Son Preference and the Desire for an Additional Child in Pakistan

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Abstract

With a Total Fertility Rate of 3.6 and a population growth rate of 2.55%, Pakistan's fertility transition has been relatively slow, hindering progress towards achieving many of the country's Sustainable Development Goals (SDG) targets. This paper examines the role that son preference plays in determining the desire for additional children. Among other factors, this desire for another child is largely influenced by women's ideal number of sons, which in turn, shapes their future fertility-related decisions and behavior. Using data from the 2017-18 Pakistan Demographic and Health Survey (PDHS), we employed logistic regression on 9,674 currently married women to examine whether son preference influences the desire for an additional child. The empirical evidence suggests that women whose ideal number of sons is 2 or 3+ are 1.27 and 2.01 times more likely, respectively, to desire another child compared to women with a lower ideal number of sons. We also examined the role of the number of living children in shaping future fertility behavior and found that even among women with four or more living children, the desire to continue childbearing remained high among those with a larger number of ideal sons. The findings suggest that investments in female education and women's empowerment (SDGs 4 and 5), along with promoting women's employment (SDG 8) and strengthening social security systems that support older persons, could help reduce the high demand for sons in the country.

Keywords: population; fertility desires; future fertility; son preference; Pakistan

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1. INTRODUCTION

A quick glance at Pakistan's demographic trends suggests that the country's fertility transition has progressed rather slowly over the past decade and a half. During the period from 1998 to 2017, the population grew at an annual rate of 2.4%, a figure that has since increased to 2.55%, according to the 2023 Population Census. According to the Population Reference Bureau's *World Population Data Sheet 2022* it shows that the country's rate of natural increase stood at 2.0% in 2022, ranking second only to Afghanistan in South Asia and above the regional average of 1.4%. (PRB, 2022).

Similarly, the Pakistan Population Situation Analysis Report 2020 by UNFPA projects a substantial rise in the country's population, estimated

overall increase of approximately 84% between 2017 and 2050. Pakistan, the fifth most populous country in the world, faces mounting pressure from its growing population, adding to the challenges of achieving its Sustainable Development Goals (SDGs).

With a TFR of 3.6 and women aged 40 and above reporting an average of 5.3 children (NIPS, 2019), it is imperative that we halt population growth and bring down the fertility rate. In this context, understanding fertility intentions, behaviors and preferences is essential. Fertility intentions, in particular, have been widely recognized as a key predictor of reproductive behavior and future fertility outcomes (Friedman et al., 1994; Bongaarts, 2001; Bashir, 2017; Tanvir & Arif, 2018).

Why the urgency? The persistent desire for an additional child further slows the fertility transition, as evidenced by the very gradual decline of only 1.3 children since 1990–91, when women in Pakistan had an average of 4.9 children, as compared to the present average of 3.6 (PDHS, 2017-18). Son preference can be viewed as a key driver of fertility, as studies reveal that the prevalence of modern contraceptive use among women in Pakistan would have been 19% higher in the absence of son preference (Channon, 2017). Similarly, a more recent study by Javed & Mughal (2020) shows that son preference also has a strong impact on birth spacing in Pakistan, finding that women whose first two children were boys were 13% – 17% more likely to delay their next birth compared to those whose first two children were girls.

In patriarchal societies like Pakistan, son preference and fertility often go hand in hand, and it would not be incorrect to say that the preference for sons even influences contraceptive prevalence in the country. Moreover, the perception of sons as contributors to household welfare and social security in a patriarchal society reinforces the view that sons are assets, while daughters are perceived as a financial burden on families (WHO, 2011). Zaidi (2013) also observes that progression to subsequent parity and continued childbearing are motivated by a strong desire for sons, indicating that fertility decisions are influenced by efforts to achieve an ideal number of sons. Hence, the desire to attain a certain ideal number of sons plays a significant role in maintaining high fertility (Westley & Choe, 2007; Population Council, 2015).

This study builds on the premise that understanding the underlying motivations behind fertility-related decisions is essential for addressing what some demographers have termed the 'population explosion' that Pakistan currently faces (Baig, 2021). The remainder of the paper is structured as follows. The next section reviews the relevant literature from both global and Pakistani contexts. The following section describes the data and methodology by providing details of the sample and the empirical analysis, followed by the

results section, which presents findings from the regression analyses. The final section concludes and offers possible policy recommendations based on the study's findings.

2. LITERATURE REVIEW

Fertility decisions are influenced by various attitudes and behaviors among couples and individuals worldwide. However, when it comes to preferences regarding the gender of the child, son preference appears to be particularly prevalent in certain parts of the world, especially in South and East Asia. Countries such as South Korea, China, India, Nepal, Bangladesh, and Pakistan continue to experience male dominance and control, where patriarchy and gender inequality remain deeply entrenched and strongly influence reproductive preferences in the region.

Some studies have examined the role of son preference in shaping women's lives within the context of persistence of patriarchal norms and unequal gender roles (Ali, 1989; Ganatra et. al., 2001; Guilmoto, 2009; Saeed, 2015; Agha, 2018; Ahmed et. al., 2021). Similarly, research from Bangladesh, India, Pakistan, Nepal, Sri Lanka, China, and South Korea has consistently confirmed the persistence of son preference in the region, which has translated into reproductive attitudes and behaviors that promote sex preference (Jayaraman et. al., 2009).

Cultural norms and beliefs shaped by patriarchy exert such a strong influence on people's lives that they often persist even after migration to foreign countries. Studies have revealed a strong persistence of cultural norms among Asian immigrants to Canada (Almond et al., 2013), the United States (Almond et al., 2008; Abrevaya, 2009) and the United Kingdom (Dubuc et al., 2007), where sex ratios (male to female) tend to be substantially elevated at higher birth parities when previous children are daughters. Similarly, Ezdi & Baş (2020) found that Turkish immigrants in Germany also exhibited gender preference in their fertility behavior, with son preference influencing the transition to second and third births.

The relationship between patriarchy and son preference is well established, and the two often reinforce each other. Some feminists and demographers have examined son preference as an indicator of patriarchal structures in order to assess gender inequality and power relations within the family (Gruber & Szoltysek, 2016). Indeed, the strength of son preference is closely linked to the level of patriarchy prevalent in society. The higher the levels of patriarchy and gender discrimination, the stronger the preference for sons among members of that society (Cain, 1993).

Religion has also been studied as a factor promoting son-preferring behaviors among Asian immigrants to Canada. Almond et al. (2013) found that while Christians and Muslims do not appear to use abortion for gender selection, they nevertheless showed a desire for male offspring, as these communities continued childbearing until they reached their desired number of sons -a phenomenon known as differential stopping behavior.

Basu & De Jong (2010) also assert that where sex-selective abortion is not socially acceptable, couples usually resort to continued fertility until their desired number of sons is reached. Studies from India, Bangladesh, and Nepal have similarly indicated the relevance of family size and sex composition in predicting future reproductive behavior (Repetto, 1972; Jayarman, et. al., 2009). Likewise, a study from India revealed that parity progression driven by son-preferring behaviors resulted in 7% more births in the country (Chaudhuri, 2012).

For Pakistan, Guilmoto (2009) found that son preference was largely a result of the persisting patriarchal norms and an overwhelming reliance on non-egalitarian gender roles. A study by Bongaarts (2013), which examined a sample of 61 countries, reported that Pakistan had the second-highest level of son preference among the countries included in his analysis. Another study asserted that this preference was driven by the perception of men as breadwinners, providers of social security, and maintainers of kinship ties, which placed male children at a higher value than female children (Agha, 2018). Basu & Koolwal (2005), in this regard, observed that bearing a male child played a pivotal role in improving a woman's status, particularly in terms of her autonomy and decision-making power within the household. Thus, the resulting shift in power and improved familial status are key factors motivating women to pursue sons rather than daughters (Barber, 2000; Butt & Asad, 2017; Javed & Mughal, 2018; Zimmerman, 2018).

It has also been revealed in some studies that pregnancies become increasingly unwanted as the number of surviving sons increases, indicating that couples in Pakistan continue childbearing primarily in pursuit of sons (Zaidi & Morgan, 2016; Javed & Mughal, 2020). Moreover, some studies have indicated that the sex of the surviving children not only determines progression to higher birth parities but also influences contraceptive use (Khan & Sirageldin, 1977; Rukanuddin, 1982; Hussain et al., 2000; Saeed, 2015; Zaidi & Morgan, 2016). A study by Wazir (2018) also found that in Pakistan, son preference and contraceptive use are significantly associated. Women with two sons had a contraceptive prevalence rate of 42 percent, compared to women with two daughters, whose contraceptive prevalence rate was 29.2 percent. Therefore, in Pakistan, son preference manifests itself in larger family

sizes, resulting in elevated fertility levels and thereby slowing the country's progress towards achieving replacement-level fertility (Zaidi & Morgan, 2016).

The literature has further revealed that while couples in India, Nepal and China often resort to sex-selective practices and use of new reproductive technologies (NRTs) (Purewal, 2010), couples in Pakistan usually rely on continued childbearing – known as differential stopping behavior – until they reach their ideal or desired number of sons as discussed above (Zaidi & Morgan, 2016; Channon, 2017; Javed & Mughal, 2020; 2022).

Thus, the scholarship on son preference in Pakistan aligns with international literature, which suggests that fertility behaviors are influenced by desires related to future goals. However, what sets Pakistan apart from its neighboring countries is the way son preference manifests itself in the country, through differential stopping behavior, reflected in continued childbearing until the desired number of sons is achieved (Bongaarts, 2013; Zaidi, 2013).

This study investigates the role that son preference plays in determining individual's future childbearing goals by employing different indicators of son preference, namely the respondent's ideal number of sons and the comparison between the ideal actual number of living sons. In addition, we examine whether the ideal number of sons continues to shape women's desire for an additional child once their number of living children is taken into account. By providing an updated empirical analysis of son preference and incorporating the concept of the ideal number of sons as a key measure, this research aims to contribute to the formulation of specific policy proposals. It also offers a comprehensive understanding of fertility-related choices and the reproductive behavior of women in Pakistan.

3. DATA AND METHODS

The analysis in this study is based on data from the Pakistan Demographic and Health Survey (PDHS) 2017-18. This nationally representative survey interviewed 15,068 ever-married women aged 15–49 across the country, including Azad Jammu and Kashmir and Gilgit-Baltistan. Information on the socioeconomic characteristics of the household population in the PDHS provides important context for interpreting demographic and health indicators.

Since this study focuses on women's desire for an additional child, the sample was restricted to women who were currently married. For meaningful analysis, women who reported that they or their husband was sterilized or who were infecund, were excluded from the sample. The final

analytical sample used in this study comprised 9,674 currently married women drawn from the four provinces.

Indicators of Son Preference

Since son preference arises from fertility behaviors motivated by individuals' desires, therefore, this study looks at son preference in conjunction with fertility desires to understand how the phenomenon manifests itself in Pakistan. Hence, the respondent's *Desire for an Additional Child* is used as a dependent variable in the analysis. The variable is binary in nature as it is measured from the woman's response to a direct question asking if she desires an additional child or not, with the response being either yes or no (coded as yes= 1; no= 0). The PDHS consists of some questions on fertility preference, which can be used to study latent son preference.

For the current analysis, two variables were constructed to be used as indicators of son preference, namely (1) *Ideal No. of Sons* and (2) *Ideal vs. Living No. of Sons*. The variable "Ideal No. of Sons" is derived from the response to a question asking the woman, "If you could go back to the time, you did not have any children and choose exactly the number of children to have in your whole life, how many would that be? How many would you like to be boys…?" This question was asked in a continuous manner. A categorical variable was then constructed where the variable takes the value of 0 if ideal sons $\leq$ 1; 1 if ideal sons = 2 and 2 if ideal sons $\geq$ 3.

The variable ideal vs. living No. of Sons was constructed by using the information on the respondents' ideal and living number of sons, respectively. This variable was recoded as follows:

0 if ideal = living sons; 1 if ideal > living sons; and 2 if ideal < living sons.

The study controlled the respondent's socioeconomic characteristics, as they could possibly impact her desire to make a fertility-related decision. These variables include the respondent's age, rural/urban residence, wealth status, education level and current employment status. Since the outcome variable for the current study looks at whether the respondent desires another child or not, which is binary in nature, so logistic regression analysis technique was applied in this study. The following logistic regression equation was used to test the impact of the two indicators of son preference on the outcome variable:

$$Ln\ (P\ /\ 1 - P) = \beta_0 + \beta_1 X_1 + \quad\quad + \beta_n X_n + e$$

Where P denotes the probability of a currently married woman with the desire of having an additional child, such that y = (0, 1), $\beta 0$ is the regression constant, while $\beta 1,…,\beta n$ show the regression coefficients for the particular

independent variables X1,…, Xn, respectively, while *e* refers to the error term in the regression analysis.

Thus, in order to test the hypotheses for son preference, logistic regressions were run for women's desire for an additional child by employing the socioeconomic characteristics of the respondent in the first model, and then the indicators of son preference in models 2 and 3. In addition, a separate analysis was conducted to test how the respondent's number of ideal sons influences their desire to have an additional child after controlling for their current number of children (model 4).

4. RESULTS

The percentage distribution of a sample of 9,674 currently married women used in the study is shown in Table 1. According to the survey, forty percent of women reported their ideal number of sons was two, while around thirty-one percent had an ideal of 3 or more sons. A little over half of the respondents did not have any formal education (51.7%), 13.5% reported having primary education, while those reporting secondary and higher education were 19.8% and 15.0% respectively.

Table 1: Percentage and frequency distribution of currently married women by selected characteristics

Variable	Frequency	Percentage
Total	**9,674**	**100.0**
Socioeconomic Characteristics		
Age		
Less than 25	2,258	23.3
Between 25 & 34	4,176	43.2
35 and above	3,240	33.5
Residence		
Urban	4,896	50.6
Rural	4,778	49.4
Education Level		
No Education	5,005	51.7
Primary	1,307	13.5
Secondary	1,915	19.8
Higher	1,447	15.0

Wealth Status*		
Poorest	1,848	19.1
Poorer	1,860	19.2
Middle	1,809	18.7
Richer	1,937	20.0
Richest	2,220	23.0
Currently Employed		
Not Employed	8,403	86.9
Employed	1,271	13.1
Independent Variable		
Ideal Number of Sons		
Ideal Sons ≤ 1	2,811	29.0
Ideal Sons = 2	3,894	40.3
Ideal Sons ≥ 3	2,969	30.7
Ideal vs. Living No. of Sons		
Ideal = Living	2,815	29.1
Ideal > Living	2,491	25.7
Ideal < Living	4,368	45.2
Dependent Variable		
Desire for an Additional Child	6,007	62.1
Yes (Have Another)	3,667	37.9
No (No More)		

Source: Authors' calculations

* Wealth status as grouped in the DHS dataset was used. The DHS index was based on the ownership of consumer goods and housing characteristics.

Table 2 below reports the cross-tabulation percentages for all explanatory variables used in this study with respect to the outcome variable and their significance levels to provide a descriptive analysis of all the variables used. It reveals that the desire to have another child was inversely associated with the woman's age; 92% of younger women, aged less than 25, desired another child compared with 33% of the oldest women aged 35 or higher. Moreover, it was found that 66.8% of respondents who wanted to have another child were those having an ideal number of 3 or more sons. Similarly, respondents who wanted to have another child were substantially those who

had yet to achieve their ideal number of sons (93.5%). Contrary to this, women who did not want another child were mainly those who had exceeded their ideal number of sons (64.7%).

Table 2: Desire for an additional child of currently married women aged 15-49 by socioeconomic characteristics

Background Characteristic	Desire for an Additional Child			Significance
	Have Another (Yes)	**No More (No)**	**Total**	
Total	**62.09**	**37.91**	**9,674**	
Age				
Less than 25	92.1	7.9	2,258	
Between 25 & 34	68.2	31.9	4,176	*0.000*
35 & above	33.4	66.6	3,240	
Residence				
Urban	59.0	41.1	4,896	*0.000*
Rural	65.4	34.6	4,778	
Education Level				
No Education	62.7	37.3	5,005	
Primary	59.1	40.9	1,307	*0.123*
Secondary	62.1	37.9	1,915	
Higher	62.8	37.3	1,447	
Wealth Status				
Poorest	70.7	29.3	1,848	
Poorer	65.8	34.3	1,860	*0.000*
Middle	59.4	40.6	1,809	
Richer	59.9	40.0	1,937	
Richest	55.9	44.1	2,220	
Currently Employed	63.5	36.5	8,403	*0.000*
Not Employed	53.0	47.1	1,271	
Employed				
Ideal No. of Sons				
Ideal Sons ≤ 1	57.4	42.6	2,811	
Ideal Sons = 2	61.9	38.1	3,894	*0.000*
Ideal Sons ≥ 3	66.8	33.2	2,969	
Ideal vs. Living Sons	75.9	24.1	2,815	
Ideal = Living	93.5	6.5	2,491	*0.000*
Ideal > Living	35.3	64.7	4,368	
Ideal < Living				

Source: Authors' calculations

Note: ***p<0.01, **p<0.05, *p<0.1

The logistic regression estimates for both indicators of son preference, namely "Ideal No. of Sons" and "Ideal vs. Living Sons" of the respondent, are shown in Table 3. The association between son preference and the desire for having an additional child is found to be statistically significant for both indicators of son preference.

Table 3: Son preference indicators and desire for an additional child, logistic estimation

Variable	Dependent variable is Desire for an Additional Child (yes= 1, no= 0)		
	(1)	(2)	(3)
	Socioeconomic Characteristics	Ideal No. of Sons	Ideal vs. Living No. of Sons
Ideal No. of Sons (Ref: ≤ 1 sons)			
Ideal Sons = 2		1.270***	
		(0.0752)	
Ideal Sons = 3 +		2.012***	
		(0.1377)	
Ideal vs. Living Sons (Ref: Ideal = Living Sons)			
Ideal > Living			3.575***
			(0.3407)
Ideal < Living			0.206***
			(0.0122)
Age (Ref: < 25 years)			
25 – 34 years	0.183***	0.174***	0.291***
	(0.1562)	(0.0149)	(0.0263)
35 + years	0.043***	0.039***	0.0782***
	(0.0038)	(0.0034)	(0.0073)
Residence (Ref: Urban)			
Rural	1.006	1.010	0.921
	(0.0567)	(0.0572)	(0.0568)
Education Level (Ref: No Education)			
Primary	0.826**	0.898	0.822**
	(0.0634)	(0.0698)	(0.0698)
Secondary	1.009	1.137	1.049
	(0.0749)	(0.0868)	(0.0859)
Higher	1.493**	1.743***	1.426**
	(0.1288)	(0.155)	(0.1379)
Wealth Status (Ref: Poorest)			
Poorer	0.759***	0.791**	0.708***
	(0.0624)	(0.0656)	(0.0666)

Middle	0.540***	0.592***	0.510***
	(0.0467)	(0.0518)	(0.0492)
Richer	0.543***	0.614***	0.503***
	(0.0511)	(0.0587)	(0.0522)
Richest	0.468***	0.543***	0.429***
	(0.0475)	(0.0559)	(0.0484)
Currently Employed (Ref: No)			
Yes	0.759**	0.776***	0.685***
	(0.053)	(0.0545)	(0.0538)
Constant	18.702***	12.588***	25.252***
	(2.0442)	(1.4852)	(3.1827)
Observations	9,674	9,674	9,674

Source: Author's calculations

Note: Robust standard errors are reported in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 3 presents the results of the logit estimation for 3 models; model (1) shows the impact of respondents' socioeconomic characteristics on their desire for an additional child. When compared with the poorest households, the desire for an additional child significantly drops by 58% among women belonging to the richest households.

Models 2 and 3 show the estimated results of the regression analysis between indicators of son preference and the outcome variable. In model 2, the son preference indicator *'Ideal Number of Sons'* is added to test for its independent effect, while model 3 is used to check for the independent effect of the second indicator of son preference, namely *'Ideal vs. Living Sons'*. Model 2 reveals that the odds of wanting another child substantially increased when the respondent's ideal number of sons increased. Compared to the reference category of 'Ideal Sons ≤ 1', the odds of wanting an additional child increased by 1.3 times for women with an ideal of 2 sons, while they increased by 2 times for women with an ideal of 3 or more sons.

Model 3 reveals that the desire for an additional child is less in the case of women who have already achieved their ideal number of sons, as opposed to those who are yet to reach their ideal number of sons. For instance, compared to those whose ideal number of sons was equal to their living number, the odds of women wanting an additional child increased by 3.6 times when their ideal number of sons was greater than their living sons. In contrast, for those whose living sons had exceeded their ideal number, the odds of wanting another child was 79% less when compared to the reference category of *Ideal = Living Sons*. The regression estimates for the socioeconomic

characteristics show that when compared with the poorest households, the desire for an additional child significantly drops by 58% among women belonging to richest households.

Table 4 below reports the findings from an additional analysis where the impact of respondents' *Ideal Number of Sons* on the *Desire for an Additional Child* is studied after controlling for the respondents' *Number of Living Children*. Three different models are used to analyze the robustness of the findings; here, the models differ according to the number of living children category the respondents fall into; hence, the number of observations (N) varies in each model.

Table 4: Ideal number of sons and desire for an additional child -controlling for number of living children

Variable	Dependent variable is Desire for an Additional Child		
	Number of Living Children		
	(1)	(2)	(3)
	0 – 1	2 – 3	4 and more
Ideal No. of Sons (Ref: ≤ 1 sons)			
Ideal Sons = 2	4.328***	2.323***	0.730***
	(1.0551)	(0.2110)	(0.0901)
Ideal Sons = 3+	6.296***	6.023***	2.349***
	(2.855)	(0.7982)	(0.2602)
Age (Ref: < 25 years)			
25 – 34 years	0.739	0.574***	0.852
	(0.1839)	(0.0684)	(0.2652)
35 + years	0.188***	0.143***	0.337***
	(0.0469)	(0.0192)	(0.1046)
Residence (Ref: Urban)			
Rural	0.793	1.069	0.776**
	(0.1855)	(0.1029)	(0.0751)
Education Level (Ref: No Education)			
Primary	0.631	0.751**	0.857
	(0.2363)	(0.1006)	(0.1135)
Secondary	0.515*	0.886***	0.847
	(0.1895)	(0.1074)	(0.1320)
Higher	0.567*	0.946**	0.976
	(0.2166)	(0.1331)	(0.2207)
Wealth Status (Ref: Poorest)			
Poorer	0.394*	0.791	0.653***
	(0.1958)	(0.1346)	(0.0730)

Middle	0.626	0.539***	0.473***
	(0.3499)	(0.0912)	(0.0609)
Richer	0.614	0.552***	0.346***
	(0.3458)	(0.0990)	(0.0523)
Richest	0.473	0.482***	0.285***
	(0.2740)	(0.0907)	(0.0534)
Currently Employed (Ref: No)			
Yes	0.892	0.700**	0.774*
	(0.2721)	(0.0836)	(0.0943)
Constant	60.898***	3.618***	1.343
	(30.138)	(0.6677)	(0.4462)
Observations	2,966	3,356	3,352

Source: Author's calculations

Note: Robust standard errors are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

The odds ratios from logistic regressions in model 1 reveal that the likelihood of wanting an additional child among women with 0 – 1 living child increases by 4.3 times for those whose ideal number of sons is 2 when compared with those whose ideal number of sons is less than or equal to 1. Similarly, when compared to the ideal of less than or equal to 1 son, those whose ideal sons were 3+ were 6.3 times more likely to want an additional child if they had 0 – 1 living child.

For 3,356 women who had between 2 and 3 living children, the likelihood of wanting an additional child among respondents with 2 ideal sons increased by 2.3 times when compared to the reference category of less than or equal to 1 ideal son. Similarly, for women with 3+ ideal sons the likelihood of wanting another child increased by 6 times when compared to the reference of less than or equal to 1 ideal son. Thus, the ideal number of sons has a significant and direct impact on the desire for an additional child, even if we control for the respondents' living number of children.

The logistic estimates for model 3 reveal that among 3,352 women who had 4+ living children, the likelihood of wanting an additional child among women with 2 ideal sons decreases by 27% when compared to those whose ideal sons were less than or equal to 1. This 27 per cent decline in the likelihood of wanting an additional child among women having 4 or more children reflects that these women may have perhaps achieved their ideal number of sons, which is 2. However, for women whose ideal number exceeded 3 sons, the probability of wanting an additional child increased by 2.3 times when compared to those whose ideal sons were less than or equal to 1. Thus, even among those with 4+ living children, there was no desire to stop

childbearing until the desired number of sons had been reached among those wanting a minimum of 3 sons.

5. DISCUSSION

This study attempted to understand the extent to which the desire for an additional child among currently married women is impacted by their son preference behaviors exhibited through two different indicators of son preference; namely, their *Ideal Number of Sons* and the comparative number of ideal and living sons, that is, *Ideal vs. Living Sons*. The empirical results of this study reinforce the findings from previous literature indicating that son preference is indeed among the driving forces behind high fertility rates in Pakistan.

It was found that son preference plays a crucial role in shaping women's future reproductive intentions and decisions. The conclusive evidence suggests that the desire for an additional child is strongly affected by a preference for sons. Compared to women who wanted at least one son, those who wanted 2 sons were 1.3 times more likely to desire another child; and the likelihood of this desire was 2 times more among women whose desired number of sons was three or more. Furthermore, women who had not yet achieved their ideal number of sons were 3.6 times more likely to want another child than those who had achieved their ideal number of sons. On the contrary, women who had achieved their ideal number of sons were 79% significantly less likely to desire another child.

The evidence provided in this paper is further supported by previous literature on son preference, both from around the world and studies specific to Pakistan. It has been previously argued that future fertility decisions are taken to approximate an ideal number of sons (Hussain et al., 2000) and, in doing so, couples exhibit differential stopping in their fertility behavior. The practice of differential stopping in fertility behavior is widespread in Pakistan and is indicative of contraceptive use in the country as Pakistanis resort to additional births and/or continued childbearing in the pursuit of having at least one son (Zaidi & Morgan, 2016).

To further understand the net effect of son preference on the desire for an additional child, a separate analysis was carried out, controlling for the respondents' number of living children. A significant, positive association was found between the respondents' desired number of sons and their desire for another child at each level of parity among those with 0 – 1, 2 – 3, and 4+ living children. For example, women who had 2 – 3 children but wanted 3+ sons were six times more likely to desire another child compared to those who reported the desire for at least one son. Thus, even among those at higher

levels of parity, the desire to continue childbearing was significantly higher for those who desired more sons. The above findings clearly indicate that ideal number of sons is a very real and meaningful concept that is likely to have a direct bearing on future fertility behavior.

There is considerable evidence from previous literature on Pakistan that shows that women in the country exhibit son-preferring behaviors. Zaidi (2013) found that women having all daughters were more likely to want another child as opposed to those who have one or more sons. Women sometimes may pursue sons because of the increased social value that comes with bearing sons in the form of an increase in women's decision-making power and familial status (Dyson & Moore, 1983; Basu & Koolwal, 2005; Zimmerman, 2018). Similarly, women also pursue sons when they feel pressured by their in-laws and husbands, as giving birth to a boy helps continue the family bloodline, which helps them pass on their 'family name' and inheritance through generations (Barber, 2000).

Economic considerations also play an integral part in women pursuing sons and ultimately drives the demand for additional children upwards. In patriarchal societies, men are considered the main source of earning and are supposed to provide for the rest of the family. Sons are thus placed on a higher pedestal due to the associated economic benefit as they earn and provide for the parents (Aslam & Kingdon, 2008; Sultana, 2010). Sons, therefore, have a higher social as well as economic utility in patriarchal household settings with an increased contribution towards household earnings. In this regard, having sons is seen as an asset as they come with a higher market return to parents than daughters, who are merely a burdensome liability.

In the absence of efficient social security schemes and safety nets to provide for people in their old age, parents tend to rely on sons for securing their future and view them especially as support for old age since daughters are wedded off to live with their husbands' families (Aslam & Kingdon, 2008; Tanvir & Arif, 2018). Hence, efforts directed at curbing the fertility rates must cater to this aspect of son preference as the results of this study revealed that women belonging to wealthier strata of society are significantly less likely to desire more sons and want additional births.

6. CONCLUSION

The regression estimates from this study provide conclusive evidence to support the hypothesis that the desire for an additional child is significantly affected by son-preferring behaviors of women in Pakistan. It focused on two ways of measuring this preference: by looking at how many sons a woman ideally wants, and whether she has reached that ideal number in terms of the

number of living sons she already has. - The study's findings align with existing research, confirming that a preference for male children significantly contributes to elevated fertility rates in Pakistan as couples resort to differential stopping behavior in order to achieve their ideal number of sons. Our analysis on the comparative number of ideal vs. living number of sons reveals how women who had achieved their ideal number of sons were 79% less likely to want an additional birth as opposed to those who were yet to achieve their ideal number. Previously, Hussain et al. (2000) and Zaidi & Morgan (2016) have suggested that couples often make future fertility decisions based on their goal of reaching a certain number of sons and continuing childbearing in the pursuit of having a son(s). Moreover, this study has also revealed that the current number of living children does not necessarily stop women from exhibiting son preference behaviors. This additional analysis further strengthened our hypothesis as it revealed that the desire for achieving an ideal number of sons was so strong that even those women who were at higher levels of parity reported the wish to continue childbearing.

The results of this study underpin the importance of tackling this strong and persistent presence of a culture of son preference in our society. The persistent preference for boys over girls has major effects at the national level, which must be addressed immediately. For instance, it drastically reduces any efforts to curb the country's fertility rate, thereby slowing down Pakistan's fertility transition. Moreover, it also slows down the country's progress towards achieving several of our SDG targets, especially those set out in SDG 3 and SDG 5, which relate to gender equality and ensuring healthy lives for all at all ages (Qazi, 2023). Women resorting to continued childbearing even after having 4 children end up putting their life at risk as well as the life of the newborn child. In this regard, the implications of son preference attitudes are far and wide-reaching as evident in the country's demographic profile as Pakistan's fertility, maternal and child mortality rates are among the highest in the region.

Therefore, a concerted effort is required by all the stakeholders to direct their resources towards investing in women's education and encouraging female labor force employment. Moreover, gender sensitization and awareness should be part and parcel of national health and education policies so that a widespread change can be brought about in the diffused norms relating to this culture of son preference. Efforts to alter son preference behaviors should therefore be an important part of the overall goals of programs designed to offer family planning with a view to reducing the rate of population growth in the country.

7. LIMITATIONS

A few limitations which might have influenced our model estimates are noted herewith. First, the results of the study may reflect omitted variable bias due to some missing variables interacting with the variables of interest. Such missing variables, not available in the DHS dataset, may include broader cultural norms about son preference or family pressure about producing sons. Second, the study may have experienced reporting bias as the desired number of sons can be affected by the respondents' number of living children and/or sons.

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