 boys per 100 girls for the period 1990-2005. The increase in sex ratio

coincides with the availability of pre-natal sex determination. Taken together, these results provided the first indirect quantitative evidence of parents in a western immigrant host country to choose female selective abortion. The recourse to female selective abortion by a small minority of Indian immigrant mothers appears to be the most plausible explanation for this trend (Dubuc and Coleman 2007). A recent investigation in the U.S.A., based on the 2000 census fertility data (Almond and Edlund, 2008) found male-biased sex ratios among U.S.-born children to women of Chinese, Korean and Indian origin, supporting the recourse to SSA among some communities from countries with strong son preference for another western country.

Here, quantitative data with respect to regional origin of immigrant mothers, trends in fertility rates of different groups of immigrants from countries with known son preference are used to evaluate potential motivations with respect to reproductive behaviour in relation to son preference. Socio-economic differences between host and origin country, especially those associated with inter-family relations may contribute to explain the apparent reduced son preference in the host country. Underlying factors of unequal valorisation of sons and daughters are discussed, including patri-lineal rules and women's freedom of choice.

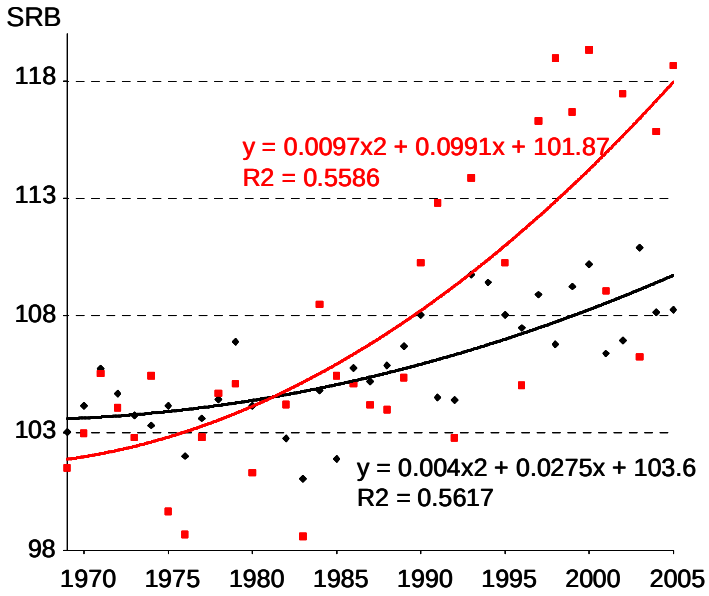

Figure 1: General trend in the sex ratio of births (SRB) to India born mothers in England and Wales (black) and for birth orders above two (red), 1969-2006. Average SRB *1969-*

89: 104.1 (99%CI: 103-105.2) ; *1990-05*: 107.9 (99%CI: 106.3-109.6) ; *1995-05*: 108.3 (99%CI: 106.3-110.3).

Sex-selection: methods and legislation

Although anecdotal evidence from the British media, support that women of Indian origin return to India to perform sex-selective abortion, no data is available to identify the country where sex-determination of the foetus, possibly followed by termination of the pregnancy generally occurs. Ultrasound technology is the most commonly used method and allowincreasingly relatively accurate determination of the sex of the foetus at 12 weeks of pregnancy (20 weeks in 1980). Abortion rights exist in India (up to 20 weeks of pregnancy) and the UK (up to 24 weeks), thus not covering (at least explicitly) gender pre-natal selection. Since 1994 and the PNDT Act, using ultrasound or other techniques to detect the sex of the foetus has been banned in India. Yet, it appears still widely available (e.g. Varma, 2002 ; Visaria, 2003). In the UK, disclosing the sex of the foetus to the parents is legal and generally available to parents at the second pregnancy scan (at about 20 weeks of pregnancy). However, in the last years some NHS clinics (public sector), aware of a risk of sex-selective abortion, have decided not to. Even in areas where NHS services have opted for this restriction, the service is easily available from the private sector. The availability of ultrasound technology (legally or not), however does not explain sex-selective abortion. Ultrasound and amniocentesis techniques are a mean for prenatal sex-selection rather than a cause (E. Croll, 2002).

Fertility decline and son preference

Son-preference constitutes the primary factor explaining prenatal sex-selection, as well as postnatal female discrimination in infant and children. However, son preference may not necessarily result in female selective abortion and cultural, religious, economic factors are likely to contribute. For instance, no evidence for sex selective abortion has been reported for Pakistan and Bangladesh, despite well documented son preference in those countries (Khan and Sirageldin, 1977; Farooqui, 1990; Sathar and Karim, 1996;

Chaudhury et al., 1996; Hussain et al. 2000; Khan and Khanum, 2000; Bairagi, 2001). However, little data is available or has been reported in these countries[2].

Because sex selective abortion is more pronounced at higher birth orders, changes in SRB at higher birth orders may be a more sensitive measure to provide some indirect quantitative evidence for SSA and indicating son-preference. A comparative analysis (as for Figure 1) of the SRB of children from the three major immigrant groups to the UK from countries where son-preference is known (India (above), Pakistan and Bangladesh) shows no indirect evidence that migrants from the Pakistan and Bangladesh practice SSA (Figure 2) and thus no evidence for son preference. These results appear to suggest that either son-preference is less if at all existing in the immigrant groups originated from Pakistan and Bangladesh or, in case son-reference does prevail within these groups, other reasons may contribute to their stable SRB. Identifying differences between the three groups originating from the Indian sub-continent may thus allow a better understanding of the causal motivations for and against the practice of SSA.

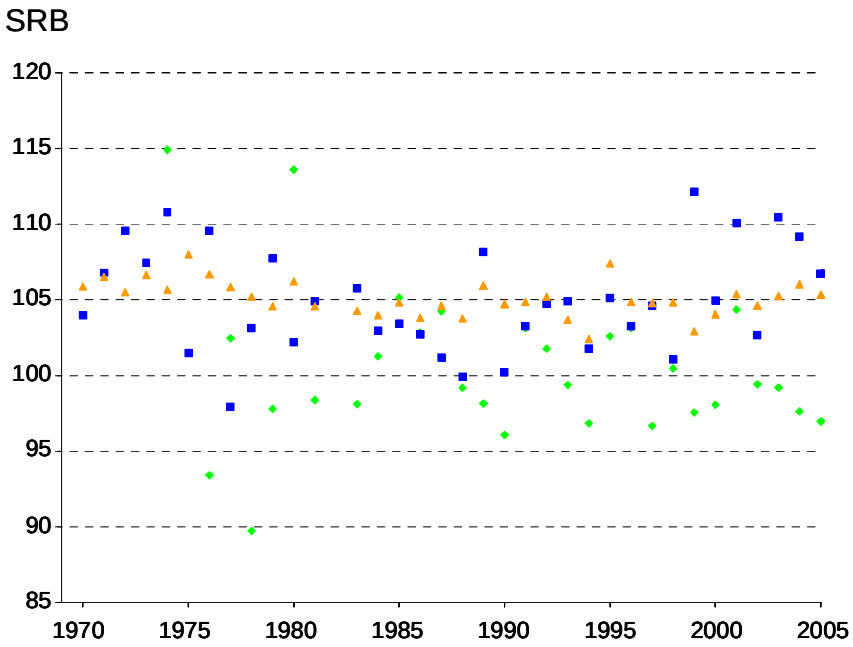

Figure 2: Trend in higher-parity sex-ratio of births (birth order above two) to Pakistan-born (blue), Bangladesh-born (green) and UK-born (orange) mothers living in England and Wales.*1995-05*: 108.3 (99%CI: 106.3-110.3).

Female-selective abortion has developed in a context of fertility decline in India, even more pronounced in China and South Korea. A decline in the fertility rate could contribute positively to sex-selective abortion when associated with son- preference (Das Gupta, Bhat, 1997; Croll, 2002). However, the impact of a decline in fertility rates to recourse to SSA is unclear and no simple relationship may exist (Figure 3).

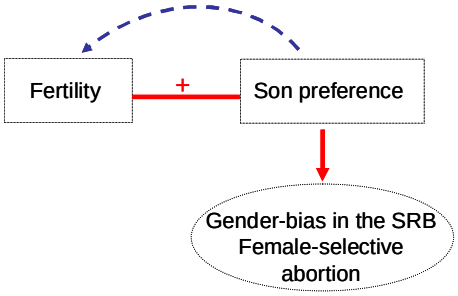

Figure 3: Relationship between fertility, son preference and female-selective abortion. A decline in fertility associated with son preference may contribute to increased pressure for SSA (red), while son preference could curb fertility decline (blue arrow).

Fertility rates of the India-, Pakistan- and Bangladesh-born women to the UK

Studies in India (See for example, Das Gupta and Bhat, 1997, Basu, 1999; Arnold et al., 2002; Retherford and Roy, 2003; Bhat and Zavier, 2007) – as well as in China and South Korea- have shown that the SRB is particularly high at higher birth orders in families were only girls had been born previously, suggesting recourse to SSA to ensure to have at least one son. The desire to have at least one son in the context of decreasing family sizes in India thus increases the pressure on parents towards SSA. Testimonials of women who have practiced SSA after having had only girls previously illustrate peer pressure on women to undergo a sex selective abortion (for example see Varma, 2002, Visaria, 2003). Since fertility rates (as a measure for average family size) and female selective abortion are linked, determination of the fertility rates may provide some evidence of the extent of pressure on prospective parents with a desire to have at least one son to choose to abort a female foetus. Figure 4 shows the trends in total fertility rates (TFR)[3] for the India-, Pakistan- and Bangladesh-born immigrants to the UK. Whereas trends up to 2001 are

based on available ONS data (births registration statistics), trend estimations since 2001 were based on data from the Labour Force Survey. Results provide evidence for a stabilisation of the previous decline in TFR for the Pakistani and Bangladeshi groups over the last years that remain significantly higher than TFR for the Indian group. As fertility has fallen, the percentage of births of orders three and above to India-born mothers have fallen over time from 44,2% in 1969 to 12.7% in 2005. Despite a decrease over time the fertility of women born in Pakistan and Bangladesh remains higher with still more than 40% of births recorded at birth order 3 and above in 2005. As a result, the chance of having no son is much lower, in average, for the Pakistan-born and the Bangladesh-born mothers compared to the India-born mothers (Figure 5). These results are coherent with the idea that fertility decline, when associated with son-preference does indeed contribute to the pressure on parents, who desire at least one boy offspring, to abort female foetuses.

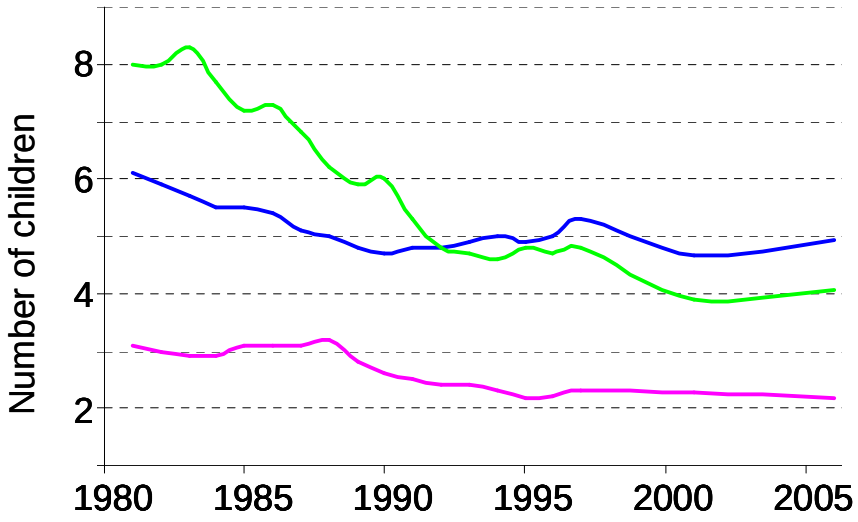

Figure 4: Trend in the total fertility rates (TFR)* to India-born (pink), Pakistan-born (blue) and Bangladesh-born (green) mothers living in the UK.
Source: Series FM1 ONS, 1981-1997 and 2001 (from births registration). TFR estimates based on the Labour Force Survey (LFS) data and using the Own Child method, with correction for mortality, have been calculated for 2000 to 2006 (by the author). Estimates for 2006 are based on the variation rate between 2000-2001 and 2002-2006 observed in the TFR estimates (LFS data) and applied to the 2001 TFR based on births registration (ONS).

Probabilistic model for decreasing family size as motivational pressure towards female selective abortion

Prospective parents with strong son preference may opt to carry out female selective abortion in order to assure to have at least one son. Figure 5 illustrates the exponential relationship between the probability of having no son as a function of child number, based on the average worldwide SRB of 105. When child numbers are equal or exceed four, the probability of not having one son is below 6.1%, whereas approximately one in four families with two children would only have daughters. The total fertility rates (as the average of family sizes) of the India-born group (Figure 5, pink square) studied here is significantly higher than those of the Pakistani (blue) and Bangladeshi (green) groups.

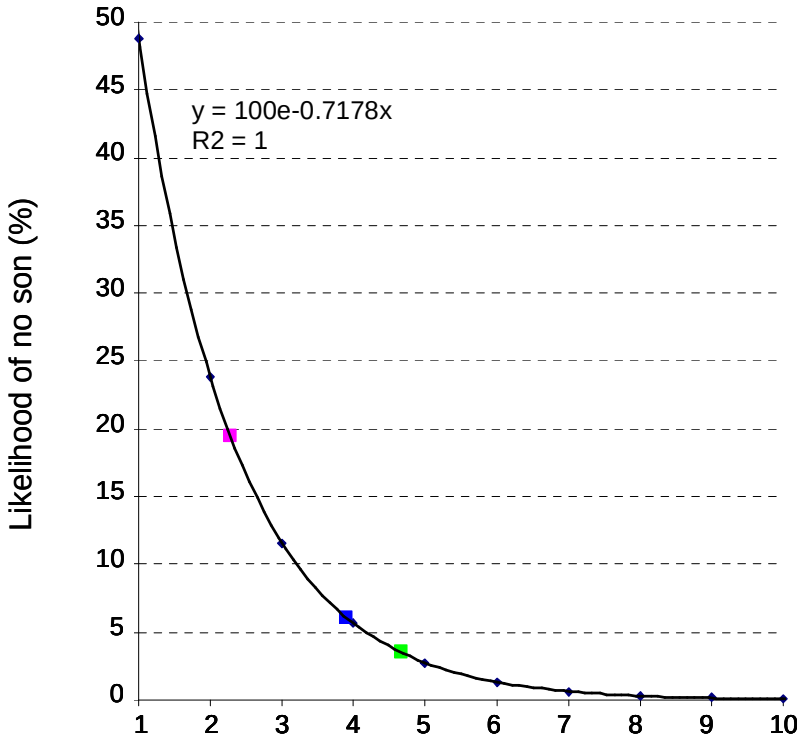

Figure 5: Probability curve based on the worldwide average SRB of 105 for having no son depending on the number of children and total fertility rate (TFR) of the India-born (pink) Pakistan-born (blue) and Bangladesh-born (green) mothers in 2001.

Lower SRB for Indian immigrants in the UK compared to those of their regional birthplace could suggest divergent cultural transition in the host country

We found that the increase in the SRB of Indian born mothers living in the UK, from 1990 to 2005, largely reflect those reported for India on a national level (Dubuc and Coleman, 2007)[4]. However, SRB within India vary considerably and therefore comparisons between immigrants to the UK and India should take into account the regional provenance of the immigrant group. Figure 6 shows the child sex-ratio, often used as a proxi to estimate the SRB, in India by region with significantly higher ratios in the northern parts (in large parts above 120), especially for Punjab, Haryana, Delhi and Gujarat. Table 1 shows the sex-ratio for the age group 0-2 years used as an even closer proxi to SRB for these states across the three latest censuses in India. The majority of the Indian immigrants to the UK comes from Punjab and Gujarat (Ballar, 1990; Peach, 1996), suggesting that the immigrants to the UK are less likely to opt for SSA than their home peers. These observations may indicate a change in son preference, potentially influenced by factors provided in the host country and distinct from the home country. Identification of these potential factors could contribute to a better understanding of the motivations resulting in SSA and thus allow targeted policy initiatives to counter those motivations.

The main factors of son-preference and female discrimination identified in India include patriarchal (patri-lineal and patri-local) family system, especially strict in the North West of India where the name, land and other family assets are generally passed on to the son(s) only (Agarwal, 1994; Das Gupta *et al.*, 2003). Sons take care of their parents at old age while raising a girl is often perceived as 'watering the neighbour's garden' (see Attane and Guilmoto, 2007). Daughters usually 'belong' to their husband's family once married and their parents are expected to pay wedding costs and offer an increasingly costly *dowry* to ensure a suitable groom, providing the daughter's parents with social prestige. In a tightly knit social context, these conducts are particularly important.

[Figure 6- Map: sex-ratio at birth in India by state in 2000. Data from 2001 census]

States	Sex-ratio		
	1981	1991	2001
India	102.7	105.4	108.3
Punjab	107.3	116.2	127.2
Haryana	107.8	114.7	124.2
Delhi	106.1	109.1	116.5
Gujarat	104.6	107.4	114.3

Table 1: Sex-ratio for young children (0-2 years old) in India and the states of Punjab, Haryana, Delhi and Gujarat, 1981, 1991 and 2001. Sources: Bhat and Zavier, 2007.

Discussion

Demographic manifestations of son preference

Son preference in various countries has resulted in gender discrimination and more recently, with the widespread availability of pre-natal sex determination combined with sex selective abortion, to an increase in the sex ratio at birth. However, son preference does not necessarily result in female selective abortions. This is evidenced by the stable SRB for the foreign born (immigrant) Pakistani and Bangladeshi women groups in the UK, assuming son preference somewhat similar to their country of origin. Motivations for and against female selective abortions may by manifold, however, the choices of prospective parents are likely imbedded in the family planning, including the number of desired children. The decrease in fertility rates seen in India, generally associated with the emerging middle class, as well as for the Indian immigrant group in the UK studied here, suggest that the combined desires to have a small family and with at least one son could provide a strong motivation to opt for female selective abortion. Mothers with first born daughter(s) may particularly feel pressurized to ensure a son and opt for female selective abortion. The probability for a family of having no male offspring increases exponentially with every fewer child, thus dramatically increasing the number of families concerned. Provided that the fertility rate for the groups of women born in Pakistan and Bangladesh remain high compared to the Indian born group, the chance of having no son is much lower, in average, for the former groups. Indeed, it has been argued that in Pakistan and Bangladesh son-preference would contribute to curb fertility decline (Sathar

and Karim, 1996; Chaudhury *et al*, 1996; Khan and Khanum, 2000; Hussain *et al*. 2000; Baijari, 2001)[5]. Further Nasir and Kalla (2006) argue that son preference may contribute to relatively high fertility among the Muslim minority in India. These findings suggest that son-preference could exist among the families of mothers born in Pakistan and Bangladesh and manifest themselves in choosing to have a large number of children, or at least conciliate well with the desire of a relatively large family. Furthermore, results shown here are coherent with the idea that fertility decline, when associated with son-preference does indeed contribute to the pressure on parents, who desire at least one male offspring, to abort female foetuses.

Factors of son preference in India and in the UK

The SRB for the group of Indian born mothers appears below that of their region of likely origin within India (Figure 6), and bias appears in the statistics at third birth order only in the UK compared to second birth order in India. Therefore, son preference may be less pronounced within this immigrant group compared to the average population of their regional cultural background and/or differences in their host country may contribute to a weakened son preference.

A number of factors of preference for son(s) have been identified in India and especially in North India, including patri-lineal (family name perpetration through males and inheritance to the sons only, Agarwal, 1994) and patri-local (at marriage, a daughter joint her husband household) practices, daughters wedding and dowry cost, son's role to care for his parents at old age, women's economic dependence and subordination to their husband family and the current practice of purdah (women public involvement restrictions, reclusive practice) in the North of India. Therefore, better professional opportunities for Indian women settled in the UK, availability of pensions, possibly less patriarchal inheritance practices and more freedom of mothers in their reproductive choices may contribute to reduce son-preference.

Independently of the British context, the average socio-economic profiles of Indian immigrants to the UK may differ from that in North West India explaining lesser son-preference of the former as supported by the difference in the bias in the sex-ratio at

birth. However, the choice of SSA in relation to the socio-economic characteristics is unclear. According to Astone and Pande (2007) in India wealth and women's employment are not significantly reducing son preference in average. The same study suggested that son-preference among highly educated women was less pronounced, if existing at all, compared to lower educated ones (Astone and Pande, 2007). A study in Punjab, however, has shown an apparent reinforcement in son preference among educated women in a context of fertility decline and due to a higher decline in the number of girls desired compared to sons (Das Gupta, 1987). Further findings in Northern India shows a fall in women's preference for son associated with a decline in their ideal family size and correlated with relatively high education, urbanization and access to the media (Bhat and Zavier, 2003)[6]. Therefore, the decline in fertility more pronounced and possibly quicker than the fall in son-preference may result in the – possibly temporary[7] - rise in the sex-ratio at birth. Education may contribute to lower the preference for son but in a context of a strong son-preference this might not counterbalance the increasing pressure to ensure a son when the total number of children desired is reduced.

Therefore, other factors that distinguish the North and North-West of India may contribute to the high level of son preference. One likely explanation is the strongly restricted women's autonomy observed in the North of India (Dyson and Moore, 1983; Basu, 1992; Das Gupta, 1996) restricting the mother's power of decisions on their reproductive behaviour, generally arbitrated by their husband family. At the macro-level a low female autonomy was found to be linked with better survival of sons and increasing mortality of daughters (Kishor, 1993). It may be argued that education and wage-work may favor women empowerment and contribute to decrease the preference for sons (Purewal, 2003; Mooney, 2006). However, these factors were found to be more influential in South India compared to the North (and Punjab Pakistan) showing the prevalence of other more traditional factors influencing women's autonomy in the Northern region, including the age of women and duration of marriage, family structure (and co-residence with family in-law), surviving sons and size of the dowry (Jejeebhoy and Sathar, 2001).

M. Das Gupta (1996) has found that, in North India, lower women's autonomy and decision making control within the household in their earlier reproductive years reflected on infant mortality, especially due the mothers' lack of power on their child health care decisions and with an exacerbated mortality of girls due to a strong son-preference. Women's lack of autonomy is "strongly influenced by patterns of household formation and inheritance" (Das Gupta, 1996, p228). Deprivation of inheritance rights (at least in practice) has been thoroughly analysed by Agarwal (1994) as a major factor of women's dependency. In contrast owning land constitutes an efficient mean to women empowerment (Agarwal, 1994). Further, it has been argued that patri-locality and village exogamy (marriage outside women's village) practiced in Northern India contributes to women's low autonomy isolating her from her pre-marital social network (Dyson and Moore, 1983; Das Gupta, 1996). A study by Yesudian (2004) further suggests that women's empowerment was translated by better use of antenatal care services and appears positively correlated with low or no preference for sons.

A women's status and relative autonomy within the household is highly dependant on her having a son: in the first place, her low status starts to rise when bearing a son and later in life she gains more power on domestic matters (and upon her daughter's in law) with the support of her son(s) (Das Gupta 1996; Bloom et al. 2001; Das Gupta *et al.* 2003). This suggests that the need for a son is interiorized by young women as a mean to improve their status and power within the household and gain autonomy over their own life. Furthermore, lack of autonomy of young wives may deprive them of reproductive rights, including, when pregnant, the choice of finding out the sex of the foetus or not, and power to decide for themselves on continuing or not their pregnancy (whatever the outcome of a sex determination test would be). Results presented here suggest that young women's autonomy should not be taken for granted in India-born population settled in the UK, and a variety of situations may exist. Kalwant Bhopal (1997), studying the trait of patriarchy among South Asian women in the UK, found that immigrant women were generally 'traditional', encompassing the characteristics of their India-based counterparts (e.g. low education, no or low paid work, doing most of the domestic work and depending materially on their husband, in an arranged marriage, with dowry) when the

second generation settled in the UK was divided in 2 groups: 'traditional' (low autonomy) and 'independent' (high autonomy). The generally low autonomy status of immigrant Indian women as described by Bhopal (1997) may contribute to the perpetration of son-preference in the Indian Diaspora.

If patrilocality contributes to deprive women of power of decisions on their life in general, including their reproductive behaviour, immigrant women may suffer from even more isolation and lack of support. On the other hand, in some case of transnational marriages[8], women may end up living with their husband but without their extended family still based in India. In this particular case women may benefit from more power of decision on domestic matters and possibly a better control of their life. The role of transnational marriages in chain migrations of south Asian communities and adapted to the immigration rules on family reunions in the UK and elsewhere is well documented (Ballard, 1990; Charsley and Shaw, 2006; Mooney, 2006). The prospect of having a British-born daughter may be seen to parents as far more favorable, compared to having a daughter in India, for future marriage arrangements; Indeed, in the case of a transnational marriage, a British-born daughter would not required a costly dowry, the opportunity to migrate for the groom being the dowry (as described for daughters of Patidar immigrants from Gujarat in the USA, Rutten and Patel, 2003). However, the parents may face other difficulties finding a suitable groom from India for their British-born daughter (especially for young women belonging to the 'independent' group identified by Bhopal, 1997). This may explain the increase in marriages organized within the Indian Diaspora only (for example Rutten and Pattel, 2003).
Immigrant status appears ambivalent in contributing to Indian women's empowerment and a variety of situations may exist, some reinforcing the dominated position of the young immigrant bride within her husband household, others offering conditions to potentially increase women's autonomy and decrease significantly the preference for son.

Additionally, Das Gupta et al. (2003) argue that even if paid employment contribute to improve adult women's status and decision-making power within the household it "does not necessarily suggest that daughters will become more welcome to their families"

because daughters are seen has “investing in another family’s daughter-in law” (Das Gupta, 2003, p 17) and “watering the neighbour’s garden” (Attane and Guilmoto, 2007). Following this argument, in the UK, more gender egalitarian view of children would be linked to some changes in the kinship system adopted by Indian families, including more egalitarian inheritance practices, the contribution of daughters to support their parents and its recognition.

In the years to come, lack of changes in the SRB associated with low fertility rates in the UK could indicate a change in attitudes towards son preference. A decrease in fertility associated with a stable SRB for the Pakistan- and Bangladesh-born women would suggest no strong son preference in these groups, while a continued high fertility rate would agree with persistent son preference within the Diaspora. For the Indian group, a decrease in SRB without a significant increase in fertility rates could suggest a weakening son-preference. Comparisons of SRB and associated fertility rates of immigrant communities with those of their country of origin may thus provide insights into the development of trans-national cultural practices, including aspects of patriarchy and women’s autonomy.

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[1] Interestingly a reversal in the trend has occurred in South Korea in the late 1990s, from a SRB of 116 in 1998 to 110 in 2004 (Heskesh and Xing, 2006). Chung and Das Gupta (2007) attribute this reversal trend particularly to less prevalent patriarchal values associated with urbanization and modernization of the Korean society.

[2] Data on sex-ratio at birth are not available. Based on a survey of pregnant women, Zubair et al. (2007) have reported a statistically significant preference for boys over girls. However, only a small proportion of the survey respondents (6.3%) declared the use of the prenatal sex-selection method 'cytometric sperm separation' (the only prenatal sex-selection method considered in the survey), as an option they might adopt.

[3] TFR is the average number of children that a woman would bear if the female population experienced the age-specific fertility rates of the calendar year in question throughout their childbearing lifespan (ONS).

[4] From the 1980s to 2001, a 4 points increase in the sex-ratio at birth is estimated for all India: from 106 for the period 1978-92 (National Family and Health Survey, NFHS-1), to 108 for the period 1984-98 (NFHS-2) and 110 in 2000 (2001 Population Census).

[5] It has been argued that in Pakistan and Bangladesh contraceptive use and family size are conditioned by having sons, and also one daughter is generally desirable (Hussain *et al.*, 2000; Khan and Khanum, 2000).

[6] These results are coherent with findings in South Korea where women education and urbanization have been identified as major factors explaining the fall in son-preference (Chung and Das Gupta, 2007).

[7] If fertility stabilized at a low level and son-preference continues to fall, the bias in the sex-ratio at birth should evaporate.

[8] Female immigration from India to the UK is primarily due to family reunion and the women mainly migrate to join their husband settled in the UK, after getting married.