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# Factors Influencing Institutional Delivery Among Reproductve-Age Women in Bagmati Province, Nepal

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## Abstract

*Reproductive age on institutional delivery among the women of Bagmati Province in Nepal, descriptive and bivariate logistic regression analysis. The data present a strong relationship between maternal age and institutional delivery (p=0.01), with women aged 30–49 years being more likely to deliver in health facilities than women under 20 years (OR=14.73). Adolescent mothers, being younger, are more exposed to social and economic factors that limit their awareness and access to institutional delivery. In contrast, older women often have greater autonomy in decision-making processes. Education showed a significant association with institutional delivery in the bivariate analysis, but this effect diminished in the multivariate analysis, suggesting that wealth and residence mediated this relationship. Cultural and caste-based factors influence institutional delivery, particularly among the Janajati, Terai, and Brahmin/Chhetri communities. Residence plays a key role as 77.4 percent of institutional deliveries occurred in urban areas. The most significant determinant of institutional delivery was wealth, with women in the richest quintile being 25.26 times more likely to deliver in a health facility compared to those in the poorest quintile (p=0.00). These findings suggest that further research is needed, particularly longitudinal and qualitative studies, to better understand the socio-cultural factors that influence maternal health outcome.*

*Keywords:* institutional delivery, maternal health, reproductive age, socio- economic, wealth inequality.

Maternal health is a cornerstone of public health, and institutional delivery is a key determinant of maternal and neonatal mortality rates. Reproductive age is a significant factor influencing women's access to institutional delivery services in Nepal. This study examines the socio-economic, cultural and healthcare system factors that mediate the relationship between reproductive age and institutional delivery, with a specific focus on Bagmati Province. Reproductive age, typically defined as ranging from 15-49 years, direct impacts maternal health outcomes, including institutional delivery. Adolescent mothers (15-

19 years) and older mothers (above 35 years) face distinct challenges that affect their health seeking behaviors and outcomes. Pradhan et al. (2020) report that adolescent mothers are 30 percent less likely than their older counterparts to access institutional delivery services in Nepal.

Thapa and Kafle (2021) empirically established that adolescent mothers often face societal and economic barriers, such as financial dependence and limited autonomy. These challenges are exacerbated for adolescent mothers from marginalized communities who experience social exclusion, further hindering their access to maternal healthcare. In contrast, older mothers face biological risks, such as hypertension and diabetes, which increase the likelihood of opting for institutional delivery (Ghimire et al., 2022). This study also highlights cultural expectations surrounding early marriages and childbirth, which contribute to adolescent pregnancies, often resulting in fewer institutional deliveries. According to Pokharel et al. (2022), in rural Bagmati, cultural practices often prioritize traditional birth attendants, particularly for younger mothers.

Adolescent mothers often face a range of societal and economic barriers, such as financial dependence and limited autonomy. This challenges are further exacerbated for those from marginalized communities, where social exclusion restricts access to maternal healthcare (Thapa & Kafle, 2021). In contrast, older mothers tend to face biological risks, such as hypertension and diabetes, which increases the likelihood of opting for institutional delivery (Ghimire et al., 2022). Adolescent mothers are often overwhelmed by poverty and a lack of knowledge about the benefits of institutional delivery. Additionally, decision-making is frequently influenced by family members, which can further hinder access to health services.

Decision-making autonomy significantly influences the likelihood of institutional delivery. The older a woman is, the more likely she is to make decisions about health independently. Older mothers face fewer societal restrictions, but their health-seeking behavior is often influenced by biological and health complications. As women age, the risks of gestational diabetes and hypertension increase, along with the likelihood of needing a cesarean section, making institutional care essential. Bhattarai et al. (2020) discovered that older women in Bagmati Province were most likely to choose institutional delivery due to heightened awareness of the risks associated with pregnancy and childbirth. Education and socioeconomic status are also critical factors in determining whether women opt for institutional delivery. Higher education helps women understand the benefits of giving birth with skilled health personnel, influencing their decision to seek care in a health facility. Shrestha et al. (2019) stated that educated mothers aged 20-35 were 40 percent less likely to choose institutional delivery compared to their uneducated counterparts. Education plays a key role in enhancing women's knowledge and confidence in making healthcare decisions.

The Safe Motherhood Program works to address inequalities in maternal healthcare by offering cash incentives and free health services to encourage women to deliver in institutions. However, Joshi et al. (2024), found that most adolescent mothers do not take advantage of these incentives due to limited awareness and accessibility. Bridging this gap

requires targeted measures. Improving infrastructure and ensuring the availability of skilled birth attendants in rural areas are key steps in addressing the systemic barriers many women face. Facility readiness and availability Play a significant role in influencing institutional delivery. Bhattarai et al. (2020) found that older women are more likely to seek institutional care due to their awareness of the risks associated with childbirth. In contrast, adolescent mother often relies on informal health services or traditional birth attendants, especially in rural areas.

Cultural variations in marriage age, pregnancy timing, and societal roles significantly influence maternal health-seeking behavior. Early marriages, which are prevalent in some communities, increase the likelihood of adolescent pregnancies, thereby reducing the incidence of institutional deliveries. According to Pokharel, et al. (2022), while many cultural and perceptions about adolescence and motherhood act as deterrents, young women often refrain from seeking institutional care. Another key factor is gender norms. In a patriarchal society, women have limited control over healthcare decisions. Even when they need care, decisions are typically made by men or elders in the family. Promoting greater autonomy for women could be achieved through community education programs and gender-sensitive policies.

Addressing disparities in institutional delivery requires a holistic approach that considers the different needs of adolescent groups and socio-economic contexts. This approach would involve developing adolescent-friendly healthcare services for counseling and education, with easy-to-use health facilities for younger mothers. Additionally, community mobilization activities could educate families on the importance of institutional delivery, especially for adolescents. Investing in healthcare infrastructure in rural areas, along with providing appropriate transportation services and training community health workers, would significantly improve access for underserved women. In addition, greater efforts are needed to implement gender-sensitive policies that advocate for gender equality and women's autonomy in healthcare decisions. All these interventions would contribute to improving maternal health outcomes while reducing disparities in access to institutional care. However, there are still many gaps in understanding the relationship between reproductive age and institutional delivery. Age at reproduction plays a critical role in the use of institutional delivery services in Bagmati Province of Nepal. Additionally, the education and preparedness of the health care system should be considered alongside socio-economic status. Adolescent-friendly health services, awareness programs, financial assistance, and investments in rural healthcare infrastructure are essential. This study examines the role of reproductive age in determining institutional delivery among women in Bagmati Province, Nepal, and highlights the socio-demographic factors such as birth order, education, caste/ethnicity, residence, and wealth that influence this relationship. A key focus is understanding disparities in access to institutional delivery between adolescent and older

mothers. The study also identifies systemic gaps, such as inadequate infrastructure and wealth inequality, and emphasizes the need for improved healthcare services, rural health assets, and gender-sensitive policies to address these disparities.

## Data and Methods

The study examines the impact of reproductive age on the use of institutional delivery services in Bagmati Province, Nepal, using data from the Nepal Demographic and Health Survey (NDHS) 2022. The NDHS provides nationally representative, population-based data on a wide range of health indicators, including maternal health, family planning, and child health. Its extensive coverage and standardized methodology make it an excellent source for this analysis, ensuring comparability across demographic groups (Ministry of Health and Population [MoHP], 2022). This study is descriptive data on women of reproductive age (15-49 years) in Bagmati Province who had a live birth within five years preceding the survey.

This study focuses on women of reproductive age (15-49 years) in Bagmati Province who had a live birth within the five years preceding the survey. This population was selected to align with the objective of evaluating maternal age and institutional delivery. The sampling design is a two-stage stratified cluster sampling with rural and urban households chosen at random from pre-defined clusters (MoHP, 2022). Institutional delivery is the dependent variables in this research, operationalized as a binary variable: 1 = institutional delivery or 0 = non-institutional delivery. The key independent variable is reproductive age, categorized into six intervals (15-19, 20-24, 25-29, 30-34, 35-39, 40-49) to capture differences across various age groups. Other variables considered include maternal education, wealth index, antenatal visits, parity, place of residence (urban/rural), and health insurance coverage. Descriptive analyses were conducted to assess institutional deliveries rates within each age group. Bivariate analyses using chi-square tests were performed to examine associations between reproductive age and institutional delivery. A bivariate logistic regression model was fitted to control for potential confounding effects. Odds ratios (OR) and 95 percent confidence intervals (CIs) were calculated to estimate the likelihood of institutional delivery across age categories, with women aged 25-29 years serving as the reference group. Statistical significance was considered at $p < 0.05$.

## Results

Maternal health is a fundamental aspect of public health, focusing on the well-being of mothers and their children. The determinants of maternal health are complex and interrelated, with factors such as age, birth order, education, religion, caste/ethnicity, place of residence, and wealth quintile all influencing birth outcomes. Understanding these factors is crucial for addressing health inequalities and identifying policy opportunities to improve maternal health services. Younger and older mothers those under 20 and over 35 years old, respectively- are particularly vulnerable and face increased risks during pregnancy and childbirth. They are more likely to experience obstetric complications such as preterm

births, low birth weights, and higher neonatal mortality, often due to biological immaturity and limited access to healthcare services. On the other hand, older mothers face greater complications associated with pregnancy, including gestational diabetes, hypertension, and a higher likelihood of requiring cesarean sections. Maternal mortality rates are significantly higher for the under-20 and over-35 age groups compared to women in the 20-34 age range. Higher-order births, that is, fourth and above, are usually associated with higher risks of loss of blood following childbirth and anemia, as well as uterine rupture. These overflow physical strain on the body and possible laps in healthcare access associated with bigger families. Family planning services and optimal birth spacing are essential in mitigating these risks.

Maternal education has a significant impact on maternal healthcare. For instance, mothers with higher levels of education are more likely to attend prenatal care, seek timely medical intervention, and engage in healthy behaviors during pregnancy. Education also facilities informed family planning decisions regarding childbearing. Higher education is associated to better health literacy and improved access to medical care, which in turn reduces the likelihood of maternal mortality and morbidity.

Religious beliefs and practices can influence maternal health behaviors in areas such as contraception, health-seeking, and childbirth. In some communities, religious norms may prevent women from accessing male health service providers, which can hinder the timely provision of critical medical interventions. Awareness campaigns and culturally sensitive healthcare initiatives can help overcome these barriers. Caste and ethnicity are also significant determinants of maternal health in multi-ethnic societies like Nepal. Dalits and indigenous communities such as the Tharu, often face limited access to quality healthcare due to social discrimination, geographical isolation, and poverty. As a result, well designed health policies are essential to reduce disparities based on caste and ethnicity.

Better healthcare infrastructure, skilled birth attendants, and emergency obstetric care are typically available in urban areas. However, rural areas often have limited health facilities, with a shortage of trained personnel to handle emergencies. Additionally, rural mothers face significant delays in accessing maternal health care, which is associated with rates of maternal and neonatal mortality compared to urban areas.

Women from richer households generally have better access to healthcare facilities, antenatal care, skilled attendants during childbirth, and postnatal services compared to others segments of society. In contrast, women in the lowest wealth quintile are often financially constrained, facing delays or even being blocked from accessing these essential maternal health services. Economic related disparities are reflected in higher maternal mortality and morbidity rates among poor women.

Table 1: Distribution intuitional delivery of respondents

| Variable | Non Institutional | | Institutional | | Total | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| **Age** | | | | | | |
| <20 | 8 | 14.2 | 12 | 2.8 | 20 | 4.2 |
| 20-24 | 12 | 20.7 | 111 | 27.2 | 123 | 26.4 |
| 25-29 | 22 | 37.6 | 129 | 31.5 | 151 | 32.2 |
| 30-49 | 16 | 27.5 | 158 | 38.6 | 174 | 37.2 |
| **Birth order** | | | | | | |
| First | 14 | 23.3 | 200 | 48.8 | 213 | 45.6 |
| Second | 22 | 38.1 | 160 | 39.1 | 182 | 39.0 |
| Third or higher | 22 | 38.6 | 50 | 12.1 | 72 | 15.4 |
| **Level of education** | | | | | | |
| No Education | 16 | 26.8 | 34 | 8.4 | 50 | 10.7 |
| Basic Education | 39 | 66.8 | 228 | 55.5 | 266 | 56.9 |
| Higher Education | 4 | 6.4 | 148 | 36.1 | 152 | 32.4 |
| **Religion** | | | | | | |
| Hindu | 37 | 63.1 | 314 | 76.7 | 351 | 75.0 |
| Other religion | 21 | 36.9 | 95 | 23.3 | 117 | 25.0 |
| **Caste/Ethnicity** | | | | | | |
| Dalit | 1 | 1.1 | 38 | 9.3 | 39 | 8.3 |
| Janjati | 36 | 62.8 | 225 | 54.9 | 261 | 55.9 |
| Other Terai | 2 | 3.4 | 9 | 2.1 | 11 | 2.3 |
| Brahmin/Chhetri | 19 | 32.7 | 138 | 33.7 | 157 | 33.6 |
| **Place of residence** | | | | | | |
| Urban | 29 | 49.2 | 317 | 77.4 | 346 | 73.9 |
| Rural | 30 | 50.8 | 93 | 22.6 | 122 | 26.1 |
| **Wealth quintile** | | | | | | |
| Poorest | 26 | 44.8 | 39 | 9.6 | 65 | 14.0 |
| Poorer | 15 | 25.4 | 54 | 13.1 | 68 | 14.6 |
| Middle | 14 | 23.3 | 69 | 16.7 | 82 | 17.5 |
| Richer | 4 | 6.6 | 79 | 19.2 | 83 | 17.6 |
| Richest | 0 | 0.0 | 170 | 41.4 | 170 | 36.3 |
| Total | 58 | 100.0 | 410 | 100.0 | 468 | 100.0 |

**Source:** Nepal Demographic and Health Survey, 2022

Table 1 presents that 27.5 percent of women in the 30-49 years' age range had non-institutional deliveries, while 38.6 percent had institutional deliveries. There are very few

women under 20 in either category, but the proportion is significantly higher for non-institutional deliveries (14.2 percent vs. 2.8 percent). Among first-born children, institutional deliveries are more common (48.8%), whereas non-institutional individuals' deliveries are more prevalent among those with a third or higher birth order (38.6%). The percent of women with no education is higher in the non-institution delivery group (26.8% versus 8.4%), while the institutional delivery group has a higher proportion of women with higher education (36.1% against 6.4). Hindu make up the largest proportion in both groups, but they represent a much higher percentage in the institutional delivery group (76.7% vs. 63.1%). The majority of individuals in both groups are Janajati, followed by Brahmin/Chhetri. The percent of Dalits is higher in the institutional delivery group (9.3%) compared to the non-institutional group (1.1%). Urban residents make up majority of the institutional delivery group (77.4%), while the non-institutional delivery group has a more equal distribution of urban and rural residents.

The non-institutional group is predominately in the poorest wealth quintile, whereas the institutional group is largely dominated by the richest quintile with 41.4 percent in this category. No individuals in the non-institutional group fall under the richest wealth quintile. Age, birth order, education, place of residence, and wealth quintile are strongly associated with institutional delivery status, whereas religion and caste/ethnicity do not significant differences in relation to institutional delivery. Education and residence seem to be the most important predictors of institutional delivery status.

**Bivariate analysis**

The dataset consisted of 254 observations, which corresponded to a weighted population of 296.35 individuals. It included 2 strata and 65 primary sampling units (PSUs) ensuring representativeness while accounting for clustering effects. The number of design degrees of freedom was 63, reflecting adjustments made for stratification and clustering in variance estimation. The model tested 17 predictors with respect to the dependent variable, yielding an overall F-statistic of 3.34 and a p-value of 0.0005, indicating that the model is statistically significant. This suggests that at least one of the predictors is significantly related to the outcome variable, and the survey design has appropriately accounted for this to produce robust robust and unbiased estimates.

Table 2: Factors association of demographic and socio –economic variable

| Variable | Odds Ratio | Std. Err. | t | P>\|t\| | 95% Conf. Interval | Sig |
|---|---|---|---|---|---|---|
| **Age** | | | | | | |
| 20-24 | 10.3352 | 8.158375 | 2.96 | 0.004 | 2.13424 - 50.04891 | ** |
| 25-29 | 5.658272 | 4.169956 | 2.35 | 0.022 | 1.29746 - 24.67593 | ** |
| 30-49 | 14.73496 | 12.23379 | 3.24 | 0.002 | 2.804113 - 7.42873 | *** |
| **Birth order** | | | | | | |
| Second | 0.229687 | 0.086513 | -3.91 | 0 | 0.1082051 - 0.4875561 | *** |
| Third or higher | 0.095118 | 0.051462 | -4.35 | 0 | 0.0322636 - 0.2804204 | *** |
| Other religion | 0.890929 | 0.452894 | -0.23 | 0.821 | 0.322606 - 2.460446 | |
| **Caste/Ethnicity** | | | | | | |
| Janjati | 0.074995 | 0.092509 | -2.1 | 0.04 | 0.0063752 - 0.8822183 | ** |
| Other Terai | 0.029189 | 0.044024 | -2.34 | 0.022 | 0.0014331 - 0.5945155 | ** |
| Brahmin/Chhetri | 0.036312 | 0.05142 | -2.34 | 0.022 | 0.0021433 - 0.6151946 | ** |
| **Educational attainment** | | | | | | |
| Basic Education | 1.408731 | 0.997409 | 0.48 | 0.63 | 0.3422629 - 5.798238 | |
| Higher Education | 1.284275 | 1.187737 | 0.27 | 0.788 | 0.2023141 - 8.152478 | |
| Residence | | | | | | |
| Rural | 2.145314 | 1.057131 | 1.55 | 0.126 | 0.8013781 - 5.743071 | |
| **Wealth quintile** | | | | | | |
| Poorer | 3.157917 | 1.528809 | 2.38 | 0.021 | 1.200187 - 8.309074 | ** |
| Middle | 7.122477 | 3.930286 | 3.56 | 0.001 | 2.364442 - 21.45524 | *** |
| Richer | 25.26137 | 22.78727 | 3.58 | 0.001 | 4.164737 - 153.2238 | *** |
| Richest | 1 | | | | | |
| **_cons** | **4.195999** | **4.832985** | **1.25** | **0.218** | **0.4199693 - 41.92307** | |

Table 2 shows that the outcome variable is binary, while the predictor variables are multiple. The key summary statistics include Odds Ratios (ORs), Standard Errors (SEs), t-values, p-values, and 95 percent Confidence Intervals (CI) for each predictor variable. A detailed analysis of these key variables and their significance is provided below 93.021053. The logistic regression analyses reveal that age, birth order, caste/ethnicity, and wealth are significantly associated with the outcome, while religion, education level, and place residence show no significant effects. Specially, individuals aged 20-24 are 10.34 times more likely to experience the outcome compared to the reference group (below 20), and this result is statistically significant ($p < 0.01$). People aged 25-29 have 5.66 times higher odds of experiencing the outcome ($p < 0.05$), while those 30-49-year-old age group have the highest odds, at 14.73 times more likely ($p < 0.01$). This suggest that overall, older age is associated with a higher likelihood of the outcome, with the strongest association seen in the 30-49-year-old age group. Another key factor is birth order; second-born children (OR = 0.23) or those born later (OR = 0.10) are much less likely to experience the outcome compared to firstborns ($p < 0.001$). Birth Order is an important explanatory variable, as firstborns are the most likely to experience the outcome. Religion, however is not a significant predictor. Subjects from non-Hindu religions have an odds ratio of 0.89 with a wide confidence interval indicating no statistically meaningful effect on the result variable ($p = 0.821$).

Caste/ethnicity significantly affects the odds of experiencing the event. Specially, members of the Janjati (OR=0.075) and Other Terai (OR=0.03) groups, as well as the Brahmin/Chhetri group (OR=0.04), have significantly lower odds of experiencing the event compared to the reference group, with p-values less than 0.05. This indicates that caste/ethnicity is a significant predictor of the result, with Dalits (or another reference group) having a greater likelihood of experiencing the event. In contrast, education has minimal influence, as the odds ratios for people with basic or higher education levels are close to 1, and help p-values are very high above 0.05. This shows that there is no significant association between education and the result.

Similarly, place of residence (urban vs. rural) does not significantly influence the result ($p = 0.126$), which means that the location of residence does not a major role in determining the result. Wealth is one of the significant determinants. Individuals in the richer wealth quintile are 25.26 times more likely to experience the result compare to the reference group ($p < 0.01$), suggesting that wealthiest individuals have a much higher likelihood of experiencing the event than those in lower wealth quintles. The analysis illustrates that age, birth order, caste /ethnicity, and wealth play important roles in determining the chances of the result while religion, education, and place of residence do not have significantly effects.

## Discussion

The analysis provides insights into the key factors influencing institutional delivery, focusing on the effects of socio-demographic and economic variables on maternal healthcare-seeking behavior in Bagmati Province, Nepal. Through chi-square tests and logistic regression analyses, the study identfies age, birth order, education, residence, and wealth quintile as the primary determinants of institutional delivery.Age emerges as a major determining factor, with older women (30-49 years) reporting significantly higher rates of institutional delivery than younger women (<20 years). Their increased awareness, financial stability, and perception of childbirth risks support these findings (OR = 14.73; $p < 0.01$). Adolescent mother, on the other hand, face barriers such as financial dependence, limited autonomy, and lack of awareness regarding the benefits of institutional care. These underscores the need for adolescent-friendly health services and awareness campaigns (Chaudhary et al., 2019; Tura et al., 2020). Birth order also influences institutional delivery, with the highest rate 48.8 percent among first born children, decreasing with each subsequent birth. This "first-born bias," suggests that families are more cautious during the first pregnancy but may not seek institutional care for further pregnancies due to perceived lower risks (Gabrysch & Campbell, 2009). Therefore, educational efforts should focus on emphasizing the importance of institutional care for all deliveries, regardless of birth order.

Education plays a significant role, with women who have higher education levels being more likely to access institutional delivery services, with 36.1 percent of educated women utilizing such services. However, logistic regression analysis indicates that factors such as wealth and urban residence influence the effect of education, highlighting the need for a holistic approach in designing interventions targeting education (Nigussie et al., 2014; Fekadu et al., 2018). The individual contributions of religion and caste/ethnicity to the institutional delivery are remote. While caste-based inequalities, particularly among Janajati and Terai communities, exist these factors do not provide statistical significance in the logistic regression models. It implies that maternal health policies have made strides in addressing caste- and religion-based inequalities since their introduction. However, there is still a need for targeted interventions for marginalized groups (Huda et al., 2019; Mishra et al., 2021).

Residence shows a significant correlation with institutional delivery, as urban women are more likely to utilize institutional care in 77.4 percent of deliveries occurring in healthcare facilities. In contrast, rural women have institutional deliveries at a rate between 54 percent and lower. However, as with other factors previously discussed, logistic regression proves that residence does not have independent predictive power, as wealth mediates this effect. Strengthening rural healthcare facilities and improving transportation

are critical factors to reduce the urban-rural divide in access to maternal healthcare (Pant et al., 2019).

Women in the richest quintile are about 25 times more likely to give birth in a health institution compared to that poorest quintile. For households with lower incomes, the cost of seeking institutional care acts as a significant barrier. Cash transfer programs, free maternity services, and community-based health financing schemes are essential to address these inequalities (Kesterton et al., 2010; Thapa et.al, 2022). Institutional delivery is therefore influenced by a combination of socio-demographic and economic factors, with wealth and age being the most powerful predictors of institutional delivery. Other specific groups that experience the most disparity include younger mothers, rural households, and those from poorer backgrounds. Therefore, a supportive health infrastructure, financial incentives, and running awareness programs are critical steps in increasing institutional deliveries rates and improving maternal and neonatal health outcomes in Nepal.

## Conclusion

The analysis of socio-demographic and economic factors influencing institutional delivery in Bagmati Province, Nepal, reveals that the institutional birth influenced by an interplay of factors such as age, birth order, education, wealth quintile, and place of residence, as shown through both bivariate and logistic regression studies. While religion and caste/ethnicity have a relatively lesser impact, wealth and age emerges as the most prominently predictors. In contrast, younger women face significant barriers such as financial dependence and lack of awareness, which underscores the need for more adolescent-friendly health services and targeted sensitization campaigns.

Birth order also proved to be a significant determinant in the uptake of institutional delivery, with firstborns being the most likely to benefit from it. This "first-born bias" often results in families prioritizing institutional care for the first pregnancy, only to see a decline in subsequent pregnancies, as the perceived risks decrease. Educational interventions are necessary to challenge this misconception and raise awareness about the importance of institutional delivery for all pregnancies. While education is widely considered a critical factor determining health results, its influence on institutional care, and wealth. To access institutional care even though they may tend to be more educated because of wealth and residence play a larger role, as wealthiest and urban women tend to have higher rates of institutional delivery.

The disparity between urban and rural residents is striking, with urban women significantly more likely to opt for institutional delivery. Rural women, on the other hand face barriers such as inadequate healthcare infrastructure, poor transportation, and limited awareness. Addressing these challenges requires improving rural healthcare facilities,

transportation subsidies, and targeted interventions to bridge the urban-rural divide. Wealth quintile emerges as the most powerful predictor of institutional delivery, with women from the richest households being 25 times more likely to utilize these services compared to those from the poorest households. This disparity underscores the critical role of economic status in determining healthcare access. For low-income households, financial barriers remain a significant obstacle. Policy measures, including free maternity services, cash transfer programs, and community-based health financing schemes, are essential to reduce these inequalities and ensure equitable access to institutional care.

While religion and caste/ethnicity are interesting factors, they are not significant independent contributors to institutional delivery. This suggests that the disparities related to caste and religion are beginning to narrow; although there are still variations that require attention, particularly among marginalized groups like some Dalits and Janjati communities. The analysis highlights that age, birth order, education, wealth, and place of residence collectively influence patterns of institutional delivery. Specifically, wealth and age emerge as the strong predictors, which suggests need for targeted policy interventions to address these economic and age disparities. The interplay between age, birth order, educational status, wealth, and rural/urban residence significantly impacts the likelihood of institutional delivery. Wealth and age emerged as the strongest indicators for institutional delivery condition and lend to targeted policy interventions for addressing economic and age disparities.

Interestingly, while religion, caste, and ethnicity are significant socio-cultural identifiers, their independent effects do not show statistically significant influence on institutional delivery. The analysis indicates that age, birth order, education, wealth, and place of residence collectively shape the likelihood of institutional delivery. Wealth and age emerge as the most powerful predictors, highlighting the need for targeted policy interventions to address disparities in these areas. The recommendations emphasize the importance of strengthening rural healthcare infrastructures, providing financial incentives, and raising awareness about the benefits of institutional delivery. By focusing on these socioeconomic, economic, and infrastructural interventions, Nepal can make significant progress in improving maternal-neonatal health results, ensuring equitable access to institutional care for all individuals.

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