International Journal of Statistical Sciences *ISSN 1683-5603*
Vol. 26(1), March, 2026, pp 135-146
DOI: https://doi.org/10.3329/ijss.v26i1.88852

Unmarried University Students' Perspectives on Women's Ideal Age at First Birth: Evidence from Bangladesh

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[Received November 25, 2025; Accepted March 4, 2026]

Abstract

Understanding university students' perceptions of women's ideal age at first birth (WIAFB) is essential for informing future reproductive health policies and programs in a given country. This study aimed to survey Bangladeshi university students' perspectives on WIAFB. A cross-sectional study was conducted at University of Rajshahi, Bangladesh and 466 unmarried students were recruited through multistage stratified random sampling. Students' perspectives on WIAFB were measured using a question: "At what age do you think women should ideally have their first child?" Based on their responses, students were categorized into two groups: (i) early age at childbirth (<20 years), and (ii) ideal age at childbirth (20-30 years). In this study, 73.2% of university students preferred WIAFB between 20–30 years. A significantly higher proportion of female students (83.8%) reported a preference for WIAFB compared to males (66.3%). Students whose mothers had secondary or higher education were more likely to prefer WIAFB. Those with fathers who were farmers or businessmen held the same view. Financially stable students, and those not under family pressure were also more likely to prefer WIAFB. The study highlights that a majority of university students prefer WIAFB. Parental education, father's occupation, financial stability, and the absence of family pressure were significantly associated with the preference. These insights underscore the need for targeted awareness programs for unmarried university students. Such initiatives should promote informed family planning decisions, encourage childbirth at an appropriate age, and help mitigate health risks associated with early pregnancies for both mothers and children.

Keywords: Ideal age at first birth; University students; Bangladesh, Logistic regression.
AMS Classification: 62J12, 62P25.

1. Introduction

The arrival of a first child marks a transformative moment in an individual's life, not only signaling the transition into parenthood but also shaping the foundation of parenting approaches and family structure (OECD, 2014). One of the most significant aspects of this transition is the preferred age at which individuals choose to have their first child, a decision shaped by a complex interplay of cultural expectations, educational attainment, economic stability, and personal readiness (Frosch et al., 2021). The timing of first birth mainly depends on family wealth and parental education (Barber, 2001). It is also affected by environmental and cultural resource allocation (Colleran et al., 2024). In Western societies, women have shown a preference for having a child at a later stage of their life and this tendency has increased in recent years (Fitzpatrick et al., 2017). Early marriage and childbearing are common in South Asian countries, where high rates of early motherhood are observed. Fertility expectations such as proving fertility soon after marriage are prevalent in South Asia. Societal pressures often lead young women to marry early and have children soon afterward (Pachauri & Santhya, 2002). Women who become mothers at an earlier age tend to be younger, less educated, and from lower socioeconomic backgrounds (McLaughlin & Micklin, 1983). Older maternal age at first birth is increasing in high-income countries. Although older women—typically defined as over 35—face greater challenges with fertility, often requiring the assistance of reproductive technologies. Psychological adjustment studies suggest that age-related infertility impacts mental health. Biological risks increase with maternal age, affecting fertility and pregnancy outcomes (McMahon et al., 2011).

Over the past half-century, Western societies have experienced notable shifts in the timing of childbirth. The average age at first childbirth for women among 23 EU countries has increased by 3.1 years, from 26.1 in 1970 to 29.2 in 2021(OECD, 2014). East Asian countries like Japan, South Korea, and Singapore report significantly higher average ages at first childbirth often exceeding 30 years driven by rising female education levels, labor market participation, urban living, and shifting family values (OECD, 2024). Similar trends can be seen in South Asian countries where the age of first child birth is increasing (Dewau et al., 2021; Scott et al., 2021). Worldwide, several studies have investigated the age at first birth in detail (Cochran, 1977; Moradeyo et al., 2024; Sobhan et al., 2024), often focusing on factors influencing the actual timing of childbirth considering only women. In Bangladesh, research has similarly concentrated on the age at which women have their first child (Cochran, 1977). However, much of the existing research has focused on realized behaviors rather than individuals' preferences or aspirations regarding when to start a family. The perspectives of both men and women— particularly their desired age for first childbirth—remain underexplored in the current literature, despite their significance in understanding evolving social norms and reproductive intentions. This study aims to assess students' perspectives on women's ideal age at first birth (WIAFB) to identify the factors that influence their views.

2. Theoretical Framework

2.1 Demographic Transition Theory

This study was conducted in eight villages of Kaligonj sub-district in Satkhira district of Bangladesh. The sampled farmers were selected using a multistage sampling technique. In the first

stage Satkhira district and Kaligonj sub-district were selected non-randomly due to the severe salinity problems with *aman* rice cultivation. In the second stage, the two *unions* and eight villages were chosen randomly. In the third stage, a sampling frame was prepared from a numbered list of all farmers collected from field level sub assistant agricultural officer. A total of 455 farm households' head were selected with the use of computer generated random numbers. In the final stage, farm households were surveyed randomly using structured questionnaire with use of face to face interview during the months of May and June in 2023. The survey focuses on predicting technical efficiency, elasticity of production, returns to scale and identify the factors for *aman* rice farms.

2.2 Gender Role Theory

Gender Role Theory suggests that socially constructed expectations about masculinity and femininity influence life-course decisions, including reproductive timing (Eagly et al., 2012). In patriarchal societies such as Bangladesh, women's reproductive roles are often emphasized, and early motherhood may be socially encouraged to fulfill traditional gender expectations.

2.3 Social Norms and Reproductive Decision-Making

Reproductive decisions are strongly influenced by collective norms and family expectations (Pachauri & Santhya, 2002). In South Asian societies, fertility soon after marriage is often viewed as a sign of marital success and womanhood. Normative pressure from in-laws, extended family, and community networks can shape both actual fertility behavior and preferred timing.

3. Methods

3.1 Study area and population

This cross-sectional study was conducted at the University of Rajshahi, one of the largest universities in Bangladesh; students come from the different parts of the country. At a particular time, more than 32000 students study at the university. It is a non-medical university comprising 12 faculties, 59 departments, and 6 institutes. There are 17 (11 for males and 6 for females) residential halls ("University of Rajshahi," 2025). Data collection took place from December 1, 2024, to April 30, 2025.

3.2 Sample size determination

The sample size for the study was determined using the formula, $n = \frac{N}{1+Nd^2}$ where N is the population size (N=32,000) and d is the margin of error. At a 95% confidence level, with d=0.05, the calculated sample size was, n=395.06, which was rounded to 396. However, a total of 466 students were included in the study to enhance the accuracy and reliability of the results.

3.3 Sampling method

The survey was conducted using a multistage stratified random sampling technique [Fig. 1]. First, 2 halls for males and 2 for females were randomly selected from the 11 male halls and 6 female halls at Rajshahi University. Then, 142 male and 91 female respondents were randomly selected from each selected male and female residential hall, respectively. The sample selection procedure is described in Fig.1.

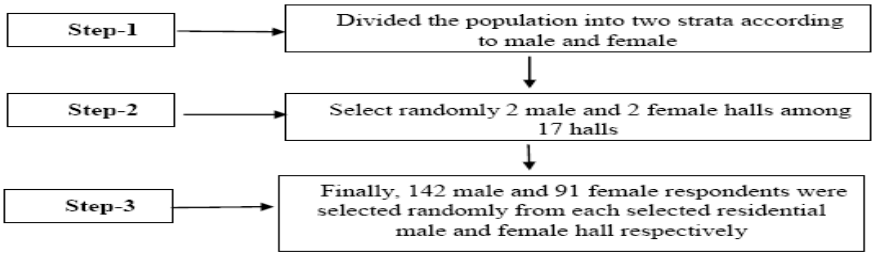

Figure 1: Sample selection procedure

3.4 Data collection procedure

For data collection, a structured questionnaire was used, written in simple English to ensure that respondents could easily understand and complete it. The questionnaire was initially prepared by the first author and later improved with the help of the other authors to make it well-structured. Five trained data collectors administered the survey. To avoid repetition, data were collected from various areas of the student halls. A total of 600 questionnaires were distributed to randomly selected students, but some did not agree to participate. In the end, 466 completed questionnaires were successfully collected.

3.5 Outcome variable

The outcome of the study was the students' perspectives on women's ideal age at first birth (Early childbirth (under 20 years) = 0, Ideal age at childbirth = 1). Their perspectives were divided into two groups: "Early childbirth" (under 20 years) (World Health Organization. Adolescent Pregnancy., n.d.) and "Ideal age at childbirth" (between 20 and 30 years) (Koo et al., 2012).

3.6 Independent variables

Type of residence, parental education, parental occupation, monthly family income, age, gender, family size, believe early childbirth harmful women's health, delaying childbirth harmful for women health, influencing factors on the decision on first child - health considerations, financial stability, career goals, family expectations, personal readiness, preferred gap between marriage and first birth, societal judgment effect on childbirth. The independent variables in this study were taken based on some previous studies (Melnikas & Romero, 2020; Senkyire et al., 2022).

3.7 Statistical analysis

The collected data were imported into SPSS version 26 for analysis. Descriptive statistics were employed to summarize the characteristics of the study participants, including frequencies and percentages. The boxplot method was applied to identify potential outliers. The chi-square test was used to find the associations between the independent and dependent variables, and finally the logistic regression model was used to identify the underlying factors that influence the WIAFB.

4. Results

4.1 Distribution of socio-economic, demographic and psychosocial factors

A total of 466 university students were included in the study to investigate their views on WIAFB. Among them, 60.9% of the students were male and 39.1% were female. The majority of

participants (65.9%) came from rural areas. Almost 40% and 35% participants' mothers and fathers were lower educated, respectively while 87% of the mothers were housewives and more than 30% of the fathers were farmers. Half of the students (51.1%) had a nuclear family structure. Almost 45% of the students believed that early childbirth was harmful to mother's health, whereas 62.7% believed delaying childbirth was harmful to mother's health. About 52.6% and 51.5% considered health and financial stability as primary factors influencing the decision to have the first child, while career goals (28.8%) and family expectations (26.8%) were less significant. The ideal gap between marriage and first birth was predominantly 1-2 years (63.7%), followed by 3-5 years (31.5%). Societal perceptions played a crucial role, with 42.5% of students reporting strong effects and 51.9% being somewhat affected by societal views on childbirth. Monthly income distribution was balanced, with 32% earning less than 15,000, 37.6% between 15,000 and 30,000, and 30.5% above 30,000 (Table 1).

Table 1: Distribution of socio-economic, demographic and psychosocial factors of university students

Variable	Group	N (%)	Variable	Group	N (%)
Types of residence	Urban	159(34.1)	Believe delaying childbirth harmful women's health	Yes	292(62.7)
	Rural	307(65.9)		No	174(37.3)
Mothers' Education	Lower education (Illiterate & Primary)	195(41.8)	Health consideration of mothers influenced the decision to have first child	Yes	245(52.6)
	Secondary	194(41.6)		No	221(47.4)
	Higher education	77(16.5)	Financial stability influenced the decision to have first child	Yes	240(51.5)
Mothers' Occupation	Housewife	405(86.9)		No	226(48.5)
	Non-housewife	61(13.1)	Career goals influenced the decision to have first child	Yes	134(28.8)
Fathers' Education	Lower education (Illiterate & Primary)	162(34.8)		No	332(71.2)
	Secondary	154(33)	Family expectation influenced the decision to have first child	Yes	125(26.8)
	Higher education	150(32.2)		No	341(73.2)
Fathers' Occupation	Farmer	147(31.5)	Personal readiness influenced the decision to have first child	Yes	202(43.3)
	Service	163(35)		No	264(56.7)
	Business	96(20.6)	The ideal gap between marriage and the first birth	Less than 1 year	10(2.1)
	Day labor, Driver etc	60(12.9)		1-2 years	297(63.7)
Gender	Male	284(60.9)		3-5 years	147(31.5)
	Female	182(39.1)		More than 5 years	12(2.6)
Family size	Nuclear	238(51.1)	Societal perceptions influence choices regarding childbirth	Strongly affects	198(42.5)
	Joint	126(27)		Somewhat affects	242(51.9)
	Single Parent Family	102(21.9)		No effects	26(5.6)
Believe early childbirth harmful women's health	Positive	206(44.2)	Monthly income	Less than 15000	149(32)
	Neutral	148(31.8)		15000-30000	175(37.6)
	Negative	110(23.6)		Above than 30000	142(30.5)

Perspectives on women's ideal age at first birth (WIAFB) was expressed by 66.3% of male students, 83.8% of female students, and 73.2% of students overall (Fig 2).

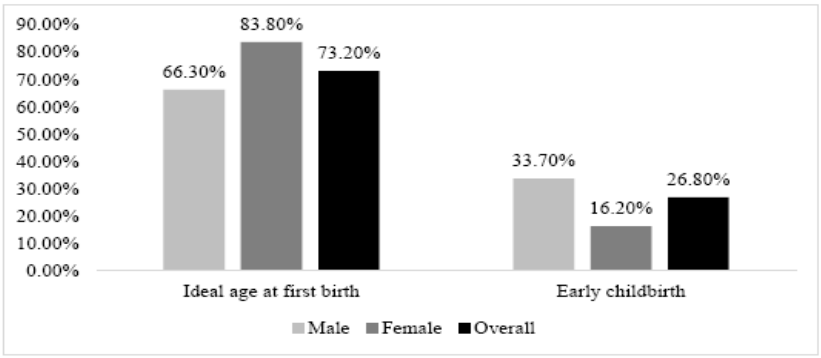

Figure 2: Percentage of Ideal Age at First Birth and Early Childbirth

From Fig 3, we observed that only 66.30% of male students preferred WIAFB, while 83.80% of female students preferred WIAFB. Among students living in urban areas, 80% preferred WIAFB, whereas in rural areas, the percentage was 69.84%. In the students' views, maternal education had a significant impact, 86.49% of the students whose mothers were highly educated preferred WIAFB. A similar pattern was shown in paternal education, with 79.17% of the students preferring WIAFB whose fathers were highly educated. Among students whose mothers were housewives, 73.42% preferred WIAFB, compared to 71.67% of those whose mothers were not housewives. Among students whose fathers were service holders and businessmen, 78.88% and 76.34% respectively preferred WIAFB. Additionally, 78.26% of students from economically strong families (>30,000 BDT) preferred WIAFB. Meanwhile, early childbirth was preferred by 22.63% of students who focused on maternal health, 21.12% who considered financial stability, and 34.40% who were influenced by family expectations.

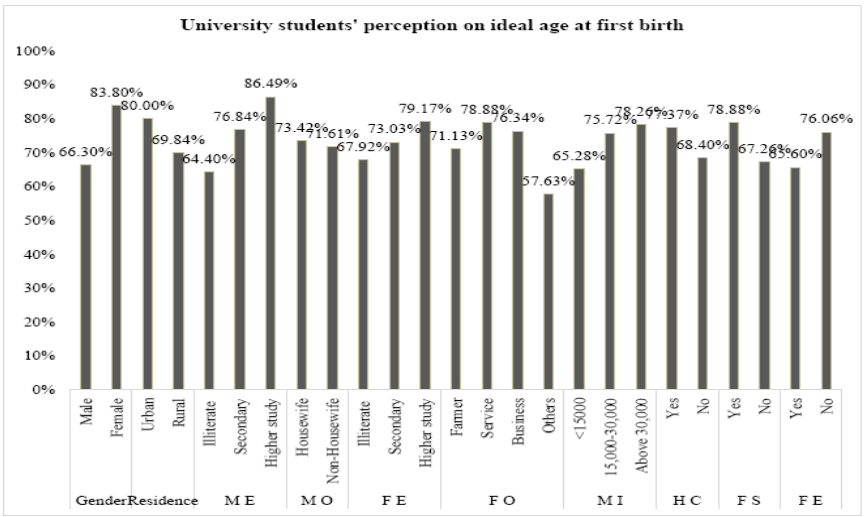

Figure 3: Perspective of ideal age at childbirth by the difference socio-demographic characteristics

N.B. M E= Mothers Education; M O= Mothers Occupation; F E= Fathers Education; F O= Fathers Occupation; M I= Monthly Income; H C= Health Consideration; F S= Financial security; F E= Family Expectation

In the logistic regression model, "ideal age at childbirth (20–30 years)" was coded as 1 (event), while "early childbirth (<20 years)" was coded as 0 (reference category). Logistic regression demonstrated that female students had a higher likelihood [aOR: 2.44; 95% CI: 1.44–4.00] of preferring IAFB. Students whose mothers had higher education [aOR: 3.70; 95% CI: 1.41–9.74] or secondary education [aOR: 1.93; 95% CI: 1.09–3.42] were more likely to prefer IAFB compared to those whose mothers had lower education. Students whose fathers were businessmen [aOR: 2.14; 95% CI: 1.00–4.58] or farmers [aOR: 2.12; 95% CI: 1.06–4.23] had higher odds of preferring the ideal age compared to those who had others occupational fathers. Financially stable students had a higher likelihood [aOR: 2.13; 95% CI: 1.33–3.41] of preferring IAFB. Finally, family influence on students reduced [aOR: 0.61; 95% CI: 0.38–0.99] the likelihood of preferring the ideal age of childbirth. . The AUC (0.722) of ROC curve (Fig. 4) showed good discriminatory power of the model and insignificant Hosmer Lemeshow test further confirmed the model was good fitted (Table 2).

Table 2: Effect of socioeconomic, demographic and psychosocial factors on the perspectives of women's ideal age at first birth

Independent variable	Group	cOR (95% CI)	p- value	aOR(95% CI)	p- value
Types of residence	Urban vs Rural®	1.72(1.08-2.76)	0.02	1.03(0.59-1.77)	0.81
Mothers' education			0.001		0.01
	Secondary vs Lower education®	1.83(1.17-2.87)	0.001	1.93(1.09-3.42)	0.02
	Higher study vs Lower education®	3.54(1.71-7.34)	0.08	3.70(1.41-9.74)	0.008
Fathers' education			0.09		0.41
	Illiterate vs Higher study®	0.55(0.33-0.93)	0.02	1.82(0.74-4.48)	0.18
	Secondary vs Higher study®	0.71(0.41-1.22)	0.21	1.41(0.67-2.93)	0.35
Fathers' occupation			0.01		0.13
	Farmer vs others (Day labor, Driver etc.) ®	1.81(0.96-3.40)	0.06	2.12(1.06-4.23)	0.03
	Service vs others (Day labor, Driver etc.) ®	2.74(1.44-5.21)	0.002	1.86(0.84-4.13)	0.12
	Business vs others (Day labor, Driver etc.)®	2.37(1.17-4.79)	0.01	2.14(1.00-4.58)	0.049
Monthly family income			0.03		0.63
	Less than 15000 vs Above than 30000®	0.52(0.30-0.88)	0.01	0.71(0.35-1.44)	0.35
	(15000-30000) vs Above than 30000®	0.86(0.50-1.47)	0.59	0.89(0.48-1.63)	0.71
Gender	Female vs Male®	2.63(1.67-4.35)	0	2.44(1.44-4)	0.001
Health consideration influences the decision to have the first child	Yes vs No®	1.57(1.04-2.39)	0.03	1.29(0.82-2.02)	0.26
Financial stability	Yes vs No®	1.81(1.19-2.77)	0.005	2.13(1.33-3.41)	0.002
Family expectation influences the decision to have the first child	Yes vs No®	0.61(0.39-0.96)	0.03	0.61(0.38-0.99)	0.04
Hosmer and Lemeshow Test	Chi-square = 5.182	df = 8	0.738		
Nagelkerke R Square	0.158				

N.B.: ®: Reference case; cOR: Crude odds ratio; aOR: Adjusted odds ratio; 95% CI: 95% Confidence interval and *Significant at 5% level

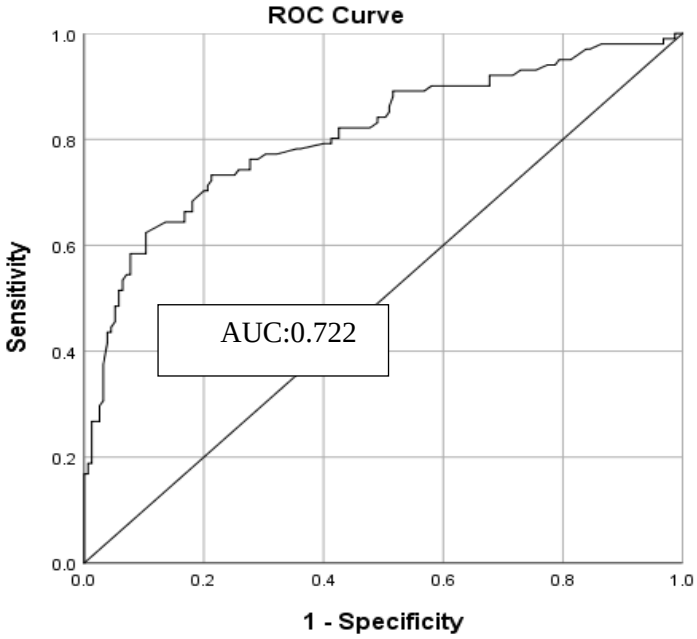

Figure 4: ROC curve

5. Discussion

We found that 73.20% of university students preferred the WIAFB, which aligns closely with a previous study reporting a similar preference rate (74.55%) among students (Subranmiam et al., 2015). This alignment might be attributed to shared values among educated youth, such as the desire to complete higher education, achieve financial stability, and ensure emotional readiness before transitioning into parenthood.

Female students were more inclined to prefer the WIAFB, which is consistent with findings from previous studies (Kim & Kim, 2023; Okine et al., 2023), possibly because women have greater reproductive awareness, stronger concerns about career and life planning, and face increased societal expectations placed on women regarding responsible family formation (Zalewska et al., 2024).

Having a highly educated mother was significantly associated with preferring WIAFB among students and this finding was supported by a previous study (Zalewska et al., 2024) showing the significant influence of mothers on their children in making decisions about family planning.

Alongside students with businessman fathers, those whose fathers were farmers also demonstrated a higher tendency to prefer childbirth at an ideal age, which is consistent with findings from another study (Bhattacharyya et al., 2023). Although early marriage is traditionally more common in rural and farming communities, the observed association may reflect changing socioeconomic and educational dynamics within farming households. Increasing exposure to education, media, and public health messaging in rural areas may influence young adults from farming families to adopt more informed attitudes toward the appropriate timing of childbirth. Similar findings have been

reported in previous research indicating that paternal occupation and broader socioeconomic context can influence reproductive decision-making. (Kariman et al., 2016).

Financially stable students were more likely to prefer WIAFB, aligning with previous studies which suggest that economic security promotes long-term planning and confidence in family formation. Individuals with stable financial backgrounds are better positioned to delay parenthood until they feel personally and professionally prepared (Hamm et al., 2018; Shreffler & Johnson, 2013).

Moreover, family influence on the students had significantly reduced the chance of preferring ideal child birth, as endorsed by a past study (Ranjbar et al., 2024), because delayed child birth often puts an individual under the stigma of infertility in Bangladesh and they are often forced by their in laws to have children (Samandari et al., 2020).

5.1 Strength and limitations

This study provides an inclusive approach, capturing perspectives from both male and female university students—an area often overlooked in previous research, which has focused predominantly on women. By examining individuals' preferences rather than just actual behavior, the study provides valuable insights into future reproductive intentions, which can inform policy and planning. However, this cross-sectional study cannot establish causality, and self-reported data may be subject to response bias.

6. Conclusion

This study highlights that a significant proportion (73.20%) of university students prefer childbirth at an ideal age, reflecting growing awareness of the importance of timing in family formation. Female gender, higher maternal education, and having financially stable or professionally employed fathers significantly increased the likelihood of students preferring childbirth at an ideal age. Conversely, strong family influence was associated with a lower likelihood of such preference. Awareness programs should promote informed and autonomous reproductive decision-making, especially targeting families and institutions. Policies must also support youth empowerment through education and economic stability.

Acknowledgment

I would like to express my sincere gratitude to the students of Rajshahi University for their invaluable support, participation, and cooperation throughout this research. The authors appreciate the reviewer's careful reading and thoughtful remarks that helped refine this work.

Funding

The authors declare that no funding was received for this research from any specific grant or funding agency, whether in the public, commercial, or not-for-profit sectors.

Competing interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Ethics approval

Ethical clearance was obtained from the Institutional Animal, Medical Ethics, Biosafety, and Biosecurity Committee (IAMEBBC) for experimentation involving animals, humans, microbes, and living natural sources at the Institute of Biological Sciences, University of Rajshahi, Bangladesh (Memo No: 31(69)/320/IAMEBBC/IBSc).

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