THE INFLUENCE OF FEMALE DECISION-MAKING AND CHILD MORTALITY ON FAMILY SIZE DYNAMICS PAKISTAN

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Abstract
Family size is an important aspect of women's life, unfortunately in Pakistan fertility rates are quite high in comparison to other developing countries as well as the other South Asian countries. Different studies have suggested that women participation in decision making can be helpful in reducing the fertility rates. The objective of this study is to investigate the effect of women decision making and child mortality on family size in Pakistan. For this purpose, we apply binary logistics regression. The data of this study is obtained from Pakistan Demographic and Health Survey 2017-18. The results of this study show that couple education increases family size decreases. The likelihood of family size decreases as wealth status of household increases. The outcomes show that the effect of women and husband employment on family size is negative and significant. The result shows that urban women have less family size as compared to rural women. The odd ratios indicate that those women who participate in decision-making have less family size as compared to those women who do not participate in decision-making. The likelihood of family size increases also child mortality increases. The results conclude that women's participation in decision making regarding family size and child mortality is important determinants of family size in Pakistan.
Keywords: Women participation in decision making; Child mortality; Family size; Pakistan Demographic and Health Survey; Pakistan

INTRODUCTION
A household is a group of people who make regular arrangement of food, shelter and different basics for living. Family units are at the point of convergence of numerous segment, social and money related procedures, since labor, lodging tasks, instruction and human services administrations, workforce support, relocation and hold reserves are normally directed at the family level. The attributes of households, including their size and organization, are intently connected with sustainable advancement; poverty and prosperity generally, as well as consumption behavior of people shape the human effect on nature (UN, 2017).

According to Carroll (2007), Americans have average 2.5 children per family that is an ideal family size for them. Moreover, Pakistani couples like to have four children as an average family size. The ladies favor a normal of 4.1 youngsters, while men normal 4.3 kids in their families. Moreover, residents normal 3. Their family size is 3.9 like to have kids while those living in rustic zones 4.5 in their family. Kids like to have youngsters. Furthermore, literate persons prefer to limit their family size to 4.0 while illiterate couples prefer to increase their family size 4.9 children on average (NIPS, 2013).

The all-inclusive community per family unit was 2.0. When there are in excess of 5 individuals in the house, the size of the house is viewed as huge. Family unit size was broadly found in families in quite a bit of Africa and the Middle East. The biggest family unit sizes were found in Senegal and Oman with a normal of 9.0 and 8.0 individuals separately. To achieve the first three goals of SDG, which are regarding the eradication of poverty, elimination of hunger and provision of food security to ensure the healthy life for all age groups, the composition of household have also important factor along with household size. Due to this reason, understanding of household composition on the basis of sex, age, marriage pattern, family structure are also relevant for the understanding of

phenomena. For instance, data from developed countries shows that children face the poverty due to the family structure (Asif and Pervaiz, 2019). The children from single parent families have to face more poverty on average than two-parent households. Moreover, some studies have linked older persons' psycho-social health and life satisfaction to the composition of their households (UN, 2017; Hydari et al., 2019).

According to the Pakistan Bureau of Statistics (2018) the normal household size of Pakistan is 6.32 in 2017-18 which was 6.75 in 2004 (HIES, 2004-05). There is mere decrease in household size during the period of 2004 to 2017 Survey reports of PDHS 2017-18 shows that fecundity ratio per women of 15 to 49 years of age on average in 1991 were 5.4 and decreased in 2017-18 to 3.6 children per women. Contraceptive use increases from 9% in 1991 to 25% in 2017 and the satisfaction level regarding use of contraceptive increase 21% to 49% from 1991 to 2017 respectively. There is mere decrease in household size in spite of remarkable decrease in fertility rate and remarkable increase in contraceptive use in Pakistan (Asif et al., 2021).

The family size also decreasing in Pakistan but still it is more than desired one. There are many factors that support high fertility rate, i.e. education of women, high ratio of mortality in childhood, non-acceptance to contraceptives, employment of women and their husband, desire for sons, regions of residence, women empowerment, decision making for using contraceptive, wealth status of household and knowledge of birth control. Male is the prominent in Pakistani society, so females choice to control the birth rate of children is passive (Arthur, 2005; Asif et al., 2022). Moreover, there are some unforeseen reasons to slow decrease in family size in Pakistan, like ethnic considerations related to cultural identities and their association with above mentioned factors. There are three key determinants that are answerable for the decrease of populace development with the assistance of new thoughts and wellsprings of model practices. These properties are urbanization, modernization and industrialization (Dreze and Murthy, 2000; Garren and Joseph, 2002; Bhar and Bhagawa, 2003). It was reasoned that family salary variances legitimately change the size. Family Negative relationship was found between family size and salary (Dreze and Murthy, 2001; Bedon, 2001; Ali & Senturk, 2019; Asif et al., 2020). Arthur (2005) called attention to that family culture and lodging rely upon family size. Effect of incitement for a superior life and the improvement of a standard kid. McLaren (1977) states that working ladies are effective somewhat contrasted with non-utilized ladies in controlling births. Referenced that little family size is identified with ladies' work status, spouse's training, neighborhood and age. Ladies' instruction has been demonstrated to be the most significant factor adding to the postponement in marriage (Gangadharan and Mitra 2003). Parental training in ladies is the most significant supporter of financial factors used to comprehend the responsibility of contraception in Pakistan (Saleem and Bobak 2005; Qaiser et al., 2021). There is a solid positive connection between maternal training, particularly if instruction is at a beginning period (Hakim 2000; Hamid and Stephenson 2006; Ali et al., 2020).

There are some signs of declining son preference within the region, as families are willing to have socially and economically able children, and are less concerned with their sex (Ahmed and Bould 2004; Asif et al., 2022). Sons and daughters do not have the same costs and benefits for their parents. As compared to sons, who bring a wife with dowry, daughters are costly as they need dowry (Diamond-Smith et al 2008; Zafar et al., 2021). The SDGs playing significant role for making policies to reduce fertility as well as maternal and child mortality rate. In current era, majority of the developing countries ensure to adopt these polices by 2030 through low cast medicine, accessibility of every contraceptive measures, knowledge and information give to society, so that they feel free in all matters regarding sexual activities, using preventive medicine, health care services. The aim of this study is to investigate the important determinants of family size in Pakistan.

METHODOLOGY

In this paper, we investigate the effect of socio-economic determinants of family size in Pakistan. Dependent variable of our study is binary variable. For this purpose, we applying binary logistics regression because dependent variable is divided into two category, i.e., family size less than four, coded as 1 and family size at least four, coded as 2.

To examine the effect of different factors on family size, the functional form of the model used is:

FS = f(WEDU, HEDU, WSH, WES, HES, ROR, WDM, CM)

Where

Family size (FS) is divided into two categories, household having FS less than four, then coded as 1 and household having FS at least four then coded as 2. Women/husband's education (WEDU/HEDU) is divided into four categories. If women/husband is uneducated then coded as 0, if women/husband is primary educated then coded as 1, if women/husband is secondary educated then coded as 2 and if women/husband is higher educated then coded as 3. Wealth status of women's household has been divided into five categories. Coded as 1 if respondent belong to poorest quintile, coded as 2, if respondent reside to a poorer quintile, coded as 3, if respondent belong to middle quintile, coded as 4, if respondent reside to a richer quintile and coded as 5, if belong to a richest quintile. Women's employment status has been classified into 2 categories. If women/husband are currently unemployed then coded as 0, and if women/husband are currently employed then coded as 1. Region of residence (ROR) is classified into two groups. If respondent live in rural areas then coded as 1 and if respondent live in urban areas then coded as 2. Women decision making (WDM) for using contraceptives is divided into two categories, i.e. when women take decision then coded as 1 and if women do not take decision then coded as 0. Child mortality (CM) is divided into 2 categories. If respondent have ever experienced the death of their children coded as 1 and otherwise coded as 0.

RESULTS AND DISCUSSION
In this study, we investigate the effect of different socio-economic and demographic determinants on family size in Pakistan.

Table 1: Description of socio-economic characteristics of household

Socio-economic variables		Frequency	Percentage
Women's education	No education	29353	60.6
	Primary	6569	13.5
	Secondary	7982	16.5
	Higher	4559	9.4
Husband's education	No education	15994	33
	Primary	6909	14.2
	Secondary	15837	32.7
	Higher	9723	20.1
Wealth status of household	Poorest	11052	22.8
	Poorer	11305	23.4
	Middle	9743	20.1
	Richer	8294	17.1
	Richest	8069	16.6
Women's employment status	Currently Unemployed	41625	85.9
	Currently Employed	6838	14.1
Husband's employment status	Currently Unemployed	2837	5.8
	Currently Employed	45626	94.2
Region of residence	Rural	26384	54.4
	Urban	22079	45.6
Women's decision making for using contraceptives	No	26677	55
	Yes	21786	45
Child mortality	No	44793	92.4
	Yes	3670	7.6

Table 1 show that 25.9% of the women have secondary or above secondary education whereas 60.6% women have no education and 13.5% of total women have primary education. 52.8% of the women's husbands have secondary or above secondary education and 33% are uneducated. 66.3 % women are belong to less than middle household whereas 33.7% women are belong to richer household. According to women's employment status, 14.1% of the women are employed whereas 85.9% are unemployed, whereas 94.2% husband are currently employed and 5.8%

are unemployed. 54.4% of the respondent women reside in rural areas as compared with 45.6% of urban women. 45% of the women are participated in decision making regarding contraceptives use. In contrast, 55% have no participated in decision making regarding contraceptives use. 92.4% women have never experience the child mortality and 7.6% women have ever experience the child mortality.

Table 2 show the results of binary logistics regression. The odds ratio indicate that couple education increases family size decreases. In developing countries, better-educated couple have fewer children than less-educated couple. However, the reasons for this are less clear, since the benefits of education extend beyond the value of women's time. Education can reduce fertility because better-educated women earn more and may raise their children more effectively. Education also improves maternal and child health, thereby increasing a woman's physical capacity to give birth and reducing the (economic) necessity for more children. However, the fact that educated women tend to breastfeed for shorter periods lengthens their exposure to (a new) pregnancy. Nevertheless, understanding modern contraception helps women control birth. Finally, higher education empowers women and includes them in household decision-making on family planning (Raja & Iqbal, 2019; Anees & Yan, 2019; Kim, 2023; Asif et al., 2023).

The likelihood of family size decreases as wealth status of household increases. Wealth influence the number of children born depends partly on both community-level birth rates and contraceptive use, but not on community-level mortality and women's work status. Women's wealth increase the likelihood of contraceptive use, which in turn has a positive association with number of births; those using contraceptives have on average, more children. While seemingly counter-intuitive, this effect is well known in sub-Saharan Africa (Caldwell and Caldwell 1987; Bledsoe et al. 1994; Mace and Colleran 2009; Alvergne et al. 2013; Rehman & Malik, 2020; Khan, 2020; Asif et al., 2022; Audi & Roussel, 2024), where those women who adopt contraceptives are regularly the ones who already have many children and want to space or limit future births and where cultures of high fertility remain strong (Caldwell and Caldwell 1987; Bledsoe et al. 1994; Mbacké, 2017; Hameed, 2020; Akbar & Hayat, 2020; Russo, 2022; Asif and Pervaiz, 2022).

Table 2: Results of Binary Logistics regression

Socio-economic determinants		β	Sig.	Odd ratios
Women's education	No education	Reference		
	Primary	-.486	.000	.615
	Secondary	-1.100	.000	.333
	Higher	-1.897	.000	.150
Husband's Education	No education	Reference		
	Primary	-.096	.005	.908
	Secondary	-.260	.000	.771
	Higher	-.390	.011	.662
Wealth status of household	Poorest	Reference		
	Poorer	-.020	.532	.980
	Middle	-.047	.188	.954
	Richer	-.116	.003	.891
	Richest	-.146	.001	.864
Women's employment Status	Currently Unemployed	Reference		
	Currently Employed	-.116	.000	.878
Husband's employment status	Currently Unemployed	Reference		
	Currently Employed	-.207	.000	.813
Region of residence	Rural	Reference		
	Urban	-.092	.000	.912
Women's decision making for using contraceptives	No	Reference		
	Yes	-.384	.000	.532

Child Mortality	No	Reference		
	Yes	.621	.000	1.860

The outcomes show that the effect of women and husband employment on family size is negative and significant. Sociological arguments about the social norms against childlessness and the dynamic models of fertility predict that women will transition to motherhood more quickly during phases of unemployment (Adsera, 2011; Mehdi, 2019; Modibbo & Inuwa, 2020).

The result shows that urban women have less family size as compared to rural women. Most generally, we expect urban residence to decrease rates of childbearing overall. That is, women who reside in urban areas will, net of other characteristics, have lower fertility rates (White et al., 2008; Mubeen et al., 2023; Ali et al., 2024).

The odd ratios indicate that those women who participate in decision-making have less family size as compared to those women who do not participate in decision-making. Women empowerment is helpful in reducing the fertility because the more empowered the women are, the fewer the children are borne is an indicator of current fertility level and ideal number of children is an indicator of future fertility preferences and higher birth intervals is also an indicator of future fertility preferences.

The likelihood of family size increases also child mortality increases. Countries with low infant mortality almost always have low birth rates (Heer, 1966; Mauldin et al., 1978; Adeel, 2019; Mahmood et al., 2022; Asif et al., 2024; Asif et al., 2024). Couples that have lost a child are, in turn, less likely to use contraception, tend to have more children, and have shorter birth intervals.

CONCLUSION

Family size is very important aspect of a women's life. In most of the societies childbearing plays a pivotal role and women's status is linked with the number of children. Although past studies has suggested women's participation and child death plays crucial role in the decisions regarding reproduction and family planning but very limited research has been conducted in Partisan on the role of women empowerment and child mortality in family size in Pakistan. The study has made an attempt to fill this gap in the existing literature.

The results indicate that couple education increases family size decreases. The likelihood of family size decreases as wealth status of household increases. The outcomes show that the effect of women and husband employment on family size is negative and significant. The result shows that urban women have less family size as compared to rural women. The odd ratios indicate that those women who participate in decision-making have less family size as compared to those women who do not participate in decision-making. The likelihood of family size increases also child mortality increases. The results conclude that women's participation in decision making regarding family size and child mortality is important determinants of family size in Pakistan.

REFERENCES

Adeel, U. (2019). Analyzing the impact of government expenditure on the health sector: Evidence from Pakistan. *Journal of Business and Economic Options*, *2*(2), 54-66.

Adsera, A. (2011). Where are the babies? Labor market conditions and fertility in Europe. *European Journal of Population/Revue européenne de démographie*, *27*(1), 1-32.

Akbar, R., & Hayat, A. (2020). Psychological Health of Children Engaged in Hazardous Labor: A Study in Lahore, Pakistan. *Journal of Policy Options*, *3*(2), 70-74.

Ali S, Asif MF, Khan MK, Fatima N, Safdar H, Lassi ZS. (2020). Moderating role of husband's education and their employment on female labor force participation in Pakistan. Ilkogr Online. 19:5265–76.

Ali, A., & Şenturk, İ. (2019). Justifying the impact of economic deprivation, maternal status and health infrastructure on under-five child mortality in Pakistan: An empirical analysis. *Bulletin of Business and Economics (BBE)*, *8*(3), 140-154.

Ali, S., Ibrahim, M., Asif, M. F., Zaman, Q., & Afridi, J. R. (2024). The Interactional Effect of Women's Education and Area of Residence on Female Labor Force Participation in Pakistan. Bulletin of Business and Economics (BBE), 13(3), 492-499.

Alvergne, A., Lawson, D. W., Clarke, P. M., Gurmu, E., & Mace, R. (2013). Fertility, parental investment, and the early adoption of modern contraception in rural Ethiopia. *American Journal of Human Biology*, *25*(1), 107-115.

Anees, M., & Yan, W. (2019). An Overview about the Challenges of Urban Expansion on Environmental Health in Pakistan. *Journal of Energy and Environmental Policy Options*, *2*(3), 64-71.

Arthur, J.L. (2005). Family Size and Its Socio-Economic Implications In The Sunyani Municipality of the BrongAhafo Region Of Ghana, West Africa. Centre for Development Studies, Faculty of Social Science, University of Cape Coast, Cape Coast, Ghana, 27-29.

Asif MF, Ali S, Ali M, Abid G, Lassi ZS. (2022). The moderating role of maternal education and employment on child health in Pakistan. Children. 9(10):1559.

Asif MF, Ishtiaq S, Abbasi NI, Tahir I, Abid G, Lassi ZS. (2023). The Interaction Effect of Birth spacing and Maternal Healthcare Services on Child Mortality in Pakistan. Children. 10(4):710.

Asif MF, Khalid S, Khalid KS, Abid G. (2021). Effect of mother's employment on child mortality in Pakistan: Moderating role of mother's empowerment. J ISOSS. 7(4):175–86.

Asif MF, Meherali S, Abid G, Khan MS, Lassi ZS. (2022). Predictors of child's health in Pakistan and the moderating role of Birth Spacing. Int J Environ Res Public Health. 19(3):1759.

Asif MF, Pervaiz Z, Afridi JR, Safdar R, Abid G, Lassi ZS. (2022). Socio-economic determinants of child mortality in Pakistan and the moderating role of household's wealth index. BMC Pediatr. 22(1):1–8.

Asif MF, Pervaiz Z. (2022). Determinants of child mortality in Pakistan: Moderating role of mother's education. J ISOSS. 8:29–40.

Asif MF, Safdar H, Ali S. (2020). Factors affecting the performance of school students: A case study of Bahawalpur. Ilkogr Online. 19:3650–60.

Asif, M. F., Ali, M., Abbas, H. G., Ishfaq, T., Ali, S., Abid, G., & Lassi, Z. S. (2024). Access and knowledge of contraceptives and unmet need for family planning in Pakistan. BMC Women's Health, 24(1), 651.

Asif, M. F., Pervaiz, Z. (2019). Socio-demographic determinants of unmet need for family planning among married women in Pakistan. BMC Public Health. 19(1):1–8.

Asif, M.F., Ibrahim, M., Noor, M.Y. and Zaman, Q. (2024). Causal Factors of Unmet Need for Family Planning in Pakistan. Journal of Policy Research. 10(3) 142–147.

Audi, M., & Roussel, Y. (2024). Exploring the Link Between Public Health and External Debt in Saudi Arabia. *Journal of Business and Economic Options*, *7*(4), 1-12.

Beydoun, M. A. (2001). Marital fertility in Lebanon: a Study Based on The Population and Housing Survey. Social Science & Medicine, 53(6), 759-771.

Bledsoe, C. H., Hill, A. G., d'Alessandro, U., & Langerock, P. (1994). Constructing natural fertility: The use of Western contraceptive technologies in rural Gambia. *Population and Development Review*, 81-113.

Caldwell, J. C., & Caldwell, P. (1987). The cultural context of high fertility in sub-Saharan Africa. *Population and development review*, 409-437.

Carroll, J. (2007). "Americans: 2.5 Children Is 'Ideal' Family Size," Gallup News Service, June 26, 2007. Accessed on 12/03/2014 from www.gallup.com/poll /27973/americans-25-children-ideal-family-size.aspx.

Chandra, D. (2000). Understanding Socio-cultural Factors Affecting Demographic Behaviour and the Implications for the Formulation and Execution of Population Policies and Programmes: Unesco/UNFPA Interregional ProjectINT/92/P78: Country Report for Fiji. Population Studies Programme, University of the South Pacific.

Dreze, J., &Murthi, M. (2001). Fertility, Education, and Development: Evidence from India. Population and Development Review, 27(1), 33-63.

Garenne, M., & Joseph, V. (2002). The timing of the fertility transition in sub Saharan Africa. World Development, 30(10), 1835-1843.

Hameed, S. (2020). Impact of Violence on Children's Learning Abilities: Evidence from Punjabi Society. *Journal of Policy Options*, *3*(2), 61-69.

Heer, D. M. (1966). Economic development and fertility. *Demography*, *3*, 423-444.

Hydari MA, Abid G, Asif MF, Butt TH, Lassi ZS. (2019). The effects of COVID-19 (Corona Virus Disease 2019) pandemic: An exploratory study of Pakistan. Int J Dis Rec Bus Cont. 12(1):1431–49.

Khan, K. K. (2020). Assessing the Impact of Climate Change on Women's Health: A Case Study in Lahore, Punjab, Pakistan. *Journal of Policy Options*, *3*(3), 82-89.

Kim, J. (2023). Female education and its impact on fertility. *IZA World of Labor*.

Mace, R., & Colleran, H. (2009). Kin influence on the decision to start using modern contraception: a longitudinal study from rural Gambia. *American Journal of Human Biology: The Official Journal of the Human Biology Association*, *21*(4), 472-477.

Mauldin, J. K., Rich, N. M., & Cook, D. W. (1978). Amino acid synthesis from 14C-acetate by normally and abnormally faunated termites, Coptotermes formosanus. *Insect Biochemistry*, *8*(2), 105-109.

Mbacké, C. (2017). The persistence of high fertility in sub-Saharan Africa: a comment. *Population and Development Review*, *43*, 330-337.

McLaren, A. (1977). Women's Work and Regulation of Family Size. In History Workshop Journal, 4(1), 70-81). Oxford University Press.

Mehdi, M. A. (2019). Examining the Dynamics of Infant Mortality Rates: A Time Series Analysis. *Journal of Policy Options*, *2*(2), 32-38.

Mehmood, A., Siddique, H. M. A., & Ali, A. (2022). *Impact of Health on Worker Productivity: Evidence from South Asia* (No. 113557). University Library of Munich, Germany.

Modibbo, H., & Inuwa, N. (2020). Health Outcomes and Economic Growth Nexus: Evidence from Nigeria. *Journal of Business and Economic Options*, *3*(2), 46-55.

Mubeen S, Asif MF, Kiran A. (2023). Socio-economic empowerment of women with sustainable development goal 05, and Pakistan's commitment (Sindh): An assessment. IBT-Journal Bus Stud. 19(1):48–64.

National Institute of Population Studies, (2013). Demographic and health surveys. Calverton: Measure DHS.Pakistan Bureau of statistic (Censes, 2017)

Qaiser N, Sattar N, Arshi S, Asif MF, Afridi JR. (2021). Impact of thriving on job performance, positive health and turnover intention: Consequences of thriving at workplace. Int J Inform Bus Manage. 13(2):97–107.

Raja, U., & Iqbal, N. (2019). Ensuring Worker Safety in Lahore's Large Industries: A Study on Occupational Health, Safety, and Risk Management. *Journal of Energy and Environmental Policy Options*, *2*(4), 117-124.

Rehman, A. U., & Malik, S. (2020). Environmental and Health Hazards of Pakistan's Leather Industry. *Journal of Energy and Environmental Policy Options*, *3*(3), 96-103.

Russo, L. (2022). The impact of slow productivity on healthcare costs in a no-growth: An empirical analysis. *Journal of Policy Options*, *5*(4), 22-28.

United Nation. (2017). World population aging. Department of Economic and social affairs. Population Division. United Nations. New York.

White, M. J., Muhidin, S., Andrzejewski, C., Tagoe, E., Knight, R., & Reed, H. (2008). Urbanization and fertility: An event-history analysis of coastal Ghana. *Demography*, *45*, 803-816.

Zafar R, Abid G, Rehmat M, Ali M, Hassan Q, Asif MF. (2021). So hard to say goodbye: Impact of punitive supervision on turnover intention. Total Qual Manage Bus Excellence. 33(5-6), 614–636.