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Revealing Ideal Number of Children by Women: A Socioeconomic Analysis Using Pakistan Demographic and Health Survey

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Abstract
Most of the developing economies including Pakistan are facing the problem of rapid population growth. All the efforts to control higher population growth become useless when the household desire larger number of children. In the study the determinants of ideal number of children revealed by the woman are probed. So along with sociocultural, economic, demographic and attitudinal characteristics of the household, a range of woman characteristics like her education, working status, BMI, exposure to media, ownership of assets, household decision-making, justification of violence and spousal age difference are included in the model. The results have shown that woman's education, woman's empowerment through household decision-making and resistance to violence against woman and inter-spousal age difference reduce the number of desired children. Exposure to media regarding the family planning programs has also shown negative impact on the ideal number of children. Wealth index has also been emerged as the strong predictor for keeping the ideal number of children low. On the other hand, son-daughter ratio and good health of the woman proxied by BMI positively impact the ideal number of children. From the policy perspective woman's education, exposure to media and woman autonomy needs specific attention at the end of family planning programs and women development in Pakistan.

Keywords: Fertility, Woman empowerment, Household wealth, Female education, Media exposure, Family planning.

1. Introduction

The size and composition of population in an economy is based on the progression of fertility, mortality and migrations. Fertility is most important factor, essential for continuation of human life on earth and contributes intensively in population growth as mortality is desirable to be declined. Fertility analysis is important for policy makers to get guidance for family planning programs. It may also help in evaluation of these programs on the basis of outcomes of analysis. Fertility analysis is equally important for

both economically developed and under-developed nations. It is important for those developed countries where fertility has reached below replacement level. The situation is generating the problem of lack of manpower in the labour market. On the other side many developing are facing the problem of rapid population growth that is above the replacement level of fertility. These countries are confronted with the problem of scarce resources to meet the growing demand of population. In Pakistan the rapid population growth is creating a great hindrance to the social and economic progress of the country.

Many developing countries are facing the problem of rapid population growth. Pakistan is in the early stage of demographic transition from the past two decades. Mortality rate has turned down rapidly. Decline in infant mortality rate was 20 percent in the past two decades. But decline in fertility was sluggish before 90's and it increased after 90's. Total fertility rate had declined from six children in 1996 to four children in 2012 per woman. Increase in adolescent population and reduction in dependency ratio exhibit that phase of population transition has started. The country is passing through the phase of rapid urbanization, migration and influence of mass media. Still the fertility has not declined up to the desired level. One of the major reasons is desired number of children by the household.

Investigation of factors which are keeping the household's ideal number of children high is very important. The objective of the current study is to see the impact of social, cultural, demographical and attitudinal factors on household's ideal number of children[1].

2. Literature Review

The fertility behavior of the women has been discussed in the literature in a number of ways. Hashmi and Zafar (1997) preferred multiple linear regression modeling technique to discover the reproductive behavior of Pakistani women. They included some predictors in the model like husband's desire for ideal family, inter-spousal discussions on fertility decisions and marital duration. The study was based on the Pakistan Demographic and Health Survey 1991. Respondents of survey under discussion were currently married women with at least one child after five years of marriage and whose husband was alive. The empirically investigated predictors were education of women, type of residence, number of inter-spousal discussions about fertility decisions and husband's desire for number of children. These factors were responsible for 89.22 percent of total variation in children ever born. Among all these factors only education of woman was found to be negatively associated with fertility. Ever use of contraceptive had shown positive effect in the analysis on children ever born. Similar result about the use of contraceptive was also reported by Butt and Jamal (1993). These findings are disappointing for policy makers. The reason might be that Pakistani women start use of contraceptive after having desired number of children.

Adhikari (2010) had explored demographic, socio-economic and cultural factors affecting fertility differentials in Nepal. The study concluded that age at marriage, fertility intentions, education, mass media exposure, economic status and child mortality had played major role in the contribution of high fertility. Child mortality and fertility had strong positive association. The results suggested that implementation of marital law of

[1] Household's ideal number of children may be expressed by the woman, woman and husband collectively, husband alone or head of the household. As family planning programs in Pakistan are female-focussed so we have included in our analysis the ideal number of children revealed by woman.

age, mass media exposure, and improvement in education and socioeconomic status could be helpful in declining fertility in Nepal. Positive association between children ever-born and ever-use of contraceptives was found by the study that is opposed by many fertility researches (Bongaarts and Potter 1983; Feyisetan and Casterline 2000). The analysis reported low fertility for those households which were headed by women. Women's high social status is responsible for this decline (Gupta 1990; Castle 1993). Media exposure had played vital role in declining the fertility of Nepali women by changing the knowledge, attitudes and behaviors of Nepali women towards family size and contraceptive use (Saksena and Rastogi 1989).

A broad body of research exists on women's empowerment and reproductive outcomes. Substantial research, primarily focused on Asia, demonstrates that women's empowerment is associated with contraceptive use (Morgan and Niraula 1995; Gwako 1997; Schuler, et. al. 1997; Woldemicael 2009), lower fertility (Dyson and Moore 1983; Balk 1994; Hindin 2000), and longer birth intervals (Upadhyay and Hindin 2005). Some researchers have suggested that women's empowerment is a key pathway through which education influences fertility (Mason 1987; Jejeebhoy 1995). To operationalize women's empowerment, much of the research literature uses the previously mentioned index of participation in household decision-making. The standard DHS questionnaire includes a set of questions about household decision-making. Other approaches include assessing women's acceptance of reasons that a husband is justified for beating his wife, and also reasons that a wife is justified in refusing sex with her husband. The DHS includes questions about these issues. Such gender-role attitudes measure the extent of women's acceptance of norms that justify men's control over women. They expressed lower levels of power over household decision-making among women (Dhaher, et. al. 2010; Hindin 2003; Linos, et. al. 2010).

Generally the studies have used the number of children, contraceptive use, husband's desire for ideal family, method of contraception for fertility behavior. We are going to analyze the ideal number of children in Pakistani families revealed by woman using the fresh data of Pakistan Demographic and Health Survey (PDHS) 2012-13[2]. The ideal number of children is revealed by the woman so, we have included the different aspects of woman decision-making, autonomy or empowerment like the ownership of assets by the woman, woman's household decision-making, violence against the woman and inter-spousal age difference in the analysis. The other woman and household characteristics[3] representing the sociocultural, demographic and attitudinal behavior of the household are also included in the analysis. In this way the study is not only an addition to the current literature on fertility behavior in Pakistan but has the novelty of probing the fertility in woman's perspective.

[2] For the ultimate objective of keeping the population growth rate lower, not only the decrease in ideal number of children by woman but the materialization of ideal number of children revealed by woman is also necessary. The ideal number of children revealed by woman may differ to ideal number of children revealed by husband. To what extent the ideal number of children revealed by woman may be materialized, it depends upon the status of woman in the household. So the variables of woman's decision-making at the household level, her empowerment and autonomy may be determining factors of materialization of ideal number of children revealed by the woman. Our study is concerned with only estimating the determinants of ideal number of children by woman.

[3] They are woman's education, woman's working status, woman's BMI, exposure to media, husband's education, sons to daughter ratio, wealth index of household and rural or urban residence of household.

3. Methodology

To estimate the ideal number of children that is a continuous variable ordinary leas square (OLS) model is applied to 3020 observations taken from PDHS 2012-13 data-set. PDHS data has specific characteristics. It is designed to collect data about demographic and maternal and child health indicators with the purpose of providing reliable and updated information for policymakers and program managers.

The background characteristics of variables of PDHS and their expected effect on ideal number of children are discussed here as:

3.1 Ideal number of children

The PDHS 2012-13 asked the women and men of 15-49 years age about the total number of children they would like to have in their lifetime if they could choose the exact number to have at the time they had no children. Even though this question is based on a hypothetical situation, it provides two important measures. First, for women and men who have not started a family, the data indicate how many children would be ideal for them to have in the future. Second, for older and high parity women, the excess of past fertility over the ideal family size provides a measure of unwanted fertility. The current study included only those observations in the analysis who have at least one child[4] and excluded those women who have no children. It makes the availability of dependent variable of the model.

3.2 Women's education and Women's working status

In the survey, the woman's education is coded into categories, i.e. no schooling, primary schooling, middle, secondary and collage or higher schooling. The study converted the years of schooling into six categories i.e. no schooling, primary schooling, middle, secondary, bachelor's degree and higher. The first category serves as the reference group because the category is assumed to be the most disadvantageous. All these categories have been included in the analysis and it is hypothesized that it would result into declining the ideal number of children and has different educational level effect. The study include the working status of women as dummy variable coded 1 if women is working, zero otherwise and hypothesis that working status of female reduces the ideal number of family size.

3.3 Woman's body mass index

Mother's body mass index (BMI) represents better picture of mother's health than height and weight alone. A BMI less than 18.5 is considered as under-nutrition (Pullum 2008). We have included the variable as dummy variable.

3.4 Exposure to media

Exposure to media is proxied by heard family planning on television. It is coded as 1 if yes, otherwise zero.

3.5 Women ownership of assets

Ownership of assets, particularly high-value assets, has many beneficial effects for households, including protection against financial ruins. Woman's individual ownership

[4] Although in the sociocultural perspective of Pakistani society, the gender of living children may affect the ideal number of children.

of assets provides economic empowerment and protection in the case of marital dissolution or abandonment. The PDHS 2012-13 collected information on women's and men's ownership (alone, jointly, and alone and jointly) of two high value assets, namely land and a house. Table 1 shows the percentages of ownership of asset by women; only 2 percent of female owned house, 7.4 percent owned jointly and 1.3 percent owned alone and jointly, as compared to female who own land 2.0, 1.8, and 0.1 percent respectively. Total 89.1 percent women do not own house and 96.0 do not owned land.

Table 1: Ownership of Assets by Ever Married Women Age 15-49 Years

Percentage who own a house				Percentage who own land			
Alone	Jointly	Alone and jointly	Who do not own	Alone	Jointly	Alone and jointly	Who do not own
2.0	7.4	1.3	89.1	2.0	1.8	0.1	96.0

Source: National Institute of Population Studies and ICF International (2013)

We have constructed the index of ownership of assets by ever married women aged 15-49 years using Principal Component Analysis (PCA). In the first stage assigned the values of different categories of house and land ownership as: the woman who does not own, the value assigned to them is zero; for jointly 1; for alone and jointly 2, and for last category the value assigned is 3. In the second stage, the index of assets is constructed by using PCA and included the first component, that is explaining 64.728 percent variance.

Table 2: Total Variance Explained for Women Ownership of Asset Index

Component	Initial Eigenvalues			Extraction Sums of Squared Loading		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	1.295	64.728	64.728	1.295	64.728	64.728
2	.705	35.272	100.000			

3.6 Women Decision Making

The ability of women to make decisions that affect their personal circumstances is an essential element of their empowerment and serves as an important contributor to their overall development. To assess currently married women's decision making autonomy, the PDHS 2012-13 collected information on their participation in three types of decisions: their own health-care, making major household purchases and visits to family or relatives. The three questions asked were as:

- Person who usually decides on respondent's health care?
- Person who usually decides on large household purchases?
- Person who usually decides on visits to family or relatives?

The responses are coded as: someone else, mainly husband, wife and husband jointly, and mainly wife. Table 3 presents the percentages of different decision, i.e. only 11.1 percent females take the decision about their own health care, and 7.8 and 8.7 percent females are able to take decision about major household purchases and visit to her family or relatives. Only 9.4 percent females have control over their husband earnings. These figures show less women empowerment in Pakistan.

Table 3: Women Decision-making by Ever Married Women Aged 15-49 years

Decision	Mainly Wife	Wife and Husband Jointly	Mainly Husband	Someone Else
Own Health-care	11.1	40.8	30.5	17.5
Major Household Purchases	7.8	39.2	28.6	24.3
Visit to Her Family or Relatives	8.7	41.2	26.2	23.8

Source: National Institute of Population Studies and ICF International (2013)

In the first stage we converted these four responses as: zero if decision is taken by someone else, 1 if it is taken by husband, 2 if decision is taken by wife and husband jointly, and 3 if it is taken mainly by wife. In the second stage we constructed the index by using PCA and included first component which explains 80.538 percent variance.

Table 4: Total Variance Explained for Women Decision-making Index

Component	Initial Eigenvalues			Extraction Sums of Squared Loading		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.416	80.538	80.538	2.416	80.538	80.538
2	.344	11.469	92.007			
3	.240	7.993	100.000			

3.7 Women violence index

The critical problems faced by women are many and diverse. Among them most serious is violence, and Pakistan is no exception in this regard. One of the most common forms of violence against women worldwide is abuse by their husband or partner (Heise, et. al. 1999). The PDHS 2012-13 gathered information on women's attitudes toward wife beating by asking ever-married women, whether a husband is justified in hitting or beating his wife under a series of six circumstances: if she burns the food, if she argues with him, if she goes out without telling him, if she neglects the children, if she refuses to have sexual intercourse with him, and if she neglects her in-laws. A woman's attitude toward wife beating is considered a proxy for her perception of women's status. A lower score on the "number of reasons wife beating is justified" empowerment indicator signals a greater sense of entitlement, self-esteem, and status and reflects positively on a woman's sense of empowerment. Agreement with wife beating as justified indicates that a woman generally accepts the right of a man to control her behavior even by means of violence. Such a perception could act as a barrier to accessing health care for her children and herself and could have an impact on her general well-being.

Table 5: Attitude towards Wife Beating Ever-married Women Aged 15-49 Years

	Burns the food	Goes out without telling him	Refuses to have sexual intercourse with him	Percentage who agree with at least one specified reason
Total	18.4	29.6	30.6	42.5
	Argues with him	Neglects the children	Neglects the in-laws	_
Total	33.7	31.1	27.6	_

Source: National Institute of Population Studies and ICF International (2013)

In Pakistan 28.4, 29.6, 30.6, 33.7, 31.1 and 27.6 percent women reported that their husbands are justifiable if they burns food, goes out without telling him, refuses to have sexual intercourse with him, argues with him, neglects the children and neglects the in-laws respectively. Total 42.5 percent women are agreeing with at least one above mentioned reasons.

The study coded 1 if the woman response towards violence is "no" otherwise zero. In the second stage index for violence is computed by using PCA and is included first component which explains 74.240 percent variance.

Table 6: Total Variance Explained for Women Violence Index

Component	Initial Eigenvalues			Extraction Sums of Squared Loading		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.454	74.240	74.240	4.454	74.240	74.240
2	.497	8.288	82.528			
3	.355	5.922	88.450			
4	.272	4.530	92.980			
5	.230	3.835	96.816			
6	.191	3.184	100.000			

3.8 Inter-spousal age difference

Inter-spousal age difference is measured as husband's age minus wife's age and it is treated as continuous variable. The higher difference between the husband's age and wife's age represents the lesser autonomy of woman in the household.

3.9 Husband's education

The husband's education like the woman's education is coded into six categories, i.e. no schooling, primary, middle, secondary schooling, bachelor's degree and higher. It is hypothesized that husband's education slides down the ideal number of children.

3.10 Son-daughter ratio

Number of sons divided by total number of daughter has been captured to see the gender aspect of children on ideal number of children. It is speculated that higher number of daughter as compared to sons may increase the revealed ideal number of children.

3.11 Wealth Index

The wealth index is an index of household socioeconomic status. It is used due to large number of inequalities in household income, health outcome and use of health services (Rutstein, et. al. 2000). The wealth index is constructed from household characteristics (having electricity, type of source of drinking water, access to sanitation facility, availability of cooking fuel, main roof material, main wall material and floor material) and ownership of durable goods (wardrobe, table, chair or bench, watch or clock, radio, television, bicycle, sewing machine and telephone) and land ownership. PDHS has divided the index into quintiles lowest to highest. The same quintiles have been included in the analysis. We hypothesized that wealth index influence ideal number of children negatively.

3.12 Place of Residence

National Institute of Population Studies and ICF International (2013) have segregated the urban and rural areas of Pakistan. The study treated place of residence of the household as dummy variable and coded 1 for rural and zero for urban areas.

4. Model and Operational Definitions of Variables

The OLS (Ordinary Least Squares) regression model is used to estimate the determinants of ideal number of children. The functional form of the model is expressed in equation 1. The operational definitions have been given in table 7.

$IDEALC = f(WEDU_{ij}, WWORK_j, WBMI_{ij}, FPLAN_{ij}, ASSET_{ij}, WDECI_{ij}, WVILO_{ij}, ISAGE_{ij}, HEDU_{ij}, SDRATIO_j, WEALTH_{ij}, RESIDE_{ij})$ …….. *(1)*

Table 7: Operational Definition of Variables

Variables	Definitions
Dependent Variable	
IDEALC (Ideal number of children)	Ideal number of children reported by female
Explanatory Variables	
WEDU (Women's educational level)	0 for no education, 1 primary, 2 middle, 3 secondary, 4 Bachelor's degree and 5 higher
WWORK (Women's working status)	1 if working, 0 otherwise
WBMI (Woman's body mass index)	0 if BMI is < 18.5 and 1 if ≥ 18.5
FPLAN (Heard family planning)	1 if heard about family planning on TV last few months, 0 otherwise
ASSET (Women ownership of asset index)	Continuous, shows incremental increase in ownership of assets by female
WDECI (Women decision making index)	Continuous, shows incremental increase in decision making
WVIOL (Women violence index)	Continuous, shows incremental decrease in Violence
ISAGE (Inter-spousal age difference)	Husband's age minus wife's reported age
HEDU (Husband's educational level)	0 for no education, 1 primary, 2 middle, 3 secondary, 4 Bachelor's degree and 5 higher
SDRATIO (Son / daughter ratio)	Number of sons divided by number of daughters
WEALTH (Wealth index)	0 for poorest, 1 poorer, 2 middle, 3 richer, 4 richest
RESIDE (Place of residence)	1 for rural, 0 for urban

5. Results and Discussion

The results of OLS model are shown in table 8.

Table 8: Results of OLS Regression for Ideal Number of Children

Background Variables	Coefficient	Robust Stander error	P-value
Women's Educational Level [No Education as reference]			
Primary	-.4143463	.1132812	0.000***
Middle	-.6504106	.1256582	0.000***
Secondary	-.8776699	.1101262	0.000***
Bachelor's degree	-1.179043	.1708303	0.000***
Higher	-1.012209	.2199972	0.000***
Women's Working Status [No as reference]			
Yes	.0916234	.0965568	0.343
Mother's Body Mass Index [< 18.5 as reference]			
≥ 18.5	.2300418	.1304061	0.078*
Heard Family Planning on TV [No as reference]			
Yes	-.1685967	.084618	0.046**
Women Ownership of Asset Index (Continuous)			
	.0198441	.0662347	0.765
Women Decision Making Index (Continuous)			
	-.0416063	.0174329	0.017**
Women Violence index (Continuous)			
	-.0559621	.0229859	0.015**
Inter-spousal Age Difference (Continuous)			
	-.0135257	.007498	0.071*
Husband's Educational Level [No Education as reference]			
Primary	-.1771336	.1144798	0.122
Secondary	-.1269484	.1052764	0.228
Higher	.0794271	.1168165	0.497
Bachelor's degree	.1255045	.1213613	0.326
Higher	.2523643	.1144268	0.294
Son-Daughter ratio (Continuous)			
	.0727416	.0304426	0.017**
Wealth index (Continuous)			
Poorer	-.4128778	.1520557	0.007***
Middle	-.6117766	.1449965	0.000***
Richer	-.7205506	.1631679	0.000***
Richest	-.7608879	.1772634	0.000***

Place of Residence [Urban as reference]			
Rural	.0314218	.0832051	0.706
Constant	**5.228486**	**.2517579**	**0.000*** **
Observations	**3020**		
R-squar	**0.1479**		

Robust standard errors
*** p<0.01, ** p<0.05, * p<0.1

Most of the results are according to theoretical conceptualization.

The results revealed that women's educational level is most important factor behind keeping the ideal number of children low. It explains a woman's level of education as a measure of her relative access to socio-economic status in the society. Each additional level of educational attainment is thought to represent greater access to amore "modern" experience and a higher standard of living. "Modern" is used to encompass characteristics like a more positive attitude towards controlling family size, better spousal communication, and improved prospects of marrying a more educated man, of having a more equal relationship and of having alternative vocations, such as work and study, rather than being wholly confined to motherhood. Living standard is expected to be positively associated with educational level because higher education is found to assure better access to jobs, especially the white-collar ones. Education not only equips women with knowledge and skills for economic activities in the labor markets but also serves as a crucial catalyst for changes in values and gender ideology. All these factors collectively make the woman to have lower number of desired children.

Exposure to media is proxy by hearing the family planning on television and it is found that exposure to media reduces the ideal number of children. It argued that the mass media alter behavior both by providing new information or options and by shaping the self-identity of consumers (a type of ideational change). In terms of new information, mass media may provide some health and family planning information. However, mass media are even more likely to influence who an individual wants to be—for example, a rich person who uses contraception, the father of two children, or someone who is equally happy with daughters as sons. This is because mass media are likely to be an important node in individuals' network of possible information sources. From the policy perspectives it has much implication. The family planning programs should focus on awareness programs through media and particularly electronic media.

Woman's health is measured by body mass index and it is found that if the female is healthy it increase the ideal number of children. The variable has a psychological aspect. the healthy woman desire for larger number of children based on the concept that she can bear larger number of children. It is not only based on the health capacity of the woman but instigation behind is that having large number of children is perceived a good quality of woman in the society. It is more prevalent in lower strata of the society.

Women empowerment is measured in three aspects; decision making, ownership of assets and attitude towards violence. Women decision making and attitude towards violence significantly reduces the ideal number of children, but analysis has shown no significant relationship between the ownership of assets and ideal number of children. There

emerged a complex relationship between empowerment of woman and resistance to violence representing her autonomy and ownership of assets by the woman. The results explain that ownership of assets by woman is nothing but the determining factor is the empowerment in the form of decision-making in the household and the autonomy expressed by resistance to violence. From the policy perspective the women empowerment needs specific attention.

Our results have shown that inter-spousal age difference significantly reduces the ideal number of children. The lesser age difference between the husband and the wife represents the higher household empowerment of the woman, more communication of fertility and family size between the couple. It makes to support the woman to think independently and use media information resulting into lesser ideal number of children.

The results have also shown that son-daughter ratio increases the ideal number of children, showing that parents prefer the sons. The variable was included in the analysis to see whether the gender of living children determine the ideal number of children or not. It is proved that when a woman idealizes the number of children, she keeps in mind the gender of living children. If there is larger number of female children the ideal number of children is increased. It represents a clear gender bias in desire for children. It is a common practice in south Asian nations.

Household's economic status was measured by wealth index and it is found that wealth index negatively affects the ideal number of children in Pakistan. In other words wealth reduces the ideal number of children. There were two opposite hypotheses regarding the wealth status of the household and ideal number of children. Firstly, if the household has comparatively higher level of wealth, the parents do not depend upon the earnings of expected offspring and ultimately they idealize smaller number of children. On the other hand, if the household has lower socioeconomic status having comparatively poor financial status in the society, the household will idealize larger number of children to support them by going to labor market. Secondly, the households having good wealth status have no financial problems for bearing and rearing the children so they should idealize larger number of children. Conversely for comparatively lower wealth households there may be problems for bearing and rearing the larger number of children so they should idealize smaller number of children. Our results support the first conception that the women from good wealthy households idealize smaller number of children. It is partially corroborate with the results of variable of woman education as education and wealth index are assumed to be enhancing each other.

It is also found that area of residence (urban or rural) has no effect on ideal number of children. It explains that all the factors which may affect the ideal number of children have same type of relationship for urban and rural women. However, the socioeconomic structure is entirely different for both urban and rural areas.

The husband's education and female working status do not have statistically significant impact on ideal number of children. Both the results are surprising. The husband's education is insignificant possibly the woman idealize independent of husband's understanding. However, women should be increasingly able to limit the ideal number of children as they are employed and employment has rendered them more economically independent and the opportunity cost of having children would also be greater, especially for those better educated and with higher career aspirations. The insignificant effect of

woman working status of ideal number of children explains the larger ratio of employed women in informal sector.

REFERENCES

Adhikari, R. (2010). Demographic, Socio-economic, and Cultural Factors Affecting Fertility Differentials in Nepal. *BMC Pregnancy and Childbirth*, 10:19.

Balk, D. (1994). Individual and Community Aspects of Women's Status and Fertility in Rural Bangladesh. *Population Studies, 48*(1), 21-45.

Bongaarts, J., & Potter, R. G. (1983). *Fertility, Biology, and Behavior: An Analysis of the Proximate Determinants.* New York: Academic Press.

Butt, M. S., & Jamal, H. (1993). Determinants of Marital Fertility in Pakistan: An Application of the" Synthesis Framework". *The Pakistan Development Review*, 32(2),199-220.

Castle, S. E. (1993). Intra-household Differentials in Women's Status: Household Function and Focus as Determinants of Children's Illness Management and Care in Rural Mali. *Health Transition Review*, 3(2), 137-157.

Das Gupta, M. (1990). Death Clustering, Mothers' Education and the Determinants of Child Mortality in Rural Punjab, India. *Population Studies, 44*(3), 489-505.

Dhaher, E. A., Mikolajczyk, R. T., Maxwell, A. E., & Krämer, A. (2009). Attitudes towards Wife Beating among Palestinian Women of Reproductive Age from Three Cities in West Bank. *Journal of Interpersonal Violence*, 25(3),518-537.

Dyson, T., & Moore, M. (1983). On Kinship Structure, Female Autonomy, and Demographic Behavior in India. *Population and Development Review*, 9(1),35-60.

Feyisetan, B., & Casterline, J. B. (2000). Fertility Preferences and Contraceptive Change in Developing Countries. *International Family Planning Perspectives*, 26(3),100-109.

Gwako, E. L. M. (1997). Conjugal Power in Rural Kenya Families: Its Influence on Women's Decisions about Family Size and Family Planning Practices. *Sex Roles, 36*(3-4), 127-147.

Hakim, A., & Mahmood, N. (1994). Factors Affecting Fertility in Pakistan [with Comments]. *The Pakistan Development Review*, 33(4),685-709.

Hashmi, N., & Zafar, M. I. (1997). Determinants of Marital Fertility in Pakistan. *Pakistan Journal of Agricultural Sciences*, 4, 58-61.

Heise, L., Ellsberg, M., & Gottemoeller, M. (1999). Ending Violence Against Women. *Population Reports. Series L Issues in World Health*, 11, 1-43.

Hindin, M. J. (2000). Women's Autonomy, Women's Status and Fertility-related Behavior in Zimbabwe. *Population Research and Policy Review, 19*(3), 255-282.

Hindin, M. J. (2003). Understanding Women's Attitudes towards Wife Beating in Zimbabwe. *Bulletin of the World Health Organization, 81*(7), 501-508.

Jejeebhoy, S. J. (1995). Women's Education, Autonomy, and Reproductive Behaviour: Experience from Developing Countries. OUP Catalogue, Oxford University Press.

Linos, N., Khawaja, M., & Al-Nsour, M. (2009) Women's Autonomy and Support for Wife Beating: Findings from a Population-based Survey in Jordan. *Violence and Victims*, *25*(3), 409-419.

Morgan, S. P., & Niraula, B. B. (1995) Gender Inequality and Fertility in two Nepali villages. *Population and Development Review*, 21(3), 541-561.

National Institute of Population Studies (NIPS) [Pakistan] and ICF International (2013). Pakistan Demographic and Health Survey 2012-13. Islamabad, Pakistan: National Institute of Population Studies, and USA: ICF International, Calverton, Maryland.

Pullum, T. W. (2008) An Assessment of the Quality of Data on Health and Nutrition in the DHS Surveys 1993-2003. USA: ICF International, Calverton, Maryland.

Rutstein, S., Johnson, K., & Gwatkin, D. (2000) Poverty, Health Inequality, and its Health and Demographic Effects. In *Annual Meeting of the Population Association of America, Los Angeles, California*.

Saksena, D. N., & Rastogi, S. R. (1989) The Reach and Effectiveness of Media used for Popularising the Family Planning Programme. *Journal of Family Welfare*, *35*(3), 26-38.

Schuler, S. R., Hashemi, S. M., & Riley, A. P. (1997) The Influence of Women's Changing Roles and Status in Bangladesh's Fertility Transition: Evidence from a Study of Credit Programs and Contraceptive Use. *World Development*, *25*(4), 563-575.

Upadhyay, U. D., & Hindin, M. J. (2005) Do Higher Status and More Autonomous Women have Longer Birth Intervals?: Results from Cebu, Philippines. *Social science & medicine*, 60(11), 2641-2655.

Woldemicael, G. (2009) Women's Autonomy and Reproductive Preferences in Eritrea. *Journal of Biosocial Science*, 41(2), 161-181.