

Unequal Geographies of Reproductive Autonomy: Spatial Reproductive Justice in India

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Abstract

This research explores how the rural-urban divide in India affects women's ability to exercise reproductive autonomy, with the theory of reproductive justice serving as the overarching framework. Based on the NFHS-6 dataset, the research analyzes the rural-urban inequalities that exist in education, internet access, age at marriage, teenage pregnancy, number of children, unmet need for family planning, and antenatal care among women in India. By bringing together reproductive justice theory and theories of space, this research develops a theory of spatial reproductive justice that is specific to the Indian context, where geography is not merely seen as a neutral backdrop but as something actively produced by uneven infrastructure, institutions, social relations, and power. The research further argues that rural disadvantage operates in many intersecting spheres at the same time, and the mere fact of availability of formal reproductive rights and service provision is not enough. Reproductive freedom is contingent on equitable access to information, mobility, infrastructure, and education. The use of a spatial reproductive justice perspective shifts the question of access to a service into one of conditions necessary for rural women to avail the service.

Keywords: Reproductive Autonomy, Reproductive Justice, NFHS-6 Dataset, Reproductive Freedom, Mobility.

Introduction

Reproductive autonomy is generally understood to be the ability to determine whether or under which circumstances to have children. Although legal rights, informed consent, and the formal availability of reproductive healthcare are essential to this capacity, they do not by themselves guarantee that reproductive choices can be exercised in practice. Marriage, fertility, and pregnancy decisions are made within a social and material environment influenced by such considerations as educational opportunities, information, household power dynamics, mobility, economic opportunities, and availability of appropriate services. In places where these conditions are distributed unequally, the formal recognition of reproductive rights may coexist with significant limitations on women's ability to use them.

This tension can be seen in India where reproductive and maternal health services have improved while inequalities based on wealth, education, caste/tribal status, age and place of residence remain (Sanneving et al. 2013). The NFHS-6 survey highlights that there exist rural-urban gaps in education level, internet usage, age of marriage, early teenage pregnancy, fertility rates, unmet family planning needs, and antenatal care (International Institute for Population Sciences and Ministry of Health and Family Welfare 4, 2026). These disparities are sometimes referred to as the gap between two

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geographic categories. Such a description, however, does not fully explain why location matters. Physical distance from cities does not automatically result in rural disadvantage; rather, disadvantage is determined by the distribution of learning facilities, information networks, transport, healthcare, trained manpower, and institutional investments, as well as social dynamics that affect the mobility and autonomy of women.

Through the lens of the reproductive justice framework these inequalities can be examined beyond the language of individual choice. As stated by Ross and Solinger (2017), reproductive justice is based on three principles that are interconnected. These principles are the right not to reproduce, the right to reproduce, and the right to raise children in secure and healthy environments. Their approach highlights how reproductive choices are shaped by wider political, economic and social factors, and how some choices are more feasible than others because of unequal resources. When this approach is applied to India, it helps shift the focus of the analysis from whether reproductive services and rights formally exist to whether women possess the material, informational, and social means required to use them.

Relational theories of space deepen this analysis by challenging the treatment of geography as a neutral backdrop. Lefebvre (1991) argues that space is socially produced through institutions, practices, and relations of power rather than simply given in advance. Massey (1994) similarly understands space as constituted through dynamic social relations that position people unequally in relation to resources, mobility, and authority. Recent work on the geographies of reproductive justice brings these insights together by showing that reproductive experiences are organised across interconnected bodily, household, community, regional, and national scales (Schurr et al., 2025). Building on this scholarship, the paper develops a version of spatial reproductive justice suited to the Indian context. It defines spatial reproductive justice as the equitable distribution of the material, informational, institutional, and social conditions necessary for people in different locations to make and realise reproductive decisions with dignity and safety.

The paper poses a fundamental question, it asks: how do rural–urban inequalities structure the conditions under which women in India can exercise reproductive autonomy? Using national NFHS-6 data, the paper compares selected indicators in rural versus urban contexts in relation to three interlinked spheres: education and access to technology; marriage, childbearing, and family planning; and antenatal care. While these indicators do not capture women's autonomy directly or individual reproductive preferences, they serve as an example of how the factors influencing reproductive decision-making differ by geographical context. The paper argues that disadvantage in rural areas is cumulative: inequalities in education, information, reproductive timing, and healthcare access operate together rather than in isolation. Therefore, the provision of formal reproductive rights or apparent reproductive services is not enough, what needs to be examined is their actual usability.

Spatial Reproductive Justice: From Formal Rights to Effective Capabilities

Spatial reproductive justice is characterized by the distinction between possessing a reproductive right in principle and having the practical capacity to exercise that right. Reproductive rights are normally framed within the context of legal protection, access to birth control methods, maternal health care, and freedom from coercion. While these formal entitlements are essential, the presence of such rights does not necessarily mean that all women will be able to use them equally. Ross and Solinger seek to overcome this constraint by defining reproductive justice in the context of the social, political and economic conditions surrounding reproductive decisions (Ross and Solinger, 2017). Such a formulation is dependent on resources and relationships that extend beyond the formal healthcare system.

The difference between formal entitlement and effective capability may be understood through three related levels. The first level is that of formal availability, whether a right, programme, facility, or service legally and institutionally exists. The second is that of material accessibility, referring to the ability of a woman to access, afford, understand, and gain access to that service. The third level is that of effective usability, which refers to the capacity of a woman to use that service on her own terms, independently, privately, consistently, and with dignity. For example, a contraceptive method may be legally available in a health facility, but with no information, transport, privacy, money or freedom to move around, it is not practically accessible to a woman.

Relational theories of space help explain why these capabilities vary geographically. Lefebvre's (1991) account of socially produced space directs attention to the institutions, practices, and investments through which locations acquire unequal resources and opportunities. Massey (1994) likewise

conceptualises space as a dynamic configuration of social relations characterised by unequal access to mobility, authority, and material resources. From this perspective, rural disadvantage is not an inherent feature of rural life. It is produced through decisions concerning the location and staffing of health facilities, the distribution of schools and digital networks, transport connectivity, public expenditure, local governance, and gendered restrictions on movement. Space consequently affects reproductive autonomy by organising who can access resources, under what conditions, and at what cost.

Building on emerging geographical reproductive justice scholarship, spatial reproductive justice connects intimate reproductive decisions to inequalities operating at household, community, regional, and national scales (Schurr et al., 2025). In this paper, the framework is organised around four connected dimensions. The informational dimension concerns access to education, digital technology, and reproductive-health knowledge. The temporal aspect relates to the ability to control when to marry and when to have children. Reproductive dimension relates to actualization of fertility intentions, such as using contraceptives. Finally, the institutional aspect relates to access to adequate and timely maternal care.

These analytically distinct dimensions operate in tandem. A woman with limited schooling may not possess adequate information on reproductive health, moreover, early marriage can disrupt school attendance and increase the likelihood of childbirth, while reduced mobility can impact access to contraceptives and continuity of antenatal care. Consequently, spatial reproductive injustice is multidimensional in nature and not restricted to only one particular service or outcome. In this study, NFHS-6 indicators are used to determine the differences between these inter-related conditions in rural and urban India, interpreting them as a reflection of the circumstances that pertain to reproductive autonomy and not the tools of autonomy themselves.

Data and Analytical Approach

This paper uses provisional national fact-sheet data from the sixth National Family Health Survey (NFHS-6), conducted under the direction of the International Institute for Population Sciences (IIPS) and the Ministry of Health and Family Welfare (MoHFW). The NFHS-6 survey has collected information regarding population dynamics, fertility, family planning, reproductive and maternal health, nutrition, education, internet usage, and women empowerment. The survey employed a two-stage sampling design covering rural and urban areas and produced national, state or union territory, and district-level estimates, although Manipur was excluded from the published results. The national fact sheet describes its estimates as provisional and advises caution when interpreting comparisons involving areas with smaller samples (IIPS and MoHFW, 2026).

In this analysis, national-level estimates for rural and urban areas have been assessed through the following three intersecting dimensions. The first dimension pertains to the assessment of the informational conditions concerning autonomy, involving women's level of education and use of the internet. The second dimension assesses the reproductive timing and fertility levels through the following four measures – marriage before the age of eighteen years, adolescent pregnancy, total fertility rate, and unmet needs for family planning. The third criterion considers access to institutions based on indicators of early, frequent, and sufficient antenatal care. For each criterion, the analysis provides the urban-rural absolute difference and explains it within the framework of the spatial perspective of reproductive justice.

The analysis drawn is descriptive in nature and not causal. Rural–urban differences cannot alone demonstrate that place of residence is necessarily the cause of a specific reproductive outcome without considering the factors such as wealth, caste, tribal status, religion, education, age, migration, and household power. Furthermore, the selected indicators do not show the extent of reproductive autonomy and personal choices. For example, higher fertility rates in an area do not naturally mean that autonomy is constrained. Similarly, the use of health services does not necessarily translate into the presence of informed consent, or good quality of care. In such circumstances, these indicators are understood as showing the unequal conditions which influence reproductive choices and not the extent of agency that is exercised. Education and use of the internet is the starting point in the analysis, as access to information is a prerequisite for gaining awareness about reproductive options and for navigating healthcare institutions.

Education and Digital Access: The Informational Foundations of Autonomy

Education and digital access are key informational pillars of reproductive autonomy in that they determine women's ability to access, understand and utilize information about contraception, pregnancy and health services. According to NFHS-6, a higher proportion of urban women (61.5%) than rural

women (39.7%) aged 15-49 completed 10 or more years of schooling (21.8 percentage point difference). There is a similar gap in internet usage, with 77.3 percent of all women using the internet in urban areas and 58.6 percent in rural areas (18.7 percentage point difference; IIPS and MoHFW 2026). These differences indicate that rural and urban women face unequal opportunities when making reproductive decisions, and they do not have the same resources to help them understand their options.

Education should not be treated merely as a background socioeconomic variable. It serves as a reproductive tool that helps to construct women's capacity to comprehend health information, engage with health providers, identify signs of pregnancy complications and negotiate with healthcare institutions. Schooling also helps raise awareness about the legal age of marriage, contraceptive methods, and reproductive rights. A study of adolescent girls in rural Varanasi revealed significant gaps in knowledge regarding legal and social issues related to reproductive health, underscoring that there is often a gap between legal entitlements and actual awareness (Kansal et al, 2017). The rural education gap thus does not only have implications for employment or income but can also impact the informational resources which make reproductive decisions intelligible.

These resources can potentially be extended through digital access. Women can use mobile phones and internet, to get information on reproductive health, to communicate with front line health workers, to get information on public benefits, to arrange transportation and to get support outside the household. The findings of Mohan et al.'s (2020) study based on NFHS survey data highlight the association between women's access to phones and health-related information and service seeking, showing that digital access can become an integral part of the healthcare infrastructure. Thus, the digital divide in rural and urban areas becomes important for reproductive justice, not only technological development.

Interestingly, the indicator used in NFHS-6 only measures whether a woman has ever used the internet, but not whether she has access to the device, can afford to use the internet regularly, is digitally literate, and can search for information privately. Scott et al.'s (2021) study of rural central India shows that women's mobile-phone use may be mediated by household surveillance, restrictions based on gender and reputation, and male control over devices. Connectivity can therefore exist without digital autonomy. A woman who occasionally uses a shared phone under supervision does not possess the same informational freedom as someone who can privately and regularly access reproductive-health resources.

From the perspective of spatial reproductive justice, informational access requires more than the presence of schools, mobile networks, or online content. It requires educational capacity, affordable connectivity, privacy, and the social freedom to use information. Rural-urban inequalities in these resources help structure when women marry, when childbearing begins, and whether they can act on their reproductive intentions. The next section therefore turns from access to information to unequal control over reproductive timing.

Reproductive Timing: Marriage, Adolescent Childbearing, and Family Planning

Rural-urban inequalities in marriage, adolescent childbearing, and family planning indicate that women do not exercise control over reproductive timing under equal conditions. NFHS-6 reports that 23.3 percent of rural women aged twenty to twenty-four were married before the legal age of eighteen, compared with 11.4 percent of urban women. Rural adolescent childbearing is also more prevalent: 7.9 percent of rural women aged fifteen to nineteen were already mothers or pregnant at the time of the survey, compared with 3.4 percent of their urban counterparts. The total fertility rate is 2.1 children per woman in rural areas and 1.6 in urban areas, while total unmet need for family planning is 9.1 percent among rural women and 7 percent among urban women (IIPS and MoHFW, 2026). These indicators, when taken together, indicate spatially varying circumstances surrounding the timing of marriage and childbearing.

The early marriage measure is especially significant since it can affect the context in which future reproductive decisions will be made. Marrying before the age of eighteen, can impact education, economic independence, and create a situation where young women will face social pressure to conceive while possessing limited authority within their marital households. In their geospatial analysis of 707 Indian districts, Singh, Shekhar, and Gupta (2024) identify clusters of early marriages and early motherhood, which depend on individual, household, community, and district-level factors. Their study provides evidence that challenges the view of child marriage as just a personal family decision. They argue that the persistence of this phenomenon is linked with the spatial distribution of educational opportunities, poverty, community norms, and institutional enforcement.

The rural gap in adolescent childbearing should therefore be considered in the context of the larger gap in early marriage. After marriage, an adolescent girl often faces pressure to become pregnant, she may not have easy access to contraception and may not further have the bargaining power to choose when to have a child. Early motherhood in turn makes education and engagement in economic activities harder. The relationship between the two variables is not mutually exclusive: fewer opportunities to pursue education may lead to earlier marriage, early marriage and motherhood may limit access to the resources available to pursue reproductive autonomy. Though NFHS-6 fails to demonstrate this causal process, the overall picture fits the general understanding that reproductive decisions are not only a matter of personal preferences but rather household and community contexts as well.

Unmet need for family planning as a category, offers a particularly clear measure of constrained reproductive choice. It identifies women who desire to delay or avoid future pregnancies but are not using any contraceptive method. The higher estimate for rural fertility suggests that many women remain unable to translate their fertility preferences into practice. Existing research indicates that the access to contraceptives varies considerably according to wealth, education, age, media exposure, and place of residence. The range of contraceptive methods available is also unevenly distributed (Ewerling et al., 2021; Srivastava et al., 2023). Consequently, the mere presence of family planning services does not necessarily mean that women have access to a suitable range of methods or the information needed to make a genuinely informed choice.

There is a need to exercise greater caution in interpreting the rural-urban fertility difference. Higher fertility among rural women does not by itself demonstrate that they have less reproductive autonomy, as preferences about family size may differ. Its implications can only be understood if taken together with factors like early marriage, higher adolescent births, lack of education, lack of internet access, and a larger unmet need. The more important question, then, is not simply why rural women have more children. It is whether they have the same resources, information and decision-making power to choose when to have children and how many to have. This continues to hold true even after conception, as they affect a woman's ability to turn the formal availability of maternal healthcare services into care that is timely, consistent and accessible all throughout pregnancy.

Antenatal Care: From Nominal Coverage to Effective Usability

The NFHS-6 data on antenatal care services reveal how the existence of a service within the formal framework does not always lead to its use. On the face of it, the urban-rural gap seems to be drastically reduced: 96.2% of urban women and 95.8% of rural women had at least one antenatal visit in relation to their most recent birth, with the difference between them being 0.4%, which may be considered almost universal coverage of the service. However, equality begins to erode at the next step of analysis, namely, at the level of timeliness, regularity, and adequacy of care.

Urban mothers are more likely than their rural counterparts to receive maternal care both early and consistently. In urban areas, 81.4 percent of mothers had an antenatal check-up during the first trimester, compared with 74.4 percent in rural areas—a difference of seven percentage points. This difference grows even bigger in case of repeated visits because 75.8% of urban mothers had four or more antenatal visits, while only 61.4% of rural mothers received four or more antenatal visits, which makes the gap of 14.4 percentage points. This gap is consistent with another aspect of maternal health, namely nutrition: 67.4% of urban mothers took iron and folic acid for 100 days during pregnancy, while only 50.3% of rural mothers did the same. Institutional deliveries were also less common in rural areas, at 89 percent, than in urban areas, where the rate reached 95.2 percent (IIPS and MoHFW, 2026). These figures suggest that the main inequality lies not merely in whether women make contact with the health system, but in whether they can begin care promptly, attend follow-up visits, and obtain the full range of recommended services.

This trend corresponds to previous research on antenatal-care inequalities in India. According to Andrade et al. (2012), disparities are more pronounced in four or more antenatal visits, suggesting that repeated antenatal care reveals inequalities that basic indicators of access do not capture. The mere presence of a clinic does not guarantee that women can remain engaged with maternal healthcare throughout pregnancy. Continued attendance may require several journeys, each bringing its own transport expenses and loss of income. Women may also need to arrange childcare, secure permission from other household members, or find time around domestic and paid work. As these demands build from one appointment to the next, attending an initial check-up may be considerably easier than completing the recommended course of care.

Moreover, the organizational arrangement of health services in the rural areas can have an effect on these disparities. According to Bhan et al. (2020), increased access to female physicians in rural primary health centres results in greater modern contraceptive use, four or more antenatal visits, skilled birth attendance, and postnatal care. Their research indicates that the extent of access is not just about where or how many facilities are available, but also who is working in them and what women think of the care they receive. Dakua and Das (2023) reach a related conclusion, showing that antenatal-care use is shaped by overlapping differences in wealth, migration status, literacy, social group, religion, and residence. Rural disadvantage is therefore not to be seen as simply a function of remoteness, but as a complex pattern of economic, institutional and social disadvantage.

In the light of the spatial reproductive justice approach, the analysis of antenatal care can be done at three levels: 'availability' evaluates whether a service exists formally; 'accessibility' analyzes whether women have access to it, whether it is affordable for them, and whether they are able to get it; 'effective usability' refers to whether women are able to use a service on time, make repeated visits where necessary, receive proper treatment, and whether they are treated with dignity throughout the process. The growing disparities between initial antenatal contact, first-trimester attendance, repeated visits, and iron-folic acid use show why these distinctions matter.

It is important to note, however, that utilization of healthcare services alone is not enough to be called a measure of reproductive autonomy. NFHS-6 does not establish whether the treatment that women received was adequate, whether their consent was informed, whether they were involved in medical decisions, and whether their care was respectable and non-coercive. Thus, reproductive injustice may coexist with high rates of utilization. Despite this limitation, the rural-urban divide makes one point clear: formal coverage should not be mistaken for equality. When the antenatal-care findings are read together with inequalities in education, internet access, marriage, and family planning, rural disadvantage appears not as a handful of separate statistical differences but as a cumulative process shaped by place.

How Disadvantages Accumulate Beyond the Rural-Urban Divide

Taken as a whole, NFHS-6 parameters show that the reproductive disadvantage faced by women in rural areas is cumulative in nature, rather than being restricted to any one choice, health care service, or stage of life. Educational and technological disparities limit the information available to them; disparities in marriage and early pregnancy limit the time and circumstances of reproduction; and antenatal disparities limit the access to healthcare services. Ross and Solinger's (2017) reproductive justice framework connects these intimate decisions to the wider circumstances in which people live, reproduce, and raise children. A spatial perspective adds that these circumstances are organized geographically through infrastructure, institutions, and social relations. It argues that these inequalities do not operate in isolation. They overlap and reinforce one another, creating a wider set of conditions that can either broaden women's reproductive choices or steadily narrow them.

Nevertheless, the division between rural and urban areas cannot fully explain these patterns. The experiences of women in each category vary by caste, tribal status, income, religion, age, disability and migration. Sanneving et al. (2013) demonstrate that the interaction between economic position, gender, education, social status and adolescence contributes to maternal and reproductive-health inequalities. Geographical location matters, but it operates alongside these other factors. For example, a financially secure rural woman living near a well-equipped clinic may have better access to care than a poor migrant woman in an urban informal settlement.

Local differences can also disappear within national, state, or district averages. According to Eom, Subramanian, and Kim (2025), there are significant differences between women's empowerment in communities that are located in the same states and districts. In addition, proximity to health centres, schools, or connectivity to the Internet does not necessarily imply the presence of affordable, private, or socially accessible services. The national rural-urban gap is therefore best understood as a broad pattern, not a complete explanation of individual experience.

Policy responses must extend beyond constructing additional health facilities. They should combine investment in girls' education and private digital access with efforts to prevent child marriage, provide adolescent-friendly services, expand contraceptive choice, improve transport, and strengthen rural healthcare staffing. These measures need to work together. A clinic offers limited benefit when women lack information, mobility, household support, or trust in its staff. Policy success should therefore be judged not only by whether services exist, but by whether women have the practical resources and authority to use them.

Conclusion

In this paper, I have explored how the rural-urban divide shapes the circumstances within which reproductive autonomy is practiced by women in India. As shown by the NFHS-6, the rural disadvantage affects several spheres of life: education, access to the internet, marriage age, teenage pregnancy, unmet needs for contraception, and the quality of antenatal care (IIPS and MoHFW, 2026).

None of these indicators captures individual autonomy on its own, and the findings should not be read as evidence that every rural woman faces identical barriers. What they do show is a persistent spatial imbalance in the resources that allow women to understand their reproductive options, make decisions, and put those decisions into practice.

Spatial reproductive justice offers a way of understanding why legal rights and the formal availability of services, although essential, are not enough. Geography is more than the backdrop against which reproductive inequality unfolds. It is continually shaped by decisions about where schools and health facilities are built, who receives reliable internet and transport, how trained professionals are distributed, and which communities benefit from public investment. Social relations and unequal power further influence who can use these resources. These spatial arrangements influence whether women can obtain information, influence the timing of marriage and childbearing, access contraception, and receive maternal healthcare early and continuously.

Meaningful reproductive justice therefore requires more than expanding the formal coverage of reproductive-health programmes. It requires coordinated investment in girls' education, private and affordable digital access, reproductive-health literacy, mobility, rural healthcare staffing, referral systems, and respectful continuity of care. Such interventions must also account for the ways that location intersects with caste, class, tribal status, religion, age, and migration. A rural–urban comparison identifies a broad structure of inequality, but effective policy must respond to variation within rural and urban communities as well.

Spatial reproductive justice ultimately changes the standard by which reproductive equality is evaluated. The relevant question is not only whether a right has been legally recognised or whether a service exists within an administrative area. It is whether women in differently positioned communities possess the information, infrastructure, mobility, institutional support, and social authority required to use that right or service in practice. Reproductive justice is achieved not when services are merely placed on a map, but when geography no longer determines whose reproductive choices are genuinely possible.

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