What's hindering fertility decline in Pakistan? Perceptions and realities

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<u>**Introduction**</u>

Despite significant policy and programmatic attention, Pakistan continues to struggle to reduce its fertility rate. The Demographic and Health Survey (PDHS 2006-2007) data show TFR in Pakistan to be 4.1, only slightly lower than the TFR in 2001. Further, the contraceptive prevalence rate which was already much lower than most countries with equivalent levels of fertility, has actually fallen to 29 percent according to the latest DHS. Table 1 describes these changes in fertility over time in Pakistan:

What explains the sluggish decline in fertility trends in Pakistan? Explanations include barriers due to religion (Sathar 1989; Hakim 2005) and limits to women's status (Sathar, Crook, Callum and Kazi 1988) among others. To what extent are these explanations based on perceptions about the religious and socio-cultural context of the country? And to what degree do these perceptions differ from the realities of fertility decline suggested by recent evidence? Close inspection of sub-national data highlights the gap between perceptions and realities of the impact of religious constraints on fertility change in Pakistan and suggest these may be myths rather than realities.

<u>**Table 1: Fertility Trends in Pakistan**</u>

	PDHS 1991	PCPS 1994	PFFPS 1996-97	PRHFPS 2001	SWRHFPS 2003	PDHS 2006
TFR Overall	6.3	5.6	5.4	4.8	4.2	4.1
Contraceptive Prevalence	11.9	17.8	23.9	27.6	32.0	29.6

Some common perceptions are that religious beliefs restrict Pakistani women from exercising reproductive choice because of purdah and placement of restrictions on women's autonomy. However, the data do not necessarily bear this out. One common perception is that, because of purdah, women are restricted from leaving their home or compound; however, only one percent of currently married women say that they cannot leave their home at all and 69 percent say they can leave their homes on their own without chaperones (NIPS 2007). While Islam is cited by many, even in Government and international circles, as a factor restricting demand for family planning in Pakistan, only 9 percent of married women say they do not use family planning because it is against religion (NIPS 2007). There is also a perception that Pakistan has

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very low age at marriage, while in fact, Pakistan has the highest average age of marriage in the South Asia region (Sathar and Kiani 1998). And perhaps most baffling of all is the fact that more than one million induced abortions take place annually in Pakistan to control marital fertility when most abortions are not legal nor openly available and contraceptive services, which are more openly available, are severely underutilized (Population Council 2004).

This paper examines the importance of ethnicity as an explanation for the disconnect between the perceptions and realities of fertility decline in Pakistan using data from the Status of Women and Fertility and Family Planning Survey 2003 (NIPS 2007). This national data set contains information on fertility, contraceptive use, wantedness of pregnancies, and to varying extents, includes data on status of women, and social and economic profiles. Careful analysis of fertility indicators by region and linguistic group (ethnicity) suggests a heterogeneity that cannot be explained by traditional explanatory factors (i.e., religion, economic development, or urbanization) alone. The analysis in this paper hypothesizes that ethnicity and cultural identity, as measured by linguistic factors, help to explain the differences in fertility decline in Pakistan.

Traditional explanations, such as urbanization, economic development, or female's attainment of education, do not fully explain this heterogeneity. This paper suggests that the influence of ethnicity and its impacts on the diffusion of family planning has a strong explanatory effect. Ethnicity impacts the diffusion of ideas and values related to patterns of women's reproductive and fertility behavior. Ethnicity also affects the interpretation of Islam; the paper suggests that Islam does not have a monolithic effect on fertility in Pakistan.

The paper begins by presenting descriptive statistics of ethnicity by area of residence and development indicators and social and reproductive behaviors by ethnicity. The data are analyzed so as to present main factors that depict the usual explanation for the unusual patterns of fertility decline in Pakistan. Urban and rural differences, which capture huge fissures in culture, gender and availability of services, and women's attainment of education are also analyzed to understand the factors behind the lagging fertility transition in Pakistan. The paper then goes on to focus on ethnicity as an explanatory factor for fertility outcomes in Pakistan against the context of educational progress for women, economic prosperity, and urbanization. The paper then presents odds ratios for contraceptive use and want no more children after adjusting for residence (urban/rural), development, and women's status.

Context and Literature Review

The theoretical background and conceptual framework for this paper draws on the current literature on Islam and fertility and family planning as well as studies on the role of culture and ethnicity in fertility change and diffusion theory.

The impact of religion on fertility decline has been the subject of much study and debate (Coale 1973; Caldwell and Caldwell 1987; Knodel et al 1999; Dyson and Moore 1983; Jejeebhoy and

Sathar 2001). There has been discussion as to the degree to which religion plays an independent role in determining fertility differentials and the results of studies are contradictory. While some have argued that the role of religious institutions were necessary for the fertility decline that took place in Europe (Coale and others) others have argued that fertility differentials by religion are explained by socio-economic factors related to religious groups, although this remains an issue of debate when it comes to Muslim populations (Jeffery and Jeffery 1997; Knodel et al. 1999; Jones and Karim 2005). Islam has been the subject of study in terms of the role that religious doctrine or theology plays in determining fertility outcomes – more specifically through specific religious interpretations about contraception and abortion (Jones and Karim 2005). From this perspective, Islam has tended to be constructed from the perspective of a barrier to fertility decline. The demographic transition in Islamic countries and examining whether or not there is a unique pattern related to Islamic countries has been analyzed in a range of countries. A recent compilation of case studies related to fertility decline from a range of Islamic countries including Bangladesh, Indonesia, Turkey, and Pakistan concludes that "[t]hough the influence of Islam is important in all these countries, the notion that there is any such thing as an 'Islamic' level or pattern of fertility or a unified Islamic approach to population or reproductive health is totally undermined. Islamic culture is too rich and diverse…" (Jones and Karim 2005, page 8). Rashad (2000) and others (Obermeyer 1992) have also challenged the role of religion and culture in explaining demographic transition in Arab countries.

There is an important historical literature on the impact of ethnicity on fertility decline that this study draws on. Much of this literature originates with the large number of studies that examined the demographic transition in European societies and analyzed the importance of linguistic, cultural, and ethnic differences in addition to economic development (Knodel and van de Walle 1979; Lesthaeghe 1978; Knodel 1974). More recent work has examined the relationships between ethnicity and fertility in developing countries. For example, Leete (1996) compares fertility trends and patterns by ethnic group and state in Malaysia from the 1950s to the 1980s. His analysis finds a more rapid fertility decline among Chinese and Indian Malaysians than among the Malay women. Basu and Amin (2000) compare the demographic transitions in Greater Bengal to suggest that the sharing of the Bengali language and the sense of common cultural identity "transcends the religious identity of a population" (page 784) as witnessed in the similarities in the fertility behavior of Bangladesh and West Bengal.

Fertility studies are often carried out at the national level, which means that specific fertility transitions in ethnic groups at the sub-national level are not captured adequately (Casterline 2001). Ethnic groups may share specific socio-cultural aspects that may impact their fertility behaviors in a particular way. As Nahmias points out, "Bongaarts and Watkins (1996) stated that patterns of nuptiality and breastfeeding are largely determined by community customs and thus under social control. … Barriers to contraceptive use could also be ethnically influenced, being subject to widespread myths and fears regarding its effect on the woman. If ethnicity

itself is an important factor, then it would be expected that once socioeconomic conditions are controlled for, then any differences in fertility by ethnic group would still remain" (page 2).

An important input into the understanding of religion, ethnicity and fertility decline is the literature on the diffusion of social change as it relates to fertility. Montgomery and Casterline (1998) define diffusion as the process in which someone is influenced in their decision making by the contact with another individual. "…diffusion theory predicts that fertility behavior should be similar in ethno-linguistic groups. Basu and Amin (2000) suggest that "a strong language identity has fostered the diffusion of ideas between the elites and the larger population within each region" (p. 765) which has contributed to agrarian change and contraceptive use in Bangladesh.

Data and Methods

Data for this analysis are drawn from a nationally representative sample survey entitled "Status of Women Reproductive Health and Family Planning Survey" conducted by the National Institute of Population Studies in 2003. As implied by its name the survey had a special emphasis on investigating aspects of women's status along with fertility, knowledge and use of contraceptive methods and intentions. A national sample of 9980 households was drawn covering all four provinces of Pakistan. The FATA and some other areas were excluded. The Federal Bureau of Statistics adopted a standard stratification scheme: the first step was an urban rural stratification which was further stratified into big cities classified as major urban and all other cities and town as other urban. The sampled households yielded a sample of 8718 eligible women, who are ever married and aged between 15-49 who were successfully interviewed. This national sample is substantive enough to allow us to do a disaggregated analysis by ethnicity and residence. Further the women's status variables allow us to look at national patterns of women's autonomy and mobility unavailable until now. This data set is the most recent, given that the PDHS 2006-2007 data are yet to be released.

We group women primarily by their ethnicity as defined by language spoken at home. Women are classified as Urdu, Punjabi, Sindhi, Seraiki, Pushto, Hindko, and Baluchi groups. All other minor languages are clubbed together as "other". The next set of background variables are of residence as classified as major urban, other urban and rural. Development status of the household is constructed by using husband's literacy, respondent's literacy, ownership of assets, women's employment and TV viewership. The last set of variables depicts women's autonomy and mobility. We primarily look at the effects of ethnicity on development status and on social behaviors such as marriage patterns, mobility and decision making.

We also assess the effects of ethnicity on reproductive behavior, as measured by the desire to limit or space children and adoption of use of contraception. Finally, we model reproductive behavior as measured by contraceptive use and want no more children or children later, introducing first ethnicity, followed by residence, development and finally women's status. To

4

do this we use logistic regression analysis to derive odds ratios of contraceptive use by ethnicity after controlling for the other set of factors.

Analysis

The classical pattern of any social dynamic is for change to initiate in the cities and slowly permeate to the countryside. Initially fertility decline did begin in the larger cities, spreading gradually to the larger towns and eventually, to the rural areas in Pakistan. Despite the diffusion of fertility change to the more agrarian countryside, there are still huge differentials in fertility of about over 1.5 children between urban and rural areas (Sathar 2007). Given this differential, it becomes important to look beyond the urban and rural divide to consider the ethnic differences, which underlie several social groupings and behaviors. These could prove important in the exploration of explanations for the stagnation in fertility change, particularly across rural Pakistan. It is interesting to gauge whether reproductive behavior has a dynamic which follows more than the urban-rural differential or whether, in fact, certain groups in urban areas resist change while other groups in rural areas lead change.

Pakistan, like other large countries such as India, and Malaysia lends itself to this analysis. This is because while almost uniformly Muslim, Pakistan has a heterogeneous rural area spanning over four provinces, bordering different countries and is home to several large ethnic groups, speaking different languages. While most Pakistanis share the official language, Urdu is not spoken in many parts of the country as a mother tongue.

It is important to point out that ethnic patterns do follow regional spatial distributions but not precisely. In fact the wider distribution of a few ethnic groups allows us to further investigate the hold of ethnic values and social behavior and values. While most analyses of social behaviors probably use provincial distinctions as their framework, we show here that the linguistic patterns do retain a hold across both regional and provincial boundaries. The regional distribution of two ethnic populations placed in the same provinces allows us to look at key indicators across contiguous regions in the same provinces.
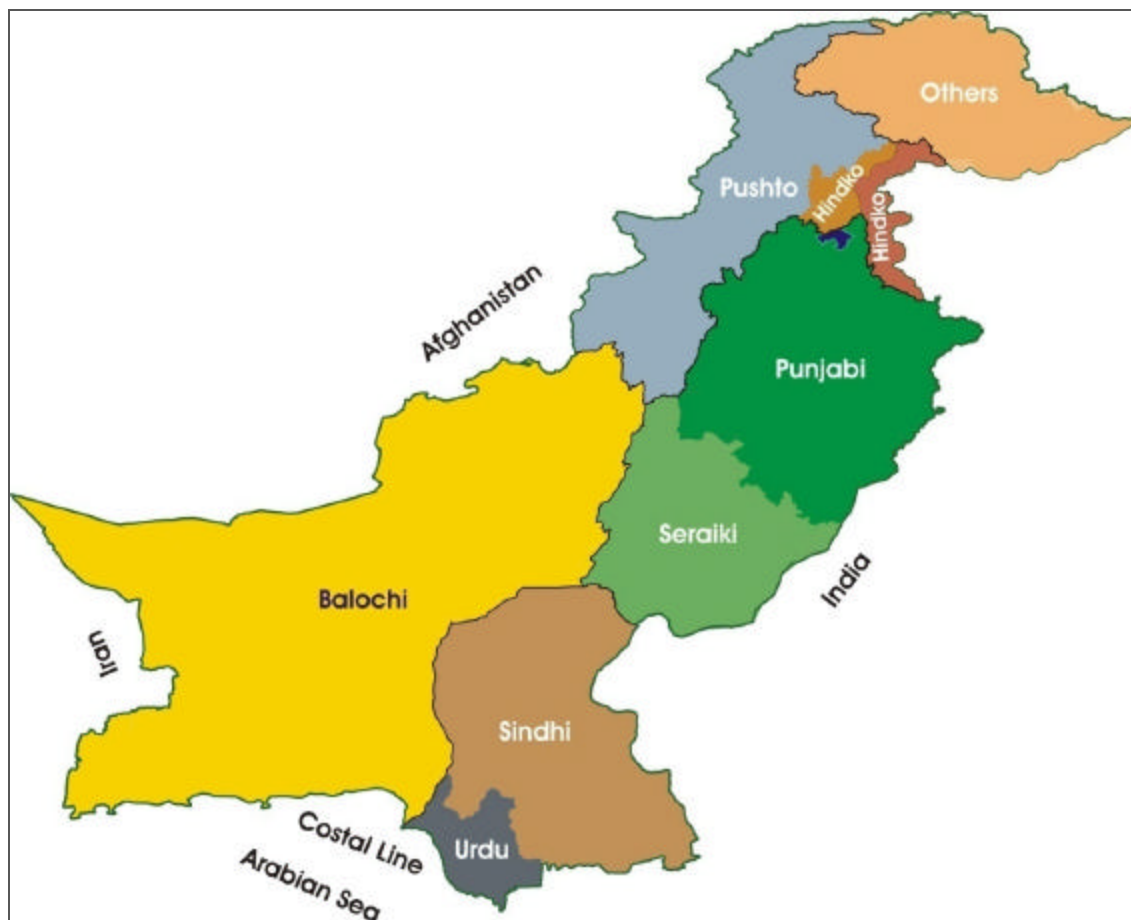
We see that Urdu groups are dominantly located in major urban areas, while all the other ethnic groups have majorities living in rural areas (Table 2). The data for urban areas is broken down into major urban and other urban areas which include towns and peri-urban areas. Punjabi and Pushto groups are more visible in major urban areas, demonstrating that they are the groups that tend to migrate more from rural areas to major cities in urban areas. Sindhis are most confined to their province residing in other urban areas and rural areas while Pushto groups (residents of NWFP) are perhaps the most mobile, also living in Sindh and Baluchistan. Hindko (natives of NWFP) also show migration to Punjab and Sindh. While Punjab comprises Urdu, Punjabi, and Seraiki groups, NWFP comprises both Hindko and Pushto groups and Sindh includes Sindhi, Urdu and Pushto groups. The 'other' category includes those languages for which the number of groups in the sample remains quite small and therefore cannot be analyzed separately.

Table 2: Ethnic Groups by Area of Residence

	Urdu	Punjabi	Siraiki	Hindko	Pushto	Sindhi	Balochi	Other	Overall
Area									
Major Urban	68.9	15.8	2.9	8.6	19.0	1.9	5.3	8.4	17.0
Other Urban	18.7	17.2	14.2	13.7	9.2	18.9	21.1	12.4	15.7
Rural	12.4	67.0	82.9	77.7	71.8	79.2	73.6	79.2	67.3
Number of respondents	**836**	**3209**	**1135**	**278**	**1089**	**982**	**257**	**642**	**8427**
Province									
Punjab	40.7	96.1	81.3	9.7	4.1	0.3		20.5	54.0
Sindh	57.5	3.3	10.1	7.4	13.9	92.6	66.0	43.6	26.5
NWFP	1.6	0.3	3.9	80.4	73.0			20.9	14.5
Balochistan	0.3	0.3	4.7	2.6	9.0	7.1	34.0	15.1	5.0
Number of respondents	**836**	**3209**	**1135**	**278**	**1089**	**982**	**257**	**642**	**8427**

Most importantly the rather wide dispersion of ethnic groups across major regions and provinces allows the ability to investigate the influence of ethnicity within residence strata in particular. This enables us to capture the influence of urban residence, greater exposure to media, and greater education which underpin urban life and those who are born and migrate to it, compared to relatively slower development that is expected in rural areas.

Development as defined conventionally through education of men and women, ownership of assets, non-agricultural occupations and through exposure to media places Urdu groups in a much more advantageous position. However, among other ethnic groups, these characteristics do not follow a uniform pattern. Female education is highest among Punjabis and Hindko and lowest among Baluchis with Siraiki, Sindhi and Pushto groups at similar medium levels. Ownership of no assets as listed by us, an indicator of harsh poverty, places Hindko (the ones with high levels of female education) as the poorest followed by Sindhi, Baluchi placing Pushto and Siraiki groups at higher levels. We also include husband's literacy and employment status because they are indicators of development but are not directly correlated with women's education or literacy (Table 3). The literacy differential between respondent and her husband are much greater in the Siraiki, Pashto, and Sindhi populations. The most striking gender difference is found in the Balochi group. Balochi and Sindhi husbands are mostly in agricultural and blue collar jobs while white collar jobs are highest among the Urdu, Hindko and Pushto groups.

<div align="center">**Table 3: Development Indicators by Ethnicity**</div>

	% Respondent literate	% Husband literate	% Household with no assets	Husbands Occupation				N
				White Collar	Blue Collar	Agriculture	Others	
Urdu	72.9	84.1	11.5	54.8	20.0	5.8	19.3	836
Punjabi	39.4	65.1	11.2	39.7	16.1	19.8	24.4	3209
Siraiki	16.4	51.8	12.1	28.1	10.9	31.3	29.7	1135
Hindko	35.4	65.3	21.8	43.7	14.3	25.3	16.6	278
Pushto	15.6	54.4	15.6	47.9	9.9	20.9	21.2	1089
Sindhi	19.9	55.6	19.4	28.3	7.6	43.6	20.5	982
Balochi	8.3	46.2	17.3	29.3	11.6	43.0	16.1	257
Other	22.1	51.3	16.2	34.5	12.2	33.6	19.7	642
Total	**31.9**	**61.1**	**13.8**	**38.8**	**13.5**	**24.8**	**22.9**	**8427**

Ethnicity is thought to have important influence on social behaviors. The areas where we expect the greatest impact of ethnicity as it relates to fertility is in marriage patterns and the traditional patriarchal hold on values related to the mobility and autonomy among women. This would consequently affect the levels of education and employment among women, factors found to be so important in empowering women to lead change in social and economic areas, such as in neighboring Bangladesh, India and Iran. It is also important to note that the status of women has been seen as a major restraining factor believed to be holding back fertility decline in Pakistan (Sathar, Crook et al. 1988).

We establish that there are distinct differences in social behavior by ethnicity in Pakistan. Table 4 shows that Urdu groups, closely followed by Punjabi groups, are the leaders in terms of higher age at marriage, greater mobility of women outside the home and decision making. The ethnic group most regressive on all these factors, with low age at marriage, lowest mobility outside the home and lowest decision making is the Baluchi population. In between these two groups lie four major sets of ethnic groups, the Hindko speaking, the Sindhis, the Pushto groups and the Siraki population.

Some of the most notable comparisons are the much lower proportions who marry before the age of 15, and the higher mean age at marriage of Urdu and Punjabi speaking women. It is noteworthy that these levels are much higher than the rest of South Asia including India. Even the more conservative ethnic groups such as the Pushtoons living near Afghanistan and Baluchis living near Iran have ages at marriage of 18 and 17.3 respectively.

Table 4: Social Behavior by Ethnicity

Marriage	Urdu	Punjabi	Siraiki	Hindko	Pushto	Sindhi	Balochi	Other	Total
Proportion married under 15	5.6	10.0	17.8	9.9	16.7	19.9	16.6	14.8	13.2
Mean age at marriage	19.7	19.1	17.8	18.8	18.0	17.4	17.3	17.9	18.5
Mobility									
Just outside the house	64.7	78.3	77.0	87.2	58.7	43.5	38.4	72.9	68.9
Visit relatives	40.1	47.9	30.5	35.6	21.2	6.2	8.0	27.9	33.3
Market	49.8	52.6	32.4	22.5	10.0	7.2	8.3	21.1	34.1
Health center	48.3	49.4	25.7	14.9	9.6	6.5	5.7	18.7	31.2
Next village	21.6	27.9	10.2	5.7	3.3	3.3	1.2	8.3	15.8
Autonomy									
Working for money	11.3	10.2	29.1	7.6	3.1	28.8	19.2	20.0	15.0
Decision making									
Children's health care	85.2	79.6	69.8	83.1	73.7	63.1	62.8	78.3	75.7
Children's education	81.3	76.2	63.5	82.9	59.4	49.4	45.5	66.3	68.2
Children's marriage	75.0	69.0	66.6	73.8	56.6	52.4	46.2	64.9	64.9
Support for own parents/Relatives	69.2	70.9	57.0	82.7	53.0	42.6	48.5	60.9	62.2
Support for Husband's parents/relatives	67.0	69.6	55.0	73.4	54.7	39.3	41.5	57.1	60.2
Buying/selling property/goods/animals	60.8	64.0	53.3	45.3	40.1	29.9	18.4	41.5	51.5
Gifts on marriages	75.7	75.3	66.1	83.8	57.3	45.0	36.6	62.5	66.4
Buying/selling jewelry	75.7	67.0	56.4	67.9	47.9	38.4	27.9	53.9	58.5
Number of respondents	**836**	**3209**	**1135**	**278**	**1089**	**982**	**257**	**642**	**8427**

The mobility of women is surprisingly not as constrained given most depictions of Pakistani women. About two-thirds of Urdu groups can leave their homes easily, but an even higher proportion of Hindko speaking women (who reside in NWFP) can leave their home alone. The proportions diminish as we look at the ability to visit relatives, go to the market, to a health center, and finally to the next village or city. These proportions remain distinctly higher for Urdu and Punjabi populations and lowest for Pushto, Sindhi and Baluchi groups. Seraiki and Hindko groups consistently fall in between. Decision making authority on children's education, their marriages and ability to use resources for their own natal family follows roughly the same patterns: Urdu and Punjabi groups are at the higher rungs while Baluchi and Sindhi women are at the lower rungs. Somewhat totally anomalous are the findings related to women's work outside the home, which is highest among Sindhi and Seraiki women. Clearly this is related to agricultural work which involves women most intensely in the cotton growing belt rather than other agro ecological zones.

Examining differences in women's mobility is important to our analysis because we argue that women's mobility among relatives can serve as a measure of diffusion. The more likely women are to associate freely outside their home and to interact with relatives or friends, the more likely they are to be exposed to alternate social behaviors. We find that Punjabi and Urdu speaking women are most likely to visit the homes of relatives or friends, followed by those who speak Hindko and Seraiki. The most insular and limited from interacting within the group are Sindhi and Baluchi groups. As a measure of linkages with natal families and ability to interact with them we look at support for ones parents or relatives, a keen indicator of women's autonomy. This is also lowest among Sindhi and Baluchi groups despite the fact that they participate in work outside the home. In contrast Urdu and Punjabi groups are able to exercise authority and to move more freely but a much lower proportion work for money.

An important next step is to establish whether there are any links such as those with social behavior between ethnicity and reproductive behavior. We look at three aspects of divided reproductive behavior: the first is children ever born, second the desire to control fertility through limiting or spacing children, and the third is to use contraception or some other means of control to act upon intentions. Table 5 below shows an interesting pattern for all these indicators. Overall, children ever born, which is a very crude indicator of fertility (uncontrolled for age), ranges from 3.6 among Hindko and 3.7 among Urdu groups to 4.4 among Siraiki

Table 5: Reproductive Behavior by Ethnicity

	Average children born	Want no more	Contraceptive use	N
Urdu	3.70	46.6	48.6	836
Punjabi	4.03	44.3	34.9	3209
Siraiki	4.36	37.6	24.7	1135
Hindko	3.60	36.1	39.1	278
Pushto	4.13	30.0	28.3	1089
Sindhi	4.17	33.0	23.5	982
Balochi	4.06	25.6	18.4	257
Others	4.10	35.3	31.6	642
Total	**4.06**	**38.9**	**32.1**	**8427**

groups. While this does not represent a very broad range, it is more stark to see differences in the proportions wanting no more or to space children. This is a measure of deviation from acceptance of unregulated fertility (which is assumed to be the dominant behavior) to a desire for more regulation of reproduction. An interestingly similar pattern to that seen with other social behavior emerges with Urdu speaking and Punjabis as the clear leaders of wanting no more children, followed by Siraiki, Hindko, Sindhi and Pushto groups, and with the least desire to control fertility among Baluchis. The pattern of contraceptive adoption, an even more telling indicator of deviation from conventional natural fertility, is roughly similar with some

anomalies.   The anomalies are the lead role of Hindko groups in the ranking of usage and a falling behind of Siraiki and Sindhi groups.

At this point it is important to note that Hindko and Pushto, both spoken in NWFP, present very different characteristics. Hindko groups are closer in behavior to adjacent Punjab. Almost analogously, Seraiki groups concentrated in Southern Punjab, bordering Sindh show more conservative trends resembling that contiguous ethnic group in terms of wanting no more children and lower contraceptive prevalence rates.

We want next to assess alternative explanations for differences in fertility behavior against the one that ethnicity drives much of social patterns of behavior in Pakistan. We are looking for explanations for which groups may lead reproductive change, apart obviously from the Urdu and Punjabi groups located in urban areas. In order to achieve this we must incorporate into the analysis the conventional set of explanations for variations. Figure 1 below presents the conceptual framework for this paper's analysis of fertility decline in Pakistan. In the left-hand side of the figure are the traditional explanations for influences on fertility decline. While there are others, these have been selected as they represent the fundamental factors that may contribute to fertility decline (urbanization, economic development, and women's education) and also may inhibit fertility decline (religious or cultural proscriptions). The right hand side of the figure includes the outcome variables – measures of fertility that include contraceptive prevalence, number of children ever born, and unmet need. This paper suggests that factors such as economic development and religion do not have a direct influence on fertility outcomes but are tempered through cultural factors defined by ethnicity. Language is a meaningful measure of ethnicity and so linguistic identity is included in the framework as a proxy variable for ethnicity. Urbanization is conceptualized as having a more direct and separate effect on fertility and therefore is shown as having a direct relationship on fertility.

The intervening variables to fertility outcome in the conceptual framework include measures related to the status of women. These are hypothesized to be affected by ethnicity rather than the effect of a monolithic interpretation of Islam on women's status. This conceptual framework suggests that ethnic identity tempers the interpretation of Islam. As a result there will be ethnic differentials in the status of women indicators that result in differential fertility outcomes. The diffusion of behavioral change is affected by both ethnic identity and the status of women in their willingness and ability to adopt changes in fertility behavior.

Figure 1: Conceptual Framework for Understanding Fertility Decline in Pakistan
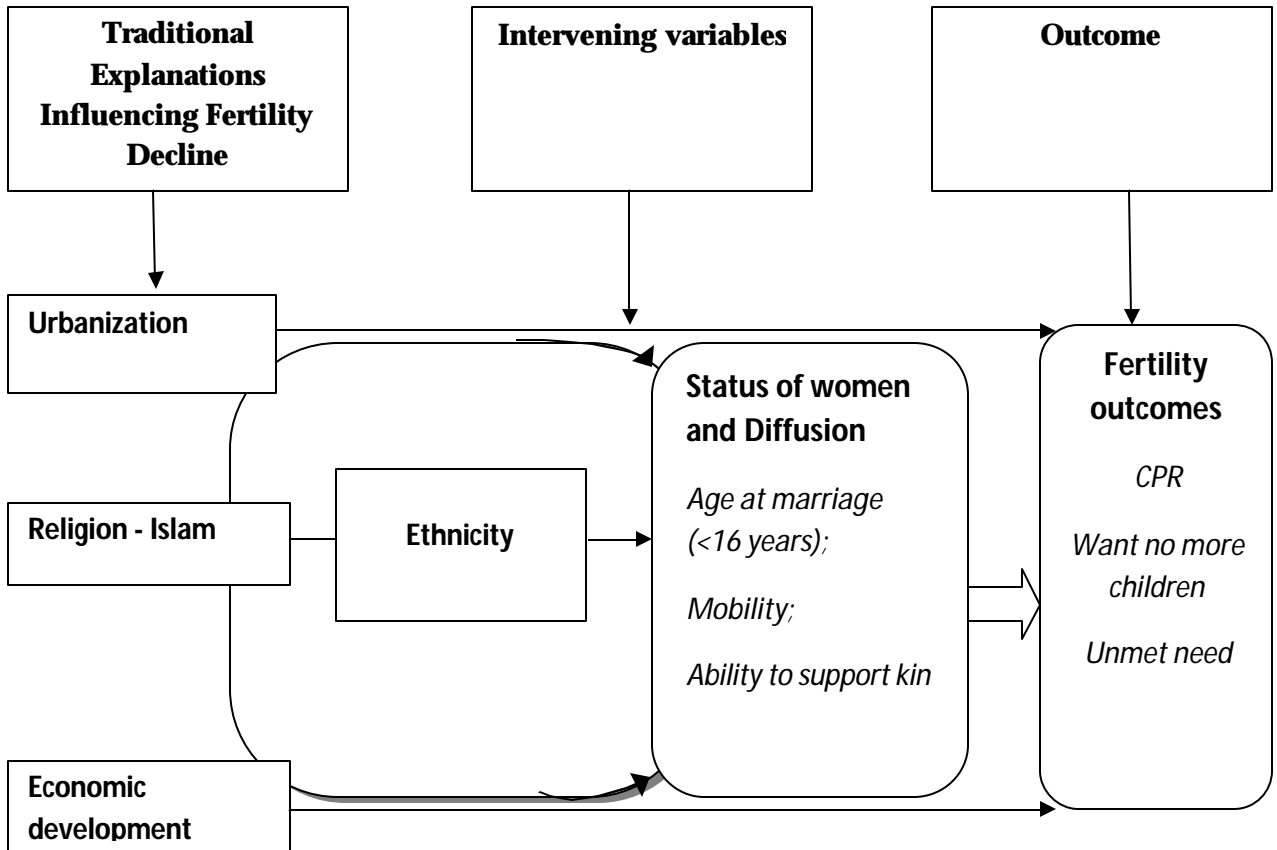
To operationalize this conceptual framework, we utilize a model which first introduces variations in intentions and behavior by ethnicity, and then introduces residence in major urban, other urban and rural as reflecting the influence of availability of better services, road networks and the 'urban lifestyle'. We find that this does reduce the variation in both contraceptive use and intentions across ethnicity.

We then introduce a combination of household and individual effects of social and economic status, i.e. education of women themselves, and whether they have ever watched television. This too reduces the influence of ethnicity and some groups now converge such as Hindko and Punjabi and Urdu speaking. In the end we also introduce women's mobility and autonomy and control over resources as the last set of factors, which in fact we hypothesize are very closely associated with the social values embodied by ethnic groups and shared commonly by them. Here we do see an even more reduced influence of ethnicity on contraceptive uptake and on future fertility intentions as would be expected. After all, ethnicity is the prime driver of what

social values are adopted about women's purdah, their seclusion, discussion about ideas deviating from traditional to modern, etc. But what is most significant is the tenacious influence of some groups in terms of having a clear leading edge in terms of reproductive behavior, e.g. Hindko population of NWFP and in contrast the conservative if not regressive influence of being Baluchi, Sindhi or Seraiki speaking.

Table 6: Influence of Residence, Development and Women Status on Ethnic Differentials in Reproductive Behavior (Logistic model with contraceptive use and desire for no more children as the dependent variables.)

	Want no more children							
	1		2		3		4	
	Sig.	Exp(B)	Sig.	Exp(B)	Sig.	Exp(B)	Sig.	Exp(B)
Ethnicity								
Urdu	0.000		0.000		0.000		0.000	
Punjabi	0.223	0.909	0.649	1.040	0.613	0.957	0.261	0.905
Sindhi	0.000	0.565	0.000	0.665	0.000	0.550	0.003	0.713
Pushto	0.000	0.492	0.000	0.567	0.000	0.461	0.000	0.568
Hindko	0.002	0.647	0.064	0.759	0.008	0.670	0.058	0.747
Balochi	0.000	0.394	0.000	0.457	0.000	0.361	0.000	0.464
Siraiki	0.000	0.689	0.054	0.819	0.000	0.682	0.017	0.772
Other	0.000	0.626	0.009	0.737	0.000	0.633	0.010	0.734
Constant	0.050	0.873						
Area of residence								
Major urban			0.000		0.000		0.000	
Other urban			0.891	0.989	0.874	0.987	0.795	1.022
Rural			0.000	0.781	0.000	0.718	0.000	0.763
Constant			0.154	0.902				
Development indicators								
Respondent's literacy					0.000	0.611	0.000	0.612
Husband's literacy					0.106	0.919	0.293	0.946
Working for money					0.015	1.173	0.188	1.091
Household assets					0.010	0.844	0.016	0.853
Watching TV					0.001	1.192	0.002	1.180
Constant					0.005	1.373		
Mobility								
Health center							0.000	1.550
Next city/village							0.009	1.226
Constant								
Decision making								
Support for own parents/relatives							0.000	0.788
Constant							0.401	1.104

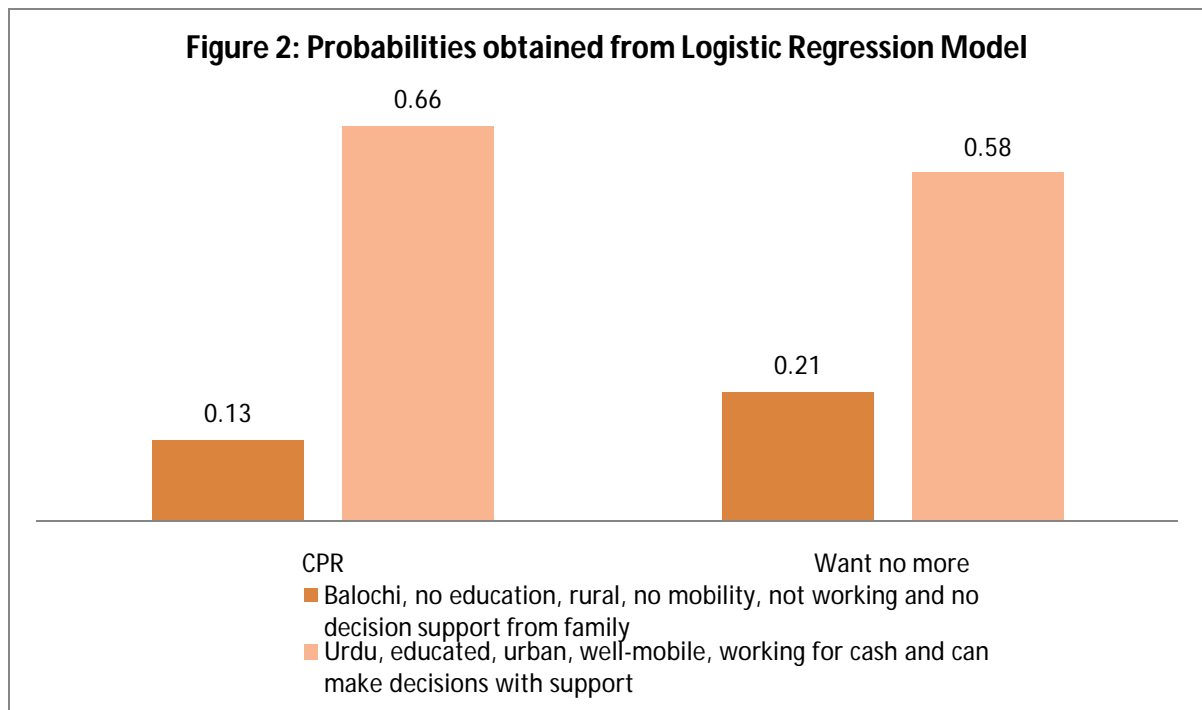|	Contraceptive use							
	1		2		3		4	
	Sig.	Exp(B)	Sig.	Exp(B)	Sig.	Exp(B)	Sig.	Exp(B)
Ethnicity								
Urdu	0.000		0.000		0.000		0.000	
Punjabi	0.000	0.567	0.067	0.852	0.458	0.937	0.214	0.895
Sindhi	0.000	0.325	0.000	0.540	0.000	0.634	0.053	0.795
Pushto	0.000	0.418	0.000	0.634	0.014	0.770	0.455	0.921
Hindko	0.006	0.680	0.490	1.108	0.238	1.194	0.082	1.305
Balochi	0.000	0.239	0.000	0.380	0.000	0.491	0.008	0.610
Siraiki	0.000	0.348	0.000	0.588	0.002	0.710	0.035	0.787
Other	0.000	0.489	0.059	0.799	0.848	0.977	0.429	1.102
Constant	0.406	0.944						
Area of residence								
Major urban			0.000		0.000		0.000	
Other urban			0.002	0.771	0.004	0.787	0.011	0.806
Rural			0.000	0.462	0.000	0.575	0.000	0.606
Constant			0.251	1.087				
Development indicators								
Respondent's literacy					0.000	1.404	0.000	1.419
Husband's literacy					0.199	1.075	0.091	1.101
Working for money					0.005	1.216	0.064	1.141
Household assets					0.873	1.011	0.704	1.027
Watching TV					0.000	1.373	0.000	1.361
Constant					0.000	0.570		
Mobility								
Health center							0.000	1.471
Next city/village							0.125	1.132
Constant								
Decision making								
Support for own parents/relatives							0.000	0.787
Constant							0.000	0.477

Discussion

The ethnic differentials in social and reproductive behavior provide insights into why fertility may be stagnating, particularly in rural areas of Pakistan. Religion, which is too quickly named as a barrier to change, is not as strong an obstacle as perhaps the confinement of social behaviors and change based on linguistic identity and groupings. Most certainly as in the case of other fertility declines in populations in Europe and across Asia, language does tie population groups into similarities of behavior which especially influences age at marriage, women's status and fertility behavior. The data presented here suggest there is more behavioral affinity across groups living in different regions and sharing a common language than neighbors in large cities of Karachi, Lahore and Islamabad speaking different languages. The data from this national survey establish this affinity to quite an extent though
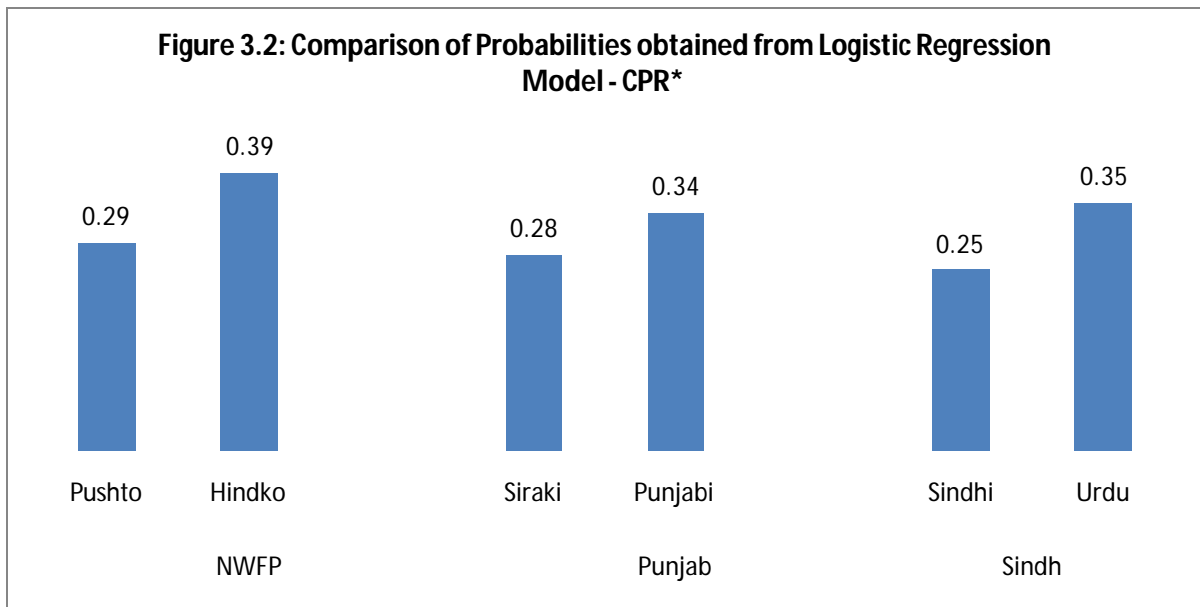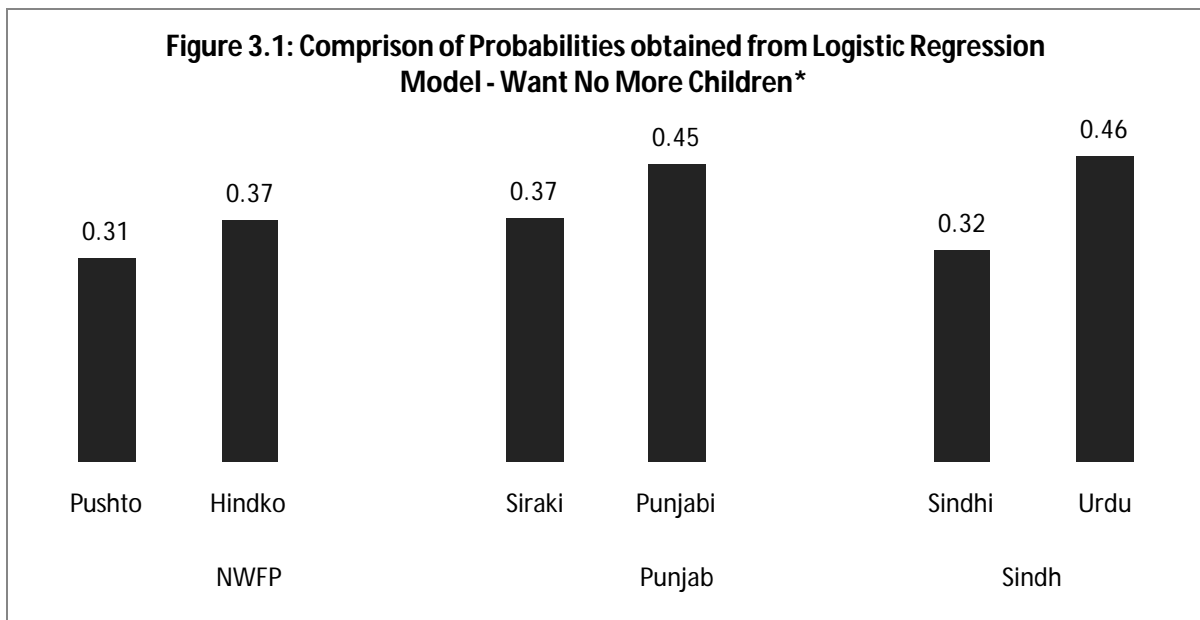
further analysis would be required to quantify these effects. We propose that fertility change happens in gradations and that ethnicity has a strong effect in predicting which areas or groups within an area will undergo fertility change.

The analysis also suggests that fertility change is not entirely explained by developmental effects as reflected in urban and rural differentials. Evidence of this phenomenon are the data that show Pushto groups in Sindh and Urdu groups outside of Sindh (whom we can presume have migrated or at least are living away from their larger clan) still exhibit fertility patterns that resemble their ethnic group. With this data set we do not have information about husbands living away from home other than as a reason for not using contraception. Having better evidence about the migration status of the husband would allow us a better sense of the impacts of migration in terms of diffusion about new ideas that affect fertility behaviors.

At the same time these differentials offer a glance at where we may expect fertility change to permeate from and spread to more rapidly. It is clear that certain ethnic groups are much more progressive in terms of their values attached to women, towards reproductive change and possibly a host of behaviors. Others are more tenacious to older, more traditional values. Among the first groups are the Urdu, Punjabi and Hindko groups. Among the latter groups are the Sindhis, Seraiki groups and Baluchis. The most stark difference is between Urdu and Baluchi groups as is shown in the Figure 2 below that shows the probabilities of using contraception and want no more children from our logistic regression model providing the comparison of the best and worst case scenarios.

Figure 2: Probabilities obtained from Logistic Regression Model

- Balochi, no education, rural, no mobility, not working and no decision support from family
- Urdu, educated, urban, well-mobile, working for cash and can make decisions with support

A central belt running across Pakistan from Baluchistan in the western border to Sindh and Southern Punjab bordering Rajasthan, India on the eastern border seem to be least permeable to change. While Pushto groups share rather conservative values about women's mobility and seclusion, they are, in the end, more amenable to change once those barriers are controlled for. Figure 3.1 & 3.2 below presents the results of the probabilities of Want no More Children and CPR for contiguous groups within provinces. It is interesting to note that in the province of NWFP which comprises both Hindko and Pushto groups, the former much in the lead similar to Punjab. In Punjab, the Siraiki groups resemble Sindhis and most stark are Urdu and Sindhi differentials in the province.

Figure 3.1: Comprison of Probabilities obtained from Logistic Regression Model - Want No More Children*

Group	Probability
Pushto (NWFP)	0.31
Hindko (NWFP)	0.37
Siraki (Punjab)	0.37
Punjabi (Punjab)	0.45
Sindhi (Sindh)	0.32
Urdu (Sindh)	0.46

Figure 3.2: Comparison of Probabilities obtained from Logistic Regression Model - CPR*

Group	Probability
Pushto (NWFP)	0.29
Hindko (NWFP)	0.39
Siraki (Punjab)	0.28
Punjabi (Punjab)	0.34
Sindhi (Sindh)	0.25
Urdu (Sindh)	0.35

*Controlling for Residence and Development indicators including household assets, education, TV viewing.

It would be interesting to compare in further analysis the contiguous groups across the borders in Afghanistan, Iran and India to assess patterns of behavior across political boundaries along the lines of Amin, Basu and Stephenson's 2002 study.

This analysis, while not exhaustive, suggests that looking only at national or even provincial or rural/urban data related to fertility change hides the sub-groups for whom the fertility transition is occurring more rapidly. In terms of what all this means for Pakistan overall, it would seem that campaigns for information or for services will have to particularly target the regressive groups in different ways than for other groups such as Punjabis who do have a gap in desire to control fertility and are actually doing so. The regressive or more conservative groups it appears are detached from social messages being transmitted through media, through migration and through interaction with groups outside of themselves. The permeation into these groups would have to follow more ethnically sensitive materials and messages and discussions in local languages. The identification of 'positive deviance' cases could prove useful as initiators of behavioral change – diffusion of such socially and, as we have argued here, ethnically, entrenched behaviors must take place within the confines of ethnic boundaries which transcend provincial and other externally imposed boundaries which are perceived as the line of demarcation.

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