

ASSOCIATIONS IN INTERGENERATIONAL FERTILITY BEHAVIOR AND PREFERENCES IN PUNJAB, PAKISTAN: TWO-GENERATION APPROACH

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ABSTRACT

Background: The intergenerational transmission of fertility behavior and preference is a crucial aspect to consider, as it offers valuable insights into the complex factors that shape fertility decisions.

Objective: To determine the associations in intergenerational fertility behavior and preference by using two-generation approach.

Material and Methods: A cross-sectional research design was employed to investigate the intergenerational fertility behavior and preferences among mothers and their daughters in Punjab, Pakistan. A multistage sampling approach was utilized to select a representative sample of 2960 mother-daughter dyads from four districts in Punjab, namely Rajan Pur, Dera Ghazi Khan, Gujrat, and Jhelum. Data collection was facilitated through a digital application on android mobile devices, and the collected data was subsequently imported into SPSS version 26.0 for statistical analysis. Descriptive statistics and Pearson Correlation Coefficient were employed to examine the associations between the fertility behavior and preferences across the two generations.

Results: This study compared the intergenerational fertility behavior and preferences of mothers and daughters in Punjab, Pakistan, revealing significant associations between various variables. The results showed that daughters had higher ages at first marriage and first birth, lower desired family sizes, and higher ever-use of contraceptive methods compared to mothers. The correlations between mothers' and daughters' fertility variables were moderate to weak, indicating a weakening of intergenerational associations over time.

Conclusion: This study examines the intergenerational fertility behavior and preferences between mothers and daughters in Punjab, Pakistan, revealing a weakening of associations over time due to changing social, cultural, educational, and economic factors.

Keywords: Two-Generation, Fertility Behavior, Fertility Preferences, Intergenerational Transmission

INTRODUCTION

The topic of intergenerational fertility behavior and preferences is a critical area of study, particularly in regions like Punjab, Pakistan, where population growth and fertility rates have significant

implications for economic development and social welfare. Research has shown that fertility preferences and behavior are influenced by a complex array of factors, including socio-

economic status, education, urbanization, and cultural values (Javed & Mughal, 2020). Understanding the associations between these factors and fertility behavior across generations is essential for developing effective policies and programs aimed at addressing population growth and improving reproductive health outcomes.

In Punjab, Pakistan, the total fertility rate (TFR) is 3.5 births per woman, which is higher than the replacement rate. This suggests that fertility rates remain a significant concern in the region. Moreover, research has highlighted the importance of considering the intergenerational transmission of fertility preferences and behavior, as it can provide valuable insights into the factors that influence fertility decisions (Maryam Hosseini et al., 2021). By examining the associations between fertility behavior and preferences across two generations, this study aims to contribute to the existing body of knowledge on fertility transitions and population growth in Pakistan. The rationale for this study is rooted in the need to understand the factors that drive fertility decisions and preferences in Punjab, Pakistan. With a large and growing population, Pakistan faces significant challenges in providing adequate healthcare, education, and employment opportunities to its citizens. By examining the associations between intergenerational fertility behavior and preferences, this study aims to inform policy and programmatic interventions aimed at addressing population growth and improving reproductive health outcomes.

Research has shown that fertility preferences and behavior are influenced by a range of factors, including education, urbanization, and cultural values (Lam, 2011). Moreover, studies have highlighted the importance of considering the intergenerational transmission of fertility preferences and behavior, as it can provide valuable insights into the factors that influence

fertility decisions (Baudin et al., 2020). By examining the associations between fertility behavior and preferences across two generations, this study aims to contribute to the existing body of knowledge on fertility transitions and population growth in Pakistan. In conclusion, this study aims to contribute to the existing body of knowledge on fertility transitions and population growth in Pakistan by examining the associations between intergenerational fertility behavior and preferences in Punjab, Pakistan.

Research Objective

By adopting a two-generation approach, this study aims to provide an association of intergenerational fertility behavior and preferences.

Materials and Methods

The nature of the study was cross-sectional and two-generation approach was adopted. The target population of the study was married mothers and their daughters with completed family size. A stratified selection approach was used to choose 4 districts in Punjab for in-depth study. Two districts (Rajan Pur and Dera Ghazi Khan) with high total fertility rates (TFRs) and two districts (Gujrat and Jhelum) with low TFRs were selected based on the Punjab Multiple Indicator Cluster Survey (MICS) 2017.

The sampling frame was developed by the Pakistan Bureau of Statistics, Islamabad. The sample design of two stages cluster sampling was used for selecting the sample of households (SSU). At first stage a sample of blocks (PSU) was selected from the urban & rural frame for the selected districts of the Punjab. At second stage, households (SSU) within each sampled block was selected at the first stage were selected.

The sample was allocated in urban-rural domains based on frame proportions with details as under:

Figure 1. Sample Size and Its Allocation

Rajanpur		DG Khan		Gujrat		Jhelum	
Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
187	1272	515	2734	223	1292	375	1279
PSU	PSU	PSU	PSU	PSU	PSU	PSU	PSU
5	37	8	42	4	23	7	22
SSU	SSU	SSU	SSU	SSU	SSU	SSU	SSU
100	740	160	840	80	460	140	440

A systematic sampling approach was used to select 2960 households from 4 districts in Punjab. From each household, one mother and her married daughter with a completed family size were selected, resulting in a substantial sample of mother-daughter pairs. This sampling strategy minimized bias and ensured a representative sample, providing a robust foundation for analyzing intergenerational fertility patterns.

A self-structured interview schedule was meticulously designed and employed as the primary data collection tool for this research study. This comprehensive instrument was crafted to elicit detailed information from the target

population, comprising mothers and their married daughters with completed family size. The data was collected in an android mobile through the digital application. Following the completion of fieldwork, the collected data underwent a systematic processing phase to prepare it for analysis. The data, which was collected through a digital application on Android phones, was imported into SPSS 26.0, a statistical software package, for further analysis. The descriptive and Pearson Correlation Coefficient test were applied to determine the intergenerational fertility behavior and preferences.

Results

1. Socio-Demographic Characteristics of the Mothers and Daughters

Table 1.1 Current Age of Mothers and Daughters

Current Age	Mothers	Current Age	Daughters
50-60	34.5	25-35	7.9
61-70	65.5	36-45	83.7
-	-	46-55	8.3
Total	100.0	Total	100.0

This analysis of the current age distribution of mothers and daughters reveals a distinct generational difference. The majority of mothers (65.5%) fall within the 61-70 age range, while a significant proportion (34.5%) are between 50-60 years old. In contrast, daughters are predominantly

concentrated in the 36-45 age range (83.7%), with a smaller proportion (8.3%) between 46-55 years old. This age disparity suggests that the daughters are approximately 20-30 years younger than their mothers with completed family size.

Table 1.2 Selected Socio-Demographic Characteristics of Mothers and Daughters

Place of Resident	Mothers	Daughters
Rural	67.0	58.7
Urban	33.0	41.3
Type of Family		

Joint Family	66.5	48.3
Nuclear Family	33.5	51.7
Education Status		
No Education	67.0	33.8
Primary	33.0	21.8
Middle	70.5	14.8
Secondary	15.5	15.9
Higher	8.9	13.7
Employment Type		
Housewife	95.6	86.7
Tailor	1.8	2.7
Private Teachers	1.5	5.1
Government Employee	1.2	5.4
Wealth Quintile		
Poorest	52.8	28.4
Poorer	35.5	38.7
Middle	11.7	20.1
Richer	-	6.7
Richest	-	6.1
Average Number of Siblings	5.79	5.02
Parental grandparents ' childcare help and emotional support		
Yes	60.3	58.0
No	39.3	42.0

The socio-demographic characteristics of mothers and daughters are presented in Table 1.2. The majority of mothers (67.0%) and daughters (58.7%) reside in rural areas, with a higher proportion of daughters (41.3%) living in urban areas. Most mothers (66.5%) live in joint families, whereas daughters are more likely to live in nuclear families (51.7%). The education status of mothers and daughters differs significantly, with 67.0% of mothers having no education, compared to 33.8%

of daughters. The majority of both mothers (95.6%) and daughters (86.7%) are housewives. The wealth quintile distribution shows that 52.8% of mothers belong to the poorest quintile, whereas 28.4% of daughters fall into this category. On average, mothers have 5.79 siblings, while daughters have 5.02 siblings. Additionally, 60.3% of mothers and 58.0% of daughters receive childcare help and emotional support from their grandparent.

1. Associations in Intergenerational Fertility Behavior and Preferences

Table 2.1 Intergenerational Fertility Behavior and Preferences

Generations	Associations	95% Confidence Interval	
		Lower	Upper
Age at 1 st Marriage			
Mothers	18.25676	18.22073	18.29278
Daughters	19.84122	19.80519	19.87724
Pearson Correlation Coefficient	.372**		
Mean Number of siblings			
Mothers	5.836824	5.800799	5.872849
Daughters	5.274324	5.238299	5.310349

Pearson Correlation Coefficient		.132**		
Mean Number of Total Children				
Mothers	6.238851		6.202826	6.274876
Daughters	4.4		4.363975	4.436025
Pearson Correlation Coefficient		.150**		
Desired family size				
Mothers	4.622973		4.586948	4.658998
Daughters	3.763514		3.727489	3.799538
Pearson Correlation Coefficient		.334**		
Age at 1 st Birth				
Mothers	19.59899		19.56296	19.63501
Daughters	21.37635		21.34033	21.41238
Pearson Correlation Coefficient		.369**		
Ideal Gap between Two Successive Births				
Mothers	20.29122		20.25519	20.32724
Daughters	28.41081		28.37479	28.44684
Pearson Correlation Coefficient		.295**		
Age at Last Birth				
Mothers	35.27399		35.23796	35.31001
Daughters	29.66014		29.62411	29.69616
Pearson Correlation Coefficient		.123**		
Last Child was Desired				
Mothers	Yes (39.8)		39.7	41.7
Daughters	Yes (52.1)		50.2	53.8
Pearson Correlation Coefficient		.094**		
Mother's Preferred Family Size for Daughter				
Mothers	3.564189		3.528164	3.600214
Daughters	3.482432		3.446408	3.518457
Pearson Correlation Coefficient		.131**		
Ever Use of Contraceptive Methods				
Mothers	Yes (67.2)		63.6	71.1
Daughters	Yes (88.0)		86.6	89.4
Pearson Correlation Coefficient		.197**		

**Correlation is significant at the 0.01 level (2-tailed).

The intergenerational fertility behavior and preferences of mothers and daughters were compared, revealing significant associations between various variables. The age at first

marriage was higher for daughters (19.84 years) compared to mothers (18.26 years), with a moderate positive correlation ($r = 0.372$). Similarly, the mean number of siblings was higher

for mothers (5.84) than daughters (5.27), with a weak positive correlation ($r = 0.132$). The total number of children was also higher for mothers (6.24) than daughters (4.4), with a weak positive correlation ($r = 0.150$). Desired family size was lower for daughters (3.76) compared to mothers (4.62), with a moderate positive correlation ($r = 0.334$). The age at first birth was higher for daughters (21.38 years) than mothers (19.60 years), with a moderate positive correlation ($r = 0.369$). The ideal gap between successive births was higher for daughters (28.41 years) compared to mothers (20.29 years), with a weak positive correlation ($r = 0.295$). The age at last birth was lower for daughters (29.66 years) than mothers (35.27 years), with a weak positive correlation ($r = 0.123$). The proportion of desired last child was higher for daughters (52.1%) compared to mothers (39.8%), with a weak positive correlation ($r = 0.094$). The preferred family size for daughters was lower (3.48) compared to mothers (3.56), with a weak positive correlation ($r = 0.131$). The ever-use of contraceptive methods was higher for daughters (88.0%) than mothers (67.2%), with a weak positive correlation ($r = 0.197$).

Discussion

The findings of this study highlight intergenerational associations in fertility behavior and preferences between mothers and daughters. The higher age at first marriage among daughters (19.84 years) compared to mothers (18.26 years) is consistent with previous research, which suggests that increased education and urbanization are contributing factors to delayed marriage (Ali & Sheikh, 2018). Similarly, the mean number of siblings was higher for mothers (5.84) than daughters (5.27), which aligns with the declining family size trend observed in many developing countries (Bongaarts, 2017).

The total number of children was also higher for mothers (6.24) than daughters (4.4), which reflects the declining fertility rates observed in Pakistan over the past few decades (Hussain et al., 2019). The desired family size was lower for daughters (3.76) compared to mothers (4.62), which is consistent with previous research suggesting that younger generations prefer smaller family sizes (Khan et al., 2020).

The age at first birth was higher for daughters (21.38 years) than mothers (19.60 years), which is consistent with previous research highlighting the impact of education on delayed childbearing (Mujahid, 2017). The ideal gap between successive births was higher for daughters (28.41 years) compared to mothers (20.29 years), which reflects the increasing trend of spacing births observed in many developing countries (Rahman et al., 2019). The age at last birth was lower for daughters (29.66 years) than mothers (35.27 years), which is consistent with previous research suggesting that younger generations are more likely to cease childbearing at an earlier age (Sathar et al., 2019). The proportion of desired last child was higher for daughters (52.1%) compared to mothers (39.8%), which reflects the increasing trend of family planning adoption observed in Pakistan (Shaikh et al., 2018).

The preferred family size for daughters was lower (3.48) compared to mothers (3.56), which is consistent with previous research highlighting the impact of education on fertility preferences (Zaidi, 2017). The ever-use of contraceptive methods was higher for daughters (88.0%) than mothers (67.2%), which reflects the increasing trend of family planning adoption observed in Pakistan (Hussain et al., 2019).

Conclusion

In conclusion, this study has examined the associations in intergenerational fertility behavior and preferences between mothers and daughters in Punjab, Pakistan. The findings suggest that with the passage of time, the associations between the two generations have become moderate and weak. This weakening of associations is likely due to several factors, including changes in social and cultural norms, increased access to education and family planning services, and shifting economic and demographic landscapes.

The study's findings highlight the need to predict the factors that are creating intergenerational differences in fertility behavior and preferences between mothers and daughters. These factors may include, but are not limited to, changes in education levels, urbanization, economic empowerment, and access to family planning services. Understanding these factors is crucial for developing effective

policies and programs aimed at addressing population growth and fertility-related issues in Pakistan.

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