EDUCATION, GENDER AND PUBLIC POLICY IN INDIA

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By

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DECLARATION

I, Ms. Sulochana Suresh Pednekar, hereby declare that this thesis represents work which has been carried out by me and that it has not been submitted, either in part or full, to any other University or Institution for the award of any research degree.

Place: Taleigao Plateau.

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CERTIFICATE

I hereby certify that the above declaration of the candidate, Sulochana Suresh Pednekar, is true and that the work was carried out under my/our supervision.

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DEDICATED
TO
MY MOTHER
(Smt. Surekha Suresh Pednekar)

My 'Maa' could not continue her education as school was far away,
and she had to look after her younger siblings due
to the loss of her mother.

ABBREVIATIONS

ABBREVIATION	FULL FORM
ADEIs	Assistant District Educational Inspectors
AMC	Annual Maintenance Contract
AR	HIV testing Recode
ASER	Annual Status of Education Report
BBBP	Beti Bachao Beti Padhao
CR	Couples Recode
CSV	Comma Separated Value
CWSN	Children With Special Needs
DFID	Department For International Development
DHS	Demographic Health Survey
DoE	Directorate of Education
EAG	Empowered Action Group
FFE	Feed For Education
FOD	Field Office Division
GER	Gender Enrolment Ratio
GoG	Government of Goa
GoI	Government of India
GR	Gender Ratio
HM	Head Master
HR	Household Recode
ICPSR	Inter-University Consortium for Political and Social Research
IHDS	India Human Development Survey
IIPS	International Institute for Population Sciences
IR	Individual Recode
J&K	Jammu and Kashmir
JMP	Joint Monitoring Programme
KGBV	Kasturba Gandhi Balika Vidyalaya

MDGs	Millennium Development Goals
MDM	Mid Day Meal
MHM	Menstrual Hygiene Management
MHRD	Ministry of Human Resource Development
MIS	Management Information Systems
MoE	Ministry of Education
MOSPI	Ministry of Statistics Programme and Implementation
NCPCR	National Commission for Protection of Child Rights
NDP	No-Detention Policy
NEP	National Education Policy
NFHS	National Family Health Survey
NIEPA	National Institute of Educational Planning and Administration
NSSO	National Sample Survey Office
NUEPA	National University of Educational Planning and Administration
OBC	Other Backward Class
OOSCI	Out-of-School Children Initiative
PMSHRI	Pradhan Mantri Schools for Rising India
PR	Persons Recode / Household members
PWD	Persons With Disabilities
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
RTE	Right To Education
RTI	Right To Information
SBM	Swachh Bharat Mission
SBSV	Swachh Bharat: Swachh Vidyalaya
SC	Scheduled Caste
SCERT	State Council of Educational Research and Training
SCHCD	School Code
SDGs	Sustainable Development Goals
SMCs	School Management Committees

SSA	Sarva Shiksha Abhiyan
ST	Scheduled Tribe
TCG	Technical Cooperation Group
U-DISE	Unified District Information System in Education
UIS	UNESCO Institute of Statistics
UN	United Nation
UNESCO	United Nations Educational Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UTs	Union Territories
VIP	Ventilated Improved Pit
WASH	Water, Sanitation and Hygiene
WC	Water Closet
WHO	World Health Organization

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CHAPTER 1
INTRODUCTION

Access to primary and quality education paves the way to achieving economic and social mobility, inclusion, and equality (GOI 2020). Education plays a crucial role in an individual's life, shaping society and the nation. Primary education is the foundation for lifelong learning and an important human development indicator(UIS 2016). Poverty and gender, however, are the main domains of denial of education (Chanana 2008). Girls encounter a series of roadblocks in their journey towards education that prevent them from accessing even basic school education in India (Save the Children 2014). The education of the girl child is often not a priority within families, as patriarchal societies expect them to perform household chores and caring responsibilities within the family. Often, social customs view the female child as a liability; thus, their education is not a priority. There have been efforts to address the barriers to girls' education (GOI 1974; Wazir 2000; GOI 2014b), but inequalities in education persist. Given this scenario, there is a need to continue the push for the inclusion of gender perspectives in educational forums and to augment the movement towards women's right to education (Manjrekar 2021).

1.1 EDUCATION: AN INTERNATIONAL AGENDA

Education is a universal agenda, and there have been deliberations at international levels to make it a fundamental right of every individual. Article 26 of the Universal Declaration of Human Rights states that every individual has the right to education and that elementary education should be free and compulsory (UN 1948). Following the Human Rights Declaration, Article 4 of the 'Convention Against Discrimination in Education'(1960) stresses the need to promote equal treatment and equal opportunities by making primary education free and compulsory and secondary education available and accessible to all (UNESCO 1960). Article 10 of the 'Convention on the Elimination of All Forms of

Discrimination Against Women' (1979) focuses on promoting equal rights for women and girls along with men in education and eliminating discrimination in all areas (UN 1979). Article 28 of the 'Convention on the Rights of the Child' (1989) recognises the child's right to education and makes primary education free, compulsory and accessible to all (UNICEF 1989). The World Declaration on Education for All (1990) states that education is a fundamental right and an indispensable key to the personal and social improvement of persons of all ages. It prioritises women and girls' access to quality education and removes hurdles hampering their participation (UNESCO 1990). At the Dakar Framework for Action: Education For All (2000), member countries collectively committed to ensuring access to complete, free, compulsory, quality primary education for all children by 2015 (UNESCO 2000).

Similarly, in 2000, Goal 2 of the 8 UN's Millennium Development Goals (MDGs) aimed to achieve universal primary education by 2015. Globally, the number of out-of-school children was reduced to almost 57 million by 2015 (UN 2015a). However, the goal of universal education for all is a target yet to be fulfilled. The unfulfilled MDGs set the stage for achieving the 17 Sustainable Development Goals (SDGs) by 2030. Three SDGs, namely SDG 4, 5 and 6, are linked to education. In this thesis, we look at these linkages and try to understand the requirements for the SDG targets related to education and school infrastructure.

1.1.1 Linking SDG Goal 4 (Quality Education), Goal 5 (Gender Equality) And Goal 6 (Sanitation For All)

The agenda of universal education, envisioned in the United Nations Sustainable Development Goal (SDG) 4, is to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' by 2030 (UN 2015b:18). Among the ten targets listed under this goal, the first is to 'ensure that all girls and boys complete free, equitable, quality primary and to 'ensure that all

girls and boys complete free, equitable, quality primary and secondary education leading to effective learning outcomes' (UN 2015b: 21). This goal emphasises the school infrastructure provisions in target 4. a, 'Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all' (UN 2015b: 21).

SDG 5 is to end discrimination of all forms against women and girls to achieve gender equality and empower women and girls. Target 5.6 'ensures universal access to sexual and reproductive rights' (UN 2015b: 22). Girls need to have access to privacy, safety and good sanitation facilities in educational institutions to manage their sexual and reproductive health needs (Adukia 2017; Van Eijk et al. 2016).

The provision of sanitation facilities is related to SDG 6, which emphasises the availability and sustainable management of sanitation facilities for all, including soap and water for washing hands and those required for the needs of women and girls. Target 6.1 specifies 'universal and equitable access to safe and affordable drinking water for all', and target 6.2 aims 'to ensure access to adequate and equitable sanitation for all considering specific needs of girls and women in particular'(UN 2015b: 22). It is widely acknowledged that inequitable and lack of access to water and sanitation facilities in educational institutions results in inequalities in health and education (Santiago Ortiz-Correa, Resende Filho, and Dinar 2016).

SDGs 4, 5 and 6 are interconnected; one cannot achieve individual goals without fulfilling the other. Education is vital for meeting the desired targets. According to the Global Education Monitoring Report (2021), education is a 'fundamental human right and an enabling right', and countries must 'ensure universal, equal access to inclusive and equitable quality education' to fulfil this right (UNESCO 2021: 20). To provide universal education to all, one has to ensure that the sanitation needs of girls are met to complete their education. The importance of Water, Sanitation and Hygiene (WASH) is specified in the

standards given by the World Health Organization (WHO) (Adams, Bartram, Chartier, Sims, et al. 2009: 22).

1.1.2 Water, Sanitation And Hygiene (WASH) Standards For Schools

Water and sanitation are essential for human life and, therefore, mandated for every educational institution. An individual probably spends about 6-7 hours a day attaining education in the early years. The World Health Organization (WHO) has provided the following WASH standards for schools in low-cost settings: 1) water quality, 2) water quantity, 3) water facilities, 4) access to water, and 5) hygiene promotion and toilets, respectively. The initial four requirements emphasise access to good-quality water facilities, and the fifth one emphasises that in all schools, children and staff require sufficient, accessible, private, secure, clean and culturally appropriate toilets.

The WASH standards suggest one toilet for every 25 female students and one toilet for female staff in the school. Similarly, it details one toilet plus one urinal (or 50 cm of urinal wall) for every 50 male students and one toilet for male staff in the school. Males and females should have separate toilet facilities and entrances (Adams, Bartram, Chartier, Sims, et al. 2009: 22).

Having outlined the international sanitation standards in educational institutions, we next discuss the development of education and education-related sanitation policies in India.

1.2 DEVELOPMENT OF EDUCATION POLICY IN INDIA

Post-independence, various developments have occurred in the education scenario in India. The three important education commissions were formed, namely:

a) **The University Education Commission** (1948-49): The Radhakrishnan Commission was the first to report on Indian University Education and suggest improvements for future education.

b) **The Secondary Education Commission** (1952-53): The Commission was named the Mudaliar Commission and was established to review the status of secondary education in India and suggest measures for improvement.

c) **Indian Education Commission** (1964-66): This Commission, popularly known as the Kothari Commission, was set up to advise the government on the national pattern of education and the general principles and policies for developing all aspects of education at all stages.

The Kothari Commission suggested a common school system open for all without discrimination based on caste, creed, religion, or social status. It advocated for the medium of instruction to be in the regional languages at all stages of secondary education. It suggested remedial education for children who are backward and unable to cope with education. It also suggested providing education for children with disability. Kothari Commission laid the foundation for the first National Policy on Education in 1968. The first two Commissions did not give adequate importance to girls' education in India, but the Kothari Commission did consider equal education opportunities for women. Since independence, though India has achieved progress in education, gender disparities are still prevalent in education (GOI 1974). The first National Policy on Education stated that girls' education leads to social transformation.

In contrast, the second National Policy on Education in 1986 highlighted the importance of gender equality and the need to address the issue of gender disparities in access to education. The 1986 Education Policy emphasised access to education for girls and marginalised groups, such as those belonging to Scheduled Caste (SC), Scheduled Tribe (ST), and Other Backward Class (OBC) households and enrolment for universal elementary education up to 14 years. Integrated education for disabled children has been envisaged as guaranteed by the Constitution of India.

Operation Blackboard, launched in 1987, recommended providing minimum essential facilities in primary schools, including all-weather buildings

with classrooms and one toilet each for boys and girls (GOI 1992: 27). Education will be an agent of basic change and play a positive and interventionist role in women's empowerment (GOI 1992: 100). Besides, several initiatives are undertaken at the national level in India to promote the education and empowerment of girls and women, primarily from rural areas. The Government of India launched the *Mahila Samakhya* Programme in 1988 and the Kasturba Gandhi *Balika Vidyalaya* (KGBV) scheme in 2004 to ensure access to quality education for girls, especially those from marginalised and minority communities in India. *Sarva Shiksha Abhiyan* (SSA) was launched in 2001-2002 as an integrated flagship programme to achieve elementary education to all children in the 6 to 14 age group by 2010 (Department of Elementary Education and Literacy and MHRD 2004, 3). The Right of Children to Free and Compulsory Education (RTE) Act was passed in August 2009 (The RTE Act 2009 is discussed in detail in a later section) to ensure compulsory free education for children of 6 to 14 years. The *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) scheme was launched in 2009 to promote a secondary education system supporting India's growth and development (Ministry of Human Resource Development and Department of School Education and Literacy 2018). The *Samagra Shiksha* – an integrated scheme on school education, envisages the school as a continuum from pre-primary to senior secondary levels and aims 'to ensure inclusive and equitable quality education as per the Sustainable Development Goal (SDG) for Education' (Ministry of Human Resource Development and Department of School Education and Literacy 2018: 5).

The Government of India has also launched a '*Swachh Bharat: Swachh Vidyalaya*' (SBSV) campaign to promote separate toilets for girls to ensure their continuation in school. Through the SBSV campaign (2014b), the Government of India developed school guidelines for providing functioning and well-maintained water, sanitation and hygiene facilities (GOI 2014b). In January 2015, the '*Beti Bachao Beti Padhao'* (BBBP) scheme was launched in India in partnership with the Ministry of Women and Child Development, Health and Family Welfare and

Human Resource Development. Subsequently, the Ministry of Drinking Water and Sanitation, Government of India, issued national guidelines focusing on Menstrual Hygiene Management (MHM) infrastructure in schools and the safe disposal of menstrual waste in December 2015 (GOI 2015). In the later section, we briefly discuss the SBSV and MHM guidelines on interventions to promote girls' education and the BBBP scheme.

Thirty years after the 1986 education policy, discussions began on a draft of the third National Policy on Education in 2016. After much deliberation, India's third National Policy on Education was approved in 2020. One of the principles of the National Education Policy (2020) states that,

> A good educational institution is one in which every student feels welcomed and cared for, where a safe and stimulating learning environment exists, where a wide range of learning experiences are offered, and where good physical infrastructure and appropriate resources conducive to learning are available to all students (GOI 2020: 6).

The National Education Policy (NEP) 2020, to ensure equitable and inclusive education for all, has directed the government of India to constitute a 'Gender-Inclusion Fund' to 'provide equal education opportunities to all girls and the transgender' student community in India (GOI 2020, 27). The fund can be utilised to create access to education for female and transgender children by providing sanitation and toilets, providing bicycles, etc. Also, an 'Inclusion Fund' has been proposed to eliminate disparities in access to education for all children, including socio-economically disadvantaged groups (GOI 2020: 27).

1.3 A NEW BEGINNING WITH THE RIGHT TO EDUCATION IN INDIA

In India, the right to education was enshrined in the Constitution of India in 1950 in Article 45, which directs states to provide free and compulsory education to all children from 6 to 14 years within ten years, which was to be

achieved by 1960. After five decades, in the Eighty-Sixth Amendment Act 2002 of the Constitution, Article 21A stated that 'The State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine' (Government of India 2007:11). Article '21 A' gave education the status of a fundamental right in India in 2002. The Government of India passed the crucial legislation 'The Right of Children to Free and Compulsory Education (RTE) Act 2009' on 26 August 2009 to strengthen the rights guaranteed under the Constitution of India. We briefly discuss the various school provisions mandated by the RTE Act 2009 to ensure compulsory and free education for all.

1.3.1 School requirements detailed in the RTE Act 2009

a) **Distance to school:** For children in Grades 1 – 5, the school should be within walking distance of 1 km, and for those in Grades 6 – 8, the school should be within 3 km (The RTE Act 2009 ensures that every child in the age group 6 – 14 years has a right to complete elementary education in a neighbourhood school. In areas where a neighbourhood school does not exist, the appropriate government and the local authority must establish a school within three years from the commencement of the act).

b) **Admission Fee:** No child between ages 6 – 14 years should have to pay any fee or charges that might hinder them from pursuing and completing elementary education, which is from Grade 1 – Grade 8.

c) **Accessibility:** Schools should be accessible to children with any disability, and they should be provided free and compulsory elementary education. Schools should be equipped with facilities for children with special needs, such as ramps, handrails, and disabled-friendly toilets, and schools should create a disabled-friendly and inclusive environment.

d) **Entry and Re-admission:** There is a special provision for children above six years who are not admitted to any school to get admission. If a child was admitted but was unable to complete elementary education, they should be permitted in a grade appropriate for their age. If a child is

admitted as per age in a particular grade and to bring them on par with others, such child has the right to receive special training as prescribed in the act and is entitled to free and compulsory elementary education even after 14 years of age.

e) **Easy transfer from one school to another:** In a particular school, if there is no provision to complete elementary education, a child has the right to seek transfer to any other school to complete their elementary education. If a child must move from one school to another, either within a state or outside, that child shall have the right to seek transfer to any other school to complete his/her elementary education. The head teacher should immediately issue the transfer certificate to seek admission to another school. Also, the delay in issuing the transfer certificate should not be the reason for the delay or denial of admission to the child. If such delay occurs in giving the transfer certificate, disciplinary action has to be taken against the person responsible in that institution under service rules.

f) **Training of teachers:** The central government shall develop a framework for the national curriculum, establish and enforce standards for the training of teachers, and provide technical support and resources to the state government to promote innovations, research, planning, and capacity building.

g) **Admission to the child belonging to an economically weaker section:** The Act ensures that children from vulnerable and disadvantaged groups are not discriminated against or prevented from completing elementary education.

h) **Infrastructure requirements:** The following infrastructure requirements are mandated for each school:

> All weather building consisting of at least one classroom for every teacher and an office-cum-store-cum-Head teacher's room; barrier-free access; separate toilets for boys and girls; safe and adequate drinking water facility to all children; a kitchen where mid-day meal is cooked in the school;

playground; arrangements for securing the school building by boundary wall or fencing (GOI 2009: 12)

The government is responsible for providing infrastructure, including school buildings, teaching staff, learning equipment and special training facilities.

i) **Monitoring of elementary education completion:** The central government has to ensure and monitor every child's admission, attendance, and completion of elementary education, as well as ensure good-quality elementary education, confirming the standards and norms specified in the schedule. The government must also ensure the timely prescription of curriculum courses of study and provide teacher training facilities.

j) **Role of local authority:** The local authority is also assigned duties in line with the appropriate government to make free and compulsory elementary education. The local authority must maintain children's records up to fourteen years old to ensure and monitor admission, attendance, and completion within its jurisdiction. They must provide entry to schools for children of migrant families, monitor their functioning within their authority, and decide the school's academic calendar.

k) **Role of Parents:** The Act also outlines the duty of parents and guardians to admit all children for elementary education in the neighbourhood schools.

l) **Pre-School Education:** The government has to make necessary arrangements to provide free pre-school education to prepare children above three years for elementary education and early childhood care and education up to age six.

m) **School and teacher's responsibility:** The responsibilities of the school management and teachers to ensure free and compulsory education to all children are outlined in the act.

n) **Reservation of 25% seats in private schools for children from weaker sections:** Private schools must accept 25% of the strength of the grade students from weaker and disadvantaged groups in the neighbourhood and provide free and compulsory elementary education until completion.

o) **No screening and capitation fees for admission:** The school shall not accept any capitation fee or conduct any screening procedure for admission while admitting students.

p) **Admission without proof of age:** No child should be denied entry to school due to lack of evidence of age.

q) **No detention policy:** No child should be held back in any grade or expelled from school till the completion of elementary education.

r) **No corporal punishment:** No child should be subjected to physical punishment or mental harassment in the school.

s) **Recognised schools:** No school shall be established without obtaining the certificate of recognition.

t) **School Management Committee:** The school should constitute a School Management Committee (SMC) consisting of the elected representatives of the local authority, parents or guardians of children admitted to the school and teachers. Every SMC shall prepare a School Development Plan, which should be the basis for the plans and grants provided by the appropriate government or local authority.

u) **Qualified teachers:** Qualifications for the appointment and terms and conditions of service for teachers are detailed. If, before the commencement of the act, a teacher does not possess the minimum qualifications as laid down, then that teacher shall acquire such minimum qualifications within five years.

v) **Pupil-teacher ratio:** Within six months of the commencement of the act, the appropriate government and local authority have to ensure that the pupil-teacher ratio is as specified in the schedule. The act specifies two teachers for up to sixty enrolled students in Grades 1 – 5, three teachers

for 61 – 90 students, four teachers for 91 – 120 students, five teachers for 121 – 200 students and the teacher-pupil ratio should not exceed forty. For students enrolled in Grades 6 – 8, the act specifies that there should be at least one teacher each for science, mathematics, social studies and languages. There should be at least one teacher for every 35 students. In the case of schools where the enrolment is above 100, a full-time head teacher is required along with part-time instructors for art education, physical and health education, and work education.

w) **Deputation of teachers on non-teaching assignments:** The Act prohibits the deputation of teachers on non-teaching duties during school working days.

x) **Medium of Instruction:** The Act states that the medium of instruction should be in the child's mother tongue. The act also lays down curriculum and evaluation procedures.

y) **Protection of Children:** The Act mandates the protection of the child's rights and redressing grievances, mainly concerning education. It mandates the constitution of the National and State Advisory Council to ensure effective implementation of the act's provisions.

z) **Miscellaneous aspects:** The Act provides information on powers to issue directions and make rules to enable the Right to Education.

Despite all the provisions in the RTE Act 2009, as discussed above, how far have schools been able to ensure that all children complete elementary education in India? Apart from the RTE Act 2009, other programs and policies try to promote education in India. We try to understand the provisions under some of these programs, especially gender-specific interventions to promote education in India.

1.4 INTERVENTIONS TO PROMOTE EDUCATION FOR GIRLS IN INDIA

Several initiatives are undertaken at the national level to promote girls' education in India. Given the current research topic on gender, we discuss the following three initiatives and policy guidelines.

1.4.1 Beti Bachao Beti Padhao (BBBP)

In January 2015, the BBBP scheme was launched in partnership with the Ministry of Women and Child Development, Health and Family Welfare and Human Resource Development to promote girls' schooling in India and check the girl drop-outs, especially at the secondary and higher secondary level. The specific target related to girls' education was to increase the girls' secondary education enrolment to 82 percent by 2018-19 and to provide functional girls' toilets in every school in selected districts. By 2015, all schools were to have separate and functioning toilets for boys and girls.

1.4.2 Swachh Bharat: Swachh Vidyalaya (SBSV)

SBSV is a national campaign launched in October 2014 by the Ministry of Education driving 'Clean India: Clean Schools'. According to these guidelines, every school in India must have functioning and well-maintained water, sanitation, and hygiene facilities. The WASH facilities listed in the guidelines include drinking water, hand washing, toilet and soap facilities for children and teachers on the school premises. The activities should help prevent water, hygiene, and sanitation-related diseases in children. It is every child's right to have access to safe drinking water and proper sanitation and hygiene facilities in the school. Girls are more likely to drop-out of school when they do not have access to private sex-specific toilets and washing facilities that are unsafe or simply unavailable. When the schools have appropriate, gender-separated facilities, an obstacle to drop-out and attending school is no longer a concern for

girls. The essential elements under this campaign are separate toilets for boys and girls, with one unit generally having one water closet (WC) plus three urinals(GOI 2014:17). The ratio to be maintained is preferably one unit for every 40 students. It also stresses Menstrual Hygiene Management(MHM) facilities, including soap, adequate and private space for changing, water availability for cloth washing and disposal facilities for menstrual waste, including incinerators and dust bins (GOI 2014b: 17). Safe and child-friendly drinking water facility to be provided in the school. An adequate water storage facility for delivering water for food preparation, cooking, cleaning, and handwashing with soap is to be made available. Instructions to maintain the sanitation facilities through an Annual Maintenance Contract(AMC) and inspection to be carried out regularly.

1.4.3 Menstrual Hygiene Management (MHM) Guidelines in Schools

Menstrual hygiene management is integral to the *Swachh Bharat Mission* (SBM) guidelines. The Ministry of Drinking Water and Sanitation, Government of India, issued the national guidelines for Menstrual Hygiene Management (MHM) in December 2015. The policies have placed a particular emphasis on addressing the sanitation needs of adolescent girls and women. Managing menstrual hygiene with dignity is integral to attaining good hygiene, sanitation and health for women and girls. Part 4 of the guidelines focuses on MHM infrastructure in schools and the safe disposal of menstrual waste. Every school must have basic water and sanitation infrastructure, including a separate toilet for a) girls and boys and b) male and female teachers. It further states that there should be (i) 500 litres of water storage capacity and supply for every 100 students, (ii) soap availability for handwashing, (iii) space for washing and cleaning menstrual products, and (iv) facilities for safe disposal of used menstrual products. The guidelines require that the water be available inside the toilet with a tap or a dedicated water container in each toilet or cubicle. A mug should be available to dispense water for personal cleaning and hygiene (GOI 2015: 17).

1.5 STATEMENT OF THE RESEARCH PROBLEM

Education plays a significant role in human development, poverty alleviation and in reducing inequalities in society among its other contributions. India since independence has focussed on increasing access to basic education to people from all walks of life. In pursuit of this goal, the Right of Children to Free and Compulsory Education (RTE) Act was enacted in 2009 to ensure that all children under 14 years of age receive free and compulsory education in India. The UN Sustainable Development Goal 4 further mandates inclusive and high-quality education. This study assesses the achievement of the goals set out in the RTE Act 2009 after almost 15 years of its implementation specifically with respect to girls education.

Water, sanitation, and hygiene infrastructure in schools is crucial for girls' retention and completion of elementary education. We examine the impact of the RTE Act on the status of school infrastructure facilities and drop-out rate. We specifically ask the question: to what extent has India been able to adhere to 1) WASH standards set out by the RTE Act 2009, 2) WHO-WASH guidelines, 3) SBSV, and 4) the MHM guidelines concerning school infrastructure requirements. We also examine to what extent the existing large databases in India permit us to assess the achievement of the relevant SDGs.

1.6 SIGNIFICANCE OF THIS STUDY

This study attempts to evaluate the implementation of the Right to Education Act 2009 in India, which provides the right to education to children between the ages of 6 and 14. We plan to understand the pre and post-RTE Act 2009 status on enrolment and drop-outs with the available secondary data. This study uses four databases to analyse progress before and after implementing the RTE Act 2009 regarding education, sanitation, and infrastructure provisions. Using national education databases, we would like to study the possibility of monitoring the

provisions of the RTE Act 2009 and if the act has successfully provided the right to education to its citizens. The following databases are analysed: a) National Sample Survey (NSS) and National Family Health Survey (NFHS) data to understand the reasons for drop-outs in the age group 5 to 18 years. To understand the pre, and post-RTE Act 2009 drop-out status, we analysed two survey rounds in each of the above databases, which is explained in the methodology section in Chapter 3. Also, we looked at school-level databases: India Human Development Survey (IHDS) and Unified District Information System in Education (U-DISE) data for evaluating the RTE Act 2009 at the National level to study the infrastructure provisions, especially about WASH facilities in schools, enrolment and drop-outs in India. This study also assesses the compliance of schools to WASH guidelines mandated by the WHO and the SBSV and MHM guidelines issued by the Government of India. Through this study, we also examine the status of schools in meeting the provisions of the RTE Act 2009 on targets related to school infrastructure and WASH facilities given in SDGs 4, 5, and 6. Finally, this study identifies the gaps in existing databases and provides necessary recommendations based on the findings. To understand the effectiveness and impact of any policy, it needs to be monitored and evaluated for its implementation in achieving desired targets. This study assesses the performance of the Right to Education Act 2009 in India, which guarantees the right to education to children between the ages of 6 and 14. The study will provide evidence on the status of specific targets and infrastructure provisions, which can be monitored with available data sources.

1.7 OPERATIONAL DEFINITION OF CORE CONCEPTS USED IN THIS RESEARCH

This section defines the various concepts used and referred to in this research.

1.7.1 Menstrual Hygiene Management

In this study we use the WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation definition of Menstrual hygiene and standards :

Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials (WHO/UNICEF 2012: 16).

1.7.2 School Infrastructure and WASH Requirements

Regarding infrastructure provisions, we have used targets and requirements listed in SDG 4a.

a) Requirements as per SDG 4

To ensure quality education in schools the following infrastructure requirements are listed in SDG 4 under target 4a:

(i) proportion of schools with access to electricity,
(ii) internet for pedagogical purposes,
(iii) availability of computers,
(iv) adapted infrastructure and materials for students with disabilities,
(v) basic drinking water,
(vi) single-sex specific basic sanitation facilities, and
(vii) **basic hand washing facilities** (UN 2016: 7)

We use the following definitions given by WHO/UNICEF for monitoring WASH in schools in Sustainable Development Goals.

a) Basic drinking water: it is categorised as improved and unimproved and criteria are listed below.

The main drinking water source is of an "improved" type. An "improved" drinking water source is one that, by the nature of its construction, adequately

protects the source from outside contamination, particularly faecal matter. "Improved" water sources in a school setting include: piped, protected well/spring (including boreholes/tubewells, protected dug wells and protected springs), rainwater catchment, and packaged or delivered water. "Unimproved" sources include: unprotected well/spring, and surface water (e.g. lake, river, stream, pond, canals, irrigation ditches) or any other source where water is not protected from the outside environment (WHO/UNICEF 2018:3).

b) Single –sex basic sanitation facilities:

There are separate toilet facilities dedicated to female use and male use at the school. Toilets/latrines are available to students (doors are unlocked or a key is available at all times), functional (the toilet is not broken, the toilet hole is not blocked, and water is available for flush/pour-flush toilets),and private (there are closable doors that lock from the inside and no large gaps in the structure) (WHO/UNICEF 2018:3).

c) Handwashing facilities with water and soap:

A handwashing facility is any device or infrastructure that enables students to wash their hands effectively using running water, such as a sink with tap, water tank with tap, bucket with tap, tippy tap, or other similar device. Both water and soap are available at the handwashing facilities for girls and boys on the day of the questionnaire or survey. Soapy water (a prepared solution of detergent suspended in water) can be considered as an alternative for soap, but not for water, as non-soapy water is needed for rinsing (WHO/UNICEF 2018:3).

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b) Requirements as per WHO WASH Guidelines

The WASH standards for schools in low costs setting includes:

i) access to good quality water facilities
ii) children and staff to be provided sufficient, accessible, private, secured clean and culturally appropriate toilets
iii) one toilet for every 25 female students
iv) one toilet for female staff
v) one toilet plus one urinal (or 50 cm of urinal wall) for every 50 male students

vi) one toilet for male staff

vii) males and females to have separate toilet facilities and entrances (Adams et al. 2009:22)

c) Infrastruture requirements as per the RTE Act 2009

The RTE Act 2009 requires that each school meet the following infrastructure requirements:

i) building accessible in all weathers,

ii) at least one classroom and a room for the head teacher cum storeroom,

iii) barrier-free access for all children,

iv) separate toilets for boys and girls,

v) safe and adequate drinking water facility,

vi) a kitchen for cooking mid-day meals,

vii) a playground, and

viii) a safe and secured compound wall (GOI 2009:12).

d) WASH requirements as per SBSV Guidelines

The SBSV guidelines suggests for functioning and well maintained water, sanitation and hygiene facilities in schools which includes:

i) Separate toilets for boys and girls, with one unit having one toilet (WC) plus 3 urinals.

ii) one unit for every 40 students

iii) Menstrual hygiene management facilities (soap, adequate and private space for changing, adequate water for cloth washing and disposal facilities for menstrual waste, including an incinerator and dust bins).

iv) group handwashing facilities with availability of soap for 10-12 students to wash hands at the same time.

v) child-friendly and sustainable safe drinking water and adequate water for handwashing to be followed everyday.

vi) water for school cleaning and food preparation and cooking.

vii) safely managed storage of drinking water practices.

viii) regular maintainance of sanitation facilities through Annual Maintainance Contract(AMC).

ix) Regular/daily inspection of water and sanitation facilities(GOI 2014: 17).

e) WASH requirements as per MHM Guidelines

The MHM guidelines requires schools to have basic water and sanitation infrastructure, which includes:

i) a separate toilet for girls and boys

ii) A separate toilet for male and female teachers.

iii) 500 litres of water storage capacity and supply for every 100 students,

iv) soap availability for handwashing,

v) space for washing and cleaning menstrual products,

vi) facilities for safe disposal of used menstrual products

vii) water to be available inside the toilet with a tap or a dedicated water container in each toilet or cubicle

viii) A mug for dispensing water for personal cleaning and hygiene(GOI 2015:17)

f) Functional toilet : In this study we used the same criteria for functional toilet, used by U-DISE in data collection, for calculating the ratio of toilets in schools for girls and boys till 2015-2016 as the data on toilets with water availability was not available in the public domain.

A toilet having minimal odor, unbroken seat, regularly cleaned dry, working drainage system, accessible to users, closable door(NIEPA 2015: 5).

Next, we discuss the concepts used to calculate out-of-school or drop-out children given by UIS and NSSO below as we used these concepts in this study.

1.7.3 Out-of-School children

UIS and UNICEF launched the methodological framework for the global Out-of-School Children Initiative (OOSCI) 2010.

To recognise the importance of pre-primary education and to ensure consistency in the calculation of out-of-school figures, the Technical Cooperation Group (TCG) on the indicators for SDG 4 – Education 2030 approved a change in the calculation method of out-of-school rates and numbers at its meeting in November 2018. *Children, adolescents and youth of primary, lower secondary and upper secondary school are now considered out-of-school if they are not enrolled in pre-primary, primary, secondary or post-secondary education* (UIS 2019: 5).

1.7.4 Drop-out

> *An ever-enrolled person currently not attending any educational institution due to either (i) he/ she has discontinued after completing the last level of education for which he/ she was enrolled or (ii) he/ she has discontinued education before attaining a specific level.* (NSSO 2016a: A-20)

Based on the UIS methodological framework, we included age five in this study while calculating the drop-out percentage from NSSO and NFHS databases. In this study, we have referred to the NSSO definition of drop-out. From the NSSO definition, one can derive the need for attendance data. To calculate the drop-outs using U-DISE and IHDS databases, considering the definition given by NSSO to identify students who have discontinued or are not attending educational institutions. However, since the school attendance data was unavailable, we could not calculate the percentage of drop-outs using U-DISE and IHDS databases.

U-DISE and IHDS databases do not collect data on individual students and attendance. Therefore, we relied on the NSSO and NFHS databases to assess the percentage of drop-outs based on the reasons for not attending school. U-DISE and IHDS data are used to assess the fulfilment of infrastructure requirements.

1.8 OBJECTIVES OF THIS RESEARCH

The objectives of the research are:

1. To evaluate the role of the RTE Act 2009 in fulfilling SDG targets related to education and compliance with WASH standards given by the WHO, SBSV and MHM guidelines of the Government of India.
2. To study the impact of educational policies in India on school infrastructure and school drop-outs from a gender perspective.
3. To evaluate the RTE Act implementation in India with particular reference to Goa.
4. To critically evaluate the data gaps in school data.

1.9 RESEARCH QUESTIONS

The research questions related to objective one are listed below:

a. Has the RTE Act 2009 has increased access to education by increasing enrolment and reducing drop-out?
b. Will India meet the SDG targets of Goal 4, especially the infrastructure requirements given in Target 4a?
c. Are adequate toilets for boys and girls in schools meeting the WASH guidelines?
d. Are these toilets functional as per the WASH guidelines?
e. Are the schools meeting WASH guidelines given by WHO, RTE Act 2009, SBSV, and MHM?
f. To what extent available secondary data help us monitor WASH facilities in schools?
g. Are there any differences in WASH compliance in school infrastructure between urban and rural areas?

The research questions related to objective 2 are:

a. Can we measure and examine the gender ratio grade-wise to understand the differences in enrolment?

b. Are schools able to meet the provisions of the RTE Act 2009?
c. Can we assess the impact of the RTE Act 2009 using secondary data?
d. Has the RTE Act 2009 improved WASH compliance in schools given by WHO, SBSV & MHM guidelines?
e. Are there significant improvements in WASH facilities post-RTE Act 2009?
f. What is the status of school infrastructure after the implementation of the RTE Act 2009?
g. With the RTE Act 2009, has there been any improvement in school enrolment from a gender perspective?

The questions related to objective 3 are:

a. What is the status on implementation of the RTE Act 2009 in Goa?
b. Has school infrastructure improved in Goa after implementing the RTE Act 2009?
c. Do schools in Goa comply with the WASH guidelines or targets given by the RTE Act 2009, WHO, SBSV and MHM?

And finally, the research questions related to objective 4 are:

a. Can we measure the drop-out rate in India using available secondary data?
b. What methods are used to collect data, and how can these processes be strengthened?
c. What can we know from the available data? Is there sufficient data to monitor the progress of the above guidelines?
d. From available data, can we know the reasons for drop-outs among boys and girls?
e. What are the further data requirements for evaluating and monitoring the progress towards the guidelines?

1.10 DATA SOURCES AND METHODS

The study uses the following databases available in the public domain on education, namely, A) The India Human Development Survey (IHDS), B) the National Sample Survey Office (NSSO), C) the National Family Health Survey (NFHS), D) Unified District Information System in Education (U-DISE) and E) Educational statistics of Goa. We discussed the database details and methods in Chapter Three and conducted the data analysis using STATA software version 12.

Next, we discuss a summary of all the chapters of the thesis.

1.11 ORGANISATION OF THIS THESIS

There are in total nine chapters, and a summary of each chapter is presented below:

1.11.1 Chapter 1: Introduction

Chapter one briefly describes the importance of education and the rights perspective for education, referring to the international deliberations and forums emphasising the need for compulsory and free elementary education. Then, the chapter reviews the development of education policies and programmes in India, covering the various educational commissions, policies, programmes and legislations in India. We discuss in detail the provisions of 'The Right of Children to Free and Compulsory Education (RTE) Act 2009' and briefly describe the WASH standards and school infrastructure facilities provided by the WHO, SBSV and MHM in alignment with Sustainable Development Goals (SDGs) 4, 5, and 6.. The chapter then outlines the problem statement, research gaps, significance of the study, objectives, research questions, data sources, and methods. It also includes a summary of the chapters of the thesis.

1.11.2 Chapter 2: Review of Literature

This chapter is based on the review of literature on enrolment, drop-outs, WASH facilities, infrastructure facilities, and girls' education. The reviewed literature is

presented under the sub-themes access to school related to school infrastructure, economically linked to financial constraints, social family and societal factors, and lastly, education in terms of skills and ability. Also, we reviewed the studies conducted regarding the school infrastructure provisions of the RTE Act 2009 to understand the status of schools in India. Besides, we looked at specific studies evaluating and monitoring the RTE Act 2009 and compliance with SBSV and MHM guidelines. In the next chapter three, we explain the data and methodology used in this study.

1.11.3 Chapter 3: Research Methodology

Chapter three briefly describes the databases used for the analysis in this study: National Sample Survey Office, National Family Health Survey, India Human Development Survey, Unified District Information System in Education and Annual Educational Statistics of Goa. It also describes the methodology used in concerning each of the databases. We compared the databases regarding data availability to evaluate the impact of the RTE Act 2009 on the specific provisions of the act. Based on the available data, the authors measure the compliance with WASH standards given by WHO, SBSV and MHM. In the next Chapter four, we discuss the findings based on U-DISE and IHDS data.

1.11.4 Chapter 4: Assessment of School Infrastructure Pre, and Post-RTE Act 2009 in India: Using U-DISE and IHDS Data

In this chapter, we present the analysis using U-DISE in Section 1 and IHDS data in Section 2. In Section 1, the data is analysed to understand the basic characteristics of school infrastructure facilities during the pre, and post-RTE period, considering the fulfilment of the RTE Act 2009 provisions. Besides, the databases are examined to check the availability of data about WASH indicators given by WHO, RTE Act 2009, SBSV and MHM guidelines. We found that MHM indicators are not part of the RTE Act 2009; monitoring WASH school facilities regarding MHM is critical. There is a need to strengthen this data if

India wants to meet the targets, especially for SDG 4, 5 and 6. Section 2 presents the analysis based on IHDS data comparing the developments in the school infrastructure facilities and identify gaps in data between the two rounds of IHDS data. This database helps us to monitor the progression of only specific targets of the RTE Act 2009. The IHDS and U-DISE data provide data on basic toilet facilities but do not provide information related to hand washing and facilities related to menstrual hygiene management. In Chapter 5, we analyse the reasons for not attending or dropping out of school using the NSSO database.

1.11.5 Chapter 5: Analysing School Drop-outs Pre, and Post-RTE Act 2009 in India: Using 64th and 71st Round of NSSO Data.

This chapter presents the findings based on NSSO data of two rounds. This chapter presents a detailed gender-based analysis of reasons for drop-outs using two National Sample Survey data rounds: the 64th Round (64R) and the 71st Round (71R). The findings indicate that even after implementing the RTE Act 2009, access to education is still a concern for females. The analysis is systematically presented separately for each round based on gender and social groups, and then the comparison between both rounds is presented based on gender. In Chapter 6, we analyse the reasons using the NFHS database.

1.11.6 Chapter 6: Analysing School Drop-outs Pre, and Post-RTE Act 2009 in India: Using Data from NFHS 3 and NFHS 4

Chapter six presents the findings based on two rounds of NFHS data. It is titled 'Analysing school drop-outs pre, and post-RTE Act 2009: using National Family Health Survey 3 and 4 in India'. This chapter presents a detailed gender-based analysis of reasons for drop-outs using two rounds of National Family Health Surveys: NFHS 3 and NFHS 4. The drop-outs are studied based on gender, social groups, and states for not attending school between 5 – 18 years in the NFHS 3 and NFHS 4. Firstly, the age and gender-wise percentage of drop-outs are calculated for NFHS 3 and NFHS 4, followed by the comparison of drop-outs between the two surveys. We have used this data to understand the reasons for

drop-outs based on gender and to study the reasons for pre, and post-RTE periods. In Chapter 7, we carried out a detailed analysis of the state of Goa.

1.11.7 Chapter 7: Assessment of Schools and Infrastructure in Goa: Using U-DISE Data

Chapter seven focuses on Goa and is titled, 'Assessment of Schools and Infrastructure in Goa: Using U-DISE Data'. We briefly describe Goa's education system and its influence following Portuguese rule (1510-1961) on legal frameworks related to education before the RTE Act 2009 (Cabral 2009). We also describe the role of the Directorate of Education in Goa and the implementation of the RTE Act 2009 after its notification in 2012. We examined the status of schools pre, and post-RTE Act 2009 and compliance with WASH facilities in schools as per the WHO, SBSV and MHM guidelines. Next, we present the final Chapter 8 in conclusion.

1.11.8 Chapter 8: Findings

In Chapter Eight, we have summarized and presented the key findings objective wise and inter-connectedness between enrolment, infrastructure and retention in school education.

1.11.9 Chapter 9: Conclusion

In Chapter Nine, we conclude the study findings by pointing out the data gaps and suggesting the future data requirements to monitor the effectiveness of the policies considered in this study specifically. We further discuss the limitations of the study, research contributions, and provide the recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

In this chapter, we present a brief theoretical perspective on gender and education and then try to understand the global scenario regarding education. We present an understanding of the factors influencing girls' education and review literature on school education, drop-outs and the RTE Act 2009, with a particular focus on infrastructure provisions. In this chapter, we also identify research gaps in the literature related to monitoring school water, sanitation and hygiene facilities and the factors responsible for drop-outs in India.

2.1 GENDER AND EDUCATION: SOME FEMINIST PERSPECTIVES

Theoretical perspectives around gender and education cover wide-ranging issues since the 1970s and the evolution of feminist theory around education. The literature discusses the philosophy and patriarchal nature of the educational institutions , the power politics of education (hooks 1989; Collins 1991) and between its participants (Foucault 1977; Foucault and Gordon 1980), including the prevailing discrimination based on social identities (Butler and Salih 2004), the feminisation of teaching (Albisetti 1993; Griffiths 2006), the dominant lens through which curriculum is developed (Paechter and Open University 2001; Soto 2015), the inequities of the binary categorisation in education (Mazumdar 1989; Majumdar and Mooij 2011) and patriarchal socio-cultural attitudes towards education of the girl child (Burra 2001; Govinda and Bandyopadhyay 2008; Bandyopadhyay 2008; Dahal, Topping, and Levy 2023). In India, as in some other regions in the world, access to education is denied to girls because of beliefs and customs around menstruation (Bodat and Ghate 2013; Kaur, Kaur, and Kaur 2018; Jahan et al. 2020; Meenakshi 2020; Rehan, ul Hussain, and Hasan 2022). There is much work on the empowering nature of education

(Snilstveit et al. 2017; Gaybor 2019; Kambala et al. 2020) and the hurdles it posed by gender-discriminatory attitudes and practices (UN Women 2019; 2020).

Since the second wave of feminism, the agenda has been to eliminate the inequities existing in society based on sex differences in education. Liberal feminists advocated for equal opportunities to be provided to both boys and girls in education. Since the emergence of liberal feminism, feminists have campaigned for equality in access to education, property rights, right to vote and all the other rights and for equality in opportunities (Bank, Delamont, and Marshall 2007: 40). There is then the critique of liberal feminists from radical feminist theorists regarding the failure to recognise that women's reproductive and carer role creates challenges in attaining education and gaining employment (Bank, Delamont, and Marshall 2007). However, radical feminist theory considers education as a process which can play a significant role in changing the patriarchal mindset of controlling women's minds and bodies (Bank, Delamont, and Marshall 2007). Many other philosophical theories on education remain outside the scope of this present work.

We now look at the global status of education to understand the broad canvas with regard to access to education.

2.2 GLOBAL EDUCATION STATUS: UNESCO INSTITUTE FOR STATISTICS REPORT (UIS)

The United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics (UIS) develops indicators and methodologies to track progress towards international education goals. The UIS monitors progress towards the Sustainable Development Goal on Education (SDG 4) and the Education 2030 Agenda. According to the UIS (2019), there are globally, 258.4 million children, adolescents and youth between the ages of 6 and 17 years who are out of school, 59 million children of primary school age, 62 million of lower secondary school age and 138 million of upper secondary age, representing one-

sixth of the global population It reported that South Asia had the second-highest number (93 million) of out-of-school children, adolescents and youth but that there was a reduction in drop-outs in 2018 compared to the year 2000, but female drop-outs at primary age continue to be higher than male drop-outs, estimating that 9 million girls are likely to remain permanently out of the education system (ibid. 2019).

There is an urgent need to address and reduce the number of out-of-school children, and the starting point is to understand why children are not attending or dropping-out of school. To develop specific interventions, it is crucial to systematically study the reasons for drop-outs and take appropriate measures to reduce the drop-out rate. Sabates, Hossain, and Lewin (2013) argue that high drop-out rates and poverty remain crucial barriers to universal access to primary education. To understand the reasons for drop-outs, we have surveyed the literature on reasons for drop-outs and the role of education policies in reducing school drop-outs. We also searched for studies on enrolment, WASH facilities, and school infrastructure facilities. Besides, we looked at studies evaluating the RTE Act 2009, education-related policies like SBSV and MHM, and studies explicitly focusing on girls' enrolment, retention, and absenteeism in schools. We looked at literature that provides evidence to understand the factors affecting school enrolment and completion of elementary education. We present the studies under multiple themes.

2.3 UNDERSTANDING FACTORS THAT IMPACT GIRL'S EDUCATION

Various factors affect girls' school education. Therefore, we have presented them under different themes.

2.3.1 Reasons for Drop-outs related to social factors

a) **Household duties:** Girls are often required for other activities such as looking after younger siblings, domestic work, and helping with farm work (Burra 2001). Children bringing water for family use and working

with parents in outdoor activities are more likely to discontinue their education. A strong association is found between familial duties and dropping out (Choudhury 2006).

b) **Female-headed households:** Children from female-headed families are likely to drop-out of school, as when women go out for work, the elder child is expected to look after younger siblings and attend to household chores (Chouhan 2017).

c) **Family size:** Girls from small families are withdrawn from school to compensate for family labour and are less likely to complete middle school (Jejeebhoy 1993). Knodel & et al. (1990) pointed out that there is an inverse relationship between family size and children's education. The smaller the family size, the more resources are available per child. The primary responsibility for children's education falls directly on parents (Knodel, Havanon, and Sittitrai 1990). Choudhary (2006) found the number of siblings to be a significant predictor for dropping out. An increase in family size by one increases the chances of dropping out by 1.7 times (ibid. 2006).

d) **Birth order of child**: A significant work burden is noticed in the older daughters and less in younger boys and girls. A child's birth order also influences the child's education status (Jejeebhoy 1993). Older children from large families are likelier to be out of school than younger ones (Chouhan 2017). If the elder child is a girl, she will likely be out of school to look after her younger siblings.

e) **Gender of the child:** Girls are involved in housework, and more boys are engaged in non-domestic activities. Boys in small families have more advantages than those in large families, and girls face disadvantages in small and large families (Jejeebhoy 1993).

f) **Parents' education:** Parental education significantly influences children's education (Jejeebhoy 1993). Burra N. (2001) mentioned that when either parent is literate, and mainly if a mother is literate, they are more likely to send their children, especially girls, to school.

g) **Socioeconomic factors:** Socioeconomic factors such as the parents' educational levels and economic status significantly affect a child's academic attendance and attainment. Besides, the net association between parental education & ownership of consumer durables and the measure of a child's education have a more powerful effect than the family size (Jejeebhoy 1993). The study shows that parents of either few or many children had no specific opinions about how much or why to educate their children. However, the expectations for sons were higher than those for girls in small and large families and were found to be similar at each socioeconomic level (ibid. 1993).

h) **Caste:** Children from a higher caste and children whose parents are employed in white-collar government or private sector jobs have higher chances of attending school (Bhatty, Saraf, and Gupta 2017). Caste, religion and household occupation play a significant role in children's education status, and children belonging to socially backward classes and from the Muslim faith are more likely to drop-out of school (Mukesh and Srivastava 2015)

i) **Attitude towards girls' education:** girls are expected to contribute to household chores and manage the house while performing different societal roles. After marriage, the family often thinks girls must manage the kitchen and family. There are no high expectations from girl's education; therefore, they are not encouraged to continue their education. Also, parents are unwilling to invest in the girl's education as ultimately it will not benefit them, and she will contribute to her in-law's family. Marriage also creates disadvantages for girl's education as compared to

boys. The expectations of girls towards their families create roadblocks to their access to school education (Bala 2014).

j) **Safety concerns:** The girls' safety while travelling to school alone is a grave concern for parents. Parents worry about their daughters if they get delayed returning home from school. Besides, the concern is that if a girl is physically abused by someone on the way to school and to protect the honour of family and stigma, parents prefer to keep their girls at home. Too much education will lead to independence and decision-making power among girls, which is seen as hostile towards girls as society always treats women in a subordinate position. Therefore, to curtail such behaviour, girls are denied access to education (Bala 2014).

k) **Non-domestic activities**: Girls from smaller families were substituted for boys in non-domestic activities such as working on the family farm and earning wages (Jejeebhoy 1993). Boys do not attend school to support household income, and a small proportion of girls enter the labour market to support their families financially (Nongkynrh 2015)

l) **Parental death:** The death of parents can also lead to school drop-out, especially the mother's death is more likely to cause drop-out among young girls than males (Sathwika and Geetha Reddy 2019).

m) **Other factors:** The individual, interpersonal, education system-related factors and macro/ societal factors play an important role in girls' education (Bhagavatheeswaran et al. 2016; Snilstveit et al. 2017).

These reasons indicate that economic benefits associated with girl's education are not visible to families. Girl's education contributes to economic growth and development in the long run. However, the interest to invest in girl's education needs a push to overcome the stereotypical attitude prevailing in society towards the roles and responsibilities assigned or expected from girls. The most likely influencing factors for access and drop-outs in schooling among others are

low socio- economic status, gender and geographical location(Hunt 2008). There are not many literature studies on drop-outs explicitly based on age, gender and social groups at the national level, suggesting the need for comprehensive research on learning reasons for drop-outs among different categories of students, which can facilitate understanding the drop-out in greater depth (Mukesh and Srivastava 2015). We notice that no studies specifically provide the absence of sanitation facilities as the reason for drop-outs.

2.3.2 Impact of sanitation facilities on enrolment and attendance

Globally, more than 500 million women, girls and others do not have access to MHM (Regional Health– Americas 2022). WASH factors and the absence of sanitation infrastructure would create hurdles for girls to attend school after puberty (Alugnoa, Cousins, and Sato, 2022; Rehan, ul Hussain, and Hasan, 2022). The MHM assessment in South Asia schools states that state-level data on WASH and MHM indicators took place for the first time in Rajasthan as a part of the Performance Monitoring and Accountability 2017 (Keatman, Cavill, and Mahon 2018). A study on WASH in schools suggested that data collected on WASH facilities are not analysed or linked to monitoring national targets (Chatterley et al. 2018).

International literature based on empirical studies highlights evidence for girls' absenteeism in schools linked to menstruation and school sanitation facilities. In Northeast Ethiopia, a study reported a decline in school performance of female students after attaining menarche, and they missed exams when it coincided with their menstruation days (Tegegne and Sisay 2014).

A study conducted in South-West Uganda (2014) to assess and explore the extent to which school girls can manage menstrual hygiene effectively and if it has an impact on their education found that menstrual-related absenteeism was prevalent at least one day per month. The absenteeism was due to the lack of a private place for them to wash and change at school. Girls who attended school during menstruation said they struggled to concentrate on lessons and did not

participate in class activities as they feared that others might recognise their menstrual status if their menstrual cloth fell out or if their menstrual blood stained their clothes. Girls recommended features for ideal toilets, which included privacy (functioning cubicle doors and a roof); a room in the toilet block with water, soap, a basin and toilet paper for them to clean themselves and their menstrual materials; better lighting so that they can see when they clean and change their menstrual materials and check for stains; and the provision of more toilet cubicles for girls (Robyn Boosey, Georgina Prestwich, and Toity Deave 2014).

In a school-based study conducted in Ethiopia (2010) over half of the students (51.2%) were absent from school during menstruation, and the main reason for school absenteeism during menstruation was lack of privacy for washing or cleaning. Most respondents (69.3%) felt uncomfortable being in school during menstruation, 39.2% felt discomfort due to the lack of a private place to change sanitary pads, and 19.1% felt discomfort due to the absence of water for washing. (Gultie, Hailu, and Workineh 2014). For women and girls to live healthy, productive and dignified lives, they must manage menstrual bleeding effectively (Mahon and Fernandes 2010).

In an attempt to put together views, practices, barriers, investments and actions linked to menstrual hygiene and management in developing countries, a study (2004) consulted around 85 water and sanitation professionals worldwide, inviting information, case studies or data on personal/project/regional experience linked to the following issues around menstrual hygiene and management. The key points were perceptions around menstrual hygiene issues, social practices, absenteeism and drop-out, impact on mobility, health-related issues, availability and affordability of materials in terms of cost, bio-degradables, ease of access and social acceptability, kind of materials used, and issues related to disposal of used napkins. The study found that menstrual management is missing from the literature, whether it is regarding manuals to sensitise engineers to gender needs or technical manuals on latrine designs, sanitation for secondary schools and solid

waste issues. The emerging point from this study was that there is an urgent need to investigate the matter thoroughly and demonstrate viable, practical solutions related to menstrual hygiene management (Bharadwaj and Patkar 2004).

Inadequate school WASH facilities could create unequal learning opportunities, especially for girls and children with disabilities (Adams et al., 2009). "*Menstrual Hygiene Management should be universally recognised, promoted, and practised as a fundamental to good health, dignity and quality of life*" (WHO/UNICEF 2012). Exceptional support for female students should be provided, especially during the first day of menstruation and separate functioning sanitary facilities, as a necessity, should be made available in school at all times if gender equality and girls' empowerment need to be achieved (Tegegne and Sisay, 2014; Gultie, Hailu, and Workineh 2014; Jahan et al. 2020).

Few studies conducted in India prove that the government must address menstrual health management needs in schools. A study conducted in West Bengal focused on identifying the issues and challenges of menstruation encountered by adolescent girls—about 38% of the girls reported being absent from school during their last menstrual period. From the time of attainment of menarche, all the girls said that they stayed absent from school at some point of time during their menstruation. 75% were absent due to a lack of proper disposal facility of sanitary napkins, and 67.5% were absent due to a lack of continuous water supply for washing in their school (Ray and Dasgupta 2012).

A study conducted on school absenteeism in Pune reported that girls remained absent from schools during menstruation due to inadequate sanitation facilities in their schools. The most common reason reported by 25% of girls was the common toilet entrance area for girls and boys. 24% said toilets were dirty, and 23% said the water supply was outside the bathroom (Bodat and Ghate 2013).

In a systematic review of studies on menstrual hygiene management among adolescent girls in India (2016), sixty-four studies reported school absenteeism being linked with menstruation. Girls miss at least one or more school days during menstruation. The reasons for absence are physical

discomfort or pain, lack of water, hygiene and disposal facilities in school toilets, fear of staining their clothes and restrictions imposed by relatives or teachers (Van Eijk et al. 2016).

There have been multiple studies on drop-out and sanitation in India, but most are case studies limited by region (Jogdand and Yerpude 2011; Marni Sommer 2010). School sanitation improves enrolment and increases gender equality by reducing drop-out rates among adolescent girls (Adukia 2017; Kim and Rhee 2019). In India, about 23 % of girls drop out of school when they start menstruating and those who continue to miss school for about five days in each (monthly) menstrual period between the ages of 12 and 18 (Mollins 2013). Young girls have unique needs during menstruation, like private space to change, toilet with running water for cleaning, and disposal of used menstrual products. Cultural practices and taboos surrounding menstruation further complicate the difficulty in effectively managing the menstrual cycle (Maulingin-Gumbaketi et al., 2022).

A study conducted on menstrual hygiene reported that 42.65% of girls did not play any games during menstruation, 33.82% of girls did not perform any household work, 16.18% of girls did not attend school, and 10.29% of girls did not participate in any marriage ceremony during the menstrual period (Dasgupta and Sarkar 2008).

In India, women suffer numerous hurdles to social mobility, and education is one of the few mechanisms by which they can be empowered to break the glass ceiling. And yet, the absence of sanitation infrastructure in school could pose a challenge for girls to attend school. Birdthhhistle et al. (2011) conducted a systematic literature review to verify whether Water, Sanitation and Hygiene (WASH) conditions contribute to girls' educational outcomes to determine what impact the provision of separate toilets for girls has on their primary and secondary school enrolment attendance and completion. This study did not identify any studies explicitly designed to assess the impact of separate-sex toilets

on school enrolment and completion. However, two critical issues emerged from this literature study: a) the girls reported absenteeism due to menstruation, establishing the relationship between girl's absenteeism and menstrual hygiene management facilities, and b) the provision of toilets reduces drop-out is not known as the inadequate sanitation facilities are not provided as a reason for drop-out (Birdthistle et al. 2011). It has been suggested that the reasons for drop-outs at different ages and stages of development need to be studied. Future research should focus on the availability of toilets and the ratio of toilets to pupils, emphasising the functionality of toilets (Birdthistle et al. 2011). MHM facilities must be integrated into the school system to make girls stay in school (Sommer 2011; Sommer et al. 2021)

It is commonly perceived that girls suffer for various reasons from the lack of infrastructure facilities in schools worse than boys do, as government schools lack a functioning standard toilet and a separate toilet for girls, impacting girls' access to education (Bala 2014). Adukia (2017) examined how improving the school environment through latrine construction influences the educational decisions of girls and boys of different ages. The study found that providing gender-specific latrines increases female enrolment more than male enrolment, and privacy and safety matters greatly for girls of older ages (Adukia 2017). Lack of adequate sanitation facilities in schools creates a double challenge, especially for girls, while dealing with menstrual hygiene with privacy and dignity, leading to school absenteeism during menstruation (World Health Organization and UN - Water 2012).

We notice that most studies concentrated on identifying reasons for girls' absenteeism. The literature shows that menstrual hygiene facilities are crucial for girls in schools. However, no studies provide information on the type of MHM facilities available in schools and whether such facilities help female students manage menstruation. The literature suggests the need for studies assessing the status of school sanitation infrastructure facilities and its impact on girls'

education. In the present study, we are attempting to analyse the availability of separate toilets for boys and girls, WASH including MHM facilities in schools and whether the available facilities comply with WHO WASH standards and national guidelines given by SBSV. We also attempt to calculate the ratio of toilets in schools. The analysis and findings are discussed in Chapter Four.

2.3.3 Studies related to school infrastructure facilities

School facilities have an important role to play in student's life, including buildings for academic as well as non-academic activities, equipment for academic and non-academic activities, space for sports activities, toilet facilities, lighting, transportation, cleaning materials, food services and special facilities for the physically disabled persons (Asiabaka 2008).

The availability of elementary infrastructure facilities such as availability of separate gender specific toilets, electricity, library, boundary wall, computers, type and condition of classroom, kitchen facility is of great significance in improving the learning environment in primary and upper primary schools(Sankar Bhunia, Kumar Shit, and Dubai 2012)

The children's education could be affected due to water and sanitation factors. Schools from rural areas often lack drinking water and sanitation facilities, or these facilities are in a deplorable state of affairs. Many countries have set up national sanitation targets for schools but lack a mechanism to monitor the progress against these targets. To monitor the targets, national monitoring systems must be developed by generating adequate data to achieve programme objectives (World Health Organization and UN -Water 2012). Also, the facilities must be cleaned and maintained regularly to remain usable and hygienic (World Health Organization and UN -Water 2012).

On 18 October 2011, the Supreme Court of India passed the order in line with the RTE Act 2009 as under:

> It is imperative that all schools must provide toilet facilities; empirical research has indicated that wherever toilet facilities are not provided in schools, parents do not send their children (particularly girls) to schools … denial of the basic right

to water and toilet facilities clearly violates the right to free and compulsory education of children guaranteed under Article 21-A.

(Petition (Civil) No. 631 of 2004, 2012)

The above-cited literature review suggests the need for systematic studies to study the impact of separate toilets and school infrastructure facilities on school attendance, drop-out, and completion.

2.3.4 Studies focussing on education as a right

Through the 86th Amendment Act in 2002, the Constitution of India guaranteed the right to education as a fundamental right of every child from age 6–14 years. The right to education is an entitlement that children rightfully deserve, and that will allow them to live a life with dignity. However, the RTE Act does not make any special provision for children from marginalised sections, such as street children and children from migrant families or conflict zones, to access schools (Nawani 2017). All over the world, countries providing constitutional guarantees of the right to primary or secondary education show positive and significant association with high net enrolment rates and noticed gaps in the constitutions concerning the protection of secondary and higher education (Heymann, Raub, and Cassola 2014). The right to education guaranteed in the country's Constitution holds the government accountable for providing the education. The Ministry of Human Resource Development (MHRD) set up a National Commission for Protection of Child Rights (NCPCR) as an independent body to monitor the implementation of the RTE Act 2009. However, multiple factors can hinder the progress of meeting the right to education, including drop-out of children. Programs such as Feed For Education (FFE) in Bangladesh have proved effective in increasing primary school enrolment for girls and reducing the likelihood of drop-out (Sabates, Hossain, and Lewin 2013).

The responsibility for meeting the educational provision lies with nation-states, including private and public local agencies, providers, and state

governments (Christie 2010). Also, one cannot solely rely on access to education as an indicator of the right to education, suggesting that rights can be a valuable framework for advocating social justice but will require continuous engagement in implementation to serve as a tool for educational change (Christie 2010). Most constitutions adopted between 1960 and 2011 did not protect the right to secondary or higher education and focused on elementary education (Heymann, Raub, and Cassola 2014). High drop-outs remain a crucial barrier to universalising access to education, creating an urgent need to investigate and understand the reasons for drop-outs even though there is a constitutional guarantee of the right to education.

2.4 STUDIES ON THE IMPLEMENTATION OF THE RTE ACT 2009

The studies on the RTE ACT 2009 pointed out that access to primary education has become universal. However, the gross enrolment ratio in upper primary education (classes 6–8) is not yet 100 per cent (Mehrotra 2012). Literature on the implementation of the Right to Education Act 2009 suggests a lack of monitoring of specific provisions of the RTE Act 2009, such as 25% reservation of seats (Teltumbde 2012; Chandra 2016), addressing the issues of corporal punishment (Nawani 2013), working of school management committees and other RTE indicators including provision of physical facilities (Choudhary 2018), removal of access barriers by eliminating admission tests and access to infrastructure requirements (Srivastava and Noronha 2014). We attempt to review the available literature and understand the reasons for drop-outs. Research evidence also shows the need to monitor the implementation of programs to achieve access to primary education.

Nawani D.(2017) pointed out the flaws in implementing the RTE Act concerning the Constitution of School Management Committees (SMCs) and the lack of awareness and clarity about the role and autonomy to question the school authorities. The RTE Act 2009 excludes children between 0 to 6 and 14 to 18 years, making only elementary education compulsory for children aged 6 to 14

(Nawani 2017). The RTE Act 2009 is critiqued for not considering access to secondary education beyond 14 years (Sadgopal 2010).

Due to the absence of literature on assessing the provisions of the RTE Act 2009, in this study, we attempt to evaluate the fulfilment of the requirements of the act using secondary databases.

2.5 COST FACTORS INVOLVED IN GIRL'S EDUCATION

A comparative study on the economic effects of student drop-outs (2015) listed financial problems, parents' unwillingness to distance themselves and lack of facilities, and security problems of girls as primary reasons in different countries, suggesting that the provision of all facilities in schools along with free education can reduce drop-outs (Latif, Choudhary, and Hammayun 2015)

The research studying the impact of educating girls on their families, economies and nations (2004) pointed out the benefits of girl's education, stating that girl's education is linked to an increase in income, smaller, healthier and better-educated families, less likely to engage in risky behaviour and contract HIV. Lastly, female education is a powerful tool for empowering women within the family and society (Herz and Sperling 2004).

Even though there are benefits associated with girls' education, we still observe educational disparities. The four types of costs associated towards educating daughters are a) direct fees –parents may be less interested in investing in girl's education by contributing a share of household income; b) indirect fees – parents are forced to pay other supplementary fees in schools associated with schooling like parent-teacher association fees, c) indirect costs linked to sending their daughters to school by incurring an additional expenditure of bearing transport costs, safety concerns that escort is required to pick and drop, especially for girls and d) opportunity cost of keeping girl child in school that they are not available or not able to contribute their time in managing household chores or duties (Herz and Sperling 2004).

Next, we look at individual studies based on national-level data, such as the National Sample Survey and National Family Health Survey, used for studying drop-outs in India.

2.6 STUDIES ON REASONS FOR DROP-OUTS THAT USE SECONDARY DATA

Sikdar and Mukherjee (2012) have studied the reasons for drop-out using the 64th round of the National Sample Survey Office (NSSO). They have grouped the reasons into eight categories: household atmosphere, access and infrastructure of schools, alternative source of work, household duties, financial constraints, quality of education, completed desired class level and others (Sikdar and Mukherjee 2012). Later, Ghosh also analysed the reasons for not attending school using the 71st round of the NSSO data (Ghosh 2018). Both of them have categorised the reasons similarly, except that Ghosh used seven categories similar to Sikdar and Mukherjee except for alternative sources of work and household duties and included marriage as an additional category (Sikdar and Mukherjee 2012; Ghosh 2018).

Sikdar and Mukherjee have used alternate sources of work and household duties as separate categories, whereas Ghosh included household duties in the household atmosphere. Also, for reasons categorised by Sikdar and Mukherjee in the alternate source of work, Ghosh has clubbed it under financial constraints. According to Sikdar and Mukherjee, the drop-out rate in secondary school was very high in India based on the analysis of unit-level data of the 64th round of NSSO (2007-2008). They pointed out that the impact of alternative sources of work and household duties are the most critical determinants for dropping out of school at the secondary stage. To ensure the completion of elementary and secondary education, it is crucial to improve the quality of education and address the financial constraints faced by lower-income groups (Sikdar and Mukherjee 2012).

According to Ghosh, based on the 71st round NSSO unit level data analysis, the number of girls in the never enrolled category is higher than boys in elementary(5-14 years) and in secondary level (15-18 years) age groups. The drop-out rate has doubled from elementary (17.3%) to secondary school (34.7%). In his study, Ghosh has clubbed the 18 reasons into seven categories and further categorised them into three groups – 1) household and socioeconomic factors, 2) school factors and 3) individual child factors. In his study, Ghosh mentioned that his findings are similar to Sikdar and Mukherjee's, pointing out that household atmosphere, financial constraints, and quality of education contribute to 80% of the reasons for never enrolling. In contrast, financial constraints and quality of education contribute to 90% of the reasons for the drop-out rate.

Ghosh (2018) has suggested a state-level analysis of different types of schools to get a concrete picture of school education in India. Ghosh mentioned in his paper that he had analysed 19 reasons for the NSSO of the 71st round survey. (Ghosh 2018). However, there were only 18 reasons considered for coding in the survey design and not 19, as reported by Ghosh in his study. It may be an error because the numbering of the reasons in the survey schedule 25.2 is not in numerical order, and code 9 is unavailable for coding (Ghosh 2018). The code list used in the 64th and 71st rounds varies as the two coding options are less in the 71st round than in the 64th round of survey design, and new coding options are added in the 71st round.

Dutta S. studied the educational inequalities in Indian states using the 71st round of NSSO data (Dutta 2017). Mukesh and Srivastava used the 64th round of NSSO to understand the influence of socioeconomic factors on drop-outs (Mukesh and Srivastava 2015).

We also reviewed a study based on the 52nd round of NSSO data (2007), which mentions that many female children drop out from urban areas due to the need to work for wages/salaries to supplement the family income. Similarly,

many male and female children drop-out to participate in other economic activities in rural and urban areas. (Jayachandran 2007).

Literature provides evidence of measuring the drop-outs using individual rounds of data, whereas no studies are identified comparing the two rounds of data. Also, we did not find a study relating the reasons for drop-outs for assessing the RTE Act 2009 in India. Based on the above-reviewed individual studies of the 52nd, 64th and 71st rounds of unit-level NSSO data, in this present study, we will attempt to analyse two rounds by connecting the rounds to pre, and post-RTE Act 2009 and compare the reasons for drop-out by age and gender. This study will also explore the reasons for fulfilling the Right to Education Act 2009 provisions in providing universal elementary education in India. Gender-specific and state-level analysis has been conducted to study the reasons for drop-out between 5 and 18 years of age. A child is expected to be in school till 16, in higher secondary till 18, and, by 18, they will continue to obtain education at a higher education level. As per the RTE Act 2009, children between 6 and 14 years old need to receive compulsory elementary education in school. Besides, the reasons for drop-outs based on social categories are also studied. The analysis and findings based on NSSO are presented in Chapter 5.

Next, we discuss the studies reviewed based on NFHS data. Gouda and Sekher (2014) analysed National Family Health Survey -3 data to study the factors leading to school drop-outs in India. The analysis of reasons is restricted to the age group 6 – 16 years. They have attempted to classify the reasons into four categories: child-related, household-related, school-related, and remaining reasons, which could not be put in these categories grouped as others. Gouda and Sekher also believe we cannot strictly categorise these reasons (Gouda, M and Sekher 2014).

Gouda and Sekher (2014) have studied the drop-out for the age group 6-16 years, whereas in the present study, we have attempted to explore the reasons for drop-out from 5 – 18 years by gender and age. According to his classification

of reasons, household factors were responsible for almost 46% of school drop-outs. He also found that school-related factors contributed to nearly 15% of the drop-outs among girls and only 4% among boys (Gouda, M and Sekher 2014)

Brahmakumar K. (2017) analysed the NFHS 4 data, and the study findings show that female literacy is significantly lower than that of males in rural areas. The reasons for low illiteracy are child marriage and female children not being permitted to go to school by parents. Another reason mentioned is that most people were identified as living below the poverty line (Brahmapurkar 2017).

In the present study, we have attempted to analyse two rounds of NFHS data, namely NFHS 3 & NFHS 4 and tried to categorise the reasons relating to the provisions of the RTE Act 2009. The analysis and findings are discussed in detail in Chapter Six.

Adukia (2017) used UDISE data from 2000- 2001 to 2005-2006 to understand school sanitation and education (Adukia 2017). Researchers have used UDISE data to study drop-outs (Govinda, Consortium for Research on Educational Access, Transitions & Equity, and National University of Educational Planning and Administration (India) 2011) and to understand the education status of India (Rangachar 2002). In the present study, we use the UDISE data to assess the feasibility of evaluating the RTE Act 2009 and monitoring the other WASH-related educational policies to ensure adequate infrastructure facilities and meet the WHO WASH guidelines in schools.

2.7 GENDER AND EDUCATION: RECENT POLICY INTERVENTIONS

Following the implementation of the landmark Right to Education (RTE) Act 2009, which guarantees free and compulsory education for children aged 6 to 14, the Union Budget in 2018-19 introduced the Samagra Shiksha Programme. This initiative aims to provide comprehensive school education from pre-primary through grade XII, with the objective of enhancing school effectiveness and

ensuring equal educational opportunities(Department of School Education and Literacy 2018). In 2020, the National Education Policy (NEP) 2020, was announced, founded on five key principles: Access, Equity, Quality, Affordability, and Accountability. To support the goals of NEP 2020, the Pradhan Mantri (PM) Schools for Rising India (SHRI) scheme was launched in 2022. This initiative targets public schools to foster safe and enriching learning environments, ensuring that each child receives support and has access to adequate infrastructure and resources (Department of School Education and Literacy 2022).

Varughese and Bairagya (2020) argue that educational policy interventions have not succeeded in mitigating gender-based educational inequalities, and that socio-economic factors significantly affect educational outcomes. Social, economic, and cultural challenges greatly impact girls' education, and gender equality efforts should extend beyond mere access and quality to empower girls in making their own choices and asserting their rights (Manjrekar and Sundararaman 2021).

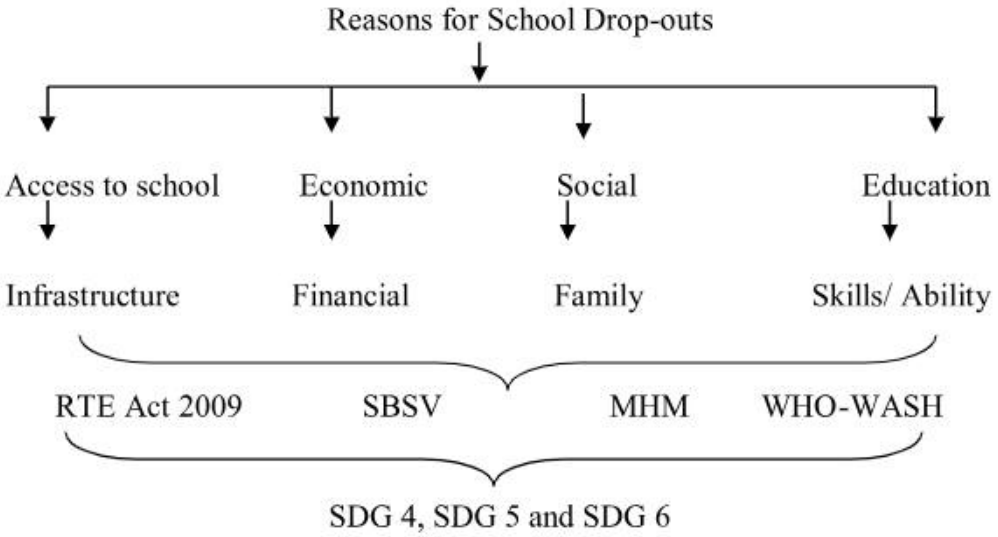
However, research on elementary education in India highlights the need for more equitable and inclusive education systems and advocates for future studies to employ comprehensive methodologies that can guide policy and practice enhancing school education (Murthy and Ramchand 2020). The RTE Act 2009 also mandates a 25% quota for Economically Weaker Sections (EWS) in private institutions. However, the extent to which private schools comply with this quota can vary, often influenced by the school's founders (Singh 2022). To uphold the fundamental right to education guaranteed under the Right to Education (RTE) Act, it is crucial to increase central spending, particularly in underperforming states (Bose 2024).

2.8 GAPS IN LITERATURE

It is evident from the literature that presently, the status of access to WASH facilities is not monitored through any existing monitoring mechanism or Management Information Systems (MIS), and there is an urgent need to strengthen it so that better data collection and sharing can help inform programmatic improvements (UNICEF 2019). Monitoring should focus on the presence of WASH facilities and assess their quality, functionality and adequacy (Deroo, Walter, and Graham 2015). Through monitoring, we can understand the policies' effectiveness and track progress towards goals set at national and international levels. UNICEF's WASH in School suggests monitoring WASH in schools through Education Management Information Systems(UNICEF 2012). We observed that no comprehensive, national-level assessment and monitoring of the infrastructure provisions outlined in the Right to Education Act 2009 exists. There is also no systematic national-level assessment of WASH-related targets and commitments. Therefore, in this study, we compare the data at different periods to monitor the availability of WASH facilities before implementing the RTE Act 2009, linking the survey rounds conducted before and after the RTE Act 2009 implementation. For assessing the pre-RTE period, we used the dataset available before 2010 or 2010 and the survey data available after 2010 for the post-RTE period. This study attempts to evaluate the feasibility of monitoring these guidelines with known secondary databases in the public domain. This study attempts to assess the progress in providing WASH facilities in schools towards compliance with the targets and commitments given by the RTE Act 2009, SDG 4, 5 and 6, and WASH guidelines issued by WHO, SBSV and MHM using secondary data. We try to assess the fulfilment of the RTE Act 2009 provisions in schools in India using secondary databases. We also explore and analyse secondary data sources to understand gender-based reasons for the drop-outs and fulfilment of the infrastructure provisions of the RTE Act 2009 and SDG 4. We try to study the availability of data to monitor the programs and policies in India. We planned to investigate the reasons for drop-outs related to economic,

social, education, and access to school, as well as the role of different educational policies and programmes in India. We established this framework to monitor the implementation of these policies and their impact on education and gender in India.

Figure 2.1: Research Framework



Source: Compiled by the author

We add to this literature by extensively examining four large national-level databases across different periods:

a) To explore and understand the gender-specific reasons for drop-outs during pre, and post-RTE periods.
b) Impact of the RTE Act 2009, SBSV, and MHM in fulfilling the provisions of the above policies and specific targets listed in SDG 4, SDG 5 and SDG 6.
c) Compliance with WASH guidelines of schools in India as per national and international commitments
d) Impact of the RTE Act 2009, SBSV, MHM and WHO WASH on education and gender in Goa.

CHAPTER 3
RESEARCH METHODOLOGY

In this chapter, we describe the various data sources and the methods used in the study to analyse school-level data regarding enrolment and infrastructure, focusing on functioning gender-specific toilets. We sought data from the Annual Status of Education Report (ASER), Unified District Information System in Education (U-DISE), India Human Development Survey (IHDS), National Sample Survey Office (NSSO), National Family Health Survey (NFHS) and the Educational Statistics of Goa, Government of Goa. Except for ASER data[1], we could access all other data sources available in the public domain or when provided on request. We examined the available data and attempted to calculate drop-out rates.

We have summarized the data from surveys used in the study (see Table 3.1). In this chapter, we discuss the following databases: Unified District Information System in Education (U-DISE), India Human Development Survey (IHDS), National Sample Survey Office (NSSO), National Family Health Survey (NFHS), and the Educational Statistics of Goa.

[1] The Annual Status of Education Report (ASER) is conducted annually which collects data from schools and households from the villages selected for the data collection. The school facilities data is collected based on the observation and interview of head teacher or senior teacher from the school. The data is collected on enrolment from Grade I to Grade VIII from the register maintained by the school but the disaggregated data on gender is not available. Sex specific toilet data is collected based on observation available for students and for teachers. But the data on functionality of toilet is lacking. At household level the data on children aged 3 – 16 years is recorded. The data on children enrolled in pre-school, school and out of school is collected. A child currently not enrolled in school age 5 – 16 years is available but reason for not enrolling or drop-out is not available. The data on the basic learning level for children age 5 – 16 years is available for reading, maths for English language reading and meaning for word and sentence. The data collected by ASER on reading and numeracy is not available in public domain.

Table 3.1: Summary details of the secondary data sources used in the study

Sr. No.	Name of the data source and survey	No. of survey rounds used	Coverage	Year	Institution	Reference
A	India Human Development Survey (IHDS)	IHDS -I	All India (28 states & 5 UTs)	2004-2005	The University of Maryland and National Council of Applied Economic Research, New Delhi	(Desai and Vanneman 2008; 2015)
		IHDS –II		2011-2012		
B	National Family Health Survey (NFHS)	NFHS-3	All India (28 states & 1 UT)	November 2005 to August 2006	Ministry of Health and Family Welfare, Government of India through the International Institute of Population Sciences, MUMBAI	(IIPS and Macro International 2007; IIPS and ICF 2017)
		NFHS-4	All India (29 states & 7 UTs)	January 2015 to December 2016		
C	National Sample Survey Organization (NSSO)	NSSO -64	All India (28 states & 7 UTs)	July 2007 to June 2008	Ministry of Statistics and Planning, New Delhi	(NSSO 2011; 2016b)
		NSSO -71	All India (29 states & 7 UTs)	January 2014 to June 2014		

D	Unified District Information System in Education (U-DISE)	Annual (10 years)	All India -29 states & 7 UTs	2005-2006 to 2015-2016	National Institute of Educational Planning and Administration (NIEPA), New Delhi	(NIEPA 2005; 2006; 2007; 2008; 2009; 2010; 2011; 2012; 2013; 2014; 2015)
E	Educational Statistics of Goa (Annual reports)	Annual	Goa	2010 2015	Directorate of Education, Government of Goa (GOG)	Directorate of Education, GOG.

Source: Compiled by the author

We used the following methods to analyse the databases. We created a panel dataset using the U-DISE data to assess the school infrastructure provisions for each state from 2005 to 2015 towards fulfilling the targets set in the policies we planned to evaluate in this study. Firstly, we checked for data availability for various indicators based on the databases' data capture format. We used STATA version 12 and EXCEL software to analyse the databases. As U-DISE and IHDS databases provide data related to school infrastructure, we have presented the findings in Chapter 4. We have used NSSO and NFHS databases to calculate the drop-outs as both these databases collect data on the reasons for not attending school for ages 5 – 29 and 5 – 18, respectively. In the two rounds of NSSO and NFHS, we compared the data related to drop-outs, linking them to the pre, and post-RTE periods. NSSO findings are presented in Chapter 5 and NFHS in Chapter 6, respectively.

3.1 METHOD OF ANALYSIS:

We will briefly present the method of analysis for each of the databases below:

A. **U-DISE:** We created a panel dataset to examine the status of schools during the pre, and post-RTE period. As the data was extensive for each state, we used the data from 2010 and 2015. The pre-RTE period is represented by the years 2010 and 2015 for the post-RTE period, respectively. We calculated the percentages for the variables related to the targets and provisions of the RTE Act 2009. We also created additional variables to calculate total enrolment, gender enrolment ratio, and ratio of toilets for the number of students. To assess whether schools are meeting the WASH and infrastructure guidelines set by international and national agencies, we checked the possibility of calculating the compliance of schools in meeting especially the WASH commitments. The ratio of number of toilets based on gender was calculated using U-DISE data for all the states and UTs. We also conducted a t-test of the gender enrolment ratio for males and females separately during the pre, and post-RTE periods. The details of the process are presented in the later

section, and findings based on the analysis of this database are presented in Chapter 4 for all India. We have also used U-DISE data to conduct a specific analysis of the state of Goa to assess the implementation of the RTE Act 2009, and the findings are presented in Chapter 7. Lastly, we have identified the data gaps in evaluating the RTE Act 2009 and other policies in fulfilling the infrastructure and WASH commitments in schools in India, which we have discussed in the concluding Chapter 8.

B. IHDS: The IHDS I and II databases were also analysed to assess pre, and post-RTE period and infrastructure provisions. We calculated the percentages, and the analysis findings are presented in Chapter 4 and U-DISE data. The data gaps identified in these databases are discussed in the Chapter 8.

C. NSSO: Two rounds of NSSO are analysed separately to examine the reasons for drop-outs based on age, gender and social groups. We analysed the reasons between the two rounds for comparability and gender for the age group 5 – 18 years only, though the database provides data for ages 5 – 29. We then calculated the drop-out percentages based on reasons in all the states and UTs. We also attempted to calculate the percentage of drop-outs to assess the impact of the RTE Act 2009 by assigning each round to pre- and post-RTE periods, respectively. We also conducted a t-test of significance between the rounds to assess the drop-outs based on gender. We also categorised the reasons under various themes related to RTE Act provisions to understand the status of providing free and compulsory elementary education.

D. NFHS: Similar to the NSSO database, we analysed the two rounds of NFHS to examine the reasons for not attending school in the age group 5 – 18 years based on gender. The reasons used for coding in NFHS rounds were identical; therefore, we used the categorisation of reasons under themes related to the provisions of the RTE Act 2009. We analysed the reasons based on age, gender and social groups. We used the two rounds to assess the

implications of the RTE Act on the reasons for not attending school. The t-test of significance is also conducted to evaluate gender-wise drop-outs between the rounds.

E. Educational Statistics of Goa: As the Directorate of Education in Goa collects the data to provide to the U-DISE in a similar data capture format, and since raw data was not available in the public domain, we were not able to use this data, and we relied on the U-DISE data provided by NIEPA for analysing Goa.

Next, we will discuss the databases in detail.

3.2. UNIFIED DISTRICT INFORMATION SYSTEM IN EDUCATION (U-DISE)

The U-DISE provides school data at the national level collected by the National Institute of Educational Planning and Administration (NIEPA), New Delhi (earlier known as the National University of Educational Planning and Administration (NUEPA), New Delhi). When raw data was obtained during the study period, it was available till 2015-2016, and we restricted our analysis due to the scope of the study. This database provided information for all schools from Grade I to Grade VIII till 2011-2012 and from Grade I to Grade XII from 2012-2013 to 2015-2016. The data is available for all the states and Union Territories (UTs).

The researcher obtained special permission from NIEPA to download the data available on the website http://schoolreportcards.in/SRC-New/ from 2005-2006 onwards till 2015-2016, as this data is available annually. For example, in the case of NFHS and NSSO, through this data, we can assess the pre- and post-RTE impact on school infrastructure facilities and check for data availability to monitor the indicators as a part of SDG 4 targets.

The U-DISE format contains different sections. Over the years, there have been revisions in the school data capture format (see Table 3.2 & Table 3.3).

Table 3.2 details the school data capture format for 2005-2006 to 2009-2010, and Table 3.3 provides the details for 2010-2011 to 2015-2016.

Table 3.2: Summary of U-DISE data from 2005-06 till 2009-10

Sections	Period 2005 -06 to 2008 -09	2009-10
A	School Particulars	School Particulars
B	School building, equipment, facilities, furniture and other data	School building, equipment, facilities, furniture and other data
C	Teachers (teachers teaching primary and upper primary grades)	Teacher's Profile
D	New admissions and transfer cases	New admissions and transfer cases
E	Enrolment (By social category)	Enrolment in current academic session(By social category)
F	Enrolment in current academic session(By age Grade)	Enrolment in current academic session(By age)
G	Enrolment in current academic session(By the medium of instruction)	Enrolment in current academic session(By the medium of instruction)
H	Repeaters and re-admission (not available based on social category)	Repeaters in current academic session (by social category)
I	Incentives (Last academic year, only for primary grades)	Incentives (Last academic year, only for primary grades)
J	Incentives (Last academic year, only for upper primary grades)	Incentives (Last academic year, only for upper primary grades)

K	Examination results (Last academic year)	Examination results (Last academic year)
L	Children with disabilities	Children with Special Needs
Additional details	Population Information Schedule	NA
	Number of Never Enrolled Information Schedule	NA
	Drop-out Information Schedule	NA

Source: Compiled by the author based on (NIEPA 2005; 2006; 2007; 2008; 2009)

Besides the sections listed (i.e. A to L section), U-DISE collected three additional data sets till 2008-2009: total population, never enrolled children and drop-outs. The data is collected district/block/village-wise for the age groups 6 – 10 and 11 – 13 based on gender and social group. From 2009-2010 onwards, only A to L section data was collected. After 2010-2011, a new section was added, i.e. section M on attendance (for the previous academic year). The attendance data was collected simultaneously for 2010-2011 and 2011-2012. However, this data is not available for analysis in the public domain. From 2012-2013 onwards, the data was collected for higher secondary students by adding sections from A to Q (See Table 3.3).

The data was available in 9 different Excel worksheet files: basic data, general data, facility data, total enrolment by gender, Scheduled Caste (SC) enrolment by sex, Scheduled Tribe (ST) enrolment by sex, Other Backward Class (OBC) enrolment by sex, disability enrolment by sex and repeaters data by sex. In 2009-2010, teacher data by sex and RTE data from 2010-2011 onwards were made available.

U-DISE data provides basic school information like the school's name, block name, cluster and village name. General data includes rural-urban, medium of instruction, type of school management, school type, school

category, etc. Information on building status, classroom conditions, toilet facility, playground, drinking water facility, ramps, boundary wall, electricity, number of male and female teachers, and qualification of teachers is also available.

Total enrolment data is available from Grades I – VIII till 2012-2013, and from the academic year 2013-2014, grade-wise enrolment is available from Grade I to Grade XII based on sex. Besides, enrolment data on marginalised groups SC, ST, and OBC is also available. Data on disabled children is available from Grade I – VIII till 2012-2013 and to Grade XII from 2013-2014. Data on repeaters is also made available grade-wise and by sex.

Table 3.3: Summary of U-DISE data capture format from 2010 -11 till 2015-16

Sections	2010-11 to 2011-12	2012-13	2013-14	2014-15 to 2015-16
A	School Particulars			
A(i)	School Particulars	School Particulars	School Particulars	School Particulars
A(ii)	School Particulars	School Particulars (only for elementary stage)	School Particulars (only for elementary stage)	School Particulars (only for elementary stage)
B	Physical facilities and equipment			
B(i)	Mid-Day Meal Information (only for Govt./Govt. Aided schools)	Physical facilities and equipment	Physical facilities and equipment	Physical facilities and equipment
		Mid-Day Meal Information (only for Govt./Govt. Aided schools)	Mid-Day Meal Information (only for Govt./Govt. Aided schools)	Mid-Day Meal Information (only for Govt./Govt. Aided schools)
C	Teachers and Part-time instructors	Teachers and Part-time instructors (including Head Master)	Teachers and Part-time instructors (including HM)	Teachers and Part-time instructors (including HM)
D	New admissions during the previous academic year	New admissions	New admissions in Grade I (only for schools having primary stage)	New admissions in Grade I (only for schools having primary stage)
D(i)	New admissions in Grade I	New admissions in Grade I (only for schools having primary stage)		

E	Enrolment in current academic session(by social category)	Enrolment in current academic session(by social category)	Enrolment in current academic session(by social category)	Enrolment in current academic session(by social category)
F	Enrolment in current academic session(by age)- All Children	Enrolment in current academic session(by age)- All Children	Enrolment in current academic session(by age)- All Children	Enrolment in current academic session(by age)- All Children
G	Enrolment in current academic session(by medium of instruction)	Enrolment in current academic session(by medium of instruction)		
G(i)			Enrolment in current academic session(by medium of instruction)	Enrolment in current academic session(by medium of instruction)
H	Repeaters in current academic session (by social category)	Repeaters in current academic session (by social category)	Repeaters in current academic session (by social category)	Repeaters in current academic session (by social category)
I	Facilities provided to children (Last academic year, only for primary grades)	Facilities provided to children (Last academic year, only for primary grades)	Facilities provided to children (Last academic year, primary grades)	Facilities provided to children (Last academic year, primary grades)
I(ii)			Facilities provided to children (Last academic year, only for upper primary grades)	Facilities provided to children (Last academic year, only for upper primary grades)
J	Facilities provided to children (Last academic year, only for upper primary grades)	Facilities provided to children (Last academic year, only for upper primary grades)		Examination Results (Last Academic Year) social category and gender-wise for IV/V and VII/ VIII Grade

J(i)		Facilities provided to children (Last academic year, only for secondary grades)		
J(ii)		Facilities provided to children (Last academic year, only for higher secondary grades)		
K	Children with Special Needs	Children with Special Needs	Children with Special Needs	Children with Special Needs
L	Facilities provided to Children with Special Needs (Last academic year)	Facilities provided to Children With Special Needs (Last academic year)	Facilities provided to Children With Special Needs (Last academic year)	Facilities provided to Children With Special Needs (Last academic year)
M	Attendance (Previous academic year)	Availability of Streams in the school	Availability of Streams in the school	Availability of Streams in the school
N		Enrolment and Repeaters by stream	Enrolment and Repeaters by stream	Enrolment and Repeaters by stream
O		Examination results (Grade X & XII)	Examination results(Grade X & XII)	Examination results (Grade X & XII)
P		Receipts and Expenditures(under RMSA)	Receipts and Expenditures(under RMSA)	Receipts and Expenditures(under RMSA)
Q		Number of non-teaching /administrative and support staff sanctioned and in position	Number of non-teaching /administrative and support staff sanctioned and in position	Number of non-teaching /administrative and support staff sanctioned and in position

Source: Compiled by the author based on (NIEPA 2010; 2011; 2012; 2013; 2014; 2015b)

Information on teachers was available from 2009-2010. Data on RTE-specific requirements was available from 2010 to 2011. It included data on school working days, school management committees and information on the functioning of the schools.

U-DISE data was collected on the functionality of toilets from schools but was not available in the public domain. We requested the NIEPA data centre to provide us with the data on functional toilets. The NIEPA data centre shared data on functional toilets from 2009 to 2015 in one Excel spreadsheet for all the states and UTs. While preparing the dataset, they provided us with an Excel file for all the states, which we separated using state codes (Refer to Table 3.4). After our request, this data was incorporated into the facility datasheet and is now available for researchers.

Table 3.4: State list used while decoding the functional toilet data file

STATE CODE	State/UT	STATE CODE	State/UT
01	Jammu And Kashmir	19	West Bengal
02	Himachal Pradesh	20	Jharkhand
03	Punjab	21	Odisha
04	Chandigarh	22	Chhattisgarh
05	Uttarakhand	23	Madhya Pradesh
06	Haryana	24	Gujarat
07	Delhi	25	Daman & Diu
08	Rajasthan	26	Dadra & Nagar Haveli
09	Uttar Pradesh	27	Maharashtra
10	Bihar	28	Andhra Pradesh
11	Sikkim	29	Karnataka

12	Arunachal Pradesh	30	Goa
13	Nagaland	31	Lakshadweep
14	Manipur	32	Kerala
15	Mizoram	33	Tamil Nadu
16	Tripura	34	Puducherry
17	Meghalaya	35	Andaman & Nicobar Islands
18	Assam	36	Telangana

Source: (NSSO 2016b)

We followed the following process to prepare the dataset for analysis.

Step 1: Data was downloaded for each state for all the years from 2005-2006 to 2015-2016. For each state, we created separate folders. The year-wise folders are created under each state folder. Within each yearly folder, there were 9 to 11 Excel files. Each state had 12 yearly folders and one separate folder for functional toilet data. The year-wise data was collated in a single file from 2005 to 2015.

Step 2: All the downloaded Excel files were then saved in the Comma Separated Value (CSV) format. Each year, there were 9 to 11 files in Excel formats, all saved individually in CSV format to import into the STATA data format.

Step 3: The import command imported all CSV files into STATA software. All the files were merged to create a yearly file using the variable School Code, as this was a standard variable among all the files in one year.

The following process was followed while creating a yearly file. First, the basic file was merged with the general data file, followed by facility, total enrolment, Scheduled Caste, Scheduled Tribe, Other Backward Class, disability, repeaters, teachers (since 2009) and RTE data file (since 2010).

In the 2009-2010 file, we observed that a few variables were named differently. We renamed them (Refer to Table 3.5) to match them while merging them with other yearly files. From 2013-2014 onwards, while collecting data, U-DISE changed the variable name of 'school code' to 'SCHCD'. The SCHCD was renamed to the school code to match and merge the other yearly files. Similarly, there were many variables for which a different name was assigned, but the information collected was the same as the previous year. Such variables were identified, and the variable names were matched as per earlier years for compatibility (A list of variables that are renamed is provided in Tables 3.6 and 3.7).

Step 4: We merged all the yearly files to form one single file for a state. All variables had to be matched to merge the files into a single file. The variable names coded in the files and how they have been renamed are shown in Tables 3.5, 3.6, and 3.7 above. After renaming the variables, all the files were merged to generate one single file for the state. Once the final file was prepared, new variables were created to analyse the data (A list of new variables is provided in Table 3.8). Data on toilets was available as a dichotomous variable (Yes and No responses) up to 2008-2009. From 2009 - 2010 onwards, the total number of toilets available in the schools was collected. We generated a dichotomous variable for the entire period based on the number of toilets to match the variables while merging and running the analysis.

The student toilet ratio was calculated based on gender to check if the number of toilets complies with the recent guidelines provided by Swachh Bharat Swachh Vidyalaya (SBSV) and World Health Organization (WHO) Guidelines. The findings are presented in Chapter 4. Next, we discuss the IHDS database.

Table 3.5: Renamed U-DISE variables for the years 2009 and 2012

Renamed variables for the year 2009		Renamed Variables for the year 2012	
Original Name	New Name	Original Name	New Name
toilet_common_yn	total_toilet_common	clrooms	tot_clrooms
toilet_boys_yn	total_toilet_boys	clgood	classrooms_in_good_condition
toilet_girls_yn	total_toilet_girls	clmajor	classrooms_require_major_repair
tch_male	male_tch	clminor	classrooms_require_minor_repair
tch_female	female_tch	othgood	other_rooms_in_good_cond
tch_nr	noresp_tch	othmajor	other_rooms_need_major_rep
headtch	head_teacher	othminor	other_rooms_need_minor_rep
tchwithprof	tch_with_professional_qualificat	hmroom_yn	separate_room_for_headmaster
daysinvld	days_involved_in_non_tch_assgn	electric_yn	Electricity
tchinvld	teachers_involved_in_non_tch_ass	cal_yn	computer_aided_learnin_lab
gradabove	graduate_teachers	bndrywall	boundary_wall
yeur_estd	year_estd	pground_yn	Playground

		bookinlib	books_in_library
Renamed Variables for the ye ar 2012		water	drinking_water
toilet_c	toilet_common	medchk_yn	medical_checkup
toilet_g	toilet_girls	ramps_yn	Ramps
toiletb	toilet_boys	computer	no_of_computers
tch_male	male_tch	chld_enrolled_for_sp_training_cu	chld_enrolled_for_sp_training_cb
tch_female	female_tch	v28	chld_enrolled_for_sp_training_cg
tch_nr	noresp_tch	spl_training_provided_current_ye	spl_training_provided_cy_b
headtch	head_teacher	v30	spl_training_provided_cy_g
tchwithprof	tch_with_professional_qualificat	spl_training_enrolled_previous_y	spl_training_enrolled_py_b
daysinvld	days_involved_in_non_tch_assgn	v32	spl_training_enrolled_py_g
tchinvld	teachers_involved_in_non_tch_ass	spl_training_provided_previous_y	spl_training_provided_py_b
gradabove	graduate_teachers	v34	spl_training_provided_py_g
schoool_hours_children_pri	school_hours_children_pri		

Source: Compiled by the author

Table 3.6: Renamed U-DISE Variables for years 2013 to 2015

Common Renamed Variables for the year 2013 to 2015					
Original Name	New Name	Original Name	New Name	Original Name	New Name
c1_dis_b	disabled_c1_boys	c5_tg	class5_st_enr_girls	fail9b	repeaters_c9_boys
c2_dis_b	disabled_c2_boys	c6_tg	class6_st_enr_girls	fail10b	repeaters_c10_boys
c3_dis_b	disabled_c3_boys	c7_tg	class7_st_enr_girls	fail11b	repeaters_c11_boys
c4_dis_b	disabled_c4_boys	c8_tg	class8_st_enr_girls	fail12b	repeaters_c12_boys
c5_dis_b	disabled_c5_boys	c9_tg	class9_st_enr_girls	fail1g	repeaters_c1_girls
c6_dis_b	disabled_c6_boys	c10_tg	class10_st_enr_girls	fail2g	repeaters_c2_girls
c7_dis_b	disabled_c7_boys	c11_tg	class11_st_enr_girls	fail3g	repeaters_c3_girls
c8_dis_b	disabled_c8_boys	c12_tg	class12_st_enr_girls	fail4g	repeaters_c4_girls
c9_dis_b	disabled_c9_boys	c1_tb	class1_st_enr_boys	fail5g	repeaters_c5_girls
c10_dis_b	disabled_c10_boys	c2_tb	class2_st_enr_boys	fail6g	repeaters_c6_girls
c11_dis_b	disabled_c11_boys	c3_tb	class3_st_enr_boys	fail7g	repeaters_c7_girls
c12_dis_b	disabled_c12_boys	c4_tb	class4_st_enr_boys	fail8g	repeaters_c8_girls

c1_dis_g	disabled_c1_girls	c5_tb	class5_st_enr_boys	fail9g	repeaters_c9_girls
c2_dis_g	disabled_c2_girls	c6_tb	class6_st_enr_boys	fail10g	repeaters_c10_girls
c3_dis_g	disabled_c3_girls	c7_tb	class7_st_enr_boys	fail11g	repeaters_c11_girls
c4_dis_g	disabled_c4_girls	c8_tb	class8_st_enr_boys	fail12g	repeaters_c12_girls
c5_dis_g	disabled_c5_girls	c9_tb	class9_st_enr_boys	apprb5	c5_appeared_boys
c6_dis_g	disabled_c6_girls	c10_tb	class10_st_enr_boys	apprg5	c5_appeared_girls
c7_dis_g	disabled_c7_girls	c11_tb	class11_st_enr_boys	apprb8	c8_appeared_boys
c8_dis_g	disabled_c8_girls	c12_tb	class12_st_enr_boys	apprg8	c8_appeared_girls
c9_dis_g	disabled_c9_girls	c1_cb	class1_sc_enr_boys	passb5	c5_passed_boys
c10_dis_g	disabled_c10_girls	c2_cb	class2_sc_enr_boys	passg5	c5_passed_girls
c11_dis_g	disabled_c11_girls	c3_cb	class3_sc_enr_boys	passb8	c8_passed_boys
c12_dis_g	disabled_c12_girls	c4_cb	class4_sc_enr_boys	passg8	c8_passed_girls
c1_ob	class1_obc_enr_boys	c5_cb	class5_sc_enr_boys	p60b5	c5_passed_with_more_than_60_boys
c2_ob	class2_obc_enr_boys	c6_cb	class6_sc_enr_boys	p60g5	c5_passed_with_more_than_60_girl
c3_ob	class3_obc_enr_boys	c7_cb	class7_sc_enr_boys	p60b8	c8_passed_with_more_than_60_boys

c4_ob	class4_obc_enr_boys	c8_cb	class8_sc_enr_boys	p60g8	c8_passed_with_more_than_60_girl
c5_ob	class5_obc_enr_boys	c9_cb	class9_sc_enr_boys	c1_totb	class1_total_enr_boys
c6_ob	class6_obc_enr_boys	c10_cb	class10_sc_enr_boys	c2_totb	class2_total_enr_boys
c7_ob	class7_obc_enr_boys	c11_cb	class11_sc_enr_boys	c3_totb	class3_total_enr_boys
c8_ob	class8_obc_enr_boys	c12_cb	class12_sc_enr_boys	c4_totb	class4_total_enr_boys
c9_ob	class9_obc_enr_boys	c1_cg	class1_sc_enr_girls	c5_totb	class5_total_enr_boys
c10_ob	class10_obc_enr_boys	c2_cg	class2_sc_enr_girls	c6_totb	class6_total_enr_boys
c11_ob	class11_obc_enr_boys	c3_cg	class3_sc_enr_girls	c7_totb	class7_total_enr_boys
c12_ob	class12_obc_enr_boys	c4_cg	class4_sc_enr_girls	c8_totb	class8_total_enr_boys
c1_og	class1_obc_enr_girls	c5_cg	class5_sc_enr_girls	c9_b	class9_total_enr_boys
c2_og	class2_obc_enr_girls	c6_cg	class6_sc_enr_girls	c10_b	class10_total_enr_boys
c3_og	class3_obc_enr_girls	c7_cg	class7_sc_enr_girls	c11_b	class11_total_enr_boys
c4_og	class4_obc_enr_girls	c8_cg	class8_sc_enr_girls	c12_b	class12_total_enr_boys
c5_og	class5_obc_enr_girls	c9_cg	class9_sc_enr_girls	c1_totg	class1_total_enr_girls
c6_og	class6_obc_enr_girls	c10_cg	class10_sc_enr_girls	c2_totg	class2_total_enr_girls

c7_og	class7_obc_enr_girls	c11_cg	class11_sc_enr_girls	c3_totg	class3_total_enr_girls
c8_og	class8_obc_enr_girls	c12_cg	class12_sc_enr_girls	c4_totg	class4_total_enr_girls
c9_og	class9_obc_enr_girls	fail1b	repeaters_c1_boys	c5_totg	class5_total_enr_girls
c10_og	class10_obc_enr_girls	fail2b	repeaters_c2_boys	c6_totg	class6_total_enr_girls
c11_og	class11_obc_enr_girls	fail3b	repeaters_c3_boys	c7_totg	class7_total_enr_girls
c12_og	class12_obc_enr_girls	fail4b	repeaters_c4_boys	c8_totg	class8_total_enr_girls
c1_tg	class1_st_enr_girls	fail5b	repeaters_c5_boys	c9_g	class9_total_enr_girls
c2_tg	class2_st_enr_girls	fail6b	repeaters_c6_boys	c10_g	class10_total_enr_girls
c3_tg	class3_st_enr_girls	fail7b	repeaters_c7_boys	c11_g	class11_total_enr_girls
c4_tg	class4_st_enr_girls	fail8b	repeaters_c8_boys	c12_g	class12_total_enr_girls

Source: Compiled by the author

Table 3.7: Renamed variable for U-DISE data for the year 2015

Renamed Variables for the year 2015			
Original Name	New Name	Original Name	New Name
Distname	district_name	cce_yn	cce_implemented
Rururb	rural_urban	pcr_maintained	people_cumilativere_record_maint
medinstr1	medium1	pcr_shared	pcr_shared_with_parents
medinstr2	medium2	wsec25p_enrolled	children_from_weaker_section_enr
medinstr3	medium3	smc_yn	smc_constituted
medinstr4	medium4	smcmem_m	smc_members_male
estdyear	year_estd	smcmem_f	smc_members_female
ppsec_yn	pre_pry_yn	smsparents_m	smc_members_parents_male
schres_yn	residential_sch_yn	smsparents_f	smc_members_parents_female
schmgt	sch_management	smcnomlocal_m	smc_members_local_authority_male
lowclass	lowest_class	smcnomlocal_f	smc_members_local_authority_fema
highclass	highest_class	Smcmeetings	smc_meetings_held

schcat	sch_category	smcsdp_yn	school_developmentplan_prepared
ppstudent	pre_pry_students	smschildrec_yn	smc_children_record_maintained
schtype	school_type	spltrg_cy_enrolled_b	chld_enrolled_for_sp_training_cb
schshi_yn	shift_school_yn	spltrg_cy_enrolled_g	chld_enrolled_for_sp_training_cg
workdays_pr	no_of_working_days	spltrg_cy_provided_b	spl_training_provided_cy_b
noinspect	no_of_acad_inspection	spltrg_cy_provided_g	spl_training_provided_cy_g
resitype	residential_sch_type	spltrg_py_enrolled_g	spl_training_enrolled_py_g
ppteacher	pre_pry_teachers	spltrg_py_enrolled_b	spl_training_enrolled_py_b
visitsbrc	visits_by_brc	spltrg_py_provided_b	spl_training_provided_py_b
visitscrc	visits_by_crc	spltrg_py_provided_g	spl_training_provided_py_g
conti_r	school_dev_grant_recd	spltrg_by	spl_training_conducted_by
conti_e	school_dev_grant_expnd	spltrg_place	spl_training_place
bldstatus	building_status	spltrg_type	spl_training_type
clrooms	tot_clrooms	txtbkrecd_yn	textbook_received
clgood	classrooms_in_good_condition	Txtbkmnth	text_book_received_month

clmajor	classrooms_require_major_repair	Txtbkyear	text_book_received_year
clminor	classrooms_require_minor_repair	Acstartmnth	academic_session_start_in
hmroom_yn	separate_room_for_headmaster	Kitshed	kitchenshed_status
electric_yn	Electricity	Toilet	toilet_boys
cal_yn	computer_aided_learnin_lab	toilet_g	toilet_girls
bndrywall	boundary_wall	toilet_boys	total_toilet_boys
pground_yn	Playground	toilet_girls	total_toilet_girls
bookinlib	books_in_library	Tchwithprof	tch_with_professional_qualificat
water	drinking_water	Daysinvld	days_involved_in_non_tch_assgn
medchk_yn	medical_checkup	Tchinvld	teachers_involved_in_non_tch_ass
ramps_yn	Ramps	Gradabove	graduate_teachers
computer	no_of_computers	no_of_working_days	working_days_primary
tch_male	male_tch	workdays_upr	working_days_uprimary
tch_female	female_tch	schhrschild_upr	school_hours_children_upri
tch_nr	noresp_tch	schhrstch_pr	school_hours_tch_p

headtch	head_teacher	schhrstch_upr	school_hours_tch_upr
approachbyroad	approachable_by_all_weather_road		

Source: Compiled by the author

Table 3.8: New Variables Generated for the Analysis

	New Variables				
totalgirlenr8	totalgirlenr9to12	G_enrol8_G_toilet	total_class1	class2_GR	complyftoiletg_40
totalboyenr8	totdisableboyenr9to12	G_enrol12_G_toilet	total_class2	class3_GR	ftoiletboys8
totdisableboyenr8	totdisablegirlsenr9to12	comply_25	total_class3	class4_GR	complyftoiletb_40
totdisablegirlsenr8	totrepeatgirlsenr9to12	comply_40_G8	total_class4	class5_GR	ftoiletg12
totrepeatgirlsenr8	totrepeatboysenr9to12	B_enrol8_B_toilet	total_class5	class6_GR	complyftoiletG12_25
totrepeatboysenr8	totstboyenr9to12	B_enrol12_B_toilet	total_class6	class7_GR	complyftoiletG12_40
totstboyenr8	totstgirlsenr9to12	comply_40_Boys8	total_class7	class8_GR	ftoiletb12
totstgirlsenr8	totscgirlsenr9to12	comply_25_G12	total_class8	class9_GR	complyftoiletB12_40
totscgirlsenr8	totscboyenr9to12	comply_50_Boys8	total_class9	class10_GR	

totscboyenr8	totobcgirlsenr9to12	gender_r8	total_class10	class11_GR	
totobcgirlsenr8	totobcboysenr9to12	total_students	total_class11	class12_GR	
totobcboysenr8	totalboysenrol1to12	total_students12	total_class12	ftoiletgirls8	
totalboyenr9to12	totalgirlsenrol1to12	total_students1to12	class1_GR	complyftoiletg_25	

Source: Compiled by the author

3.3 INDIA HUMAN DEVELOPMENT SURVEY (IHDS)

The IHDS data is available for two rounds (IHDS I in 2004 – 05 and IHDS II in 2011 – 12). This data is publicly available from the Inter-university Consortium for Political and Social Research (ICPSR) (Desai and Vanneman 2008; 2015). The IHDS surveys are conducted all over India, including Union Territories (UTs) of India, except in Andaman/Nicobar and Lakshadweep. The household schedule collects data on health, education, employment, economic status, marriage, fertility, gender relations, and social capital. It also contains information from children (aged 8 – 11 years) on their reading, writing, and arithmetic skills. School-level data from primary schools in India is also collected on the status of the infrastructure facilities up to Grade IV.

The data file used in this study is DS0005 – 22626 for 2004-05 and DS0009 – 36151 for 2011-12. IHDS I collected information on 102 variables from 3,782 schools for 28 States and 5 UTs. IHDS II collected data on 141 variables from 4,267 primary schools for 28 states and 5 UTs. The school schedule is divided into several parts; IHDS I had five parts (A to E), and IHDS II had seven (A to G). (See Table 3.9)

The different sections in the IHDS I and IHDS II questionnaire are briefly explained below:

Section A- Basic Characteristics of School – This pertains to school characteristics like type of school, students enrolled, and the medium of instruction, among others.

Section B- Physical Structure of the School- This pertains to infrastructure like the number of classrooms and water and toilet facilities, among others.

Section C- School Costs: This pertains to registration fees, other payments,

schemes, and scholarships provided to students.

Table 3.9: Sections in the IHDS I & II School Questionnaire

Sections	IHDS-I	IHDS-II
A	Basic Characteristics of School	Basic Characteristics of School
B	Physical Structure of the School	Physical Structure of the School
C	School Costs	School Costs
D	School management and community involvement	School management and community involvement
E	School Staff	School Staff
F		School Operations
G		Observation of Infrastructure Facilities

Source: Compiled by the author based on (Desai and Vanneman 2008; 2015)

Section D- School management and community involvement –This pertains to the number of teachers and nature of employment, parent-teacher association, and teacher evaluation criteria.

Section E- School Staff – This section pertains to the qualification and other demographic information of staff employed in the school.

Sections A to E were common for IHDS I and II. However, two additional sections, F and G, were added in IHDS-II. The details are given below.

Section F- School Operations – This pertains to teachers' involvement in additional duties like census and whether the school has received grants or donations during the financial year.

Section G- Observation – This pertains to the observation of Grade IV classrooms and the presence of infrastructure facilities, including the status of the toilets, which was verified through observation, among others.

Apart from the two new sections in IHDS II, there were a few more differences between IHDS I and II. First, some of the questions in IHDS I had a different sequence in IHDS II (Refer to Table 3.10). Second, a few questions and the response options were changed; third, a few new questions were added in IHDS II. The IHDS survey used the Primary School Facility Questionnaire and collected information from schools for Grade I to Grade IV only. For our analysis, we focused on the questions related to infrastructure. For coding responses 16a, 16b, and 16c, separate gender-wise columns are available in both questionnaires.

The field investigator is expected to visit the Grade IV classroom and toilets and record their observations during the IHDS II. The findings are presented in Chapter 4. Next, we discuss the National Sample Survey database.

Table 3.10: Selected questions used for our study from IHDS I and IHDS II

IHDS I	IHDS II
Attendance (Part A: Basic Characteristics)	
6. How many students are enrolled in this school?	6. How many students are enrolled in this school?
6a On an average day, of the students enrolled, how many attend *?*	6a Of these, how many are girls?

6b Of these, how many are girls?	6b On an average day of the students enrolled, how many attend?
Classrooms: (Part B: Physical Structure)	
13a How many classrooms does this school have?	13a.How many classrooms does this school have?
13b Do any classes meet outside because of the lack of classrooms? If yes, How many?	13b. Does any class meet outside because of the lack of classrooms? If yes, how many?
13c Are there any classrooms that have students from more than one grade? If yes, How many?	13c.Are there any classrooms that have students from more than one grade? If yes, how many?
Electricity (Part B: Physical Structure)	
14a Does this School have electricity? [IF NO, ENTER 0]	14a Does this School have electricity?
If yes, for how many hours is the electricity available during school hours?	If yes, for how many hours is the electricity available during school hours?
14b. How often does the electric power fail? Every day= 2 Once or twice per week = 1 Never, less than once a week = 0	14b. How often does the electric power fail? *Never, less than once a week = 1* *Once or twice per week = 2* *Almost every day = 3*
Access to water (Part B: Physical Structure)	
15a. What is the school's main source of drinking water? *Piped 01 Tube well 02 Hand pump 03 Dug, open well 04 Covered well 05 River, canal, stream 06 Pond 07 Tanker truck 08 Rainwater 09 Bottled 10 Other: 11*	15a. What is the school's main source of drinking water? *Piped(public supply) 01 Tube well 02 Hand pump 03 Dug, open well 04 Covered well 05 River, canal, stream 06 Pond 07 Tanker truck 08 Rainwater 09 Bottled 10 Other: 11*
15b. Is this a water source... *1 Inside the school building?* *2 Inside the compound?* *3 Outside the compound?*	15b. Is this a water source... *1 Inside the school building?* *2 Inside the compound?* *3 Outside the compound?*
15c. Do upper caste children sometimes drink water from a different source than lower caste children? *Different= 1 Same= 2*	15c. Do upper caste children sometimes drink water from a different source than lower caste children? *Different= 1 Same= 2*
Availability of Toilets (Part B: Physical Structure)	
16. Does the school have any toilet facility for the students *No=0 Yes=1*	16. Does the school have any toilet facilities for the students? if yes, then follow-up questions on *No=0 Yes=1*
16b. What type of toilet does the school have for girls? For boys? *1=Flush toilet 2=Pit latrine 3=Ventilated improved pit latrine 4=None*	16a. Do girls and boys have toilet facilities? *Yes, common=1 Yes, separate=2 No=3*
16c.Is this toilet/latrine…	16b. Is this toilet/latrine…

inside the school building?=1 *outside the school building?=2*	*inside the school building?=1* *outside the school building?=2*
16d. Do girls and boys have separate toilet facilities? *No=0* *Yes=1*	16c. What type of toilet does the school have for girls? For boys? *1=Flush toilet 2=Pit latrine 3=Ventilated improved pit latrine 4=None*
Physical Infrastructure (Part B: Physical Structure)	
17. Does the school have.....	17. Does the school have .....
a. Chairs and desks for all students? *No=0 Yes=1*	a. Chairs and desks for all students? *Yes=1 No=2*
b. Blackboard in every classroom? *No=0 Yes=1*	b. If No, Mats to sit on? *Yes=1 No=2*
c. Library? *No=0 Yes=1*	c. Blackboard in every classroom? *Yes=1 No=2*
d. Computer that students use? *No=0 Yes=1*	d. Library? *Yes=1 No=2*
e. Fan? *No=0 Yes=1*	e. Computer that students use? *Yes=1 No=2*
f. Play grounds? *No=0 Yes=1*	f. Fan for children? *Yes=1 No=2*
g. Kitchen for cooked meals? *No=0 Yes=1*	g. Fan for Principal's office *Yes=1 No=2*
h. A cook? *No=0 Yes=1*	h. Play grounds? *Yes=1 No=2*
i. An assistant for the cook? *No=0 Yes=1*	i. Kitchen for cooking meals? *Yes=1 No=2*
	j. A cook? *Yes=1 No=2*
	k. An assistant for the cook? *Yes=1 No=2* l. Plates/utensils for all students? *Yes=1 No=2*
	m. Boundary wall? *Yes=1 No=2*
	n. Separate office for principal/head teacher? *Yes=1 No=2*
	Observation of Toilets (Part G: Observation of Grade IV Classroom
	Q.37. Is the classroom indoors? *Yes=1 No=2*
	Q.38. Do all the children have...
	Q.38 a. Chairs and desks? *Yes=1 No=2*
	If NO Q.38m. Are they provided mats to sit on? *Yes=1 No=2*
	Q. 38b. A classroom Blackboard? Yes, but blank = 1 Yes, with writing = 2 No = 3

	Q. 38c. Writing materials: Pencils, wooden tablets (Takhti)/books or slate, and chalk? *Yes=1 No=2*
	Q.38d. Textbooks? *Yes=1 No=2*
	Q.39. Has the teacher posted anything on the classroom walls:
	Q.39a. Teaching materials? *Yes=1 No=2*
	Q.39b. Examples of children's work? *Yes=1 No=2*
	Q. 40 What is the seating arrangement of the class? Only one sex =1 Separately = 2 Mixed = 3
	Q.41 Toilets available for:
	41a. Only teachers? *Yes=1 No=2*
	41b. Only students? *Yes=1 No=2*
	41c. Combined teacher/student? *Yes=1 No=2*
	Q.42 Toilets for students are….
	42 a. .....unlocked? *Yes=1 No=2*
	42 b.....have water? *Yes=1 No=2*
	42 c .....are clean? *Yes=1 No=2*

Source: Compiled by the author based on (Desai and Vanneman 2008; 2015)

Note: Codes are indicated in italics after the question.

3.4 NATIONAL SAMPLE SURVEY OFFICE (NSSO):

The National Sample Survey Office of the Ministry of Statistics and Programme Implementation (MOSPI), Government of India, conducts large-scale sample surveys on various socio-economic issues. At the all-India level, primary data is collected through household surveys by the Field Office Division (FOD) of NSSO. Data collection is carried out using schedules designed for specific surveys. We limit our discussion to the NSS surveys conducted on education (Refer to Table 3.11).

Table 3.11: List of Surveys on Education conducted by NSSO

Sr. No.	Name of the survey	Round	Schedule	Survey Period
1	Participation in Education	42	25.2	July 1986 - June 1987
2	Participation in Education	52	25.2	July 1995 - June 1996
3	Participation and Expenditure in Education	64	25.2	July 2007 - June 2008
4	Social Consumption in India: Education	71	25.2	January 2014- June 2014
5	Social Consumption in India: Education	75	25.2	July 2017 to June 2018

Source: Compiled by the author based on (MOSPI, n.d.)

Our study has used data from the 64th round on "Participation and Expenditure in Education" (MOSPI, n.d.) conducted from July 2007 to June 2008 (hereafter referred to as 64 R) and the 71st round on "Social Consumption in India: Education" (MOSPI, n.d.) conducted from January 2014 to June 2014 (hereafter referred to as 71R).

The raw microdata was obtained from the Government of India's Ministry of Statistics and Programme Implementation website, http://mospi.gov.in. The microdata was extracted using Nesstar software (Nesstar Explorer software v3.62 version). The data is presented in 7 blocks by NSSO (see Table 3.12). All the variables for each block were destringed to merge all the blocks except for block 1. Block 1 was excluded from merging as it contains the basic details of the sample identification.

Table 3.12: Details of schedule 25.2 used in 64 R and 71 R

Block	Description of data collected
1	Descriptive identification of sample household
2	Particulars of field operations
3	Household characteristics
4	Demographic and other particulars of household members
5	Education particulars of those aged 5 – 29 years who are currently attending at primary level and above
6	Particulars of private expenditure for those aged 5 – 29 years who are currently attending at primary level and above
7	Particulars of currently not attending persons aged 5 – 29 years

Source: Compiled by the author based on the NSSO 25.2 schedules(NSSO 2011; 2016b)

All the blocks from Block 2 to Block seven were combined using the HH_ID variable. After connecting, we created a single file for further analysis. The STATA commands are described in Table 3.13, which were used for analysing the data.

In the 64th R individual level, 445970 observations are available. The total number of households surveyed in 64th R was 100581, of which 63318 were rural households from 7953 villages, and 37263 were urban households from 4682 urban blocks (NSSO 2010). In the 71st R individual level, 310827 observations are available. The total number of households surveyed was 65926, of which 36479 were rural households from 4577 villages, and 29447 were urban households from 3720 urban blocks (NSSO 2016b). This data is provided at individual, household, and state levels. NSSO provides data for not attending school from 5 to 29 years old. For comparability between NSSO and NFHS drop-outs, we have focused on the age group between 5 and 18 years. The two rounds allow us to compare the reasons for school drop-outs in India pre-RTE and post-RTE. The NSSO 64th R was conducted two years before the

notification of the RTE Act 2009, and the 71st R was completed four years after the notification of the RTE Act 2009 in April 2010.

Table 3.13: STATA commands used for analysing the NSSO data

Commands	
The reasons were labelled using the following commands.	01 "parent not interested in studies" 02 "inadequate number of teachers" 03 "school is far off" 04 "to work for wage/salary" 05 "for participating in other economic activities" 06 "to look after younger siblings" 07 "to attend other domestic chores" 08 "financial constraints" 10 "timings of educational institution not suitable" 11 " for helping in household enterprises" 12 "Language/medium of instruction used unfamiliar" 13 "No tradition in the community" 14 "education not considered necessary" 15 "child not interested in studies" 16 "unable to cope up or failure in studies" 17 "unfriendly atmosphere at school" 18 "completed desired level/class" 20 "non-availability of lady teacher" 21 "non-availability of ladies toilet" 29 "others"
Recoding of age	*recode AGE (0/4=1) (5/9=2) (10/14=3) (15/18=4) (19/23=5) (24/28=6) (29/33=7) (34/38=8) (39/max=9), gen (agegroup)*

Source: Compiled by the author

We extracted the data from block 7, item no.11, which lists the significant reasons for not attending school as stated below:

"reason for never enrolling/ discontinuing/dropping out(code)"(NSSO 2010: 8)

"major reason for never- enrolling/ discontinuing/ dropping out (code)" (NSSO 2016: 8)

Table 3.14: Reasons for never enrolling /discontinuing/dropping out (64 R)

Applicable for all	Code	Applicable for "ne ver enrolled" cases only	Code
Parent not interested in studies	1	No tradition in the community	13
Inadequate number of teachers	2	Education not considered necessary	14
School is far off	3	Applicable for "ever enrolled" cases only	
To work for wage/ salary	4	Child not interested in studies	15
For participating in other economic activities	5	Unable to cope up or failure in studies	16
To look after younger siblings	6	Unfriendly atmosphere at school	17
To attend to other domestic chores	7	Completed desired level/class	18
Financial constraints	8	Applicable for female students only	
Timings of educational institutions not suitable	10	Non-availability of lady teacher	20
For helping in household enterprises	11	Non-availability of ladies toilet	21
Language/medium of instruction used unfamiliar	12	Others	29

Source: Compiled by the author based on (NSSO 2011)

Table 3.15: Reasons for never enrolling /discontinuing/dropping out 71 R

Applicable for all	Code	Applicable for "never enrolled" cases only	Code
Not interested in education	1	No tradition in the community	11
Financial constraints	2	**Applicable for "ever enrolled" cases only**	
Engaged in domestic activities	3	Unable to cope up with studies/failure in studies	12
Engaged in economic activities	4	Unfriendly atmosphere at school	13
School is far off	5	Completed desired level/class	14
Timings of educational institutions not suitable	6	Preparation for competitive examination	15
Language/medium of instruction used unfamiliar	7	**Applicable for girl students only**	
Inadequate number of teachers	8	Non-availability of female teacher	16
Quality of teachers not satisfactory	10	Non-availability of girls' toilet	17
Others	19	Marriage	18

Source: Compiled by the author based on (NSSO 2016)

The code list of reasons provided in the survey is listed in the tables (see Tables 3.14 and 3.15). In the 64th R, there were 20 codes, whereas in the 71st R, there were only 18 codes. The coding and reasons used in both rounds are different. A few of the reasons included in 64 R were excluded in 71 R, and new reasons were added. Further, the order of the codes for both rounds was not the same.

After calculating the percentages, we tried to find the states' ranking in the drop-out rates through graphs. Firstly, the percentage of school drop-outs is

calculated for children aged 5 to 18 years by further classifying the age groups into three categories using class intervals, namely 5 – 9 years, 10 – 14 years, and 15 – 18 years. We then used a t-test to check for gender-wise differences in drop-outs between the two surveys.

Next, we discuss the NFHS database.

3.5. NATIONAL FAMILY HEALTH SURVEYS (NFHS)

The Ministry of Health and Family Welfare, Government of India, has designated the International Institute for Population Sciences (IIPS), Mumbai, as the nodal agency for conducting the National Family Health Survey (NFHS) in India. These national surveys include a Household questionnaire which identifies eligible women (15 – 49 years) and men (15 – 54 years) for detailed interviews, covers information on children between 0 – 18 years, and interviews visitors who have stayed in the selected household the previous night. At the time of writing the following surveys were available in the public domain: NFHS-1 (1992-1993), NFHS-2 (1998-1999), NFHS-3 (2005-2006) and NFHS-4 (2015-2016). NFHS-5 (2019-2020) was recently completed, but raw data was unavailable in the public domain at the time of analysis. The first three rounds of the survey, i.e. NFHS 1 to NFHS 3, were conducted after a gap of approximately 5 – 6 years. NFHS 4, however, was executed after almost ten years. For this study, we will use the data collected in NFHS 3 and NFHS 4.

We have used data from two surveys to compare and analyse gender differences in the reasons for drop-outs over the years. Also, this will help us assess the impact of the Right of Children to Free and Compulsory Education Act, 2009 (RTE Act, 2009) on school attendance and the reasons for school drop-outs in India. The government of India notified the RTE Act 2009 in April 2010. We are comparing the reasons for not attending school during the pre-RTE period (using NFHS 3 data 2005-06) and the post-RTE period (NFHS 4 data 2015-16).

The NFHS is a large-scale survey conducted at the household level all over India to collect health information. The Demographic Health Survey (DHS) Programme hosts the NFHS data on their website: https://dhsprogram.com/data/. There are four main schedules: Household Questionnaire, Biomarker Questionnaire, Woman's Questionnaire, and Man's Questionnaire. The DHS program uses recode files for the datasets. Eight recorded data file types are associated with the core questionnaires, i.e., household, women, and men. Information on children is collected through these questionnaires, as there are no separate questionnaires. The common recode files are: - HR: Household Recode, PR: Household members or Persons Recode, IR: Individual (Women's) Recode, BR: Births Recode, KR: Kids Recode, MR: Men's Recode, CR: Couples Recode and AR: HIV testing Recode. The PR recode file was used to extract data from the household questionnaire on reasons for not attending school. The file is named IAPR52FL.DTA from NFHS 3 and IAPR72FL.DTA files from NFHS 4 have been used in this study.

In both rounds, similar reasons were used to code the responses. Since our study is on children's educational attainment, we focus on the population aged 5 – 18 years, i.e., the school-going age. The database provides information on completed education at the time of the survey. If the child is not attending school, then the reason for not attending school is also recorded based on a closed set of options. We studied the reasons for not attending school, classified by age and gender.

We use the UNESCO (2019) methodology to estimate the number of children out of school. We included the children aged 5 in our analysis to see if any preschool children are out of school (UIS 2019). The following questions were asked in the NFHS household schedule, and data was collected for all the members in the age group 5 – 18 years,

Q.19. "Did (NAME) attend school or college at any time during the 2015-16 school year?" (IIPS and ICF 2017: 5)

If the answer to this question is 'No', then the follow-up question was (Q.21) "*What is the main reason (NAME) is not attending school?"*(IIPS and ICF 2017:5).

The 17 potential responses to this question are listed below (Table 3.16). Among these, there are three options which do not specify the exact reason for drop-outs: "don't know", "other", and "not interested in studies". The options to code the reason for drop-outs from the households in both rounds are given below. Some of these reasons are directly linked to the access to schools. The reasons are studied at the state level for ages 5 – 18 years, disaggregated by gender and caste.

We have grouped the reasons into eight categories, considering the provisions under the RTE Act, 2010. The following are the categories: 1) access to school, 2) gender-related access, 3) domestic responsibilities, 4) child involved in economic activities, 5) lack of interest in academics, 6) financial constraints, 7) marriage and 8) other reasons.

We have given details of the responses included in each category. Under "access to school" education, we included responses such as "school too far away", "did not get admission", and "transport not available". Under "gender-related access", we included responses such as "not safe to send girls", "no proper school facilities for girls", and "no female teacher". Under "domestic responsibilities", we included responses such as "required for household work" and "required for the care of siblings". Under "child involved in economic activities", we included responses such as "required for work on farm/ family business" and "required for outside work for payment in cash or kind". Under "lack of interest in academics", we included responses such as "repeated failures", "not interested in studies", and "further education not considered necessary". And finally, under "financial constraints", we included the reason "costs too much".

Table 3.16: Reasons for not attending school (NFHS-3 and NFHS-4)

Code	Reasons
1	School too far away
2	Transport not available
3	Further education not considered necessary.
4	Required for household work
5	Required for work on farm/family business
6	Required for outside work for payment in cash or kind
7	Costs too much
8	No proper school facilities for girls
9	Not safe to send girls
10	No female teacher
11	Required for care of siblings
12	Not interested in studies
13	Repeated failures
14	Got married
15	Did not get admission
16	Other(96)
17	Don't know(98)

Source:(IIPS and Macro International 2007; IIPS and ICF 2017)

Under "marriage", we included the response "got married". And last is "other reasons", under which we have included responses such as "other" and "don't know", which we could not categorise in any of the above categories.

Using this grouping, we identified the three most common reasons for not attending the school for only states.

Equation 1: Calculation of percentages of reasons for states

$$\text{Percentage} = \frac{\text{A reason for not attending the school of 'X' state}}{\text{Total number of responses of reasons for not attending the school of 'X' State}} \times 100$$

After calculating the percentages as per equation 1, the graphical representation presents the ranking of the states in the drop-out rates. Firstly, the percentage of school drop-outs is calculated based on age groups, namely, 5 – 9 years, 10 – 14 years, and 15 – 18 years. We used a t-test to check for changes in reasons for not attending the school between the two rounds based on gender and between the rounds. The following section will briefly discuss the data available at the state level in Goa.

3.6 EDUCATIONAL STATISTICS OF GOA (ANNUAL REPORTS):

The Directorate of Education, Government of Goa (GoG), collects data from all schools annually and compiles the educational statistics. The raw data for the same is not available for analysis. We noticed that not all data collected is available in the yearly report.

An attempt was made to obtain the raw data from the Directorate of Education through a personal visit, where the researcher was informed that the annual report could be used for the research. The annual report did not include information on the infrastructure facilities, such as the number of toilets available in the schools. Therefore, we sought the data through the Right to Information Act 2005. The Directorate replied that the applicant should write to each school individually and collect the information. The data obtained through the Right to Information (RTI) Act 2005 is discussed in Chapter 7.

The researcher attempted to visit some schools to check the feasibility of collecting the data directly from the schools. The researcher visited the four

schools in the North Goa district. We were able to collect data from only two schools after multiple visits. Accessing individual schools during the pandemic was not feasible, so we limited our analysis to secondary sources.

The Directorate of Education, Government of Goa (GoG), uses Form A – Education Management Information System (EMIS) to collect school data. The form is to be filled out by only primary and middle schools and secondary and higher secondary schools with primary and middle schools. The following sections are in the School Information Schedule (Table 3.17).

We want to specify here that data collection done by GoG is similar to the U-DISE data format. Additional data was collected by the Directorate of Education on annual attendance for the previous academic year from I to IV and V to VII Grade through sections P and P. a., respectively. As the Directorate of Education did not have the raw data as required and it was not feasible to collect the data, we decided to use U-DISE data and refer to the annual data on the website.

Table 3.17: Details of Schedule used for school data collection

Section	Data Particulars
A	School Particulars
B	School Building, Equipment, Facilities, Furniture and other data
B1	Mid-Day Meal Information (Only for Govt./Aided Schools)
C	Teachers (only for those teachers teaching Primary and middle or both classes
C1	Medium Teachers (Schools having more than one medium)
D	Non-teaching staff
E	Enrolment from I to IV gender wise
F	Enrolment from V to VII gender wise
G	Enrolment in the Current Academic year by the medium of Instruction I to IV
H	Enrolment in the Current Academic year by the medium of Instruction V to VII
I	Children with Disabilities I to IV
I.a	Children with Disabilities V to VII

J	Category-wise Primary Teachers
J.a	Category-wise Middle Teachers
K	Repeaters and Re-Admission
L	Examination Result (Last Academic Year)
M	Incentives (Last Academic Year: Only for Primary Classes)
N	Incentives (Last Academic Year: Only for Middle Classes)
O	Facilities Provided to Children With Special Needs (Last Academic Year)
P	Attendance (Previous Academic Year I to IV)
P.a.	Attendance (Previous Academic Year V to VII)
Proform a V	Subject-wise and standard-wise workload (V to X)

Source: Compiled by the author based on (GOG 2016)

We next present the comparison of the databases in terms of data availability based on the data capture format or instruments of data collection and the raw data obtained from the respective institutions.

3.7 COMPARISON OF THE DATA SOURCES:

In this section, we discuss the strengths and weaknesses of these data sources in the context of our study objectives. Specifically, we compared the data sources in the context of:

a) The RTE Act 2009, and
b) larger developmental goals, especially the Sustainable Development Goals (SDGs), WHO Water Sanitation and Hygiene (WASH) standards, SBSV and MHM Guidelines

We would like first to see what the infrastructural requirements of schools are and then compare and assess the availability of data to monitor the school's progress in meeting these requirements. The RTE Act 2009 provisions, WASH guidelines for schools given by WHO, SBSV requirements and SDGs targets specific to Goal 4 are described in Chapter 1.

We now look at item-wise infrastructure requirements for each of these laws and international targets as follows: The infrastructure requirements under:

a) The RTE Act, 2010 requires that there should be (i) a school building accessible in all weather conditions, (ii) at least one classroom for every teacher, (iii) office-cum-store-cum-Head teacher's room, (iv) barrier-free access, (v) separate toilets for boys and girls, (vi) safe and adequate drinking water facility to all children, (vii) a kitchen where mid-day meal is cooked in the school, (viii) playground, (ix) arrangements for securing the school building by boundary wall or fencing (GOI 2009).

b) SDG 4's target requires schools to build and upgrade educational facilities. To monitor the same, we need data on the following infrastructure facilities: (i) proportion of schools with access to electricity, (ii) internet for pedagogical purposes, (iii) availability of computers, (iv) adapted infrastructure and materials for students with disabilities, (v) basic drinking water, (vi) single-sex specific basic sanitation facilities, and (vii) basic hand washing facilities (as per the WASH indicator definitions) (UN 2015b)

c) WHO guidelines on Water, Sanitation and Hygiene Standards (WASH) for schools require (i) one toilet for every 25 girl students, (ii) one toilet for female staff, (iii) one toilet plus one urinal (or 50 cm of urinal wall) for every 50 boys, and (iv) one toilet for male staff. (v) Availability of drinking water throughout the school day. WASH specifies that a (vi) reliable water point should be made available with soap or a suitable alternative at all the critical points within the school, particularly in toilets and kitchens (Adams, Bartram, Chartier, and Sims 2009).

d) SBSV guidelines require functioning and well-maintained water, sanitation and hygiene facilities, including (i) separate toilets for boys and

girls, (ii) one unit for every 40 students, (iii) menstrual hygiene management facilities including soap, (iv) adequate and private space for changing, (v) adequate water for cloth washing and (vi) disposal facilities for menstrual waste such as an incinerator and dust bins (GOI 2014a).

e) Menstrual Hygiene Management (MHM) Guidelines: The schools should have essential water and sanitation infrastructure to help girls and female staff manage their menstruation hygienically and with dignity. The essential facilities include a) separate toilets for girls and boys, b) separate toilets for male and female teachers, c) water supply, d) availability of soap for handwashing and for washing menstrual absorbents and e) safe disposal of used menstrual absorbents.

We have separately assessed each database for data availability on infrastructure and WASH requirements. This process has helped us identify the gaps in the databases in monitoring the targets given under the policies we intended to evaluate and analyse.

Our next step is to check which data sources allow monitoring of these requirements (see Table 3.18). From the table, we can infer that U-DISE provides the data in monitoring the infrastructure requirements of the RTE Act 2009 except data related to office- cum-store room cum head teacher room. The data on the office-cum-store room cum head teacher room is not available in any of the databases reviewed in this study. IHDS I & II do not have data on all-weather school buildings, barrier-free access, and ramps. However, IHDS II collected data on separate rooms for the head teacher and boundary wall, which was unavailable in IHDS I related to the RTE Act 2009.

The data relating to the monitoring of SDG 4 is also available in U-DISE, but data on a few indicators is not available in the public domain (Refer

Table 3.19). IHDS data about internet facilities, infrastructure and materials for students with disabilities, and basic hand washing facilities is unavailable.

Data on WHO WASH requirements related to toilets for male and female staff and water points with soap/alternative for washing in toilets and kitchens is unavailable in IHDS and U-DISE data till 2015- 16.

Data on MHM facilities mandated in SBSV and MHM guidelines for schools is unavailable in the databases reviewed till 2015- 16 in U-DISE and the IHDS database. We could not monitor the WASH facilities in schools due to the unavailability of data in the public domain and lack of data. It is crucial to collect data from schools related to WASH facilities to understand the fulfilment of the guidelines and the linkages between the MHM and girls' absenteeism in schools, especially at the secondary level.

Table 3.18: Infrastructure requirements and availability of data

Sr. No.	Policies	Infrastructure Requirements of RTE, SDG, WHO & SBSV	IHDS I	IHDS II	U-DISE
A	RTE Act 2009	All-weather school building	*	*	☐ B(I) 1
		Classrooms	☐Part B 13a	☐Part B 13a	☐ B(I) 2
		Office-Cum- Store room cum Headteacher room	*	*	*
		Separate Headteacher room	*	☐Part B 17n	☐ B(I) 4
		Barrier-free access	*	*	☐ A(I) 20
		Separate toilet for boys	☐ Part B 16d	☐ Part B 16a	☐ B(I) 5
		Separate toilet for girls	☐ Part B 16d	☐ Part B 16a	☐ B(I) 5
		safe and adequate drinking water	☐ Part B 15a	☐ Part B 15a	☐ B(I) 6

		Kitchen	☐Part B 17g	☐Part B 17i	☐ B(II) 1(i)
		Mid-day-Meal cooked	☐Part A 10b	☐Part A 10b	☐ B(II) 1(ii-a)
		Playground	☐Part B 17f	☐Part B 17h	☐ B(I) 11
		Boundary well	*	☐Part B 17m	☐ B(I) 8
		Ramps	*	*	☐ B(I) 15
B	SDG 2030 Goal 4	Electricity	☐Part B 14a	☐Part B 14a	☐ B(I) 7
		the Internet for pedagogical purposes	*	*	☐ B(I)20*
		Availability of computers for pedagogical purposes	☐Part B 17d	☐Part B 17e	☐ B(I) 12
		Adapted infrastructure and materials for students with disabilities	*	*	☐ B(I) 15
		basic drinking water	☐Part B 15a	☐Part B 15a	☐ B(I) 6
		single-sex basic sanitation facilities	☐Part B 16b	☐Part B 16a	☐ B(I) 5
		basic handwashing facilities	*	*	☐ B(I)5a*
C	WHO –WASH guidelines	one toilet per 25 girls	☐Part B 16d	☐Part B 16a	☐ B(I) 5
		one toilet for female staff	*	*	*
		one toilet plus one urinal per 50 boys	☐Part B 16d	☐Part B 16a	☐ B(I) 5
		one toilet for male staff	*	*	*
		Reliable drinking water point	☐Part B 15a	☐Part B 15a	☐ B(I) 6

		Reliable water point with soap/alternative for washing in toilets and kitchen	*	*	*
D	SBSV	separate toilets for boys and girls	☐Part B 16d	☐Part B 16a	☐ B(I) 5
		Menstrual hygiene management facilities include soap, adequate and private space for changing, water for cloth washing, and disposal facilities for menstrual waste, such as an incinerator and dust bins.	*	*	*
E	MHM Guidelines	Separate toilets for girls and boys	☐Part B 16d	☐Part B 16a	☐ B(I) 5
		Separate toilets for male and female teachers and staff	*	*	*
		Adequate space in the cubicle for girls to change their napkins/cloth and wash themselves. A well-positioned mirror so that girls can check for stains on their clothes.	*	*	*
		Availability of menstrual absorbents and disposal facility	*	*	*

Source: Compiled by the author based on (Desai and Vanneman 2008; 2015; NIEPA 2015b; GOI 2009; Adams, Bartram, Chartier, Sims, et al. 2009; GOI 2015; 2014b)

*Note : * denotes data not collected and available for analysis.*

We present the analysis of the databases fulfilling WASH requirements in Table 3.19.

Table 3.19: WASH requirements and data availability

Sr. No.	Indicator	RTE	SDG 4 & 6	WHO guidelines on Water Sanitation and Hygiene Standards (WASH)	SBSV guidelines	MHM Guidelines	Databases with this information and the type of data available
1	Separate toilets	Separate toilets for boys and girls	Single-sex-specific basic sanitation facilities	Boys' and girls' facilities should be in separate toilet blocks or areas separated by solid walls (not lightweight partitions) and have separate entrances. Doors should reach down to floor level.	Separate toilets for boys and girls, with one unit generally having one toilet (WC) plus three urinals.	Separate toilets for boys and girls	IHDS I & IHDS II provide data on toilets up to IV grade only, as mentioned below. a) Whether the school has a toilet facility or not? b) Whether girls and boys have separate toilet facilities or not? c) Where the toilet is located inside or outside of the building for boys and girls, and d) The type of toilet facility separately available for boys and girls U-DISE provides data

							on the availability of toilets till 2008 and on the number of toilet seats constructed and available for boys and girls separately up to VIII grade from 2009-10 onwards and after 2013 till XII grade IHDS I & II do not provide data on the number of school toilets; therefore, we cannot compare it with U-DISE.
2	Drinking water	Safe and adequate drinking water facility for all children	Basic drinking water and *access to safe and affordable drinking water*	A reliable drinking water point is accessible for staff and schoolchildren, including those with disabilities, at all times. Provide safe drinking water from a protected groundwater source (spring, well or borehole)	Daily provision of child-friendly and sustainable safe drinking water for food preparation and cooking		IHDS I and II provide information on whether drinking water facilities are available and where the water source is located. In addition, if a separate source is provided based on caste, this information is recorded.

							U-DISE provides data on the source of drinking water. It also collects data on whether the drinking water facility is functional. However, data on the functionality of drinking water sources are not available in the public domain.
3	Kitchen	A kitchen where mid-day meal is cooked in the school					IHDS I and II provide information on whether the school has a kitchen for cooking meals U-DISE provides data on whether or not the mid-day meal is cooked on school premises.

4	The ratio of toilets for girls		*Access to adequate and equitable sanitation and hygiene for all, with special attention to the needs of girls and women*	One toilet per 25 female students	One unit for every 40 female students	One toilet for every 40 girls (and one urinal for every 20 girls).	U-DISE provides data on the number of toilet seats constructed and available for boys and girls separately. Data on the number of toilet seats functional for boys and girls is provided. Grade-wise, the number of students enrolled is available for boys and girls separately. (functional toilet data collected includes the following criteria: minimal odour, unbroken seat, regularly cleaned dry, working drainage system, accessible to users, closable door)
5	The ratio of toilets for boys			One toilet plus one urinal (or 50 cm of urinal wall) per 50 boys	One unit for every 40 students		Same as above (Sr. No. 4)

6	Toilet for female teachers/staff			One toilet for female staff			IHDS II provides this information
7	Toilet for male teacher/ staff			One toilet for male staff			IHDS II provides this information
8	Toilet facility for children /staff with disabilities			At least one toilet cubicle should be accessible for staff and children with disabilities, preferably one for females and one for males.		Separate toilets for male and female teachers and staff	U-DISE collects data on the availability of toilets for children with special needs, but data is not available in the public domain There is no data on the availability of separate toilets for teachers and staff
9	Handwashing		Basic handwashing facilities	Provide water and soap (or ash) for handwashing after going to the toilet and before handling food.	Adequate water for handwashing facility with soap allowing groups of 10-12 students to wash their hands simultaneously.	Water and Soap availability for handwashing	U-DISE collects data on handwashing, but data is not available in the public domain

10	MHM facilities			Appropriate facilities should be provided for menstrual hygiene for female teachers and older girls.	Menstrual hygiene management facilities, including soap	Adequate space in the cubicle for girls to change their napkins/cloth and wash themselves. A well-positioned mirror so that girls can check for stains on their clothes.	Data not available from any dataset
11	Space for MHM			Toilets should be safe and secure for use by children	Adequate and private space for changing	safe location to assure privacy/adeq uate privacy wall for changing and cleaning	Data not available from any dataset

12	Functioning toilet			The water inside toilet cubicles for cleaning .private place to wash and dry cloth	Adequate water for cloth washing	Toilet cubicles with a shelf, hooks or niche to keep clothing and menstrual adsorbents dry.	Data on the availability of water inside the toilet for flushing and cleaning is collected by U-DISE, but this data is not available in the public domain till 2015-2016.
13	Disposal of Menstrual waste			Waste baskets to throw away sanitary pads	Disposal facilities for menstrual waste, such as an incinerator and dust bins	Facilities for safe menstrual disposal options and disposal bins are to be inside the cubicle.	Data not available from any dataset

Source: Compiled by the author based on (Adams, Bartram, Chartier, Sims, et al. 2009; GOI 2009; 2014b; 2015; UN 2015b)

Note: SDG 6 targets are specified in italics

In this chapter, we examined and analysed the instruments of the four national databases to identify the indicators that can provide us with data to assess the fulfilment of the infrastructure and WASH requirements set by international and national educational policies and programs. The findings for each database are presented separately in respective chapters. Chapter four is based on the U-DISE and IHDS database related to school infrastructure and WASH facilities in schools.

CHAPTER 4

ASSESSMENT OF SCHOOL INFRASTRUCTURE PRE, AND POST-RTE ACT 2009 IN INDIA:

USING U-DISE AND IHDS DATA

In this chapter, we examine U-DISE and IHDS data to understand the impact of the RTE Act 2009 on school infrastructure and enrolment. We have discussed the provisions of the RTE Act in Chapter 1. This chapter is divided into two Sections. Section 1 contains the assessment of school infrastructure and Enrolment Pre, and Post-RTE Act 2009 using U-DISE data and Section 2 includes an assessment of only school infrastructure using IHDS data. Although the RTE Act 2009 came into force in April 2010, directing all the states to notify and implement the Act (except for Jammu and Kashmir), the date of notification of the Act differed in the various states. Table 4.1. below are details of the date of notification of the Act in multiple states.

Table 4.1: State-wise variations in dates of notification of the RTE Act 2009

STATE CODE	State/UT's	RTE ACT Notification
1	Jammu and Kashmir	*
2	Himachal Pradesh	5th March 2011
3	Punjab	12th October 2011
4	Chandigarh	*
5	Uttarakhand	31st October 2011
6	Haryana	3rd June 2011
7	Delhi	23rd November 2011
8	Rajasthan	29th March 2011
9	Uttar Pradesh	27th July 2011
10	Bihar	6th June 2011
11	Sikkim	11th August 2010

12	Arunachal Pradesh	3rd June 2010
13	Nagaland	21st March 2011
14	Manipur	21st October 2010
15	Mizoram	2011
16	Tripura	2011
17	Meghalaya	1st August 2011
18	Assam	7th July 2011
19	West Bengal	16th March 2012
20	Jharkhand	11th May 2011
21	Odisha	27th September 2010
22	Chhattisgarh	15th November 2010
23	Madhya Pradesh	26th March 2011
24	Gujarat	18th February 2012
25	Daman & Diu	*
26	Dadra & Nagar Haveli	*
27	Maharashtra	11th October 2011
28	Andhra Pradesh	22nd February2011
29	Karnataka	28th April 2012
30	Goa	2nd August 2012
31	Lakshadweep	*
32	Kerala	January 2011
33	Tamil Nadu	12th November 2011
34	Puducherry	*
35	Andaman & Nicobar Islands	*
36	Telangana	June 2017(Amendment)

Source: Compiled by the author

**Denotes UTs where no notification details were available.*

Arunachal Pradesh was first to notify the Act within three months, in June 2010. Goa took over two years, making it the last state to notify and implement the Act in August 2012. We have noticed variations in the dates of notifications of the RTE Act 2009 across India. Few states notified the Act in 2010, some states in 2011 and the remaining in 2012. Details of notification in Union Territories are

not available. Telangana state was formed in 2014 after the implementation of the Act and was part of Andhra Pradesh till then. However, in 2017, the Amendment to the RTE Act for Telangana RTE Act was specified. For our analysis, we have grouped the States/ UTs as indicated in Table 4.2 below:

Table 4.2: Grouping of States

Sr. No.	Name of the States / UTs	Group Name
1.	Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttarakhand and Uttar Pradesh	Empowered Action Group (EAG) States
2.	Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura	Northeastern States
3.	Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Telangana	Southern States
4.	Haryana, Himachal Pradesh, Jammu & Kashmir and Punjab	Northern states except EAG states
5.	West Bengal	Eastern states except EAG states
6.	Goa, Gujarat, and Maharashtra.	Western states
7.	Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Delhi, Lakshadweep and Puducherry.	Union Territories

Source: Compiled by the author
**EAG states are socio-economically backward states.*

We now discuss the assessment of school infrastructure Pre, and Post-RTE Act 2009 using U-DISE data.

SECTION 1

Assessment of School Infrastructure and Enrolment Pre, and Post-RTE Act 2009 in India using U-DISE Data

We calculated state-wide data on various indicators to understand school infrastructure facilities and pre- and post-RTE Act enrolment. We assumed 2010 as the base year to assess the status of schools for the pre-RTE period and the post-RTE period as 2015, five years after the implementation of the RTE Act 2009 in all the states. We present below our analysis and findings.

4.1 SCHOOL PROFILE DETAILS

a. Number of Schools:

The number of schools in India increased by 12% from 13,63,187 in 2010 to 15,22,344 in 2015. In almost all the states, we have seen an increase in the number of schools in 2015 compared to 2010, which can be the result of the implementation of the RTE Act 2009 to ensure the provision of compulsory elementary education to all children between 6 and 14 years (Refer Table 4.3).

Table 4.3: Total number of Schools Pre, and Post-RTE Act 2009 in India

States/UT's	Number of Schools Pre-RTE Act (2010)	Number of Schools Post-RTE Act (2015)	Difference in the number of schools in 2015	Percentage Increase in schools since 2010
EAG States				
Bihar	69393	84236	14843	21
Madhya Pradesh	136912	150762	13850	10
Rajasthan	105646	108428	2782	3
Uttar Pradesh	201523	255967	54444	27
Uttarakhand	22726	24026	1300	6

Jharkhand	44662	48528	3866	9
Odisha	65736	70300	4564	7
Chhattisgarh	51424	53781	2357	5
North East States				
Arunachal Pradesh	4447	4047	-400	-9
Assam	64692	71042	6350	10
Sikkim	1598	1279	-319	-20
Nagaland	2826	2826	0	0
Manipur	3878	4993	1115	29
Mizoram	2909	3825	916	31
Tripura	4385	4844	459	10
Meghalaya	12423	14514	2091	17
Northern States				
Jammu & Kashmir	27101	29092	1991	7
Himachal Pradesh	17446	18039	593	3
Punjab	30899	28988	-1911	-6
Haryana	20879	22315	1436	7
Eastern State				
West Bengal	90203	95736	5533	6
Western States				
Gujarat	40722	52424	11702	29
Maharashtra	97315	107624	10309	11
Goa	1496	1554	58	4
Southern States				
Karnataka	59480	75489	16009	27
Tamil Nadu	55236	57583	2347	4
Kerala	12925	17130	4205	33
Andhra Pradesh	107530	62702	-2196	-2
Telangana	NA	42632		
UTs				
A&N Islands	407	414	7	2
Chandigarh	184	201	17	9
Delhi	5020	5755	735	15
Daman and Diu	110	145	35	32
Dadra and Nagar Haveli	297	347	50	17

Lakshadweep	46	45	-1	-2
Puducherry	711	731	20	3
TOTAL	1363187	1522344	159157	

Source: Compiled by Author based on (NIEPA 2010; 2015b)

However, in a few states, we noticed a decline in the total number of schools in 2015 as compared to 2010, namely in Arunachal Pradesh (-9%), Sikkim (-20%), Punjab (-6%), Lakshadweep (-2%). Due to the division of Andhra Pradesh, some of the schools are now falling under the jurisdiction of Telangana state, but we see between the states a (-2%) decrease in the number of schools in 2015. The highest percentage of increase in schools is noticed in the following states, namely, Kerala (33%), Daman and Diu (32%), Mizoram (31%), Manipur and Gujarat (29%), Uttar Pradesh and Karnataka (27%) and Bihar (21%). All other states show increases below 20%, ranging from 2% to 17%.

b. Schools in Rural and Urban Areas:

There was a difference in the percentage of schools located in rural and urban areas in each state. Most schools are located in rural areas compared to urban areas. However, we noticed that the percentage of schools in rural areas decreased from 2010 to 2015 and increased the percentage in urban areas from 2010 to 2015 (Refer to Table 4.4). In 2010, the highest percentage of schools in rural areas was in Lakshadweep (100%) and Himachal Pradesh (95.52%). On the other hand, the lowest percentage of schools in rural areas were in Chandigarh (17%) and Delhi (24.12%) in 2010. The highest percentage of schools in urban areas was in Delhi (75.88%) in 2010, and the lowest in Himachal Pradesh (4.48%). In 2015, the highest percentage of schools in rural areas was in Himachal Pradesh (95.8%) and the urban area in Delhi (96.04%). This may be due to the closure of schools in rural areas due to low enrolment, parents' decision to enrol their children in private schools located in urban areas and changes in the classification of areas as towns or urban areas based on the 2011 census of India.

c. Education Level Provided by School:

Observing the coding categories in the raw data, we categorised schools into two groups:

a) Schools that provide only elementary education include education up to primary (Grade I to IV/V) level and upper primary (Grade V to VIII) level.

Table 4.4: Urban and Rural Schools 2010 and 2015

	2010		2015	
States	Rural	Urban	Rural	Urban
Bihar	94.46	5.54	90.94	9.06
Madhya Pradesh	86.32	13.68	84.99	15.01
Rajasthan	88.53	11.47	86.3	13.7
Uttar Pradesh	90.78	9.2	88.73	11.27
Uttarakhand	91.38	8.61	90.4	9.59
Jharkhand	93.08	6.92	91.97	8.03
Odisha	92.99	7.01	92.59	7.41
Chhattisgarh	91.04	8.96	89.32	10.68
Arunachal Pradesh	92.5	7.44	89.4	10.6
Assam	95.02	4.98	94.46	5.54
Sikkim	93.12	6.88	92.34	7.66
Nagaland	84.82	15.18	83.3	16.7
Manipur	84.55	15.45	86.14	13.86
Mizoram	70.54	29.39	66.75	33.25
Tripura	93.2	6.8	91.78	8.22
Meghalaya	94.08	5.92	93.04	6.96
Jammu & Kashmir	88.68	11.32	89.31	10.69
Himachal Pradesh	95.52	4.48	95.8	4.2
Punjab	80.09	20	77.49	23
Haryana	84.43	15.57	79.79	20.21
West Bengal	86.92	13.07	86.6	13.4
Gujarat	82.78	17.22	78.3	21.7
Maharashtra	79.88	20.12	77.87	22.13
Goa	80	20	78	22
Karnataka	78.88	21.11	73.87	26.13
Tamil Nadu	76.15	23.85	75.72	24.28
Kerala	85	15	81	19
Andhra Pradesh	81.65	18.35	80.32	19.68
Telangana			73.05	26.95
Andaman and Nicobar Islands	83.54	16.46	85.51	14.49
Chandigarh	17	83	8.46	91.54
Delhi	24.12	75.88	3.96	96.04

Daman and Diu	68.18	31.82	68.28	31.72
Dadra and Nagar Haveli	91.92	8.08	89.34	10.66
Lakshadweep	100		77.78	22.22
Puducherry	52.04	47.96	52.12	47.88

Source: Compiled by Author based on (NIEPA 2010; 2015b)

b) Schools providing elementary to higher secondary level education, including those from Grade I to Grade X or XII, and those providing only education from Grade V/VI to Grade X, IX to X, or only Grade XI to XII.

The analysis shows that higher percentages of schools were catering to elementary schooling from Grade I to Grade VIII in India in 2010. Bihar (99%) had the highest percentage of schools providing only elementary education from Grade I to Grade VIII, and Chandigarh (20%) had the lowest percentage of schools providing only elementary education in 2010. Except for Chandigarh, all the states had more than 50% of schools catering to elementary schooling in 2010. Chandigarh (80%) had the highest percentage of schools providing education from Grade I to Grade XII in 2010 and 2015.

However, in a few states, we noticed the schools providing elementary education, including secondary education, were below (10%) namely in Bihar, Madhya Pradesh (MP), Uttar Pradesh, Jharkhand, Chhattisgarh, Assam, Mizoram, Meghalaya, Gujarat, Karnataka and Dadra and Nagar Haveli in 2010 (Refer Table 4.4). In most states, elementary schools decreased in numbers in 2015 compared to 2010, and secondary schools increased in 2015. It may be due to the gradation of schools to meet the demand for secondary education.

Among EAG states, we noticed Rajasthan (16.66%), Uttarakhand (10.61%), and Odisha (13.04%) had a comparatively higher percentage of secondary schools than Bihar (1%), MP (1.7%), UP (1.42%), Jharkhand (6.85%) and Odisha (1.99%) having a much lower percentage of schools. These could be due to the backwardness of these states and the lack of initiatives in developing infrastructure facilities. The highest percentages of secondary schools were seen in Chandigarh (80%), Puducherry (43.46%), Delhi (37.21%), Haryana (32.6%)

and Arunachal Pradesh (31.11%) in 2010. In 2015, among the EAG states, Bihar, MP, UP, and Jharkhand had 90% of the schools providing only elementary education from Grade I to Grade VIII. Only these four states are seen as having below 10% of the schools delivering secondary education, which could be the reason for high drop-outs at the secondary level due to the lack of secondary educational facilities in these states. The number of secondary schools in all the states, including EAG states, increased in 2015. The reason for this increase could be that some schools were upgraded to provide secondary education as there is a compulsion to provide elementary education and meet the rising demand for secondary education.

Table 4.5: School education level 2010 and 2015

States/UT's	Only Elementary School Education (2010)	Only Elementary School Education (2015)	Schools with Elementary to Higher Secondary Education (2010)	Schools with Elementa ry to Higher Secondary Education (2015)
EAG States				
Bihar	99.05	90.95	0.95	9.04
Madhya Pradesh	98.3	90.11	1.7	9.87
Rajasthan	83.34	74	16.66	26.01
Uttar Pradesh	98.56	90.4	1.42	9.59
Uttarakhand	89.38	85.38	10.61	14.62
Jharkhand	93.14	90.52	6.85	9.48
Odisha	86.96	84.72	13.04	15.28
Chhattisgarh	98	88.32	1.99	11.68
North East States				
Arunachal Pradesh	64.83	89.68	31.11	10.32

Assam	90.06	87.24	9.93	12.76
Sikkim	83.54	82.25	16.46	17.74
Nagaland	83.66	73.95	16.35	26.05
Manipur	79.88	77.78	20.11	22.2
Mizoram	97.84	67.06	2.17	32.94
Tripura	79.16	79.06	20.84	20.93
Meghalaya	96.67	89.28	3.33	10.71
Northern States				
Jammu & Kashmir	87.48	85.56	12.51	14.45
Himachal Pradesh	82.42	79.03	17.58	20.96
Punjab	72.53	68.37	27.46	31.64
Haryana	67.23	65.67	32.6	34.34
Eastern State				
West Bengal	89.35	89.35	10.64	10.64
Western States				
Gujarat	97.73	79.13	2.27	20.88
Maharashtra	78.91	76.75	21.08	23.26
Goa	77.6	68.15	22.25	31.86
Southern States				
Karnataka	94.75	75.98	5.26	24.02
Tamil Nadu	81.18	78.35	18.73	21.65
Kerala	76.38	72.66	23.63	27.34
Andhra Pradesh	81.7	77.95	18.3	22.05
Telangana	NA	68.34	NA	31.65
UTs				
A&N Islands	67.07	72.95	11.3	27.06
Chandigarh	20.11	20.4	79.89	79.61
Delhi	62.8	64.19	37.21	35.81
Daman and Diu	81.82	71.04	18.18	28.98
Dadra and Nagar Haveli	96.63	88.19	3.37	11.82
Lakshadweep	71.74	68.89	28.27	31.11
Puducherry	56.54	49.93	43.46	50.06

Source: Compiled by Author based on (NIEPA 2010; 2015b)

Schools providing higher grade education up to Grade XII were less in 2010, and the percentage of schools increased in 2015. In 2010, only five categories of schools were available for coding the responses, and in 2015, more coding options were added. As the categories overlap, we cannot count the number of schools providing only elementary education and limit the comparability of data at two time periods. We noticed that the number of elementary schools had decreased from 2010 to 2015 in almost all states. Except in the following states, we saw an increase in elementary schools in 2015 as compared to 2010 in Arunachal Pradesh (64.83% to 89.68%), Andaman and Nicobar Islands (67.7% to 72.95%) and Delhi (62.8% to 64.19%). Only in Arunachal Pradesh we saw a decline in the percentage of secondary schools in 2015 compared to 2010, whereas all the other states and UTs showed an increase in secondary schools in 2015 (Refer Table 4.5). Puducherry is the only UT having an equal number of elementary and secondary schools in 2015.

d. School Management:

A high percentage of schools are run and governed by the respective state governments through the Directorate of Education in most states. Almost 20% to 25% of the schools were managed by Tribal/ Social welfare departments in three states: Madhya Pradesh (21.51%), Chhattisgarh (26.78%) and Manipur (22.92%) in 2010. In Rajasthan (36.06%), Maharashtra (68.21%), Gujarat (77%), Tamil Nadu (53.17%), Andhra Pradesh (64.47%) and Delhi (35.74%) of the schools were governed by local bodies and state government-run schools were of meagre percentage in all these states mentioned above in 2010. In 2010, schools managed privately with aid were noticed in Assam (11.04%), Manipur (14.78%), Meghalaya (16.32%), Maharashtra (19.04%), Tamil Nadu (15.27%) and Puducherry (33.19%). Private unaided schools were functional in almost all the states, but the highest percentages of schools were in Delhi (39.7%) and Chandigarh (32.07%) and the lowest in Bihar (0.01%). Central government-run schools were highest in Lakshadweep (4.35%) in 2010. The highest percentage of unrecognised schools was functional in Assam in 2010 and 2015. In a few states,

we noticed Madrasa schools, both recognised and unrecognised, were functional, with a very minimal percentage of schools in 2010. In 2015, the highest percentage of schools were governed by the Department/ Directorate of Education in Lakshadweep (95.56%), tribal or social welfare department in MP (21.36%), Local body in Andhra Pradesh (64.91%), private aided schools in Puducherry (36.66%), and private unaided in Delhi (46.38%). The other category of schools was observed in Mizoram (13.05%).

Assam, Sikkim, Manipur, Punjab, and West Bengal have seen an increase in schools managed by the Department of Education; in other states, the schools operated by the State government showed a decline. Also, private unaided schools increased in 2015 compared to 2010. We noticed that private unaided schools have increased in 2015 compared to 2010. This may affect accessibility, resulting in the cost factor for not enrolling or drop-out.

e. Absence of teachers (male/female):

The highest percentage of schools with no male teacher (98.71%) and no female teacher (99.3%) was found to be in Madhya Pradesh in 2010. However, in 2015, we noticed the highest percentage of schools with no male teachers was in Goa, reporting 49.94% of the schools. On the other hand, 99% of the schools in Tripura had at least one male teacher in 2010 and 2015. Similarly, 99% of the schools in Kerala had at least one female teacher in 2010 and 2015.

f. Type of school:

Usually, there are three types of schools: boys', girls', and co-ed schools with boys and girls. Nagaland had the highest percentage of Co-ed schools, 99.80%, and Delhi had the highest percentage of only boys (19.7%) and only girls (19.04%) schools in 2010. In 2015, all the states and UTs had 90% and above co-ed schools except Delhi (66.15%). The highest percentage of only boys (17.67%) and only girls (16.18%) schools was in Delhi in 2015, which showed a decline in percentage compared to 2010.

g. Conduct of regular medical checkups:

96.63% and 98.85% of the schools in Dadra and Nagar Haveli conducted medical checkups in the schools in 2010 and 2015, respectively, and the lowest percentage of medical checkups were conducted in Assam in only 10% of the schools in 2010, while 22.19% of the schools in Manipur conducted medical checkups in 2015. The data on several medical checkups conducted is collected for previous years during data collection, but this data was not available in the public domain till 2015-2016.

4.2 SCHOOL INFRASTRUCTURE

a. School Building:

Data was available regarding the school building status, whether it is housed in its own building or is run in a rented/private space. The analysis shows that the highest percentage of schools was run in government-owned buildings in most states in both years. Among the states, the highest number of schools run in government-owned buildings are in Tripura (94.09%) in 2010 and (89.04%) in 2015. Chandigarh was the highest among all the states to house 38.04% of the schools in private buildings in 2010, which increased to 41.29% in 2015. In 2010, 12.26% of the schools in Bihar had no buildings, which was reduced to 8.62% in 2015. In Meghalaya, 9.55% of the schools are provided rent-free buildings to carry out educational activities, and 2.36% were under construction in 2015. 4.35% of the schools in Assam in 2015 had school buildings dilapidated. Jammu and Kashmir had the highest percentage of schools, 25.76% located in rented space in 2010 among other states, which decreased in 2015 to 14.73%.

In 2010, 95.13% of the schools in Bihar had no electricity connection, and Lakshadweep had 100% electricity connection in all the schools. Among EAG states, Bihar (4%) and Jharkhand (9.8%) had only limited schools with electricity connections in 2010. Among Northeast states, 43% of the schools in Mizoram had electricity in 2010, but 20.69% were not functional. The availability of electricity is not enough; it should also be functional to benefit the students in accessing the

educational material as electricity connection could also be linked to the availability of computers for pedagogical purposes. We noticed an improvement in the provision of electricity facilities in the schools in 2015. In Bihar, 35.27% of the schools received an electricity connection; in Jharkhand, 16.15% of the schools received electricity by 2015. More than 80% of the schools in Jharkhand are without electricity connection even though access to electricity in schools is necessary concerning SDG 4. In UP, 41.93% of the schools had access to electricity, but 12.33 % were not functional in 2015. The following UTs reported 100% provision of electricity in all the schools: Chandigarh, Daman and Diu, Lakshadweep and Puducherry. Punjab, Gujarat, Goa, Tamil Nadu, UTs Delhi, and Dadra and Nagar Haveli had shown 99 % coverage of electricity facilities in their jurisdiction in 2015. There are few states where the electricity provision in schools is below 50% of the total schools.

b. Boundary Wall:

The boundary wall is essential in terms of the safety of the children. The highest percentage of schools with pucca boundary walls was available in 99% of the schools in Chandigarh in 2010 and 2015. Pucca, but broken boundary walls were noticed in 12.05% of the schools in Chhattisgarh, whereas in 2015, it was reduced to 8.05%. The highest percentage of pucca but broken walls was seen in Uttarakhand (21.29%) schools, which improved in 2015 to 18.9%. The boundary walls with barbed wire fencing were seen in Mizoram (28.19%) schools in 2010, which was reduced to 4.44% in 2015. The highest percentage of schools with barbed wire fencing as a boundary wall was found in Nagaland (34.54%) 2015. In 2010, the highest percentage of schools with hedges as boundary walls was noticed in Manipur (6.34%), which reduced in 2015 to 5.89%. In 2015, a high percentage of schools with hedges was found in Odisha (14.06%). In 2010, the highest percentage of schools with no boundary walls was found in Meghalaya (81.13%), which decreased to 77.82% in 2015, showing some improvement. In 2015, we found the highest percentage of schools with no boundary wall in Tripura (79.42%). In Chhattisgarh, the schools with other types of boundary walls

were seen as 30.26%, and in 2015, we found 13.58% of the schools were reported as others. Also, a Partial boundary wall was available in Meghalaya (10.38%) in 2010; in 2015, it was highest in Uttarakhand (13.39%). Lastly, Lakshadweep reported that 15.22% of the schools were under construction in 2010; in 2015, it was 5.48% in Dadra and Nagar Haveli.

c. Availability of Drinking Water Facility:

As per the WASH and SBSV guidelines, schools should have basic drinking water facilities that provide water during school hours. As per the code list available, the drinking water sources are hand pumps, wells, tap water, others and none. The highest percentage of hand pumps was in Uttar Pradesh (94.45%) in 2010 and 94.23% in 2015. The number of schools having access to well water was highest in Lakshadweep (41.3%) in 2010, which increased to 53.33% in 2015. The highest percentage of schools in Delhi had tap water as a source of drinking water at 94.96%, and the lowest in Bihar at 0.68% in 2010. Chandigarh ranked first in providing tap water (100%) as the source of drinking water in all schools, followed by Delhi (97.41%). Other types of drinking water were highest in Manipur, 59.54% in 2010, which increased to 67.39% in 2015. The type of water source included in others is not known. The highest percentage of schools with no water source specified was in Meghalaya at 41.44% of the schools in 2010, which reduced to 36.19% in 2015. There was a coding error in 2010 for the source of drinking water outside of the code list, which may also be a data entry error. There is no provision to verify the same during the analysis. The data on the functionality of drinking water facilities was collected till 2015 – 16, but the data was not available in the public domain. Besides, running water should be available for hand washing and cleaning in schools. The data on the quantity of water available in schools is not available.

d. Facilities for Children with Special Needs:

The highest percentage of schools with access to ramps for children with special needs was in Gujarat at 80.67% in 2010, which declined to 78.98% in 2015. The

lowest percentage of schools with ramps was in Arunachal Pradesh, with 3.67% in 2010. In 2015, Maharashtra ranked first (84%) for having schools with ramp facilities. In 2015, Sikkim had the lowest percentage of schools, with a minimum number of schools (13.6%) with ramp facilities. Whether the hand railing is available for the ramps data is collected but was not available in the public domain until 2015-2016. Besides, the schools provide disabled-friendly toilet facilities; the data is collected but unavailable in the public domain until 2015-16.

e. Playground Facilities:

95% of the schools in Chandigarh had a playground; the lowest percentage was noticed in Lakshadweep, 26% in 2010. In 2015, Punjab had the highest percentage of schools with playgrounds, accounting for 96.78%, whereas only 30.91% of the schools in Odisha have playgrounds. The playground is an important indicator of the overall development of children. For schools with no playground facility, the data is collected on whether the land is available for developing playgrounds, but this data was not available in the public domain till 2015 – 2016.

f. Gender-specific toilet facility:

As per international and national commitments, every school should have separate toilets for boys and girls. In 2010, Delhi had the highest percentage of boys (98.24%) and girls (99.93%) toilets in the schools. Bihar had the lowest percentage of girls' toilets (23.1%) and boys' toilets (37.46%). In UP, it was observed that there was an absence of boys' toilets in 2010. However, it may be a reporting error or data entry error. In 2015, the lowest percentage of girls' toilets was in Bihar, which increased to 46.27% compared to 2010, and boys' toilets in Bihar increased to 89.98%. However, the increase in boys' toilets is comparatively higher than in girls' toilets from 2010 to 2015. The percentage of toilets for boys was more than for girls during the pre, and post-RTE period, showing a disadvantage for girls' schooling in Bihar.

g. Functionality of gender-specific toilets:

The lowest percentage of functional toilets was in Bihar (8.56%), and the lowest number of functional boys' toilets was in Jammu and Kashmir (13.99%) in 2010. Regarding the percentage of functioning toilets, Bihar had the lowest number of functional toilets for boys (24.07%) and girls (12.25%) in 2015. Though the number of toilets has increased, their functionality is very low. Except for Bihar, all other states and UTs are showing improvement in the availability of gender-specific toilets and functionality of toilets, which did not ensure water inside the toilet until 2015-2016. Also, data on water inside the toilet was collected for cleaning and flushing, but this data was not available in the public domain until 2015-2016.

h. Availability of computers:

We found that the highest percentage of schools in following states namely Kerala, Chandigarh, Lakshadweep and Puducherry had availability of computers in 2010. And 98.79% of the schools reported of having no computers in 2010. In 2015 all schools in Lakshadweep had access to computers followed by Puducherry. The schools having no computers reduced to certain extent showing improvement in access to at least minimum one to two computers in the schools (Refer Table 4.6).

i. Availability of computer aided lab for pedagogical purposes:

Chandigarh (76.63%) schools were well equipped with computers for pedagogical purposes 2010. In Tripura, 97.26% of the schools had no access to computers in 2010; the highest percentage of schools with non-functional computers was found in Uttarakhand (3.22%). In Uttar Pradesh, all the schools lacked computer facilities. In 2015, Chandigarh showed an increase in the percentage of computers, 81.59%, as compared to 2010, still holding the topmost rank, and Andhra Pradesh reported only 3.04% of the schools having computer facilities which is the lowest among all the states and UTs. In Lakshadweep, 8.89% of the

computers were not functional from the total computers 71.11% available in 2015(Refer Table 4.7).

Data on whether internet connectivity is available in the schools is unavailable in the public domain until 2015-2016. This data is essential to monitor the SDG 4 target on the availability of computers and the use of computers for education with internet connectivity.

j. School head teacher and separate room for head teacher:

Andhra Pradesh ranked highest for not having head teachers in schools, accounting for 99.99% of the schools in 2010, and Delhi had the lowest number of schools with only 10.88% with no head teacher. Delhi also has shown the lowest percentage of schools, 12.75%, with no separate room for head teachers. Uttar Pradesh showed that no single school had a separate room for a head teacher in 2010. In 2015, Arunachal Pradesh had the highest percentage of schools with no dedicated head teachers, 94.64% of the schools. Chandigarh showed that 99.5% of the schools had no dedicated room for head teachers.

k. Library facility:

In Uttarakhand, no single school had a library facility in 2010; in Delhi, 97.09% of the schools reported having a library facility in the schools in 2010. In 2015, the highest percentage, 99.86%, of the schools providing access to library facilities was in Puducherry, and the lowest percentage of schools with library facilities available to students was in Meghalaya (12%).

l. Approach-road and access in all weathers:

Schools in Karnataka had (100%) access through approach-road in 2010. In Lakshadweep, only 6.52% of the schools had approach roads accessible in all weathers in 2010, which has improved significantly to 80% of the schools having accessible approach roads in 2015. However, 54% of the schools could be accessed in all weather conditions in 2015.

Table 4.6: Availability of Computers in schools

	2010		2015			2010		2015	
States	Yes	No	Yes	No	States	Yes	No	Yes	No
Bihar	1.21	98.79	9.37	90.63	Punjab	47.13	52.87	52.83	47.17
Madhya Pradesh	10.13	89.87	15.17	84.83	Haryana	32.93	67.07	46.93	53.07
Rajasthan	21.83	78.17	30.11	69.89	West Bengal	8.73	91.27	12.67	87.33
Uttar Pradesh	5.45	94.55	13.31	86.69	Gujarat	45.39	54.61	75.50	25
Uttarakhand	23.15	77	33.54	66.46	Maharashtra	40.77	59	59.65	40
Jharkhand	7.14	93	10.28	90	Goa	31.89	68.11	44.72	55.28
Odisha	8.47	92	15.03	85	Karnataka	24.37	76	39.53	60
Chhattisgarh	6.04	94	12.70	87	Tamil Nadu	47.43	53	57.62	42
Arunachal Pradesh	15.56	84.44	24.36	75.64	Kerala	93.01	6.99	94.50	5.5
Assam	5.13	94.87	10.76	89.24	Andhra Pradesh	25.57	74.43	30.59	69.41
Sikkim	41.93	58.07	60.36	39.64	Telangana			35.51	64
Nagaland	33.12	66.88	40.13	59.87	A&N Islands	60.69	39.31	57.00	43
Manipur	18.18	81.82	27.16	72.84	Chandigarh	93.48	6.52	94.53	5.47
Mizoram	23.03	76.97	32.81	67.19	Delhi	83.17	16.83	83.89	16.11
Tripura	11.65	88	15.65	84.35	Daman and Diu	55.45	44.55	64.14	35.86
Meghalya	7.09	92.91	11.74	88.26	Dadra and Nagar Haveli	11.78	88.22	42.65	57
Jammu & Kashmir	14.68	85.32	18.32	82	Lakshadweep	95.65	4.35	100.00	0
Himachal Pradesh	16.55	83.45	26.00	74.00	Puducherry	90.72	9.28	98.77	1.23

Source: Author's calculation based on(NIEPA 2010; 2015b)

Table 4.7: Status on Availability of Computer lab for learning

	2010				2015			
States	Yes	No	Yes , but not functional	No code	Yes	No	Yes , but not functional	No code
Bihar	2.04	96	0.11	2.1	7.41	91.14	1.17	0.28
Madhya Pradesh	4.57	93	2.36		8.76	90.37	0.83	
Rajasthan	6.22	93.44	0.27		7.17	92.81	0.02	
Uttar Pradesh				100	10.96	88.91	0.13	
Uttarakhand	13.69	82.97	3.22		19.13	77.53	3.13	
Jharkhand	5.19	94.31	0.44		7	92	1	
Odisha	3.94	94.55	0.56		5.27	94.43	0	
Chhattisgarh	6.25	91.89	1		7	92	0	
Arunachal Pradesh	5.76	93.37	0.85	0.02	8.13	89.62	1.95	0.3
Assam	2.7	97.2	0.1		5.02	94.65	0.34	
Sikkim	12.33	83.04	1.63		18.45	79.98	0.7	
Nagaland	16.45	81.46	2.09		21.97	77.03	0.85	
Manipur	6.86	92.06	1.08		14	84.88	0.62	
Mizoram	5.74	92.4	0.93		10	88.65	1.25	
Tripura	2.17	97.26	1		3	96.57	0	
Meghalaya	3	97	0.58		6	94.05	0.26	
Jammu & Kashmir	6	93.76	1		7	92.34	0	
Himachal Pradesh	6	93.85	0		11	88.68	0	
Punjab	15	84	0		37	63.02	0	
Haryana	16	68.5	1		24	75.6	0	
West Bengal	3	94.75	1		5	94.13	0	
Gujarat	19	79.31	1		52	46	2	
Maharashtra	7	93	0.34		6	94	0.05	
Goa	25.07	73.33	0.4	1.2	34.17	65.64	0.19	
Karnataka	16	83	1		18	81	1	
Tamil Nadu	17	83	0		26	74	0	
Kerala	47	49	3	1	56	43	1	0.04
Andhra Pradesh	9.86	89.85	0.12	0.17	3.04	96.96		
Telangana	No observations				4	96		
A&N Islands	19	54	0.98	26	14.25	85.27	0.48	

Chandigarh	76.63	21.2	1.63	0.54	81.59	17.91	0.5	
Delhi	48.67	45	6	0.2	41.13	58.87		
Daman and Diu	36.36	59.09	1.82	2.73	40.69	58.62		0.69
Dadra and Nagar Haveli	5.05	94.95			17.58	81.84	0.58	
Lakshadweep	45.65	43.48	6.52	4.35	71.11	20	8.89	
Puducherry	50.21	47.68	1.97	0.14	74.56	24.62	0.82	

Source: Author's calculation based on(NIEPA 2010; 2015b)

4.3 SCHOOL ENROLMENT PRE, AND POST-RTE PERIOD

a. Enrolment of girls:

The gender enrolment ratio in schools from Grade I to Grade VIII was calculated state-wise.

Equation 2: Grade-wise estimation of Gender Ratio

$$\text{Gender Ratio} = \frac{\text{Total number of girls enrolled in the X grade}}{\text{Total number of boys enrolled in the X grade}}$$

The gender ratio for each state is calculated to understand the drop-out rate occurring at each grade in school. For each state, we calculated the gender ratio from Grade I to Grade VIII for the years 2005, 2010 and 2015

b. Gender Enrolment Ratio in EAG states:

The gender enrolment ratio in 2005 in Bihar was below one from Grade I to Grade VIII, which improved to one and above in 2010 and 2015. In Rajasthan, the gender ratio in Grades VI to VIII was below one in 2010, which improved to 1 in 2015. In all the EAG states, the Gender ratio was one, which is a good indicator. The Ratio improved in 2010 and 2015, indicating that boys dropped out in 2010, making it equal. Children enrolled in Grade I in 2005 would be in Grade VI in 2010, as the Ratio equals 1. It shows that either boys have dropped out or failed in Grades II to V over the years, making the Ratio equal to one (Refer to Table 4.8).

c. Gender Enrolment Ratio among Eastern and Northern states:

The gender enrolment ratio in northeast states also shows improvement, except in Arunachal Pradesh, where the gender enrolment ratio in Grades VII and VIII was below one in 2015 (Refer Table 4.9).

Among Northern states, Haryana and Punjab showed a gender enrolment ratio below one in 2005, 2010, and 2015 in Grades VI, VII, and VIII. The gender ratio from Grade I to Grade V improved from below one in 2010 to one and above in 2015. The improvement in the gender ratio in lower Grades shows the improvement in enrolment in 2010 and 2015. This improvement could be due to the implementation the RTE Act 2009, which ensures compulsory and free education for children between 6 and 14 years (Table 4.10). In West Bengal, we notice that in Grade V, the enrolment ratio was below one in 2015.

d. Gender Enrolment Ratio among Southern and Western States

Among the Southern states, Kerala showed low girls' enrolment compared to other states from Grade V to Grade VIII in 2005, 2010 and 2015. Among the western states in Goa and Gujarat, we noticed a low gender ratio from Grade V to Grade VIII in 2005 and 2010 and Grade VI to Grade VIII in 2015 (Table 4.11).

e. Gender Enrolment Ratio among Union Territories

Among Union Territories, Chandigarh and Delhi have gender enrolment ratios below one from Grade 1 to Grade VIII in 2005, 2010, and 2015. In 2005, the gender enrolment ratio was below one in secondary schools except in Delhi and Puducherry. In 2010, the gender ratio in secondary schools was below one in almost all the UTs except the Andaman and Nicobar Islands, where the gender ratio till Grade VIII was equal to one (Refer to Table 4.12).

Table 4.8: Gender Enrolment Ratio in Empowered Action Group States

Year	Bihar	Chhattisgarh	Jharkhand	Madhya Pradesh	Orissa	Rajasthan	Uttar Pradesh	Uttarakhand
2005								
Grade1_GR	0.93	1.15	1.08	1.15	1.11	1.08	1.01	1.23
Grade2_GR	0.93	1.18	1.11	1.16	1.14	1.13	1.04	1.28
Grade3_GR	0.91	1.13	1.08	1.14	1.14	1.15	1.07	1.31
Grade4_GR	0.90	1.12	1.01	1.15	1.13	1.17	1.10	1.34
Grade5_GR	0.86	1.11	0.97	1.10	1.10	1.06	1.11	1.30
Grade6_GR	0.76	0.91	0.90	0.90	0.94	0.75	0.99	1.10
Grade7_GR	0.79	0.91	0.90	0.86	0.92	0.69	1.00	1.12
Grade8_GR	0.78	0.85	0.95	0.78	*	0.62	0.97	1.08
2010								
Grade1_GR	1.04	1.16	1.13	1.11	1.15	1.10	1.17	1.17
Grade2_GR	1.06	1.18	1.17	1.17	1.17	1.16	1.15	1.21
Grade3_GR	1.07	1.16	1.19	1.24	1.17	1.18	1.19	1.20

Grade4_GR	1.06	1.18	1.21	1.24	1.20	1.18	1.24	1.24
Grade5_GR	1.03	1.18	1.21	1.28	1.18	1.18	1.30	1.24
Grade6_GR	1.02	1.07	1.10	1.11	1.10	0.98	1.32	1.17
Grade7_GR	1.05	1.05	1.11	1.09	1.05	0.94	1.28	1.16
Grade8_GR	1.06	1.03	1.08	1.06	1.04	0.90	1.28	1.18
2015								
Grade1_GR	1.06	1.20	1.18	1.16	1.20	1.12	1.14	1.10
Grade2_GR	1.10	1.19	1.20	1.17	1.21	1.15	1.14	1.12
Grade3_GR	1.08	1.20	1.23	1.17	1.20	1.17	1.14	1.14
Grade4_GR	1.09	1.20	1.23	1.15	1.18	1.17	1.18	1.15
Grade5_GR	1.11	1.19	1.24	1.13	1.17	1.16	1.22	1.17
Grade6_GR	1.09	1.08	1.14	1.03	1.11	1.03	1.19	1.10
Grade7_GR	1.11	1.09	1.15	1.05	1.11	1.01	1.21	1.10
Grade8_GR	1.14	1.07	1.19	1.09	1.06	1.00	1.24	1.12

Source: Author's calculation based on (NIEPA 2005; 2010; 2015b) *Note: GR denotes Gender Ratio and * no data available*

Table 4.9: Gender Enrolment Ratio in the Northeast States

Year	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
2005								
Grade1_GR	1.05	1.15	1.13	1.13	1.07	1.03	1.09	1.03
Grade2_GR	1.11	1.18	1.21	1.18	1.06	1.06	1.11	1.05
Grade3_GR	1.12	1.19	1.16	1.23	1.08	1.07	1.14	0.99
Grade4_GR	1.07	1.17	1.17	1.22	1.11	1.07	1.21	1.09
Grade5_GR	1.04	0.98	1.11	1.22	1.05	1.04	1.23	1.10
Grade6_GR	1.02	1.00	1.12	1.23	1.04	1.05	1.30	0.96
Grade7_GR	1.02	1.04	1.09	1.27	1.01	1.04	1.22	1.05
Grade8_GR	0.99	0.00	1.04	*	*	1.11	1.43	1.01
2010								
Grade1_GR	1.08	1.13	1.09	1.14	1.02	1.07	1.06	1.15
Grade2_GR	1.12	1.17	1.14	1.20	1.06	1.06	1.16	1.16
Grade3_GR	1.17	1.19	1.17	1.22	1.05	1.10	1.12	1.15

Grade4_GR	1.15	1.19	1.19	1.26	1.08	1.10	1.08	1.11
Grade5_GR	1.12	1.02	1.17	1.28	1.04	1.10	1.20	1.17
Grade6_GR	1.04	1.03	1.11	1.32	1.04	1.06	1.25	1.05
Grade7_GR	1.02	1.05	1.13	1.32	1.07	1.06	1.34	1.07
Grade8_GR	0.98	1.02	1.15	1.36	1.05	1.07	1.33	1.06
2015								
Grade1_GR	1.10	1.17	1.11	1.11	1.06	1.07	1.12	1.18
Grade2_GR	1.15	1.20	1.14	1.12	1.11	1.10	1.05	1.16
Grade3_GR	1.16	1.21	1.14	1.16	1.10	1.12	1.17	1.17
Grade4_GR	1.12	1.22	1.14	1.20	1.08	1.12	1.09	1.18
Grade5_GR	1.14	1.22	1.16	1.20	1.09	1.09	1.19	1.20
Grade6_GR	1.03	1.08	1.11	1.27	1.07	1.10	1.10	1.11
Grade7_GR	0.97	1.12	1.16	1.29	1.05	1.14	1.11	1.09
Grade8_GR	0.97	1.15	1.13	1.27	1.06	1.10	1.14	1.10

Source: Author's calculation based on (NIEPA 2005; 2010; 2015b)

*Note: GR indicates Gender Ratio, and * indicates no data available*

Table 4.10: Gender Enrolment Ratio in the Northern States

	Northern States				Eastern State
Year	Haryana	Himachal Pradesh	Jammu & Kashmir	Punjab	West Bengal
2005					
Grade1_GR	1.01	1.13	1.10	0.98	1.06
Grade2_GR	1.07	1.14	1.11	0.97	1.12
Grade3_GR	1.08	1.16	1.12	1.01	1.14
Grade4_GR	1.17	1.14	1.07	1.05	1.14
Grade5_GR	1.23	1.15	1.08	1.09	1.01
Grade6_GR	0.93	0.99	1.03	0.85	0.98
Grade7_GR	0.91	1.01	1.07	0.91	1.01
Grade8_GR	0.95	1.01	1.04	0.94	1.03
2010					
Grade1_GR	0.97	1.16	1.15	0.97	1.07
Grade2_GR	0.99	1.16	1.15	0.99	1.13
Grade3_GR	1.01	1.17	1.13	0.98	1.15
Grade4_GR	1.01	1.16	1.16	0.96	1.15
Grade5_GR	1.01	1.12	1.17	0.97	1.02
Grade6_GR	0.86	1.04	1.14	0.81	1.05
Grade7_GR	0.85	1.03	1.11	0.86	1.08
Grade8_GR	0.88	1.01	1.06	0.85	1.13
2015					
Grade1_GR	1.02	1.14	1.15	1.05	1.14
Grade2_GR	1.02	1.16	1.12	1.04	1.14
Grade3_GR	1.04	1.13	1.15	1.03	1.10
Grade4_GR	1.03	1.12	1.16	1.03	1.14

Grade5_GR	1.03	1.14	1.14	1.00	0.99
Grade6_GR	0.88	1.12	1.18	0.90	1.00
Grade7_GR	0.89	1.11	1.18	0.88	1.06
Grade8_GR	0.88	1.09	1.17	0.85	1.12

Source: Author's calculation based on (NIEPA 2005; 2010; 2015b)

Note: GR indicates the Gender Ratio

Table 4.11: Gender Enrolment Ratio in Southern and Western States

	Southern States					Western St ates		
Year	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	Telangana	Goa	Gujarat	Maharashtra
2005								
Grade1_GR	1.20	1.20	1.08	1.11	*	1.13	1.01	1.07
Grade2_GR	1.25	1.19	1.06	1.11		1.13	1.02	1.08
Grade3_GR	1.25	1.18	1.06	1.11		1.11	1.03	1.10
Grade4_GR	1.26	1.20	1.05	1.09		1.07	1.05	1.14
Grade5_GR	1.25	1.19	0.97	1.10		0.89	0.98	1.01
Grade6_GR	1.03	1.10	0.97	0.94		0.91	0.92	1.02
Grade7_GR	1.03	1.11	0.96	0.96		0.96	0.88	1.05
Grade8_GR	0.91	1.13	0.82	0.97		0.91	0.51	0.88
2010								
Grade1_GR	1.21	1.15	1.10	1.19	*	1.12	1.00	1.10
Grade2_GR	1.27	1.15	1.10	1.19		1.12	1.02	1.10

Grade3_GR	1.28	1.16	1.08	1.18		1.14	1.01	1.10
Grade4_GR	1.29	1.16	1.07	1.16		1.21	1.02	1.09
Grade5_GR	1.28	1.16	0.99	1.14		0.94	0.99	1.03
Grade6_GR	1.14	1.14	0.97	1.00		1.00	0.99	1.04
Grade7_GR	1.12	1.12	0.96	0.99		0.99	0.97	1.04
Grade8_GR	1.04	1.11	0.90	0.99		0.93	0.96	0.92
2015								
Grade1_GR	1.23	1.20	1.09	1.17	1.18	1.06	1.06	1.09
Grade2_GR	1.23	1.21	1.09	1.16	1.22	1.08	1.07	1.12
Grade3_GR	1.25	1.21	1.09	1.19	1.24	1.10	1.07	1.12
Grade4_GR	1.26	1.22	1.09	1.15	1.23	1.10	1.07	1.12
Grade5_GR	1.24	1.15	0.99	1.15	1.24	1.02	1.03	1.10
Grade6_GR	1.07	1.14	0.97	1.03	1.10	0.98	0.97	1.08
Grade7_GR	1.08	1.14	0.98	1.03	1.12	0.98	0.96	1.08
Grade8_GR	1.09	1.04	0.93	1.00	1.11	0.97	0.94	1.01

Source: Author's calculation based on (NIEPA 2005; 2010; 2015b)

*Note: * denotes no data available for 2005 and 2010, and GR indicates the Gender Ratio*

Table 4.12: Gender enrolment ratio among Union Territories

Year	Andaman and Nicobar Islands	Chandigarh	Dadra & Nagar Haveli	Daman & Diu	Delhi	Lakshadweep	Puducherry
2005							
Grade1_GR	1.21	0.81	1.16	0.94	0.84	1.20	1.15
Grade2_GR	1.18	0.77	1.08	1.00	0.99	0.91	1.05
Grade3_GR	1.10	0.78	0.99	1.10	0.90	0.94	1.12
Grade4_GR	1.09	0.81	0.89	1.01	0.89	0.84	1.10
Grade5_GR	1.09	0.79	0.88	0.81	0.87	0.92	0.98
Grade6_GR	1.07	0.78	0.66	0.89	1.39	0.71	0.90
Grade7_GR	0.97	0.77	0.75	0.88	1.08	0.65	1.18
Grade8_GR	0.91	0.86		0.74	1.04	0.86	1.01
2010							
Grade1_GR	1.09	0.89	1.19	1.02	0.78	1.03	1.15
Grade2_GR	1.18	0.89	1.11	1.07	0.80	0.93	1.13

Grade3_GR	1.13	0.80	1.15	1.17	0.82	1.09	1.14
Grade4_GR	1.13	0.80	1.04	1.06	0.74	1.10	1.07
Grade5_GR	1.08	0.81	0.98	1.01	0.74	1.23	1.09
Grade6_GR	1.01	0.75	0.98	0.82	0.91	1.09	0.98
Grade7_GR	1.05	0.72	0.86	0.99	1.07	3.47	0.91
Grade8_GR	1.04	0.75	0.83	1.00	0.99	0.91	0.96
2015							
Grade1_GR	1.11	0.88	1.17	1.27	0.86	0.92	1.13
Grade2_GR	1.23	0.90	1.33	1.16	0.82	1.09	1.11
Grade3_GR	1.17	0.91	1.22	1.08	0.83	1.37	1.08
Grade4_GR	1.15	0.83	0.97	1.07	0.79	1.12	1.11
Grade5_GR	1.02	0.83	1.19	0.90	0.78	1.09	1.13
Grade6_GR	1.13	0.81	1.02	1.03	0.73	0.89	0.97
Grade7_GR	1.08	0.80	0.96	0.89	0.70	1.01	1.01
Grade8_GR	1.10	0.78	0.96	0.91	0.89	1.11	1.01

Source: Author's calculation based on (NIEPA 2005; 2010; 2015b)

4.4 ASSESSMENT OF WASH COMPLIANCE

The databases are also examined to check the availability of data on WASH compliance given by

1) WHO WASH Guidelines,
2) RTE Act 2009,
3) SBSV, and
4) MHM Guidelines.

4.4.1 An Assessment of Compliance with World Health Organisation (WHO) Water, Sanitation and Hygiene (WASH) Standards

The WHO WASH standards on the number of toilets for girls and boys are discussed in Chapter 1. The guidelines specify the Ratio for girls and boys separately. The girls' ratio is 1:25 (one toilet for every 25 female students) and 1: 50 for boys (one toilet for every 50 boys). We attempted to calculate the Ratio for the number of toilets for every 25 girls and 50 boys state-wise for schools (See Equation 3 & 4).

Equation 3: Girls ratio for number of toilets

$$\text{Toilet Ratio for Girls} = \frac{\text{Total number of girls enrolled upto VIII grade}}{\text{Total number of functional girls toilets in school}}$$

Equation 4: Boys ratio for number of toilets

$$\text{Toilet Ratio for Boys} = \frac{\text{Total number of boys enrolled upto VIII grade}}{\text{Total number of functional boys toilets in school}}$$

Similarly we calculated boys ratio for number of functional toilets. Then, we created a new variable compliance; if one or more toilets were available for every 25 girls in school, the code was assigned equal to 1 and 0 if less than one toilet was available for every 25 girls. The percentage of schools complying with the girls and boys ratio as per WHO WASH standards is presented below (Refer to

Table 4.13). Further, we carried out a significant test concerning compliance between girls and boys and found that boys' compliance was better than girls'. As for boys, the number of boys using one toilet was higher (1:50), which is double that of the girls using one toilet (1:25).

The p-value showed a significant change in compliance compared to 2010 in 2015, which can be attributed to the change in number of toilets available in schools. (Refer to Table 4.14).

The toilet compliance has been calculated for girls and boys up to Grade VIII separately for rural and urban areas in co-ed schools. The compliance with WHO WASH standards and SBSV was calculated separately.

4.4.2 An Assessment of Compliance with RTE Act 2009

The RTE Act 2009 mandates all schools to have separate toilets for boys and girls, safe and adequate drinking water facilities for all children, and a kitchen where a mid-day meal is cooked. Firstly, we checked the percentage of separate toilets available separately for each state of India, which is calculated and presented below. We assessed the schools having separate toilets for boys and girls using U-DISE data. However, the RTE Act 2009 does not ensure the toilets are functional. We have tried to assess whether the toilets were available and valuable in Co-ed schools using U-DISE data (Refer to Table 4.15).

Regarding drinking water facilities, whether the drinking water is safe and adequate relies on the source of drinking water. The data regarding the source of drinking water is available, but the data on whether an adequate amount of drinking water is available or not and whether it is safe to drink or not is not available in the public domain. If food needs to be prepared on the school premises, then the school must have cooking space and will need to check the water availability for cooking and cleaning, too.

Table 4.13: Percentage of schools having WHO compliance for Girls and Boys in co-ed schools

	WHO Compliance Girls				WHO Compliance boys			
Ratio	Rural 1: 25		Urban 1:25		Rural 1: 50		Urban 1: 50	
Year	2010	2015	2010	2015	2010	2015	2010	2015
A & N Islands	36.18	70.06	21.21	45.76	46.76	90.96	37.88	83.05
Andhra Pradesh	8.61	61.82	8.41	49.71	5.83	79.36	8.29	68.74
Arunachal Pradesh	7.85	59.05	11.93	36.67	9.35	75.5	19.88	55.48
Assam	10.54	38.63	11.23	34.61	11.48	53.85	9.11	48.27
Bihar	0.64	7.73	0.75	20.81	1.43	17.53	1.72	32.6
Chandigarh	6.45	6.25	47.65	58.01	9.68	31.25	58.39	73.48
Chhattisgarh	7.07	47.82	6.3	33.86	13.06	68.71	10.17	55.06
D & N Haveli	15.81	58.25	20.83	54.05	30.51	83.5	41.67	72.97

Daman & Diu	15.07	43.16	25.81	56.41	43.84	67.37	32.26	74.36
Delhi	35.02	65.49	35.21	40.02	51	72.99	50.5	57.5
Goa	41.17	76.21	21.07	52.5	46.28	86.39	38	70.27
Gujarat	15.03	43.32	15.61	46.36	17.32	59.98	23.25	58.65
Haryana	26	51.61	17.56	35.25	38.47	72.68	29.04	54.27
Himachal Pradesh	36.66	84.93	29.79	57.85	41.08	94.06	40.99	76.16
Jammu & Kashmir	5.73	63.53	13.3	48.26	6.81	78.6	17.46	67.41
Jharkhand	10.81	34.11	10	26.21	24.24	61.06	18.08	48.62
Karnataka	30.84	60.24	21.18	50.79	37.57	76.96	33.6	68.09
Kerala	25.17	55.53	29.59	57.84	32.88	69.57	36.74	71.63
Lakshadweep	13.04	45.71	No observations	60	30.43	71.43	No observations	90
Madhya Pradesh	7.87	46.12	13.11	37.22	12.66	71.28	20.04	57.62
Maharashtra	27.67	54.79	20.51	41.74	38.53	72.04	31.36	57.99
Manipur	2.82	50.88	6.26	39.04	6.92	69.27	15.13	63.36

Meghalaya	9.67	51.91	12.81	42.36	13.05	68.86	21.58	63.96
Mizoram	21.26	61.05	27.14	62.09	18.19	77.98	33.02	76.86
Nagaland	11.85	40.37	9.13	23.88	15.78	62.22	19.44	44.78
Odisha	5.91	45.02	4.14	31.97	7.78	64.74	4.21	52.02
Puducherry	48.14	76.45	51.53	79.74	71.92	92.52	71.19	92.48
Punjab	36.76	56.82	25.26	36.26	38.03	76.16	37.58	56.65
Rajasthan	30.68	40.73	23.53	41.55	33.62	62.34	34.93	62.73
Sikkim	36.57	63.18	33.33	51.11	30.24	80.91	29.29	72.22
Tamil Nadu	20.52	56.16	30.66	54.02	30.02	80.37	47.02	76.72
Telengana	No data	56.95	No data	41.38	no data	78.97	no data	63.5
Tripura	6.2	38.2	3.55	21.43	5.69	57.4	6.03	37.83
Uttar Pradesh	8.51	21.61	6.65	21.59	20.97	51.81	11.11	40.71
Uttarakhand	23.98	67.21	19.7	40.58	27.32	79.56	27.65	60.99
West Bengal	7.59	38.92	15.97	44.93	11.65	66.49	12.96	63.09

Source: Compiled by Author based on (NIEPA 2010; 2015b)

Table 4.14: Gender-wise comparison of WHO compliance using t-test of significance

	Rural								Urban							
	2010				2015				2010				2015			
	Mean		t-value	p-value	Mean		t-value	p-value	Mean		t-value	p-value	Mean		t-value	p-value
State	Boys	Girls			Boys	Girls			Boys	Girls			Boys	Girls		
Andaman & Nicobar	0.47	0.43	-1.51	0.13	0.91	0.72	-8.92	0.00	0.37	0.37	0.00	1.00	0.82	0.50	-4.87	0.00
Andhra Pradesh	0.06	0.25	125.17	0.00	0.78	0.64	-67.25	0.00	0.08	0.19	37.38	0.00	0.67	0.51	-38.33	0.00
Arunachal Pradesh	0.09	0.13	7.86	0.00	0.74	0.64	-13.00	0.00	0.20	0.14	-2.88	0.00	0.55	0.42	-5.81	0.00
Assam	0.11	0.15	22.41	0.00	0.53	0.43	-52.08	0.00	0.09	0.15	9.72	0.00	0.45	0.38	-8.95	0.00
Bihar	0.01	0.02	2.11	0.03	0.18	0.09	-68.30	0.00	0.02	0.02	2.26	0.02	0.32	0.25	-13.81	0.00
Chandigarh	0.09	0.06	-1.00	0.33	0.29	0.06	-2.22	0.04	0.57	0.49	-2.55	0.01	0.73	0.58	-5.12	0.00
Chhattisgarh	0.13	0.13	0.19	0.85	0.68	0.51	-66.23	0.00	0.09	0.09	-0.33	0.74	0.52	0.36	-22.87	0.00
Dadra & Nagar Haveli	0.30	0.19	-4.48	0.00	0.83	0.59	-9.30	0.00	0.42	0.29	-1.14	0.27	0.73	0.54	-2.49	0.02

Daman and Diu	0.43	0.15	-5.04	0.00	0.66	0.43	-5.01	0.00	0.29	0.23	-1.44	0.16	0.74	0.57	-2.43	0.02
Delhi	0.40	0.26	-10.63	0.00	0.69	0.51	-5.59	0.00	0.40	0.29	-13.89	0.00	0.52	0.30	-31.16	0.00
Goa	0.46	0.44	-1.94	0.05	0.86	0.76	-9.61	0.00	0.34	0.23	-4.41	0.00	0.68	0.51	-7.11	0.00
Gujarat	0.17	0.18	4.21	0.00	0.58	0.43	-74.29	0.00	0.22	0.19	-7.06	0.00	0.56	0.46	-24.26	0.00
Haryana	0.35	0.30	-11.21	0.00	0.68	0.51	-42.08	0.00	0.28	0.30	1.96	0.05	0.52	0.35	-23.73	0.00
Himachal Pradesh	0.41	0.44	6.50	0.00	0.94	0.86	-32.41	0.00	0.40	0.33	-3.85	0.00	0.75	0.59	-9.63	0.00
Jammu & Kashmir	0.07	0.09	12.47	0.00	0.78	0.66	-36.49	0.00	0.18	0.17	-0.60	0.55	0.66	0.50	-17.47	0.00
Jharkhand	0.24	0.14	-50.93	0.00	0.60	0.36	-110.00	0.00	0.17	0.13	-5.82	0.00	0.47	0.29	-22.43	0.00
Karnataka	0.37	0.34	-13.57	0.00	0.76	0.61	-87.54	0.00	0.33	0.24	-23.27	0.00	0.67	0.52	-48.05	0.00
Kerala	0.33	0.28	-10.48	0.00	0.69	0.58	-26.65	0.00	0.35	0.32	-2.66	0.01	0.69	0.59	-11.06	0.00
Lakshadweep	0.30	0.09	-3.54	0.00	0.71	0.46	-3.01	0.00	No Observations				0.90	0.70	-1.50	0.17
Madhya Pradesh	0.13	0.10	-27.78	0.00	0.70	0.49	-140.00	0.00	0.19	0.15	-14.32	0.00	0.56	0.39	-50.17	0.00
Maharashtra	0.38	0.29	-64.17	0.00	0.71	0.55	-110.00	0.00	0.30	0.21	-31.84	0.00	0.56	0.42	-50.87	0.00
Manipur	0.07	0.04	-6.88	0.00	0.69	0.62	-8.88	0.00	0.15	0.08	-5.10	0.00	0.62	0.50	-5.67	0.00
Meghalaya	0.13	0.15	5.38	0.00	0.69	0.60	-19.20	0.00	0.22	0.15	-5.12	0.00	0.61	0.46	-10.38	0.00

Mizoram	0.18	0.27	8.74	0.00	0.78	0.70	-8.11	0.00	0.33	0.30	-1.54	0.12	0.76	0.68	-6.40	0.00
Nagaland	0.16	0.22	6.55	0.00	0.62	0.47	-14.45	0.00	0.19	0.11	-4.78	0.00	0.45	0.28	-7.83	0.00
Orissa	0.08	0.13	35.82	0.00	0.64	0.49	-72.32	0.00	0.04	0.09	11.34	0.00	0.50	0.36	-20.13	0.00
Puducherry	0.70	0.51	-6.67	0.00	0.90	0.76	-6.17	0.00	0.67	0.52	-5.58	0.00	0.87	0.77	-4.13	0.00
Punjab	0.38	0.37	-0.35	0.73	0.75	0.58	-56.46	0.00	0.36	0.26	-17.53	0.00	0.55	0.37	-28.79	0.00
Rajasthan	0.33	0.33	0.68	0.50	0.62	0.43	-120.00	0.00	0.35	0.27	-18.26	0.00	0.62	0.43	-51.90	0.00
Sikkim	0.31	0.37	3.85	0.00	0.82	0.63	-14.14	0.00	0.28	0.30	0.41	0.69	0.69	0.48	-4.61	0.00
Tamil Nadu	0.30	0.24	-27.65	0.00	0.79	0.56	-100.00	0.00	0.45	0.32	-30.89	0.00	0.73	0.53	-47.18	0.00
Telangana	No Observations				0.79	0.59	-78.09	0.00	No Observations				0.65	0.45	-47.15	0.00
Tripura	0.06	0.09	7.50	0.00	0.57	0.48	-12.08	0.00	0.07	0.06	-0.39	0.70	0.38	0.25	-4.73	0.00
Uttar Pradesh	0.21	0.11	-100.00	0.00	0.52	0.23	-280.00	0.00	0.12	0.10	-6.93	0.00	0.42	0.23	-68.96	0.00
Uttarakhand	0.27	0.23	-11.76	0.00	0.79	0.72	-20.93	0.00	0.27	0.14	-13.34	0.00	0.59	0.43	-15.28	0.00
West Bengal	0.12	0.10	-14.77	0.00	0.65	0.40	-150.00	0.00	0.12	0.18	14.30	0.00	0.56	0.45	-23.75	0.00

Source: Compiled by Author based on (NIEPA 2010; 2015b)

We also assessed the data availability on the RTE Act 2009 provisions (Table 4.16), detailed in Chapter one. There is minimal data available related to the RTE Act 2009 provisions. There is data on the number of children who applied under weaker sections and were admitted. This data should be compulsorily collected from private and private-aided schools to monitor the implementation of the RTE Act 2009. Similarly, data on teachers involved in non-teaching assignments is obtained from the schools, but the type of activities the teachers were engaged in is missing.

4.4.3 Assessment of Compliance with SBSV -WASH Guidelines

U-DISE data is assessed to check the availability of WASH facilities as listed in the guidelines. We calculated the ratio of toilets (1:40) available as per the SBSV guidelines for both genders. We also conducted a t-test of significance between pre- and post- period and between genders (Table 4.17 and 4.18, respectively). Menstrual hygiene management facilities that includes the availability of soap, adequate and private space for changing, adequate water for cloth washing and disposal facilities for menstrual waste, including an incinerator and dust bins. The data related to these MHM facilities is not being collected and not available in the databases assessed till 2015-2016.

4.4.4 MHM Guidelines

The MHM guidelines have prescribed all the facilities or services required to manage the menstrual health and hygiene needs of the female students and staff of the schools. However, the data on MHM indicators from schools related to access to menstrual materials such as whether the sanitary napkin dispenser available or not , private and adequate space, menstrual waste disposal facilities is lacking in the databases assessed suggesting the need to incorporate these questions in the survey tools used in these surveys.

Table 4.15: An assessment of the WASH requirements in the RTE Act 2009

	2010				2015			
	Availability of Toilets		Functional toilets		Availability of Toilets		Functional toilets	
States	Girls toilet in co-ed Schools	Boys toilet in co-ed Schools	Functional girl's toilet in co-ed Schools	Functional boys' toilet in co-ed Schools	Girls toilet in co-ed Schools	Boys toilet in co-ed Schools	Functional girls' toilet in co-ed Schools	Functional boys' toilet in co-ed Schools
Bihar	23.1	37.46	8.56	21.65	46.27	89.98	12.25	24.07
Madhya Pradesh	38.49	28.15	32.99	24.87	96.63	96.15	91.82	90.91
Rajasthan	92.18	69.9	84.71	58.12	99.66	99.19	97.21	95.9
Uttar Pradesh	76.63	0	61.11	47.61	99.79	99.74	96.79	96.62
Uttarakhand	48	37	44	35	97.16	97.41	91.84	90.75
Jharkhand	60	53	49	43	97	96	94	94
Odisha	38	18	20	14	97	94	91	88
Chhattisgarh	35	33	21	20	99	98	95	88
Arunachal Pradesh	30.62	18.68	21.33	15.58	96.48	95.65	90.26	90.64
Assam	39.37	21.41	29.23	17.47	84.02	82.77	77.1	71.29
Sikkim	82.26	49.13	79.37	47.38	99.83	99.83	97.56	97.39
Nagaland	69.47	42.76	39.67	29.76	99.89	98.69	87.56	86.22
Manipur	26.17	23.18	22.76	20.7	98.72	98.66	85.71	85.6
Mizoram	62.44	32.87	53	30.32	99.27	97.96	89.29	87.93
Tripura	43.29	20	34	16	100	100	85.34	85.34

Meghalaya	23.83	21.23	17	15.97	84.31	86.38	73.38	74.93
Jammu & Kashmir	25.38	17.37	18	13.99	94.92	92.08	92.35	90
Himachal Pradesh	66.61	57.25	57.36	48.71	99.82	99.70	99.35	99.15
Punjab	90.38	67.43	89.09	65.96	99.83	99.60	99.52	98.94
Haryana	91.27	70.80	83.53	75.77	99.61	99.48	99.36	98.82
West Bengal	48.36	32.64	40.81	28.23	98.25	97.68	96.73	96.19
Gujarat	74.88	60.02	65.49	52.87	100	100	100	100
Maharashtra			69	67	99	99	98	98
Goa	68.34	62.71	65.29	60.34	100	100	100	100
Karnataka	76	64	69	59	100	99	99	99
Tamil Nadu	72	61	66	57	100	100	100	100
Kerala	77.99	71.3	70.35	64.35	99.15	98.16	98.79	97.5
Andhra Pradesh	59.54	14.5	22.61	9.38	99.72	99.71	98.29	96.46
Telangana					100	100	100	100
A&N Islands	73.65	68.47	62.22	60.49	100	100	100	100
Chandigarh	95.56	94.44	93.89	93.89	100	100	100	100
Delhi	99.93	98.24	97.66	96.84	100	100	100	100
Daman and Diu	83.65	82.69	82.69	81.73	100	100	100	100
Dadra and Nagar Haveli	54.73	55.74	48.99	47.64	100	100	100	100
Lakshadweep	63.04	60.87	65	65.22	100	100	100	100
Puducherry	94.1	91.46	90.37	88.35	100	100	100	100

Source:: Compiled by Author based on (NIEPA 2010; 2015b)

We will now present the details of data availability on various RTE Act Provisions discussed in Chapter 1.

Table 4.16: The RTE Act 2009 provisions and data availability

Sr. No.	Provisions	U-DISE	IHDS	NSSO	NFHS
A	Distance to school	*	*	64 & 71	*
B	Admission fee	*	*	64 & 71	*
C	Disable friendly	Till 2015	*	*	*
D	Entry and Re-admission facility	*	*	64 & 71	*
E	Easy transfer from one school to another	*	*	64 & 71	*
F	Training of teachers	*	*	*	*
G	Admission to the child belonging to an economically weaker section	Till 2015	*	64 & 71	*
H	Infrastructure requirements like drinking water, toilets	Till 2015	Till 2011	*	*
I	Monitoring the completion of elementary education	*	*	64 & 71	*
J	Role of local authority	*	*	*	*
K	Role of Parents	*	*	*	*

L	Pre-school Education	Till 2015	*	64 & 71	*
M	School and teacher's responsibility	*	*	*	*
N	Reservation of 25% seats in private schools to children from weaker sections	Till 2015	*	*	*
O	No screening and capitation fees for admission	*	*	*	*
P	Admission without proof of age	*	*	*	*
Q	No detention policy	Repeater data available till 2015	*	*	*
R	No corporal punishment	*	*	*	*
S	Recognised schools	Till 2015	*	*	*
T	School Management Committee	Till 2015	*	*	*
U	Qualified teachers	*	*	*	*
V	Pupil-teacher Ratio	*	*	*	*
W	Deputation of teachers on non-teaching	Till 2015	*	*	*

	assignments				
X	Medium of instruction	Till 2015	*	64 & 71	*
Y	Protection of Children	*	*	*	*
Z	Misc. Aspects	*	*	*	*

*Source: Compiled by the author * Indicates no data*

Table 4.17: Percentage of schools having compliance with SBSV among co-ed schools

	SBSV Compliance _Girls				SBSV Compliance _boys			
Ratio	Rural 1:40	Rural 1: 40	Urban 1: 40	Urban 1: 40	Rural 1: 40		Urban 1: 40	
Year	2010	2015	2010	2015	2010	2015	2010	2015
A & N islands	43.82	86.44	37.88	69.49	42.94	84.75	33.33	74.58
Andhra Pradesh	12.54	78.5	13.78	67.28	5.1	73.1	6.86	60.51
Arunachal Pradesh	10.96	72.87	17.74	50	8.37	70.4	15.9	49.52
Assam	16.09	53.08	18.18	47.3	9.8	48.08	7.26	42.18
Bihar	1.51	13.79	1.58	30.86	0.84	12.67	1.15	26.16
Chandigarh	16.13	25	63.09	74.03	6.45	25	51.01	63.54
Chhattisgarh	11.77	68.12	11.45	52.23	10.98	61.29	7.74	46.3
D & N Haveli	27.94	82.2	37.5	78.38	25.37	75.73	33.33	70.27
Daman & Diu	32.88	60	25.81	71.79	31.51	63.16	29.03	71.79
Delhi	57.92	77.01	59.97	66.91	38.48	63.79	39.22	44.54
Goa	50.38	87.73	34.64	71.47	42.93	81.47	29.29	61.56
Gujarat	23.88	57.65	25.71	59.29	14	53.67	17.84	51.96
Haryana	42.6	72.91	33	58.92	31.65	63.43	21.38	43.44
Himachal Pradesh	47.8	93.84	47.38	78.92	37.65	91.6	33.9	67.44

Jammu & Kashmir	8.63	78.27	22.21	63.93	5.68	73.62	13.58	60.32
Jharkhand	21.9	53.61	17.68	43.65	19.71	53.3	13.5	39.39
Karnataka	41.53	74.36	34.13	64.9	33.35	71.09	27.4	60.91
Kerala	38.6	73.89	42.7	76.83	26.86	62.09	30.44	64.65
Lakshadweep	28.26	71.43	No data	90	23.91	54.29	No data	80
Madhya Pradesh	14.86	66.23	23.26	55.89	10.14	63.71	15.57	48.61
Maharashtra	36.68	68.1	30.71	56.68	34.02	65.69	26.21	50.58
Manipur	5.45	64.9	11.83	53.75	5.48	64.24	12.17	56.16
Meghalaya	12.38	63.81	17.99	54.06	12.15	65.45	18.13	57.96
Mizoram	33.35	77.59	41.95	73.14	15.5	72.41	28.2	71.72
Nagaland	19.2	57.54	20.61	39.87	12.73	55.93	13.11	37.74
Odisha	10.15	63.27	7.02	48.69	6.3	57.41	3.16	44.02
Puducherry	68.48	91.14	70.51	91.18	62.18	87.26	62.03	87.25
Punjab	59.53	77.94	45.64	60.14	30.82	66.6	28.44	44.57
Rajasthan	49	58.55	40.62	61.52	28.2	54.62	27.85	53.2
Sikkim	49.32	75.64	43.43	71.11	25.13	74.55	23.23	64.44
Tamil Nadu	32.36	77.03	47.03	74.48	25.2	71.85	39.51	68
Telengana	No data	74.44	No data	58.77	No data	71.66	No data	54.51
Tripura	11.06	51.78	8.16	38.1	4.81	51.29	3.55	28.84
Uttar Pradesh	18.23	40.08	13.42	35.77	15.86	41.12	8.02	32.4
Uttarakhand	32.42	78.69	31.49	61.19	24.98	75.65	22.23	51.1
West Bengal	14.83	60.82	23.14	61.82	8.69	56.8	10.56	55.6

Source: Compiled by Author based on (NIEPA 2010; 2015b)

Table 4.18: Gender-wise comparison of SBSV Guidelines using t-test of significance

	Rural								Urban							
	2010				2015				2010				2015			
	Mean		t-value	p-value	Mean		t-value	p-value	Mean		t-value	p-value	Mean		t-value	p-value
State	Boys	Girls			Boys	Girls			Boys	Girls			Boys	Girls		
Andaman & Nicobar	0.43	0.44	0.65	0.51	0.85	0.86	1.23	0.22	0.33	0.37	1.35	0.18	0.73	0.70	-0.81	0.42
Andhra Pradesh	0.05	0.13	77.06	0.00	0.72	0.78	35.63	0.00	0.07	0.14	34.14	0.00	0.59	0.67	21.40	0.00
Arunachal Pradesh	0.08	0.11	8.52	0.00	0.69	0.73	6.46	0.00	0.16	0.18	1.46	0.14	0.49	0.50	0.59	0.56
Assam	0.10	0.16	54.91	0.00	0.47	0.53	38.01	0.00	0.07	0.18	17.67	0.00	0.40	0.47	10.43	0.00
Bihar	0.01	0.02	14.96	0.00	0.13	0.14	15.96	0.00	0.01	14.96	2.45	0.01	0.26	0.32	14.29	0.00
Chandigarh	0.06	0.16	1.79	0.08	0.24	0.24	0.00	1.00	0.50	0.63	4.12	0.00	0.63	0.74	3.92	0.00
Chhattisgarh	0.11	0.12	9.58	0.00	0.60	0.67	35.51	0.00	0.07	0.10	10.08	0.00	0.44	0.51	11.47	0.00
Dadra & Nagar Haveli	0.25	0.28	1.89	0.06	0.75	0.82	3.62	0.00	0.33	0.38	0.44	0.66	0.70	0.78	1.36	0.18
Daman and Dlu	0.31	0.32	0.30	0.77	0.62	0.30	-0.63	0.53	0.26	0.23	-0.57	0.57	0.70	0.72	0.37	0.71

Delhi	0.31	0.41	7.26	0.00	0.61	0.63	0.62	0.54	0.32	0.45	15.33	0.00	0.41	0.50	11.86	0.00
Goa	0.43	0.50	7.25	0.00	0.81	0.87	7.48	0.00	0.29	0.34	2.38	0.02	0.59	0.70	5.18	0.00
Gujarat	0.14	0.23	49.82	0.00	0.52	0.57	28.55	0.00	0.17	0.25	16.21	0.00	0.50	0.57	19.02	0.00
Haryana	0.28	0.40	34.26	0.00	0.59	0.69	29.67	0.00	0.21	0.32	16.87	0.00	0.42	0.57	22.36	0.00
Himachal Pradesh	0.38	0.48	36.81	0.00	0.92	0.94	14.61	0.00	0.33	0.46	8.48	0.00	0.67	0.78	7.47	0.00
Jammu & Kashmir	0.06	0.09	21.64	0.00	0.73	0.78	20.90	0.00	0.14	0.23	13.74	0.00	0.59	0.63	5.01	0.00
Jharkhand	0.20	0.22	18.01	0.00	0.53	0.54	5.41	0.00	0.13	0.19	9.57	0.00	0.39	0.44	8.58	0.00
Karnataka	0.33	0.41	44.96	0.00	0.71	0.74	23.68	0.00	0.27	0.34	20.38	0.00	0.61	0.65	16.62	0.00
Kerala	0.27	0.39	32.39	0.00	0.62	0.74	34.44	0.00	0.29	0.42	13.52	0.00	0.62	0.76	18.10	0.00
Lakshadweep	0.24	0.28	0.70	0.49	0.54	0.71	2.24	0.03	No Observations				0.80	0.90	1.00	0.34
Madhya Pradesh	0.10	0.15	50.71	0.00	0.62	0.65	20.50	0.00	0.15	0.22	28.05	0.00	0.48	0.55	23.09	0.00
Maharashtra	0.33	0.36	25.82	0.00	0.65	0.67	21.58	0.00	0.25	0.30	18.30	0.00	0.49	0.55	24.78	0.00
Manipur	0.06	0.05	-0.20	0.84	0.64	0.65	1.82	0.07	0.12	0.12	0.00	1.00	0.55	0.54	-0.48	0.63
Meghalaya	0.12	0.12	2.02	0.04	0.65	0.64	-5.70	0.00	0.18	0.18	-0.82	0.41	0.55	0.53	-1.59	0.11
Mizoram	0.16	0.33	19.85	0.00	0.72	0.78	7.76	0.00	0.28	0.42	9.77	0.00	0.71	0.73	2.23	0.03

Nagaland	0.13	0.19	10.07	0.00	0.56	0.58	1.97	0.05	0.13	0.21	5.08	0.00	0.38	0.40	1.49	0.14
Orissa	0.06	0.10	41.27	0.00	0.57	0.63	39.13	0.00	0.03	0.07	11.65	0.00	0.42	0.48	10.49	0.00
Puducherry	0.60	0.67	3.29	0.00	0.85	0.89	2.25	0.03	0.58	0.68	4.13	0.00	0.82	0.87	2.11	0.04
Punjab	0.30	0.59	91.72	0.00	0.66	0.77	44.10	0.00	0.28	0.45	30.53	0.00	0.43	0.60	29.06	0.00
Rajasthan	0.28	0.49	122.70	0.00	0.54	0.58	27.80	0.00	0.28	0.41	32.48	0.00	0.53	0.62	26.82	0.00
Sikkim	0.26	0.47	15.16	0.00	0.76	0.71	-4.01	0.00	0.23	0.39	4.10	0.00	0.62	0.66	1.00	0.32
Tamil Nadu	0.25	0.32	41.73	0.00	0.71	0.77	31.62	0.00	0.38	0.46	23.62	0.00	0.65	0.73	22.33	0.00
Telangana	No Observations				0.72	0.75	12.08	0.00	No Observations				0.57	0.60	9.11	0.00
Tripura	0.05	0.11	13.89	0.00	0.51	0.52	0.78	0.44	0.04	0.09	3.04	0.00	0.29	0.38	3.96	0.00
Uttar Pradesh	0.16	0.18	28.80	0.00	0.41	0.40	-14.95	0.00	0.09	0.14	22.04	0.00	0.34	0.37	12.27	0.00
Uttarakhand	0.25	0.33	28.12	0.00	0.75	0.78	13.52	0.00	0.22	0.31	9.64	0.00	0.50	0.60	11.29	0.00
West Bengal	0.09	0.15	56.52	0.00	0.56	0.60	32.01	0.00	0.10	0.22	33.92	0.00	0.49	0.57	18.75	0.00

Source: Compiled by Author based on (NIEPA 2010; 2015b)

SECTION 2

Assessment of School Infrastructure Pre, and Post-RTE Act 2009 in India using IHDS Data

This section restricts the analysis to school infrastructure facilities. IHDS-I was conducted before RTE and IHDS-II in the Post-RTE period, which helped us assess the status of infrastructure facilities during these periods. We have examined the school data available, compared the developments in the school infrastructure facilities, and identified gaps in data between the two rounds.

Minimum school infrastructure guidelines specified by the Department For International Development (DFID) include providing classrooms, outdoor learning and play areas, furniture, water and sanitation, administration buildings, storage, cooking and boarding facilities (Bonner et al. 2004). It also includes electricity, playgrounds, and drinking water sources. Water from uncovered/protected dug wells, rivers, ponds, and rainwater is not the standard. A water source located within the compound is considered an accessible one. The IHDS data collected is restricted only to primary schools. Few schools are functioning beyond Grade IV, which was also part of the survey. The number of schools surveyed differs between the two rounds in all the states, and UT's limiting data comparability. The number of schools surveyed is 3781 in IHDS-I and 4762 in IHDS-II. The number of schools surveyed in IHDS-I and IHDS-II varies, and the proportion of schools surveyed under different types of schools also varies (Refer to Table 4.14). In IHDS-I (96%) and IHDS-II (97%), among the surveyed schools were co-ed. The number of girls only was 2% each inIHDS–I whereas in IHDS-II 2% girls only and 1% boys only schools were surveyed. For 31 % of the schools, the starting grade was from nursery, whereas for 69%, it started in Grade I. The maximum schools surveyed cater to primary education up to Grade 4, IHDS-I (15%) and IHDS-II (13%). 50% of the schools up to Grade V were seen in both rounds, 15% were catering till Grade VII in IHDS-I and 12% in

IHDS-II. Only 4% of the schools surveyed in IHDS I and 6% in IHDS –II provided education from Grade I to Grade X, and only 3% were up to Grade XII in IHDS-II.

We present the findings based on IHDS data considering all these infrastructure requirements (Refer Table 4.19).

4.5 SCHOOL INFRASTRUCTURE PRE, AND POST-RTE FROM IHDS DATA

a. **Boundary wall:**

   70% of the schools reported having secured boundary walls for the school in IHDS II, while no data is available to compare for IHDS I. Also, data on the type of boundary wall available was not collected.

b. **Electricity:**

   The data on the availability of electricity and how often there are power failures in the school was available. The percentage of schools having electricity connection improved from IHDS I to IHDS II (59.33% to 78.32%). Power failures occur almost every day in 64% of the schools reported in IHDS II, showing an increase in power failures in the schools as compared to IHDS I (28.21% to 64%).

c. **Drinking water:**

   Regarding data on drinking water availability, we observed ten different options for coding the source of water provided. Most schools surveyed in both rounds had water from a protected source. In IHDS II, we observed a 2% rise in the percentage of schools having piped water compared to IHDS I. There is a 5% increase in tube wells, and 3% of the schools are now provided with bottled water as per IHDS II. The water source was outside the school compound in IHDS I. We observed an increase in the percentage of schools having water inside the compound in IHDS II. However, data on the functionality of the drinking water source was not

collected in both rounds. Based on caste, we found that different drinking water sources are provided to students in schools. Among 4% of the schools in IHDS II, it shows that caste-based discrimination is practised in schools in providing drinking water.

d. **Availability of Playground:**

69% of the schools had playgrounds in IHDS I, which has increased to 72.7% of the schools having playground facilities in IHDS II.

e. **Computers for Pedagogical Use:**

In IHDS I, it was observed that almost 83% of the schools did not have computers for students' use. In IHDS II, we noticed that 37.5% of the students could use school computers.

f. **Separate room for head teacher:**

In 22% of the schools, there is no separate room or office for the Principal or head teacher.

g. **Library facility:**

A Library was available in 47% of the schools in IHDS-I, which improved to 66% of the schools having a library facility in IHDS-II.

h. **Kitchen and Mid-day Meal:**

In IHDS I, only 27.2% of the schools had a kitchen facility to cook mid-day meals. In IHDS I, 45% of the schools had an assigned cook per school, which increased to 49% in IHDS II. In IHDS II, almost 46% of the schools' kitchen facilities were available, and 49% of the schools had assigned cooks for the schools. An assistant cook was provided in 40% of the schools, as reported in IHDS II. Whereas in IHDS I, only 30% of the schools had assistant cooks available.

i. **Plates/utensils for students:** only 38% of the schools had a provision to provide students with plates and utensils for serving mid-day meals.

4.6 SANITATION INFRASTRUCTURE

a) Toilet facilities:

According to IHDS I data, 31% of the schools did not have toilet facilities, which decreased to 10% of the schools in IHDS II, increasing the number of toilet facilities in schools. In IHDS I, data was collected on separate school toilet facilities. Only 53% of the schools reported having separate toilet facilities. Meanwhile, IHDS II asked if boys and girls have separate toilet facilities, and the options provided were whether a common facility was available or separate. Almost 76% of the schools in IHDS-II had separate facilities for girls and 74% for boys. 2% of the schools did not have toilets for boys, which was observed in IHDS II.

b) Location of toilets:

The location of toilets for girls, if present inside or outside the building, plays a crucial role in considering the safety of the students. It is noticed that the location of girls' toilets, i.e. inside the building, has increased from 54% to 72% from IHDS I to IHDS II. Also, the location of boy's toilets outside the building has increased from IHDS I to IHDS II. Compared to boys' toilets, the shift in the location of toilets from outside to inside was observed more in the case of girls.

c) Type of toilets:

Types of toilets in schools have also improved for both boys and girls to a great extent. The percentage of ventilated improved pit (VIP) latrine facilities has increased from 7% to 31% for girls and 9 % to 31% for boys.

d) Functionality of toilets:

In IHDS II, data on the functionality of toilets, including whether they are available for student use, have adequate water and are clean, is collected by observation. The analysis shows that toilets for students were locked in 23% of the schools and were not accessible to students for use. Only 41% of the schools had combined toilet facilities available for teachers and students.

e) **Toilet facilities for teachers:**

Additional data on toilet facilities for teachers was collected during IHDS II. In 54% of the schools surveyed, a separate toilet facility is available only for teachers.

f) **Separate toilets for students:**

Regarding toilet facilities for students, in 10.5% of the schools, no toilet facilities are available. In 33% of the schools, there are no separate toilets for students, whereas in 57%, only toilets for students were available. Data was also collected by observing whether combined toilet facilities are available for teachers and students. We found that only 41% of the schools had such facilities. Also, we found that toilets available for students were locked in 23% of the schools and 66% were unlocked. Almost 72% of the toilets for students were observed as having water facilities, and they were also noticed as being clean.

4.7 OTHER SCHOOL INFRASTRUCTURE

j. **Chairs, Desks, Blackboard, and Fans:**

In terms of physical infrastructure for students, it is observed that only 50% of the schools in IHDS II had chairs and desks. In the schools that did not have chairs and desks, it was noticed that only 37% had mats in IHDS I, which increased to 80% of the schools having mats in IHDS II. In IHDS I, 96% of the schools had blackboards, which increased to 98% in all the schools, leaving 2% without a blackboard facility. In IHDS I, only 44% of the schools had fans in the schools. The percentage of schools having fans in schools has increased to 60% in IHDS II.

k. **Fan for Principal's office:**

Almost 69% of the schools reported a fan in the Principal's office.

4.8 ENROLMENT

The data is available on the total number of students enrolled in the school, which is not provided based on grade and gender, which does not allow us to analyse gender-wise enrolment. How many enrolled students attend on average does not

indicate attendance. Data on how many girls attended is collected from those who enrolled, but we do not have the total number of girls enrolled. The details on gender-wise enrolment data would have helped understand enrolment based on gender. The order of layout of questions in both rounds is not similar, nor are the coding options provided in the few questions identical.

4.9 ATTENDANCE DATA

The IHDS I and II collected data on attendance regarding the total number of students enrolled and out of the enrolled, how many attended and from that, how many enrolled girls attended the school. It does not allow us to calculate how many boys and girls were enrolled in school. Data on the total number of students attending the school is collected, but how many of the girls were enrolled is unknown.

Table 4.19: List of variables used in IHDS I and II

Sr. No.	Details of the Variables	IHDS I (N= 3782)		IHDS II (N= 4267)	
1.	Type of school	Freq.	%	Freq.	%
	Government	2,031	53.72	2,248	52.81
	Private aided and recognised	437	11.56	1,071	25.16
	Private recognised, not aided	756	19.99	489	11.49
	Private unrecognised	457	12.09	381	8.95
	Convent	80	2.12	62	1.46
	Others	18	0.48	6	0.14
2.	School Gender				
	Boys	79	2.09	55	1.29
	Girls	83	2.2	72	1.69
	Co-ed	3,617	95.66	4,132	97.02
3.	Start Grade				
	0	1,156	30.57	1,801	42.29
	1	2,621	69.32	2,452	57.57
	2	1	0.03	2	0.05
	3	2	0.05	1	0.02

4.	End Grade				
	0	3	0.08	3	0.07
	1	12	0.32	11	0.26
	2	27	0.71	25	0.59
	3	36	0.95	17	0.4
	4	571	15.1	563	13.22
	5	1,916	50.67	2,140	50.25
	6	62	1.64	30	0.7
	7	568	15.02	493	11.58
	8	343	9.07	577	13.55
	9	17	0.45	12	0.28
	10	171	4.52	262	6.15
	11	2	0.05	6	0.14
	12	53	1.4	120	2.82
5.	Electricity				
	No	1,538	40.67	921	21.68
	Yes	2244	59.33	3327	78.32
6.	Electricity failure				
	Never, < 1 a week	646	17.08	727	22.35
	1 or 2 per week	546	14.44	447	13.74
	Almost every day	1,067	28.21	2,079	63.91
7.	Main Source of Drinking Water	N=3705		N=4251	
	Piped	1,663	43.97	1,943	45.71
	Tube well	445	11.77	718	16.89
	Hand pump	1,196	31.62	1,155	27.17
	Dug, open well	138	3.65	105	2.47
	Covered well	59	1.56	54	1.27
	River, canal, stream	11	0.29	9	0.21
	Pond	10	0.26	5	0.12
	Tanker truck	55	1.45	44	1.04
	Rainwater	6	0.16	5	0.12
	Bottled	35	0.93	108	2.54
	Other	87	2.3	105	2.47
8.	School Drinking water source				
	Inside building	1,593	42.12	1,783	42.04

	Inside compound	1,348	35.64	1,789	42.18
	Outside compound	764	20.2	669	15.77
9.	Different Drinking water sources by caste				
	Different	116	3.07	166	3.92
	Same	3,573	94.47	4,069	96.08
10.	School toilet facilities				
	No	1,173	31.02	445	10.45
	Yes	2,607	68.93	3,813	89.55
11.	Separate toilets				
	No	587	15.52		
	Yes	2,013	53.23		
12.	Girls have separate				
	Yes, Common			889	23.6
	Yes, Separate			2,878	76.4
13.	Boys have separate				
	Yes, Common			875	23.33
	Yes, Separate			2,805	74.8
	No			70	1.87
14.	Location of toilets for Girls				
	Inside building	2,046	54.1	2,716	72.1
	Outside building	409	10.81	1,051	27.9
15.	Location of toilets for Boys				
	Inside building	2,051	54.23	2,628	71.39
	Outside building	459	12.14	1,053	28.61
16.	Type of toilet for Girls				
	Flush toilet	1,580	41.79	1,421	37.71
	Pit latrine	510	13.49	1,119	29.7
	VIP latrine	273	7.22	1,193	31.66
	None	96	2.54	35	0.93
17.	Type of toilet for Boys				
	Flush toilet	1,519	40.17	1,379	37.46
	Pit latrine	553	14.63	1,105	30.02
	VIP latrine	325	8.6	1,162	31.57
	None	152	4.02	35	0.95

18.	Physical infrastructure				
a.	Chairs and Desks				
	No	2,079	54.99	2,122	49.86
	Yes	1,702	45.01	2,134	50.14
b.	Mats				
	No	685	18.11	433	20.44
	Yes	1,416	37.44	1,685	79.56
c.	Blackboard all classroom				
	No	126	3.33	60	1.41
	Yes	3,655	96.64	4,194	98.59
d.	Library				
	No	1,996	52.78	1,430	33.63
	Yes	1,785	47.2	2,822	66.37
e.	Student use computer				
	No	3,148	83.24	2,658	62.47
	Yes	633	16.74	1,597	37.53
f.	Fan				
	No	2,099	55.5	1,693	39.81
	Yes	1,682	44.47	2,560	60.19
g.	Playground				
	No	1,159	30.65	1,164	27.35
	Yes	2,622	69.33	3,092	72.65
h.	Kitchen				
	No	2,753	72.79	2,306	54.18
	Yes	1,029	27.21	1,950	45.82
i.	Cook				
	No	2,065	54.6	2,185	51.35
	Yes	1,717	45.4	2,070	48.65
j.	Assistant for the cook				
	No	2,650	70.07	2,524	59.32
	Yes	1,132	29.93	1,731	40.68
k.	Fan for Principal's office	*	*		
	No			1,321	31.06
	Yes			2,932	68.94
l.	Plates/Utensils for students	*	*		

	No			2,651	62.33
	Yes			1,602	37.67
m.	Boundary wall	*	*		
	No			1,281	30.12
	Yes			2,972	69.88
n.	Office for Principal/headt eacher	*	*		
	No			943	22.16
	Yes			3,313	77.84
19.	Toilets available only for teachers	*	*		
	No			1,882	45.26
	Yes			2,259	54.33
	No toilet			17	0.41
20.	Toilets available only for students	*	*		
	No			1,388	32.89
	Yes			2,388	56.59
	No toilet			444	10.52
21.	Toilets available for combined teacher	*	*		
	No			2,431	58.51
	Yes			1,707	41.08
	No toilet			17	0.41
22.	Toilets available for students unlocked	*	*		
	No			967	22.95
	Yes			2,803	66.52
	Not Applicable			444	10.54
23.	Toilets for students have water .	*	*		
	No			745	17.68
	Yes			3,024	71.78
	Not Applicable			444	10.54
24.	Toilets for students are clean	*	*		
	No			726	17.24

	Yes			3,042	72.22
	Not Applicable			444	10.54

*Source: Author's calculation (Desai and Vanneman 2008; 2015) * No data available*

In this chapter, we have presented the findings based on the U-DISE and IHDS data. Though specific provisions of the RTE Act can be assessed using these databases, gaps still exist due to data non-availability. Both databases show improvement in school infrastructure facilities post-RTE Act 2009. U-DISE data also indicates improvement in infrastructure facilities assessed in the study after 2010. The schools surveyed in IHDS-II show improvement in infrastructure as compared to IHDS-I. Though we can see the progress, the schools surveyed in IHDS-I and–II are different. The data collected is over a decade old, and no recent data is available to compare the school facilities. Also, the IHDS data is collected only from primary schools, even though some schools in the survey cater to middle, secondary, and higher secondary schools. Compared to U-DISE data, IHDS data is collected through a school survey and provides much more reliable data as it is verified by observation. Whereas U-DISE data is collected online, there are chances of data entry errors and bias due to self-reporting. There is a need for a school census to provide the data on schools' profiles and basic infrastructure facilities and a mechanism to monitor each student so that schools can identify likely drop-outs at the school level and necessary intervention is delivered to ensure elementary education is completed. U-DISE and IHDS databases do not provide data on drop-outs in schools, and it is challenging to estimate as new enrollment in each grade is unknown.

Next, we present our analyses and findings regarding reasons for school drop-outs in India based on the NSSO database.

CHAPTER 5
ANALYSING SCHOOL DROP-OUTS PRE, AND POST-RTE ACT 2009 IN INDIA: USING THE 64TH AND 71ST ROUNDS OF NSSO DATA

This chapter explores the reasons for not attending school, which were collected in the 64th R and 71st R National Sample Surveys on education. The details of the data source and methodology used for the analysis have been explained earlier in Chapter 3 on Research Methodology. This chapter discusses the age-specific and gender-specific reasons for drop-outs reported in the 64th R and 71st R of NSS surveys and assesses the rate of school drop-outs pre, and post-RTE Act 2009 in India.

As discussed in Chapter 3, the National Sample Survey Office (NSSO) of the Ministry of Statistics and Planning of India (MOSPI), GOI, collects data on reasons for never enrolling/discontinuing/dropping out from school for the age group 5 – 29 years.

According to the UNESCO Institute of Statistics (UIS), from 2019 until 2018, children enrolled in pre-primary were considered out of school. Since 2018, there has been a change in the definition. The new report now includes all the children enrolled in formal education and pre-primary school children while counting out-of-school children (UIS 2019). Many studies have explored the reasons for drop-outs using NSSO data (Jayachandran 2007; Sikdar and Mukherjee 2012; Mukesh and Srivastava 2015; Ghosh 2018)

In this research, we will analyse the reasons for the age group 5 – 18 years only. We attempt to study the reasons for never enrolling/discontinuing/dropping out for the age group 5 – 18 years for two survey rounds, i.e., 64th R and 71st R. We undertake a gender-based examination for the age group 5 – 18 years in three sub-categories, namely 5 – 9 years, 10 – 14 years, and 15 – 18 years. We have

included pre-school age, i.e., five years, in the study as it will provide an insight into the reasons for not enrolling in a school that is available from age 5 in the data. In some states, age 5 is a pre-school and primary education enrolment year.

5.1 REASONS FOR DROP-OUTS IN 64TH R AND 71ST R

The response options for not attending the school in the 64th R and 71st R are listed below (see Table 5.1 & 5.2). There are 20 reasons used for coding in the 64th R. There were only 18 reasons in the 71st R. We list the differences between the 64th R and 71st R coding options for not attending school.

The following codes used in the 64th R were **not included** in the 71st R of the survey:

- Parent not interested in studies (Applicable for all, Code 1)
- To work for wage/salary (Applicable for all, Code 4)
- To look after younger siblings (Applicable for all, Code 6)
- For helping in household enterprises (Applicable for all, Code 11)
- Education is not considered necessary (Applicable for "never enrolled cases only, code 14) and,
- The child not interested in studies (Ever enrolled, Code 15)

The reasons **modified** in the 71st R survey are:

- 'To attend other domestic chores' (Applicable for all, Code 7) was replaced with 'Engaged in domestic activities' (Applicable for all, Code 3) and
- 'For participating in other economic activities' (Applicable for all, Code 5) was replaced with 'Engaged in economic activities.' (Applicable for all, Code 4)

Apart from this, we find some **new additional reasons included in the 71st R** of the survey:

- Not interested in studies (Applicable for all, Code 1)
- Quality of teachers not satisfactory (Applicable for all, Code 10)
- Preparation for competitive examination (Applicable for "ever-enrolled" cases only, Code 15) and
- Marriage. (Applicable for "girl students" only, Code 18)

There are subtle differences between the 64th R and 71st R. For example, "parent not interested in studies" and "child not interested in studies" were two separate coding options in the 64th R. The option offered in the 71st R was "not interested in education". However, it does not indicate who is 'not interested in education'. So, in the 71st R, we don't know whether the parent is not interested in the child's education or the child is not interested in education.

Table 5.1: Comparison of the reasons and codes used in the 64th R and 71st R

Sr. No.	Reasons used in the 64 th Round	Code 64R	Reasons used in the 71 st Round	Code 71R
	Applicable for all Households		Applicable for all Households	
1	Parent not interested in studies	1	-	
2	Inadequate number of teachers	2	Inadequate number of teachers	8
3	School is far off	3	School is far off	5
4	To work for wage/salary	4	Engaged in economic activities	4
5	Participating in other economic activities	5		
6	To look after younger siblings	6		
7	To attend other domestic chores	7	Engaged in domestic activities	3
8	Financial constraints	8	Financial constraints	2
9	Timings of the educational institution not suitable	10	Timings of the educational institution not suitable	6
10	For helping in household enterprises	11	-	
11	Language/medium of instruction used unfamiliar	12	Language/medium of instruction used unfamiliar	7
	Applicable for "ne ver-enrolled" cases only			
12	No tradition in the community	13	No tradition in the community	11
13	Education not considered necessary	14	-	
	Applicable for "ever -enrolled" cases only			
14	Child not interested in studies	15	-	
15	Unable to cope up or failure in studies	16	Unable to cope up with studies/ failure in studies	12
16	The unfriendly atmosphere at school	17	The unfriendly atmosphere at school	13
17	Completed desired level/class	18	Completed the desired level/class	14
	Applicable for "girl students" only			
18	Non-availability of lady	20	Non-availability of female	16

	teacher		teachers	
19	Non-availability of the ladies toilet	21	Non-availability of girls' toilets	17
20	Others	29	-	

Source: Compiled by the author based on the 64th R and 71st R 25.2 Schedule (NSSO 2011; 2016b). *Note: * Code no.9 was not used in either of the rounds.*

Table 5.2: New codes in 71st R

New codes in 71 st R are included under the following categories.		
SCOPE OF APPLICATION	Reasons	Code
Applicable for all Households	Not interested in education	1
Applicable for all Households	Quality of teachers not satisfactory	10
Applicable for "ever-enrolled" cases only	Preparation for competitive examination	15
Applicable for girl students only	Marriage	18
Applicable for all (in the previous R was applicable for girl students only)	Others	19

Source: Compiled by the author based on the 71st R 25.2 Schedule (NSSO 2016b)

The findings based on the analysis are discussed below.

5.2 GENDER-WISE PERCENTAGE OF DROP-OUTS AT THE STATE LEVEL FOR THE AGE GROUP 5 – 18 YEARS (64TH R)

In this section, we present the analysis of reasons for drop-outs based on gender using 64th R.

5.2.1 Male Drop-outs:

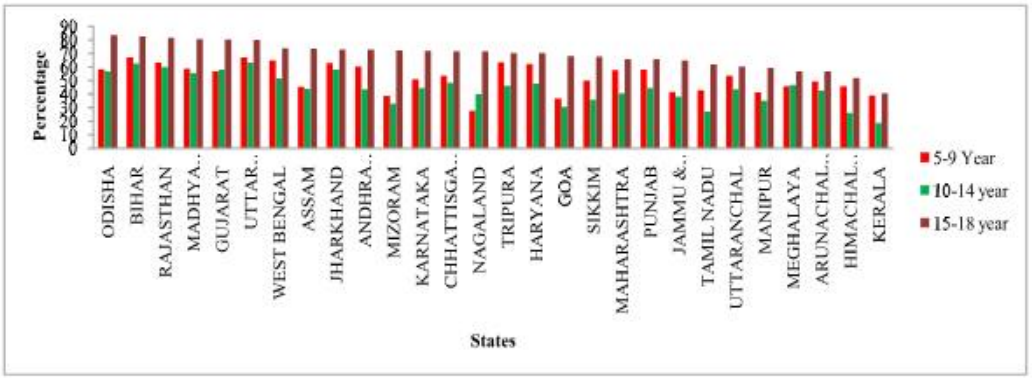
The age group 5 – 18 years is divided into three sub-groups: 5 – 9, 10 – 14, and 15 – 18.

Age group 5 – 9 years: We find that Bihar (67%), Uttar Pradesh (67%), and West Bengal (65%) had the highest percentage of drop-outs among males, and the lowest drop-outs was reported from Nagaland (28%), Goa (37%), and Mizoram (39%).

Age group 10 – 14 years: Uttar Pradesh (63%), Bihar (63%), and Rajasthan (60%) had high drop-out rates among males. The lowest rates of drop-out were observed in Kerala (19%), Himachal Pradesh (26%) and Tamil Nadu (27%).

Age group 15 – 18 years: Odisha (84%), Bihar (83%), and Rajasthan (82%) recorded the highest percentage of drop-outs, whereas the lowest drop-outs were in Kerala (41%), Himachal Pradesh (52%), and Arunachal Pradesh (57%).

Figure 5.1: Percentage of male drop-outs for 5 – 18 years (64th R by states)



Source: Author's calculations based on the 64th R

Compared to age groups 5 – 9 years and 10 – 14 years among males, the percentage of drop-outs in the age–group 15 – 18 years is much higher in the 64th R in almost all the states (see Figure 5.1). The states with higher drop-out among males across all age groups are BIMARU states, which include Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh, followed by Gujarat, West Bengal, and Jharkhand. Kerala has the lowest drop-out rate among all age groups.

5.2.2 Female Drop-outs:

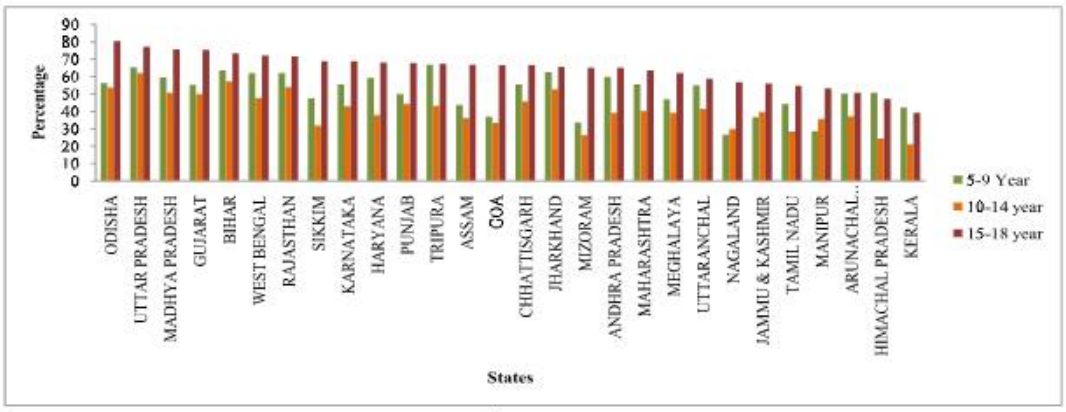
We present the findings for females aged 5 – 18 years below. We have split the age group into three sub-groups: 5 – 9, 10 – 14, and 15 – 18.

Age group 5 – 9 years: Tripura (67%), Uttar Pradesh (65%) and Bihar (63%) had the highest drop-outs. Lowest drop-outs were from Nagaland (27%), Manipur (28%), and Mizoram (34%) (see Figure 5.2).

Age group 10 – 14 years: Uttar Pradesh (62%), Bihar (57%) and Rajasthan (54%) had the highest drop-outs. Lowest drop-outs were from Kerala (21%), Himachal Pradesh (24%) and Mizoram (27%).

Age group 15 – 18 years: Highest drop-outs are from Odisha (80%), Uttar Pradesh (77%), and Madhya Pradesh (76%). The lowest drop-outs are from Kerala (39%), Himachal Pradesh (47%), and Arunachal Pradesh (51%).

Figure 5.2: Percentage of female drop-outs for 5 – 18 years (64th R by states)



Source: Author's calculations based on the 64th R

Uttar Pradesh had the highest drop-out rates among all age groups, followed by Bihar and Rajasthan. Kerala and Himachal Pradesh had the lowest drop-outs. The age group 15 – 18 years had the highest drop-outs compared to the other two age groups (see Figure 5.2).

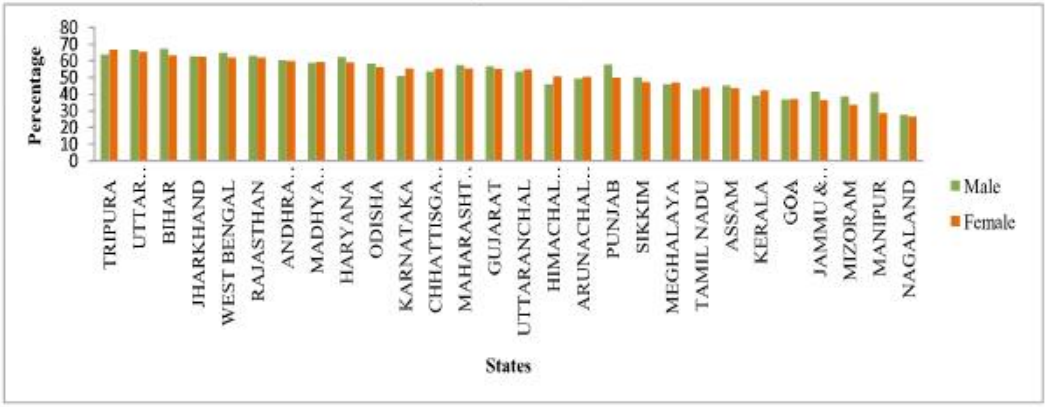
Next, we compare the drop-outs based on gender in the three age groups separately for the 64th R.

5.3 COMPARISON OF DROP-OUTS BASED ON AGE AND GENDER IN 64TH R

Age group 5 – 9 years

Male drop-outs are higher in Bihar, Punjab, Mizoram, and Manipur. Female drop-outs are higher in Tripura, Karnataka, Uttaranchal, and Himachal Pradesh (see Figure 5.3).

Figure 5.3: Percentage of Male and Female drop-outs for 5 – 9 years (64th R by states)

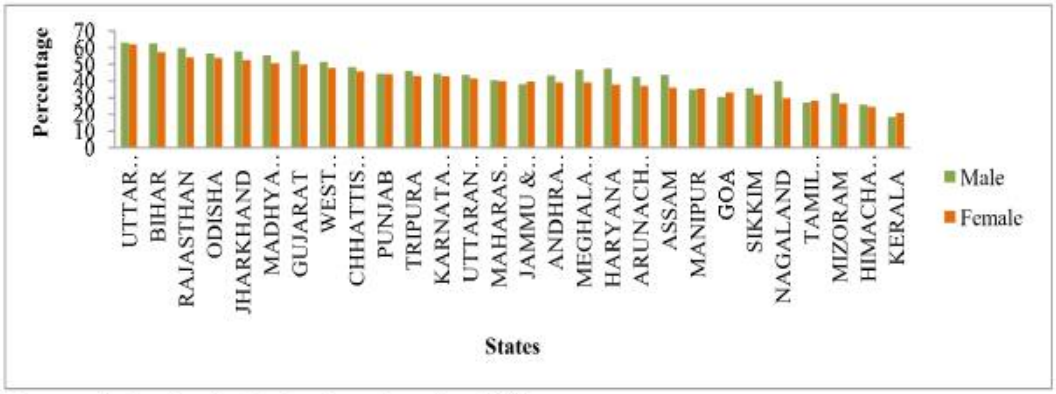


Source: Author's calculations based on the 64th R

Age group 10 – 14 years

The male drop-outs are higher than females in Bihar, Rajasthan, Gujarat, Meghalaya, Haryana, Andhra Pradesh, Assam, Sikkim, Nagaland, and Mizoram (see Figure 5.4)

Figure 5.4: Percentage of Male and Female drop-outs for 10 – 14 years (64th R by states)

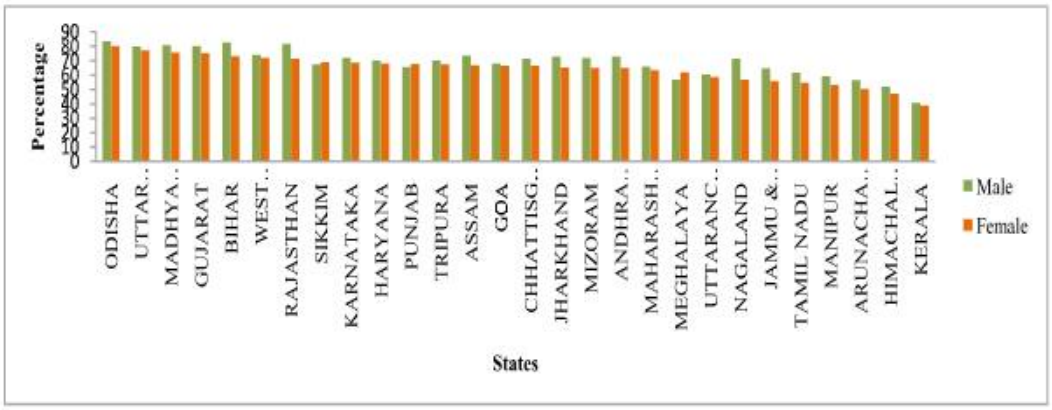


Source: Author's calculations based on the 64th R

Age group 15 – 18 years

Drop-outs among the age group 15 – 18 are higher among males than females in most states. Female drop-outs are slightly higher than males in Sikkim, Punjab, and Meghalaya (see Figure 5.5).

Figure 5.5: Percentage of Male and Female drop-outs for 15 – 18 years (64th R by states)



Source: Author's calculations based on the 64th R

Table 5.3 and Table 5.4 provide the reasons for drop-outs for ages 5 – 18 years and gender for 64th R and 71st R, respectively.

In the 64th R, we noticed that parent not interested in studies were the reason for the highest percentage of drop-outs in the age group 5 – 9 years and financial constraints were the reason showing a high percentage of drop-outs in the age group 10 – 14 years and 15 – 18 years. In the 71st R, child not interested in studies was the reason for the highest drop-outs across the three age groups.

Table 5.3: Reasons for drop-outs based on age and gender 64th R

Code No.	Reasons	64th R					
		5-9 year		10-14 year		15-18 year	
		Male	Female	Male	Female	Male	Female
1	parent not interested in studies	21.47	21.58	16.07	15.62	13.17	10.12
2	inadequate number of teachers	0.07	0.05	0.03	0.09	0.03	0.04
3	school is far off	2.73	2.87	2.38	2.39	2.69	1.74
4	to work for wage/salary	2.08	1.93	2.89	2.96	3.24	4.73
5	for participating in other economic activities	2.88	2.88	4.32	4.04	4.85	6.58
6	to look after younger siblings	1.41	1.18	1.4	1.08	0.97	0.32
7	to attend other domestic chores	4.4	4.88	4.07	3.96	4.78	3.12
8	financial constraints	18.52	17.56	21.47	21.5	22.7	23.87
10	timings of educational institutions not	0.2	0.2	0.11	0.11	0.09	0.05
11	for helping in household enterprises	1.69	1.55	2.21	2.41	2.6	3.25
12	language/medium of instruction used unfamiliar	0.13	0.09	0.1	0.08	0.08	0.08
13	no tradition in the community	1.93	2.04	1.42	1.54	1.08	0.88
14	education not considered necessary	9.82	9.76	6.96	7.14	4.59	4.29
15	child not interested in studies	10.66	10.97	15.76	15.72	16.12	19.14
16	unable to cope up or failure in studies	5.1	5.16	7.56	7.74	9.59	10.62
17	unfriendly atmosphere at school	0.18	0.23	0.21	0.41	0.22	0.21
18	completed desired level/class	4.18	5.42	4.26	4.57	6.75	5.53
20	non-availability of ladies toilet	0.03	0.03	0.04	0.05	0.03	0.01
21	non-availability of lady teacher	0.1	0.07	0.05	0.08	0.05	0.05
29	Others	12.44	11.54	8.69	8.52	6.38	5.37

Source: Author's calculations based on the 64th R

Table 5.4: Reasons for drop-outs based on age and gender 71st R

Code No.	Reasons	71st R					
		5-9 year		10-14 year		15-18 year	
		Male	Female	Male	Female	Male	Female
1	not interested in education	22.09	22.44	26.66	24.87	25.74	22.26
2	financial constraints	15.27	16.06	18.57	18.86	19.88	18.42
3	engaged in domestic activities	19.72	18.89	15.36	16.51	12.62	16.8
4	engaged in economic activities	8.19	8.26	11.35	10.92	15.91	13.99
5	School is far off	2.69	2.47	2	2.1	1.68	2.4
6	timings of educational institution not suitable	0.03	0.09	0.08	0.02	0.04	0.06
7	language/medium of instruction used unfamiliar	0.1	0.05	0.2	0.09	0.09	0.09
8	inadequate number of teachers	0.03	0.03	0.03	0	0.03	0.06
10	quality of teachers not satisfactory	0.08	0.14	0.08	0.2	0.13	0.18
11	never enrolled - no tradition in the community	1.72	1.44	1.26	0.96	0.47	0.72
12	ever enrolled - unable to cope up with studies/ failure in studies	3.03	3.09	4.08	4.31	5.9	5.67
13	ever enrolled in an unfriendly atmosphere at school	0.1	0.05	0.2	0.13	0.17	0.19
14	ever enrolled and completed the desired level/class	2.74	2.32	3.08	2.88	4.79	4.87
15	ever enrolled in preparation for competitive examination	0.6	0.46	0.94	1.1	1.94	1.82
16	girl student - non-availability of female teacher	0.15	0.08	0.15	0.14	0.05	0.07
17	girl student - non-availability of girls' toilet	0	0	0	0	0.01	0.04
18	girl student - marriage	15.52	7.25	3.58	3.42	2.45	3.19
19	Others	0	16.88	12.38	13.49	8.1	9.15

Source: Author's calculations based on the 71st R

Next, we present the age and gender-specific analysis of the 71st R.

5.4 GENDER-WISE PERCENTAGE OF DROP-OUTS AT THE STATE LEVEL FOR THE AGE GROUP 5 – 18 YEARS (71ST R)

In this section, we present the analysis of male drop-outs based on the 71st R. Once again, we categorise the age group 5 – 18 years into three sub-groups: 5 – 9, 10 – 14, and 15 – 18 years. (see Figure 5.6)

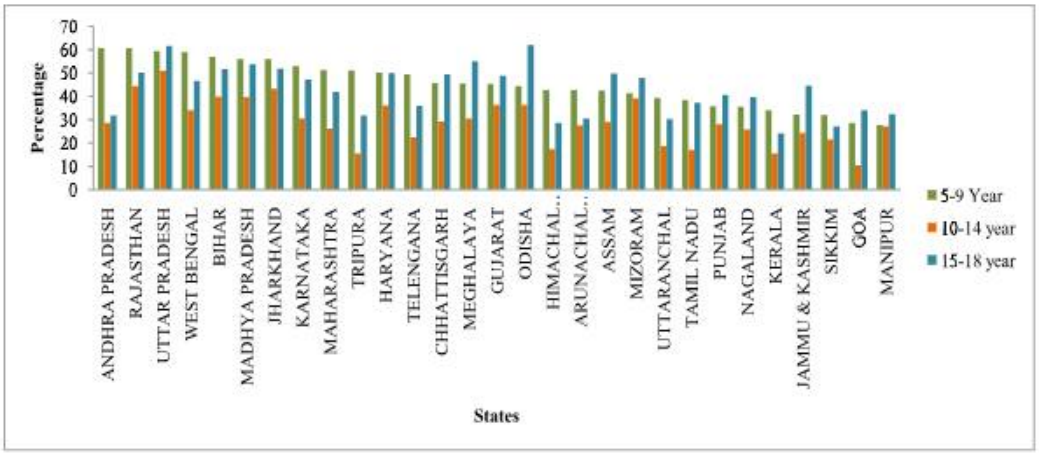
5.4.1 Male Drop-outs:

Age group 5 – 9 years: Andhra Pradesh (61%), Rajasthan (61%), Uttar Pradesh (59%), and West Bengal (59%) had the highest drop-outs. Manipur (28%), Goa (29%), and Sikkim (32%) had the lowest drop-outs.

Age group 10 – 14 years: Uttar Pradesh (51%), Rajasthan (44%), and Jharkhand (43%) had the highest drop-outs, while Goa (10%), Tripura (15.36%), and Kerala (15.40%) showed the lowest drop-outs.

Age group 15 – 18 years: Odisha (62%), Uttar Pradesh (62%), and Meghalaya (55%) had the highest drop-outs, while Kerala (24%), Sikkim (27%), and Himachal Pradesh (29%) had the lowest.

Figure 5.6: Percentage of Male drop-outs for 5 – 18 years (71st R by states)



Source: Author's calculations based on the 71st R

Few states have higher drop-out rates in one specific age group than others. Andhra Pradesh, Rajasthan, Bihar, Karnataka, Tripura, and Telangana show a high male drop-out rate in the 5 – 9 age group compared to other age groups. In the 15 – 18 age group, Odisha, Meghalaya, Assam, Jammu & Kashmir, Gujarat, and Punjab reported high drop-outs compared to other age groups.

5.4.2 Female Drop-outs:

The age group 5 – 18 years is split into three sub-groups: 5 – 9, 10 – 14, and 15 – 18.

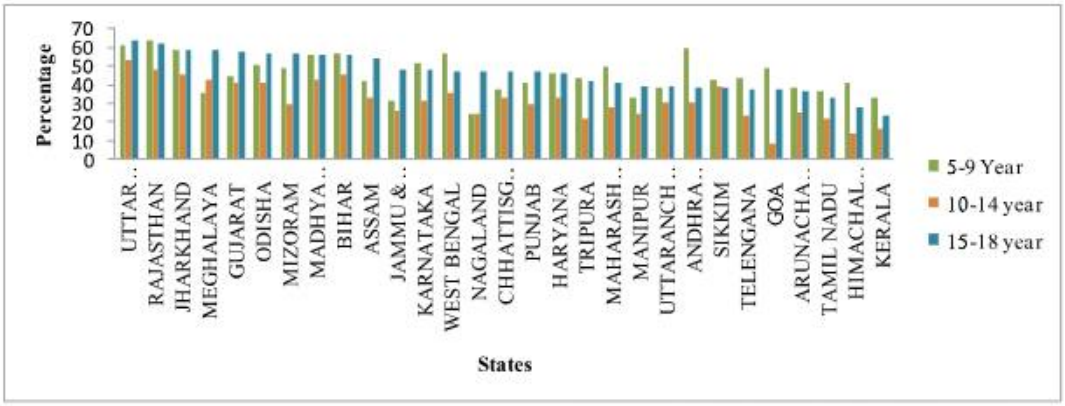
Age group 5 – 9 years: Rajasthan (64%), Uttar Pradesh (61%), and Andhra Pradesh (59%) have the highest drop-outs, while Nagaland (24%), J&K (31%), and Kerala (33%) have the lowest (see Figure 5.7).

Age group 10 – 14 years: Uttar Pradesh (53%), Rajasthan (48%), and Bihar (45%) had the highest drop-outs. Goa (8%), Himachal Pradesh (13.5%), and Kerala (17%) had the lowest.

Age group 15 – 18 years: Uttar Pradesh (64%), Rajasthan (62%) and Jharkhand (58%) had the highest drop-outs, while Kerala (23%), Himachal Pradesh (27%) and Tamil Nadu (33%) had the lowest.

The drop-out rate in the 5 – 9 age groups is higher than in the other age groups. The states with higher drop-outs in the 5 – 9 age group are Andhra Pradesh, Maharashtra, Goa, Himachal Pradesh, Kerala, Maharashtra, and West Bengal. The highest drop-out rate in 15 – 18 years is reported in Meghalaya, Gujarat, Odisha, Mizoram, Assam, Jammu & Kashmir, Nagaland, Chhattisgarh, and Punjab.

Figure 5.7: Percentage of female drop-outs for 5 – 18 years (71st R by states)



Source: Author's calculations based on the 71st R

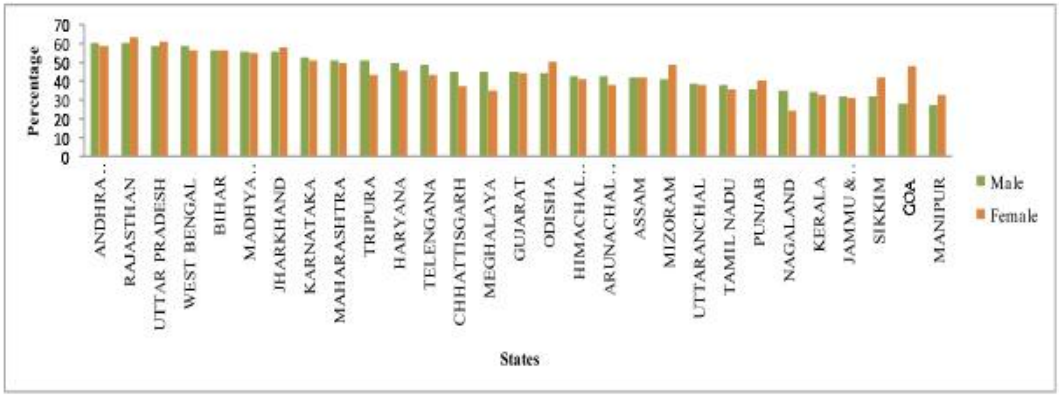
Next, we will compare the drop-out rates among males and females in the 71st R.

5.5 COMPARISON OF DROP-OUTS BASED ON AGE AND GENDER IN 71ST R

Age group 5 – 9 years:

Female drop-out rates are higher than male drop-outs in Goa, Sikkim, Mizoram, Punjab, Manipur, and Odisha (see Figure 5.8). Tripura, Haryana, Telangana, Chhattisgarh, Meghalaya, and Nagaland have a high drop-out rate among males compared to females.

Figure 5.8: Percentage of male and female drop-outs for 5 – 9 years (71st R by states)

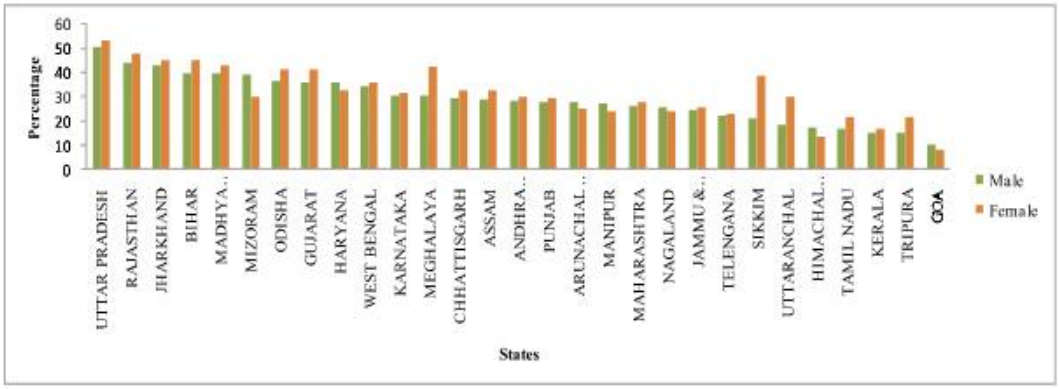


Source: Author's calculations based on the 71st R

Age group 10 – 14 years

Female drop-out rate among females is higher in Meghalaya, Sikkim, Uttaranchal, Tripura, Odisha, and Gujarat, and male drop-out is higher in Mizoram, Haryana, Manipur, and Himachal Pradesh (see Figure 5.9).

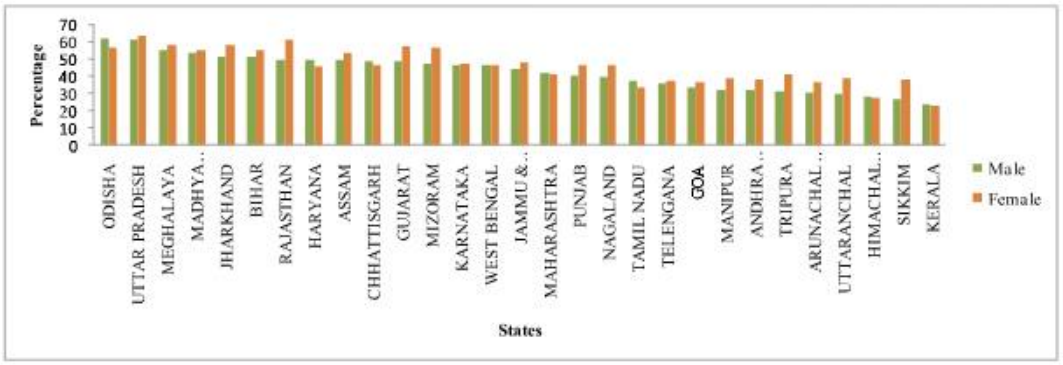
Figure 5.9: Percentage of male and female drop-outs for 10 – 14 years (71st R by states)



Source: Author's calculations based on the 71st R

Age group 15 – 18 years

Figure 5.10: Percentage of Male and Female drop-outs for 15 – 18 years (71st R by states)



Source: Author's calculations based on the 71st R

Female drop-outs are higher in Rajasthan, Gujarat, Mizoram, Punjab, Nagaland, Manipur Uttaranchal, and Sikkim. Male drop-outs are higher in Odisha, Haryana, and Chhattisgarh (Refer to Figure 5.10). In the 71st R, female drop-out rates are higher across all age groups in most states.

5.6 GENDER-WISE COMPARISON OF DROP-OUTS BETWEEN 64TH R AND 71ST R BY STATES

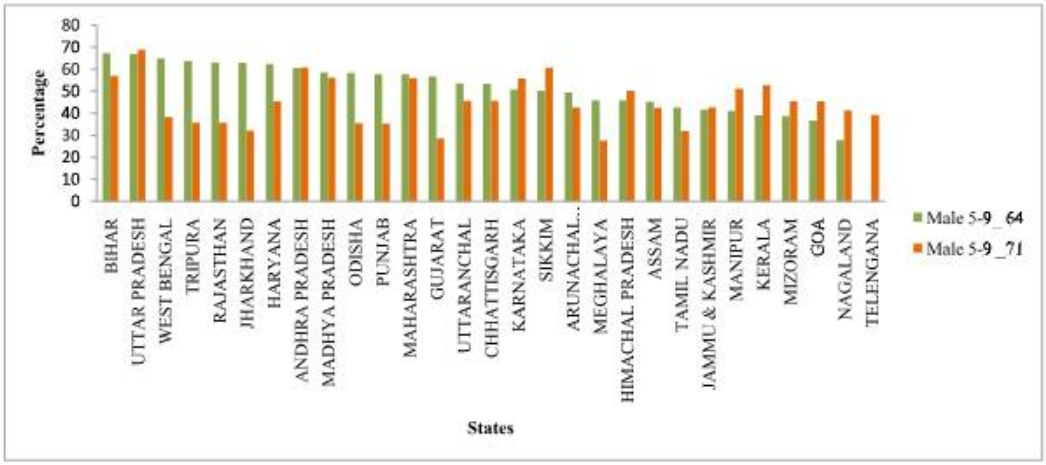
We now compare the drop-out rates for the 64th R and the 71st R by age and gender. (Telangana, as it is a new state, does not have data to compare for the 64th R).

5.6.1 Comparison between males in 64th R and 71st R

Age group 5 – 9 years (Males):

There is a reduction in the drop-out rate from the 64th R to the 71st R in some states like West Bengal, Tripura, Rajasthan, Jharkhand, Gujarat, and Meghalaya (see Figure 5.11). The drop-out rate has increased in a few states like Sikkim, Karnataka, Manipur, Kerala, Mizoram, Goa, and Nagaland.

Figure 5.11: Percentage of male drop-outs for 5 – 9 years (64th R and 71st R by states)

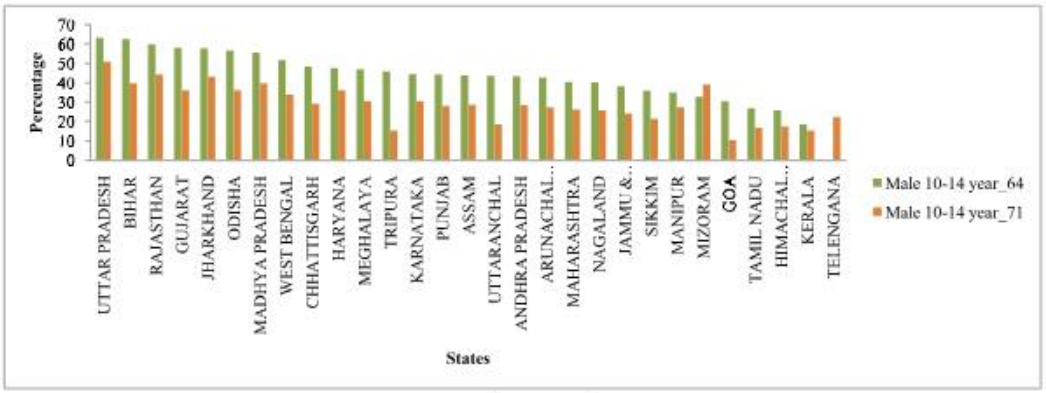


Source: Author's calculations based on the 64th R & 71st R

Age group 10 – 14 years (Males):

There is a reduction in the drop-out rate in the 71st R compared to the 64th R in all the states except for Mizoram (see Figure 5.12). The drop-out rate in Tripura has reduced significantly in the 71st R.

Figure 5.12: Percentage of male drop-outs for 10 – 14 years (64th R and 71st R by states)

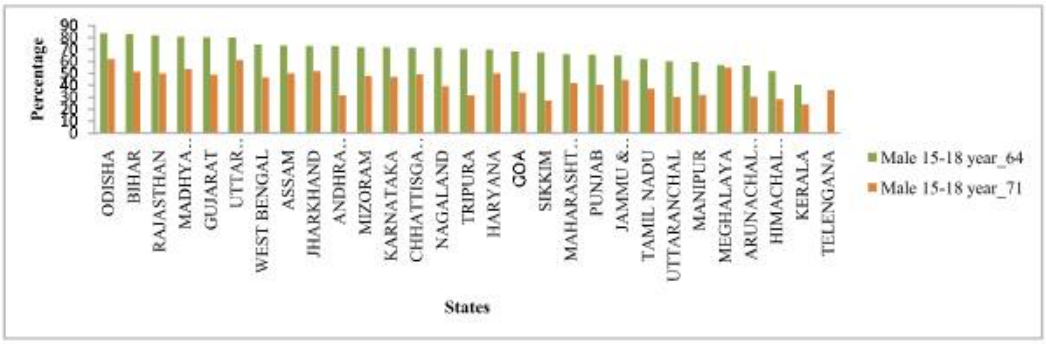


Source: Author's calculations based on the 64th R & 71st R

There is a reduction in the drop-out rate in the 71st R compared to the 64th R among males in all the states (see Figure 5.13).

Age group 15 – 18 years (Males):

Figure 5.13: Percentage of male drop-outs for 15 – 18 years (64th R and 71st R by states)

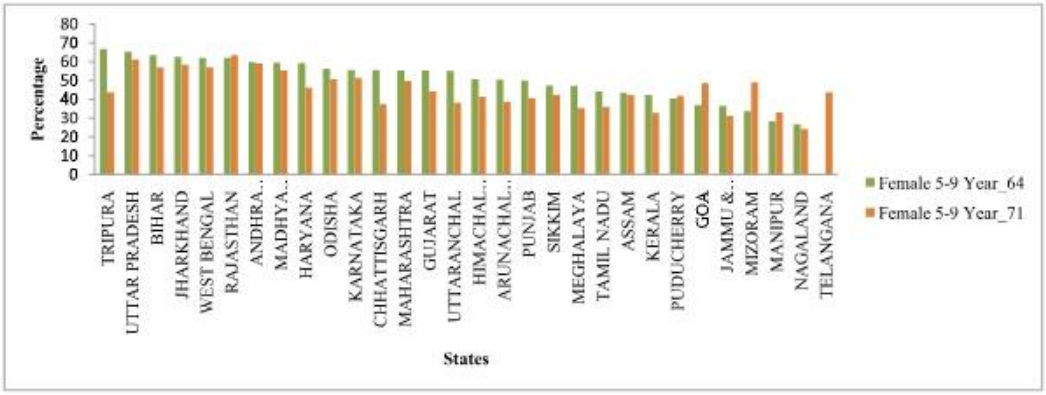


Source: Author's calculations based on the 64th R & 71st R

5.6.2 Comparison between females in the 64th R and 71st R

Age group 5-9 years (Females):

Figure 5.14: Percentage of female drop-outs for 5 – 9 years (64th R and 71st R by states)



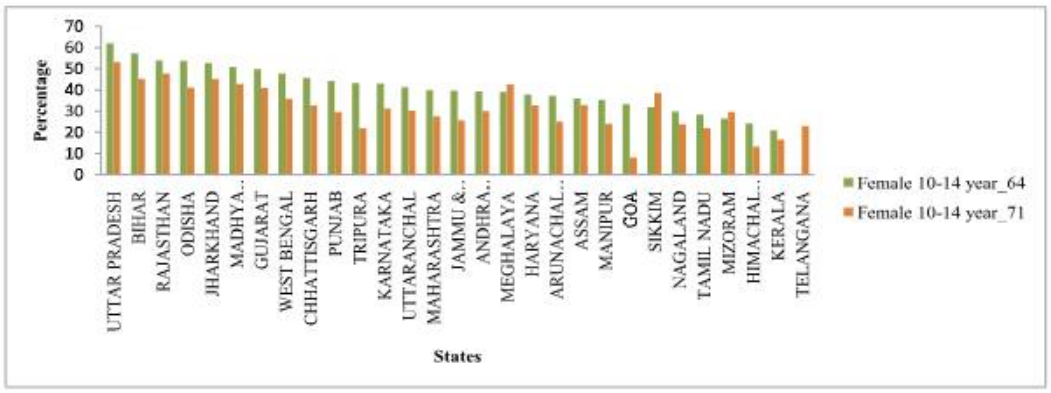
Source: Author's calculations based on the 64th R & 71st R

There is a decline in the drop-outs among females in the age group of 5 – 9 years in 71st R compared to the 64th R, except in a few states like Goa, Mizoram, Manipur and Rajasthan (see Figure 5.14).

Age group 10-14 years (Females):

The drop-out rate in all the states has declined in the age group of 10 – 14 years except Mizoram, Meghalaya, and Sikkim (see Figure 5.15).

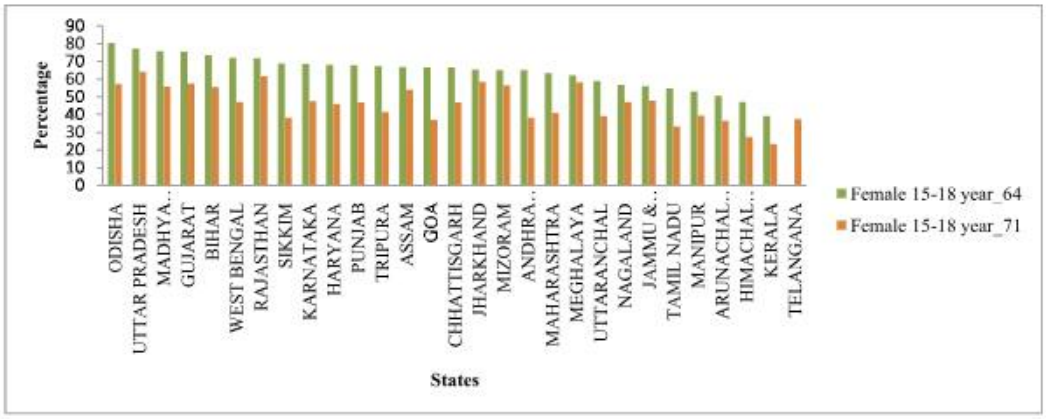
Figure 5.15: Percentage of female drop-outs for 10 – 14 years (64th R and 71st R by states)



Source: Author's calculations based on the 64th R & 71st R

Age group 15 – 18 years (Females):

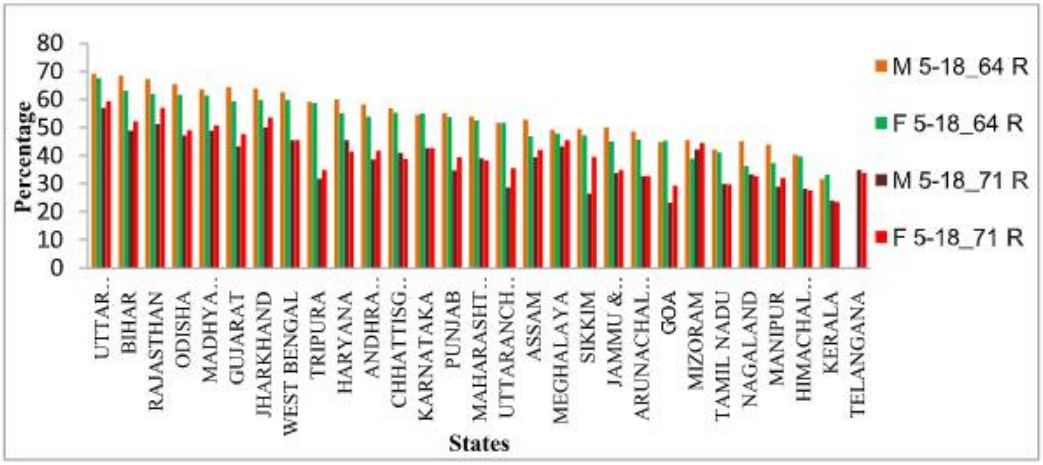
Figure 5.16: Percentage of female drop-outs for 15 – 18 years (64th R and 71st R by states)



Source: Author's calculations based on the 64th R & 71R

There is a decline in the drop-out rate from the 64th R to the 71st R among females in all the states (see Figure 5.16).

Figure 5.17: Percentage of Male and Female drop-outs for 5 – 18 years (64^{th} R and 71^{st} R by states)



Source: Author's calculations based on the 64th R & 71st R

Overall, there has been a decline in the drop-out rate in the 71^{st} R compared to the 64^{th} R across all age groups (see Figure 5.17 & Table 5.5).

Table 5.5: Percentage of school drop-outs for 5 – 18 years by gender

States	NSSO 64_Male	NSSO 64_Female	NSSO 71_Male	NSSO 71_Female
Andhra Pradesh	58.24	54.00	38.67	41.80
Arunachal Pradesh	48.66	45.65	32.61	32.69
Assam	52.92	46.92	39.42	42.07
Bihar	68.63	63.06	48.99	52.12
Chhattisgarh	56.87	55.28	40.91	38.71
Goa	44.78	45.28	23.28	29.23
Gujarat	64.46	59.38	43.31	47.63
Haryana	60.06	55.14	45.50	41.41
Himachal Pradesh	40.28	39.70	28.13	27.55
Jammu & Kashmir	50.00	44.97	33.91	34.91
Jharkhand	63.80	59.82	50.04	53.63
Karnataka	54.48	54.97	42.70	42.59
Kerala	31.68	33.23	23.95	23.49

Madhya Pradesh	63.62	61.40	49.01	50.76
Maharashtra	53.82	52.52	39.05	38.35
Manipur	44.00	37.42	29.00	32.10
Meghalaya	49.22	47.88	43.30	45.53
Mizoram	45.40	38.97	42.20	44.56
Nagaland	45.21	36.33	33.43	32.59
Odisha	65.44	61.63	47.27	49.08
Punjab	55.22	53.78	34.69	39.33
Rajasthan	67.27	61.96	51.28	57.02
Sikkim	49.53	47.26	26.43	39.55
Tamil Nadu	42.12	41.01	30.02	29.76
Telangana	*	*	34.85	33.75
Tripura	59.23	58.77	31.82	34.79
Uttar Pradesh	69	67.57	56.96	59.30
Uttaranchal	51.82	51.61	28.57	35.39
West Bengal	62.66	59.76	45.41	45.46

*Source: Author's calculation based on 64th R and 71st R Note: * No data available for 64 R*

The drop-out rate in 64th R among males was higher in all the states except Goa, Karnataka and Kerala. There has been an overall reduction in drop-outs from the 64th R to 71st R among males and females. The percentage decline in drop-outs among males was higher compared to the females between the two rounds. There is a higher percentage of drop-outs among females in the 71st R in a few states than males. Mizoram is the only state showing a 6% increase in female drop-outs from the 64th R (39%) to the 71st R (45%) (see Table 5.6).

We observe that the rate of drop-outs among males is higher than among females across all age groups in the 64th R. We have noticed high drop-outs among females in specific age groups in a few states.

Age group 5 – 9 years: Arunachal Pradesh, Assam, Chhattisgarh, Goa, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Meghalaya, Tamil Nadu, Tripura

Table 5.6: Percentage of School Drop-outs in 64th R based on age and gender in India

States	64th R					
	5 - 9 Years		10 - 14 years		15 - 18 Years	
	Male	Female	Male	Female	Male	Female
Andhra Pradesh	60.46	59.75	43.36	39.22	72.98	65.01
Arunachal Pradesh	49.41	50.41	42.65	37.17	56.59	50.67
Assam	45.29	43.61	43.76	36.04	73.56	66.83
Bihar	67.35	63.41	62.51	57.26	82.75	73.41
Chhattisgarh	53.45	55.48	48.36	45.74	71.60	66.58
Goa	36.59	37.04	30.61	33.33	68.18	66.67
Gujarat	56.78	55.37	58.10	49.95	80.25	75.41
Haryana	62.25	59.23	47.69	37.89	70.23	68.11
Himachal Pradesh	45.79	50.71	25.94	24.29	51.95	47.10
Jammu & Kashmir	41.56	36.49	38.10	39.62	64.95	56.11
Jharkhand	62.96	62.54	57.87	52.73	73.01	65.50
Karnataka	50.84	55.56	44.55	43.02	71.96	68.78
Kerala	39.04	42.30	18.59	20.97	40.65	39.04
Madhya Pradesh	58.68	59.45	55.44	50.79	80.81	75.71
Maharashtra	57.71	55.39	40.50	40.09	65.99	63.46
Manipur	41.06	28.51	35.03	35.55	59.36	53.14
Meghalaya	45.87	47.04	46.89	39.14	56.87	62.10
Mizoram	38.66	33.69	32.75	26.52	72.16	65.05
Nagaland	27.65	26.64	40.08	29.89	71.50	56.86
Odisha	58.37	56.20	56.63	53.87	83.64	80.50
Punjab	57.80	50.00	44.27	44.25	65.73	67.95
Rajasthan	63.23	62.03	59.83	54.07	81.89	71.68
Sikkim	50.23	47.41	35.80	31.85	67.61	68.95
Tamil Nadu	42.74	44.18	27.01	28.32	61.90	54.89
Telangana	*	*	*	*	*	*
Tripura	63.74	66.83	46.03	43.20	70.48	67.31
Uttar Pradesh	66.88	65.47	63.15	62.02	80.02	77.06
Uttaranchal	53.53	54.98	43.56	41.39	60.55	58.89
West Bengal	64.97	62.13	51.59	47.76	74.11	72.10

*Source: Author's calculation based on 64th R Note: * No data available for 64 R.*

and Uttaranchal show a higher percentage of female drop-outs compared to male drop-outs.

Age group 10 – 14 years: Goa, Jammu & Kashmir, Kerala, Manipur and Tamil Nadu have shown high drop-out rates among females compared to male drop-outs.

Age group 15 – 18 years: Meghalaya, Punjab, and Sikkim show a higher female drop-out rate than males. (see Table 5.6).

In the 71st R, the rate of drop-outs in the three age groups is discussed below (Refer to Table 5.7)

Age group 5 – 9 years: Goa, Jharkhand, Manipur, Mizoram, Odisha, Punjab, Rajasthan, Sikkim and Uttar Pradesh show a high percentage of female drop-outs.

Age group 10 – 14 years: High female drop-outs were observed in most states except Arunachal Pradesh, Goa, Haryana, Himachal Pradesh, Manipur, Mizoram and Nagaland.

Age group 15 – 18 years: High female drop-outs were observed in most states except Chhattisgarh, Haryana, Himachal Pradesh, Kerala, Maharashtra, Odisha and Tamil Nadu (Refer Table 5.7).

Table 5.7: Percentage of school drop-outs in 71st R based on age and gender in India

States	71st R					
	5 - 9 Years		10 - 14 years		15 - 18 Years	
	Male	Female	Male	Female	Male	Female
Andhra Pradesh	60.59	59.10	28.46	30.02	31.84	38.22
Arunachal Pradesh	42.65	38.52	27.46	25.14	30.51	36.53
Assam	42.45	42.19	28.83	32.88	49.89	53.82
Bihar	56.85	56.82	39.86	45.30	51.64	55.48
Chhattisgarh	45.59	37.50	29.10	32.73	49.34	46.86

Goa	28.57	48.57	10.42	8.16	34.04	36.96
Gujarat	45.34	44.12	36.16	41.13	48.79	57.43
Haryana	50.14	46.15	36.11	32.65	50.00	45.82
Himachal Pradesh	42.66	41.32	17.41	13.50	28.50	27.50
Jammu & Kashmir	32.09	31.15	24.26	25.75	44.51	48.03
Jharkhand	55.83	58.40	43.15	45.22	51.79	58.52
Karnataka	52.93	51.31	30.49	31.37	47.11	47.48
Kerala	34.14	32.72	15.40	16.70	24.03	23.33
Madhya Pradesh	55.89	55.37	39.69	42.92	53.71	55.56
Maharashtra	51.18	49.61	26.27	27.62	42.01	41.07
Manipur	27.60	33.04	27.19	24.06	32.32	39.46
Meghalaya	45.41	35.26	30.48	42.61	54.87	58.25
Mizoram	41.29	49.02	39.02	29.71	47.86	56.60
Nagaland	35.53	24.24	25.81	23.81	39.53	47.01
Odisha	44.40	50.57	36.21	41.22	61.90	57.09
Punjab	35.66	40.71	28.00	29.62	40.50	46.76
Rajasthan	60.58	63.61	44.32	47.67	50.06	61.60
Sikkim	32.00	42.31	21.43	38.71	27.10	38.14
Tamil Nadu	38.21	36.14	16.86	21.97	37.21	33.43
Telangana	49.44	43.75	22.38	23.05	35.96	37.45
Tripura	51.05	43.79	15.36	21.96	31.68	41.46
Uttar Pradesh	59.24	61.08	50.88	53.23	61.56	64.03
Uttaranchal	39.31	38.05	18.68	30.15	30.20	39.25
West Bengal	58.90	56.82	34.06	35.86	46.65	47.15

Source: Author's calculation based on 71st R

The following section will discuss the most common reasons for not attending school.

5.7 GENDER-WISE COMPARISON OF REASONS FOR DROP-OUTS (64TH R AND 71ST R).

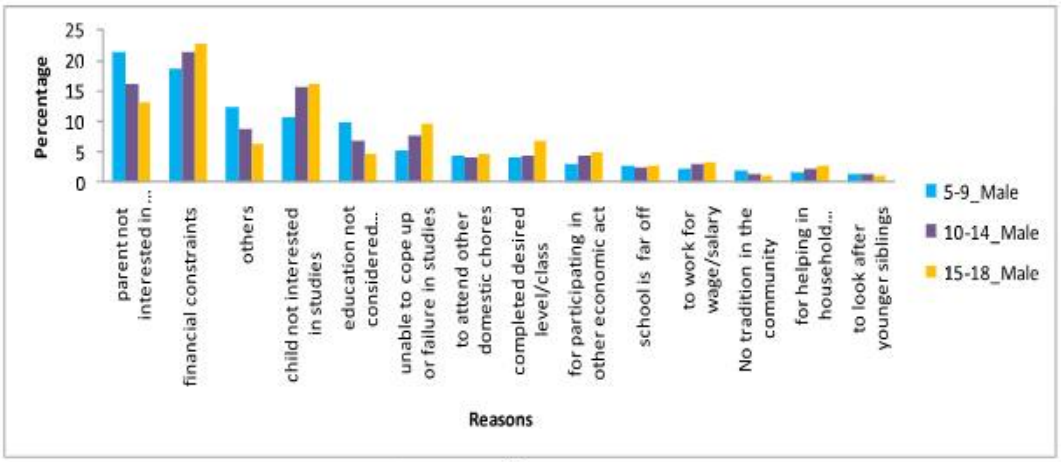
We will first discuss the most common reasons for dropping out of school for 64th R and 71st R and compare the rounds by age group and gender.

5.7.1 Gender-wise, the most frequent reasons for drop-outs in 64th R

Now, we discuss the reasons for dropping out for ages 5 – 18 years by gender.

Reasons for drop-outs among males 5-18 years: The reasons which have a percentage below 1% are not depicted in the graph.

Figure 5.18: Reasons for male drop-outs for age group 5 – 18 years (64th R)



Source: Author's calculations based on the 64th R

Age group 5 – 9 years: Highest percentages of drop-outs are due to "parent not interested in studies" and "education not considered necessary".

Age group 10 – 14 years: Many drop-outs are due to "financial constraints" and "child not interested in studies" in this age group.

Age group 15 – 18 years: The high percentage of drop-outs are due to "financial constraints", "child not interested in studies", "unable to cope up or failure in studies", and "completed desired level/class".

We observe that "financial constraints" and "child not interested in studies" are common reasons for higher age groups. Drop-outs due to "financial constraints" have increased as the age increases (see Figure 5.18).

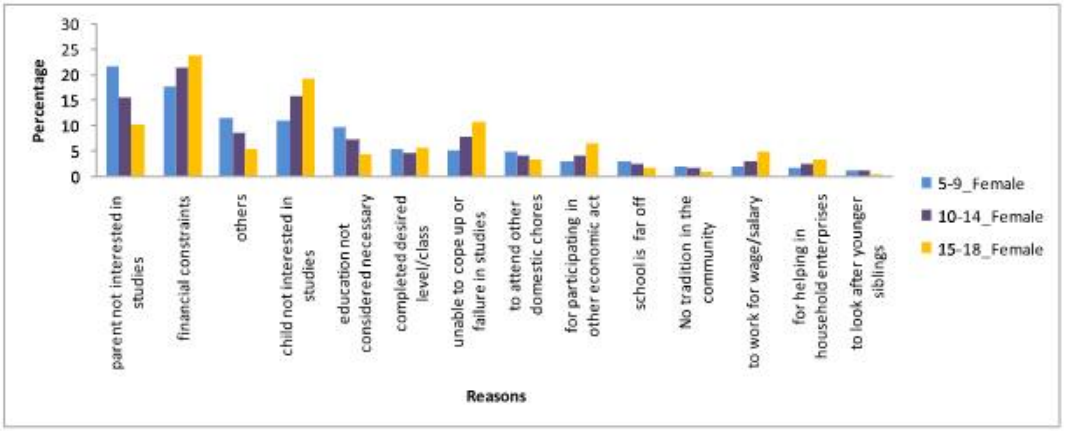
Reasons for drop-outs among females of 5 – 18 years:

Age group 5 – 9 years: "Parent not interested in studies" and "education not considered necessary" contribute to high drop-outs among females.

Age group 10 – 14 years: "Financial constraints", "parent not interested in studies", and "child not interested in studies" contribute to high drop-outs among females.

Age group 15 – 18 years: High female drop-outs were observed due to "financial constraints", "child not interested in studies", "unable to cope up or failure in studies", "to participate in other economic activities", and "to work for wage or salary" (see Figure 5.19).

Figure 5.19: Reasons for female drop-outs for age group 5 – 18 years (64th R)



Source: Author's calculations based on the 64th R

Next, we present the findings on the reasons for drop-outs in 71st R.

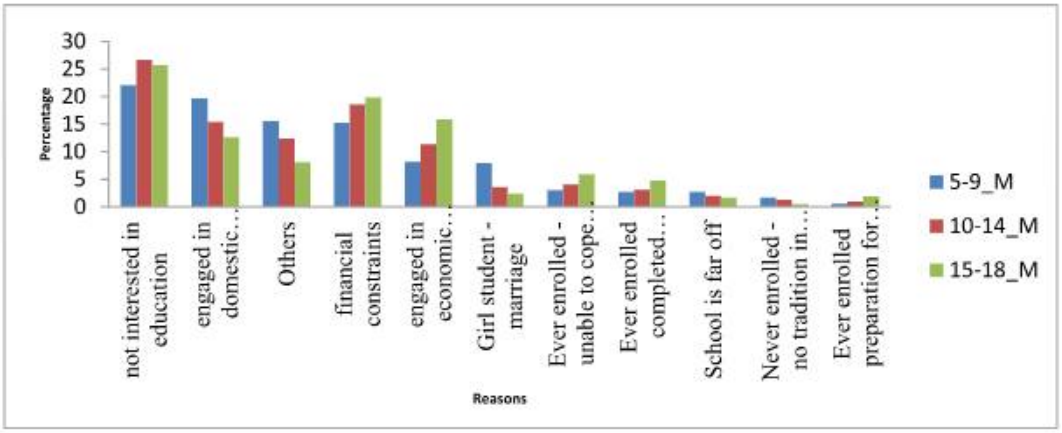
5.7.2 Gender-wise, the most frequent reasons for drop-outs in the 71st R

The reasons are analysed for the age group between 5 – 18 years by gender

Reasons for drop-outs among males 5-18 years

Here, we will discuss the reasons for male and female drop-outs separately for each sub-group. Reasons showing percentages below 1% are excluded (See Figure 5.20).

Figure 5.20: Reasons for male drop-outs for age group 5 – 18 years (71st R)



Source: Author's calculations based on the 71st R

Age group 5 – 9 years: The high percentages of drop-outs are due to the reasons "not interested in education", "engaged in domestic activities", and "others".

Age group 10 – 14 years: The high percentage of drop-outs in this group is due to "not interested in education". The other reasons for high drop-outs are "financial constraints", "engaged in domestic activities", and "engaged in economic activities".

Age group 15 – 18 years: A high percentage of drop-outs are due to "not interested in education", "financial constraints", and "engaged in economic activities".

The percentage of drop-outs for the reason "engaged in domestic activities" decreased in the higher age group. High drop-outs are observed in the higher age group due to "engaged in economic activities". Among all the age groups, a high percentage of drop-outs due to "not interested in education" is noticed in the age group 10 – 14 years. The second most important reason is "engaged in domestic activities" among males.

The other reasons contributing to drop-outs are "financial constraints", "engaged in economic activities", and "Girl-student marriage" (see Figure 5.20).

Reasons for drop-outs among females 5-18 years

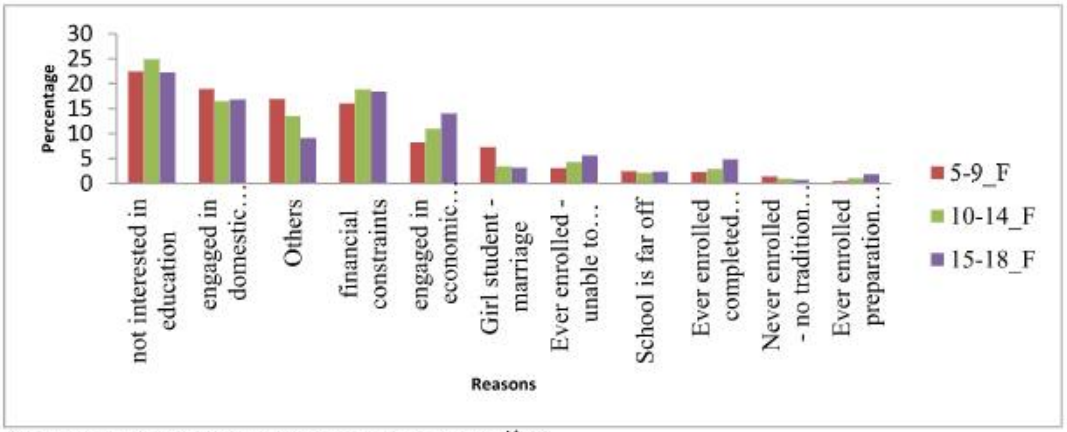
Age group 5 – 9 years: The reason "not interested in education" contributes to the highest percentage of drop-outs. Other reasons contributing to high drop-outs are "engaged in domestic activities", "others", and Girl–student marriage."

Age group 10 – 14 years: The high percentage of drop-outs are attributed to "not interested in education", "financial constraints", and "engaged in domestic activities".

Age group 15 – 18 years: The reasons "not interested in education", "financial constraints", "engaged in domestic activities", "engaged in economic activities", and "unable to cope up or failure in studies" contribute to high drop-outs in this age group (see Figure 5.21)

A high percentage of drop-outs in the age group 15 – 18 years is due to "not interested in education" and "financial constraints". Marriage was a significant factor for drop-outs among females in the 71st R, as this was introduced in the 71st R only.

Figure 5.21: Reasons for female drop-outs for age group 5 – 18 years (71st R)



Source: Author's calculations based on the 71st R

There is an increase in drop-outs due to children "engaged in domestic activities" in 71st R. We noticed that in the 71st R, there is no separate reason category to code for activities like engaged in family farm or business/ enterprises which were available in 64th R. There are no coding options to code the activities such as children involved in family agricultural activities in 71st R. We notice that engaged in domestic activities also contributes to high percentage of drop-outs among males and females. More male children drop-out as they are "engaged in economic activities". A high percentage of drop-outs are also reported due to other reasons coded under 'others'. From the code 'others', we cannot determine what reasons are coded under this particular reason.

5.8 CATEGORIES OF REASONS FOR DROP-OUTS OF 64TH R AND 71ST R

As noted earlier, the 64th R and 71st R differ slightly in terms of reasons for not attending school, as discussed earlier. We classify the reasons for not attending school into seven categories: 64th R and 71st R.

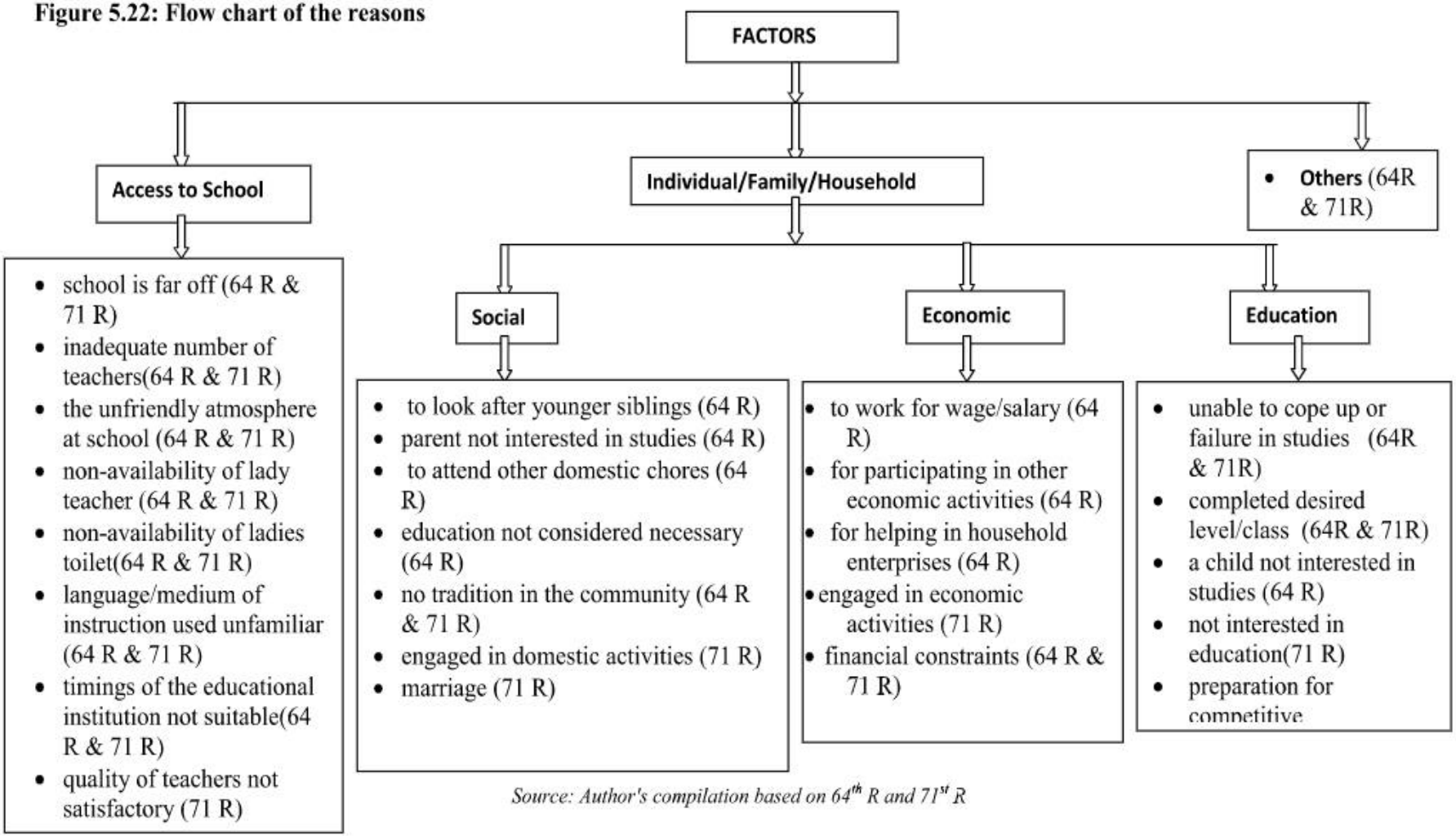
Further, we have classified the reasons based on four factors: access, individual, family, or household factors, including social, economic, education-related factors, and others (see Figure 5.22).

Table 5.8: Categories of reasons 64th R and 71st R

Sr. No.	Reason category	Major reasons used in the 64th R	Major reason used in the 71st R
1	Access to school and infrastructure	school is far off	school is far off
		inadequate number of teachers	inadequate number of teachers
		the unfriendly atmosphere at school	the unfriendly atmosphere at school
		non-availability of lady teacher	non-availability of female teachers
		non-availability of ladies toilet	non-availability of girls' toilets
		language/medium of instruction used unfamiliar	language/medium of instruction used unfamiliar
		timings of the educational institution not suitable	timings of the educational institution not suitable
			quality of teachers not satisfactory
2	Social factors	to attend other domestic chores	engaged in domestic activities
		to look after younger siblings	
		education not considered necessary	
		parent not interested in studies	
		no tradition in the community	no tradition in the community
			Marriage
3	Economic factors	financial constraints	financial constraints
		for participating in other economic activities	engaged in economic activities
		to work for a wage/salary	
		for helping in household enterprises	
4	Education	unable to cope up or failure in studies	unable to cope up with studies/ failure in studies
		completed desired level/class	completed the desired level/class
		child not interested in studies	
			not interested in education
			preparation for competitive examination
5	Others	Others	others

Source: Author's compilation of categories based on the 64th R and 71st R (NSSO 2011; 2016b)

Figure 5.22: Flow chart of the reasons



Source: Author's compilation based on 64th R and 71st R

Table 5.9: Percentage of reasons for drop-outs based on categories

	64 R		71 R	
	Age group			
Reasons	5 -9 _Male	5 -9 _Female	5 -9 _Male	5 -9 _Female
Access to School	3.43	3.55	3.16	2.9
Social factors	34.62	34.57	9.68	8.7
Economic factors	29.57	28.8	43.18	43.21
Education	19.95	21.55	28.46	28.31
Others	12.44	11.54	15.52	16.88
	Age group			
	10-14_Male	10-14_Female	10-14 _Male	10 -14 _Female
Access to school	2.91	3.21	2.75	2.68
Social factors	25.85	25.38	4.84	4.38
Economic factors	34.96	34.87	45.28	46.29
Education	27.58	28.03	34.76	33.16
Others	8.69	8.52	12.38	13.49
	Age group			
	15-18_Male	15-18_Female	15 -18 _Male	15 -18 _Female
Access to school	3.19	2.17	2.2	3.11
Social factors	19.8	15.62	2.92	3.91
Economic factors	38.16	41.55	48.41	49.21
Education	32.46	35.29	38.37	34.62
Others	6.38	5.37	8.1	9.15

Source: Author's calculation based on 64th R and 71st R

The percentages were obtained after creating categories of reason into five categories for both the Rounds. It is observed that social factors contributed to the high percentage of drop-outs in the age group 5-9 years in the 64th R, whereas the percentage contribution in the 71st R has declined to a great extent. Economic

factors are the following important reason for a high percentage of drop-outs in the 64th R. In the 71st R, economic factors were the major contributing factor for the high percentage of drop-outs in the age group 5-9 years. In the age group 10-14 years, economic factors contributed to the high percentage of drop-outs in both rounds. Drop-outs are higher in 71st R compared to 64th R. Many children drop out due to economic factors. In the age group 15-18 years, a large percentage of drop-outs have occurred due to economic factors followed by education-related factors in the 71st R. Also across the age groups, economic factors are seen as a significant factor leading to high drop-outs in 71st R. We notice that access factors are not the reason for drop-outs.

In the next section, the study will present the findings based on social groups for the 64th R and 71st R.

5.9 GENDER-WISE REASONS FOR DROP-OUTS BASED ON SOCIAL GROUPS FOR AGES 5 – 18 YEARS.

The social groups studied are Scheduled Tribe (ST), Scheduled Caste (SC), Other Backward Class (OBC), and Others (General category). Our findings are presented based on age and gender.

We will first present the findings of the 64th R, followed by the 71st R.

5.9.1 Gender-wise reasons for drop-outs (64th R by social groups)

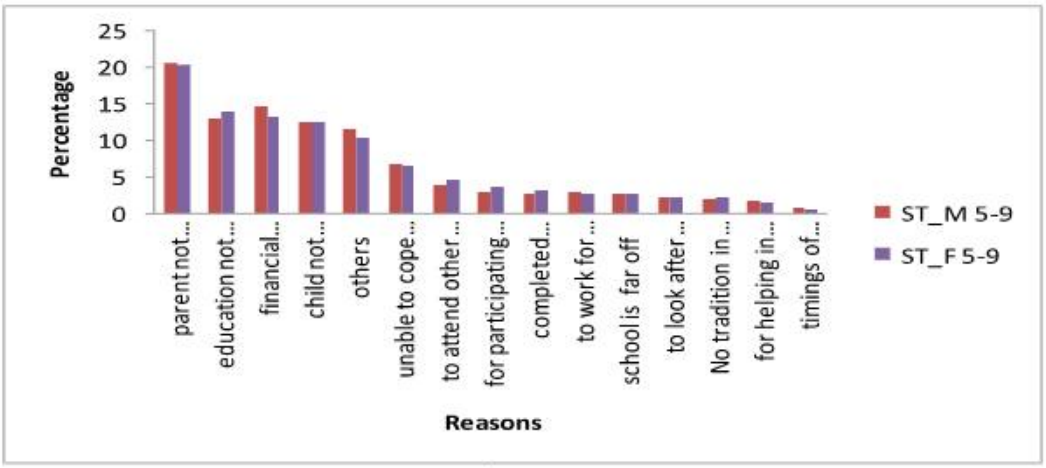
The findings are presented for the age group 5 – 18 years, split into three sub-groups: 5 – 9 years, 10 – 14 years and 15 – 18 years. The first three highest percentages of reasons for drop-outs for the social groups are discussed.

Age group 5-9 years

Scheduled Tribe (ST):

A higher percentage of male and female drop-outs are observed due to the reasons "parent not interested in studies", "education not considered necessary", and "financial constraints".

Figure 5.23: Reasons for drop-outs among ST category for 5-9 years (64th R)



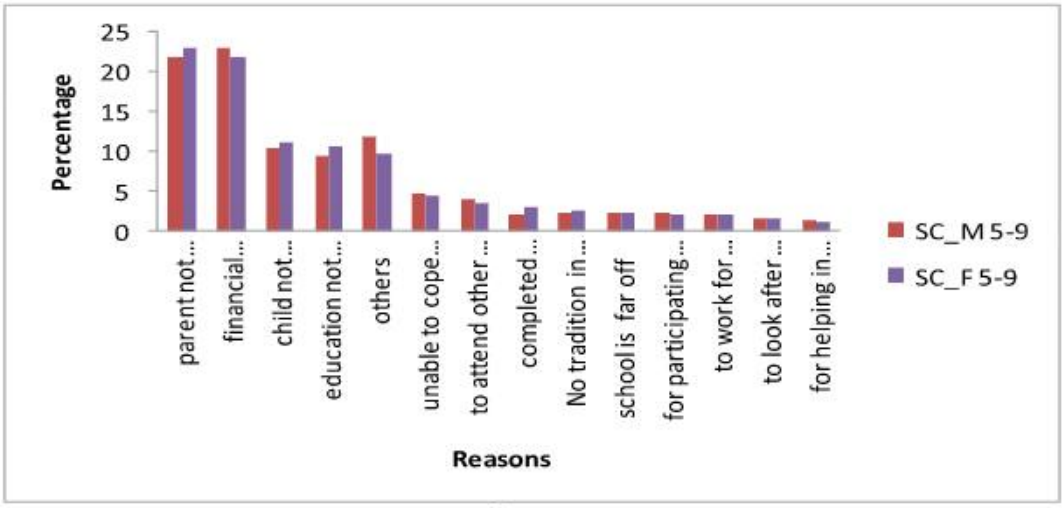
Source: Author's calculations based on the 64th R

High female drop-out rates compared to males are due to "education not considered necessary" and other reasons like "child not interested in studies", "to attend other household chores", and "for participating in other economic activities". A high percentage of male drop-outs compared to females is observed due to "parents not interested in studies" and "financial constraints," among other reasons (see Figure 5.23).

Scheduled Caste (SC):

A high percentage of male and female drop-outs are due to "parent not interested in studies", "financial constraints", and "child not interested in studies". These are the three crucial reasons for high drop-outs in the SC group. 23% of the female and 22 % of male drop-outs are due to parents not interested in studies. High male drop-outs compared to females are observed due to "financial constraints". A higher percentage of female drop-outs is observed due to "parent not interested in studies", "child not interested in studies", and "education not considered necessary" than males (see figure 5.24).

Figure 5.24: Reasons for drop-outs among SC category for 5-9 years (64th R)



Source: Author's calculations based on the 64th R

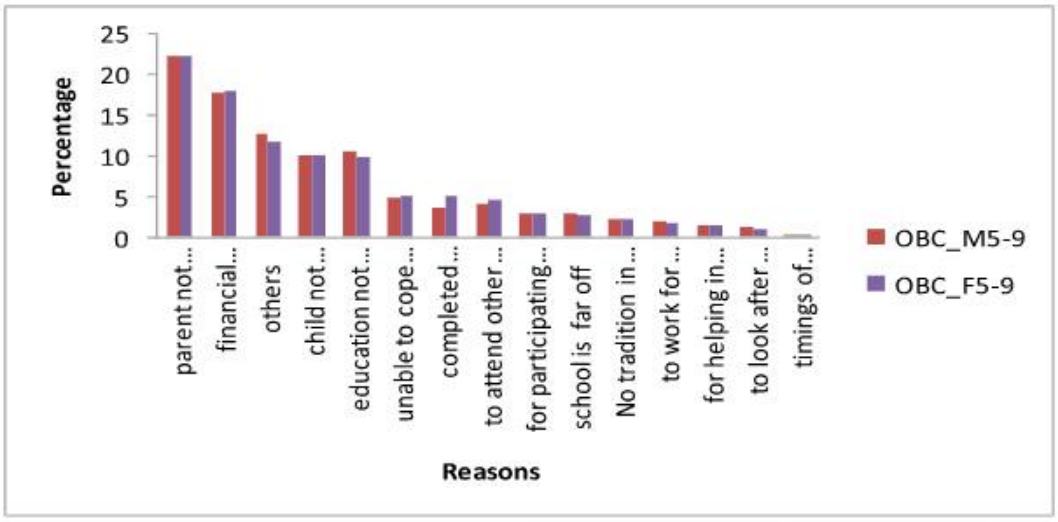
Other Backward Class (OBC):

A high percentage of male and female drop-outs are due to "parents not interested in studies", "financial constraints", and "others". A higher percentage of female drop-outs than males is due to "parent not interested in studies" and "financial constraints" and a higher percentage of male drop-outs due to reason "others" and "education not considered necessary" than females (see Figure 5.25).

Other (General):

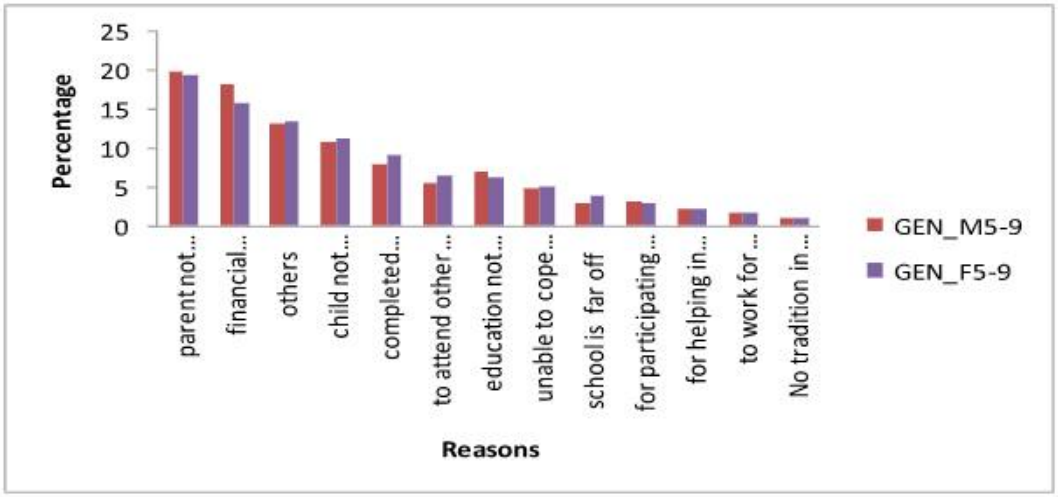
A high percentage of drop-outs among males and females is observed due to "parents not interested in studies", "financial constraints", and "others". A higher percentage of male drop-out than females is noticed due to "financial constraints". Among females, the high percentage of drop-outs is due to "parent not interested in studies", "financial constraints", "others", "child not interested in studies", and "completed desired level of education" (see Figure 5.26).

Figure 5.25: Reasons for drop-outs among OBC category for 5-9 years (64th R)



Source: Author's calculations based on the 64 R

Figure 5.26: Reasons for drop-outs among Other (General) category for 5-9 years (64th R)



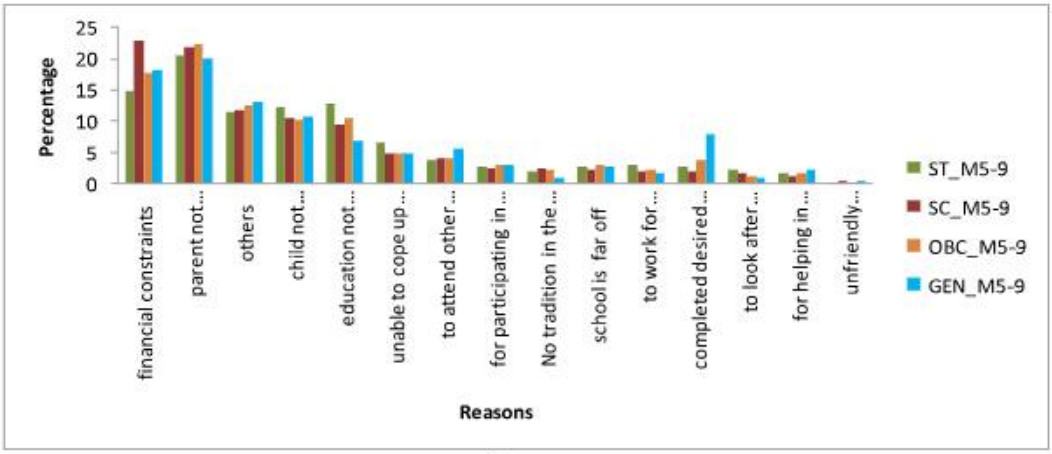
Source: Author's calculations based on the 64th R

Next, we will discuss the reasons for comparing all the social groups in the age group 5 – 9 years by gender.

Comparison of reasons among social groups for 5 – 9 years (Males)

Overall, when we compared the reasons among males in all the social categories, a high percentage of drop-outs noticed among the SC group compared to other groups is due to "financial constraints", "parent not interested in studies", and "others". A higher percentage of drop-outs among the ST category, compared to other groups, was noticed due to "parent not interested in studies", "financial constraints", "child not interested in studies", "education not considered necessary", and "unable to cope up with studies/failure in studies". Among the OBC group, the reasons are "parent not interested in studies", "financial constraints", "others", "child not interested in studies", and "education not considered necessary". Among the General category, it is observed that "parent not interested in studies", "financial constraints", "others", "child not interested in studies", and "completed desired level of education" were reasons for drop-outs. The percentage of reasons "education not considered necessary" was higher among the ST category than other groups, and reasons like "to attend other domestic chores" and "completed desired level of education" were higher among the general group than others (see Figure 5.27).

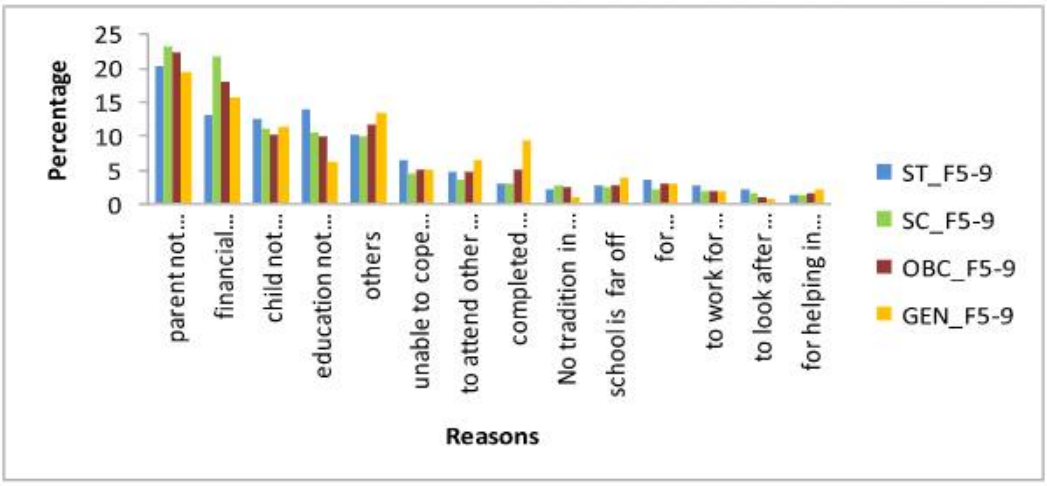
Figure 5.27: Comparison of reasons for male drop-outs for 5 – 9 years (64th R by social groups)



Source: Author's calculations based on the 64th R

Comparison of reasons among social groups for 5 – 9 years (Females)

Figure 5.28: Comparison of reasons for female drop-outs for 5 – 9 years (64th R by social groups)



Source: Author's calculations based on the 64th R

We observe that the reasons for high drop-out among females in the SC group were due to "parent not interested in studies", "financial constraints", and "child not interested in studies". The reasons for high female drop-outs among the ST group were "parent not interested in studies", "financial constraints", "education not considered necessary", and "child not interested in studies". The drop-outs due to the reason "others" and "completed the desired level of education" were higher among the general group than other groups. "Education is not considered necessary" and "child not interested in studies" was highest among the ST group compared to other groups. Among the OBC group, the reasons noticed were "parent not interested in studies", "financial constraints", and "others" (see Figure 4.28).

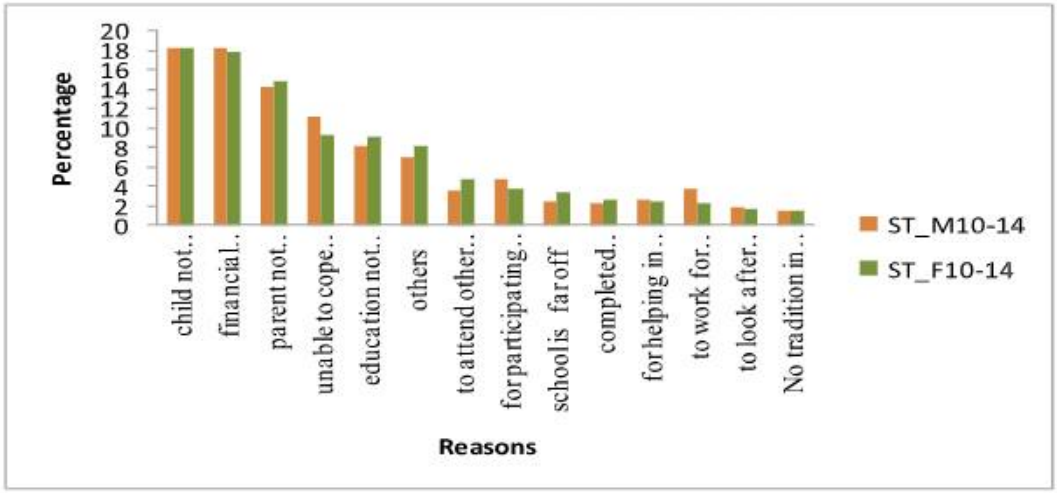
Age group 10 – 14 years

Scheduled Tribe (ST):

We notice that a high percentage of drop-outs among males and females are due to the reasons "child not interested in studies", "financial constraints", and "parent not interested in studies". The percentage of drop-outs is high among females due

to "parent not interested in studies", "education not considered necessary", "others", and "to attend other domestic chores". The percentage of drop-outs is slightly higher for males for reasons "financial constraints", "unable to cope with studies or failure in studies", "for participating in other economic activities", and "to work for wage/ salary "than females(see Figure 5.29).

Figure 5.29: Reasons for drop-outs among ST category for 10-14 years (64th R)

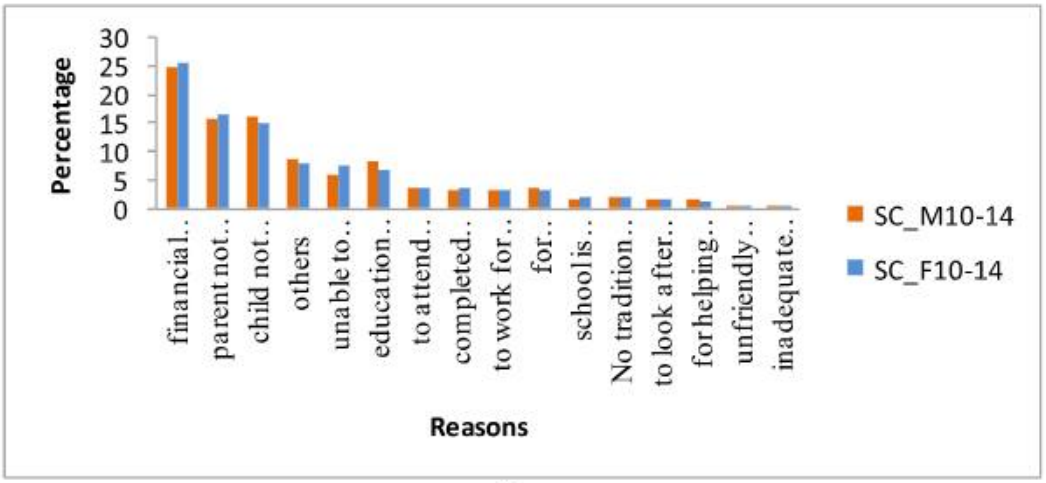


Source: Author's calculations based on the 64th R

Scheduled Caste (SC)

A high percentage of drop-outs among males and females is observed for reasons such as "financial constraints", "parent not interested in studies", and "child not interested in studies". The percentage of drop-outs was higher among females for reasons of "financial constraints" and "parent not interested in studies" than among males (see Figure 5.30)

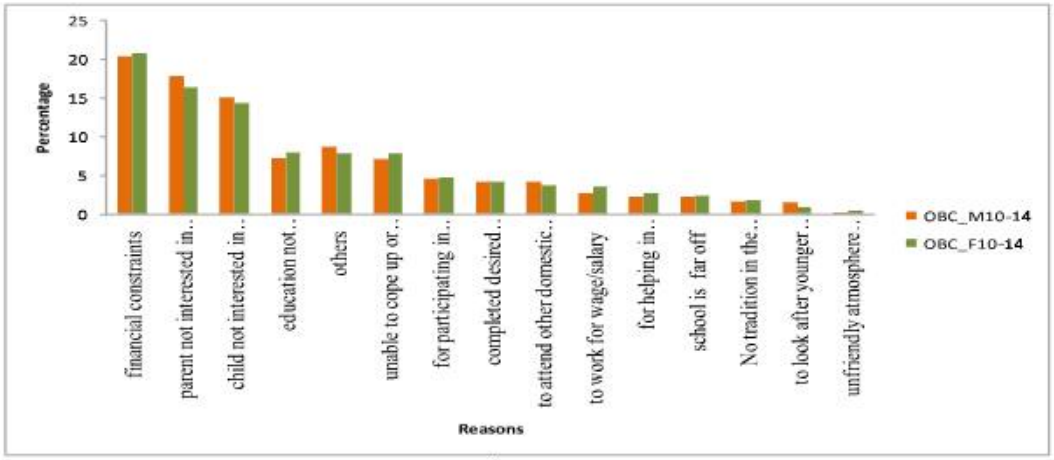
Figure 5.30: Reasons for drop-outs among SC category for 10-14 years (64th R)



Source: Author's calculations based on the 64th R

Other Backward Class (OBC):

Figure 5.31: Reasons for drop-outs among OBC category for 10-14 years (64th R)



Source: Author's calculations based on the 64th R

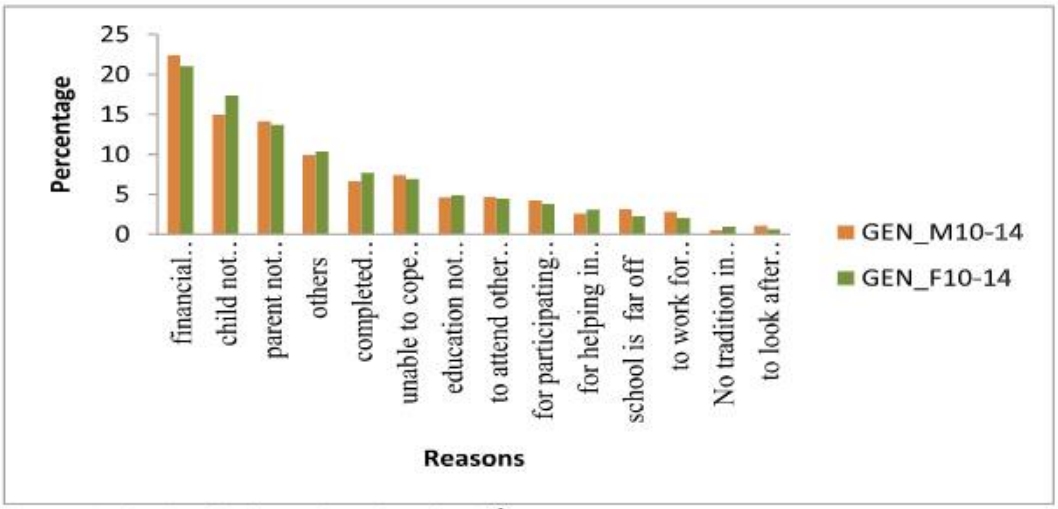
The top three reasons for high drop-outs among males and females are "financial constraints", "parent not interested in studies", and "child not interested in studies". A higher percentage of drop-outs was noticed among females than males

for reasons such as "financial constraints", "education not considered necessary", and "unable to cope up or failure in studies". A higher percentage of male drop-outs than females was observed for reasons like "parent not interested in studies" and "child not interested in studies" (see Figure 5.31).

Other (General):

The percentage of male and female drop-outs was due to "financial constraints", "child not interested in studies", and "parent not interested in studies". A higher percentage of female drop-outs than males is due to reasons like "child not interested in studies". A higher percentage of male drop-outs than females is due to "financial constraints" (see Figure 5.32).

Figure 5.32: Reasons for drop-outs among Other (General) category for 10-14 years (64th R)



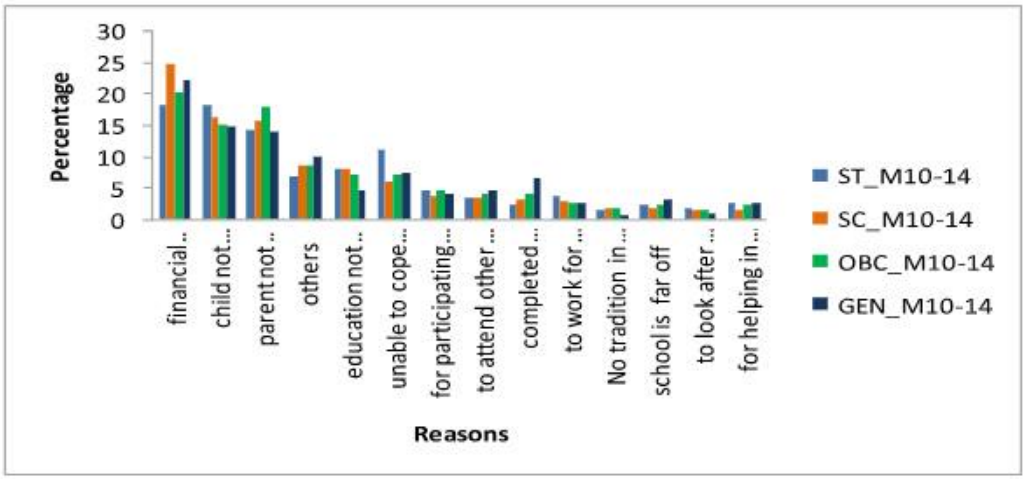
Source: Author's calculations based on the 64th R

Comparison of reasons among social groups for 10 – 14 years (Males)

A high percentage of drop-outs among all the social groups is due to "financial constraints", "child not interested in studies", and "parent not interested in studies". The highest percentage of drop-outs among SC groups was seen due to "financial constraints" compared to all other groups. A high percentage of drop-outs due to "child not interested in studies" and "unable to cope up with studies"

were highest among ST groups compared to other groups. A higher percentage of drop-outs due to "parents not interested in studies" was observed among the OBC group than other groups. In the general group, the reasons for high drop-outs included "financial constraints", "child not interested in studies", "parent not interested in studies", and "completed desired level of education" (see Figure 5.33).

Figure 5.33: Comparison of reasons for male drop-outs for 10 – 14 years (64th R by social groups)



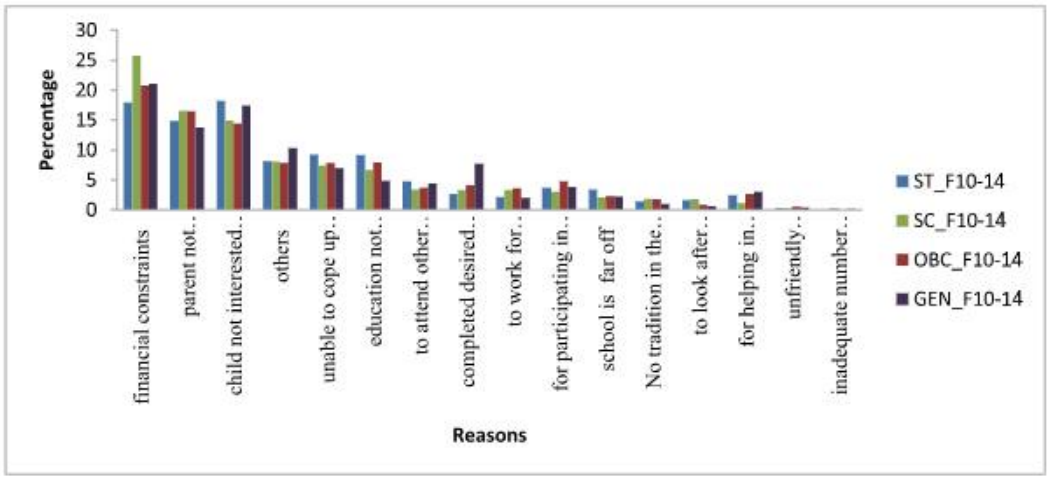
Source: Author's calculations based on the 64th R

Comparison of reasons among social groups for 10 – 14 years (Females)

Like males, among females, "financial constraints" are the most crucial reason for drop-outs among all the social groups. In the ST category, "child not interested in studies", "unable to cope up with studies", and "education not considered necessary" show a high percentage of drop-outs compared to other social groups. Among the general group the reasons like "child not interested in studies" and "completed the desired level of education" were higher than in other social groups. The percentage of drop-outs due to "participating in other

economic activities" is higher among the OBC category than in different social groups (see Figure 5.34).

Figure 5.34: Comparison of reasons for female drop-outs for 10 – 14 years (64^{th} R by social groups)



Source: Author's calculations based on the 64^{th} R

Age group 15 – 18 years

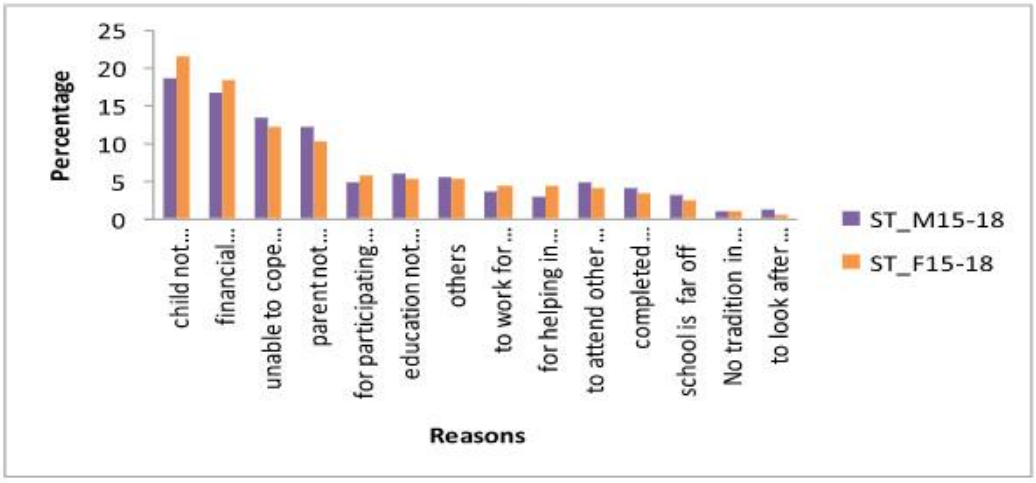
Scheduled Tribe (ST):

The three topmost reasons for male and female drop-outs are "child is not interested in studies", "financial constraints", and "unable to cope up with studies". The percentage of drop-outs for the reasons "child is not interested in studies" and "financial constraints" are higher among females than males. Among males, a higher percentage of drop-outs is noticed due to being "unable to cope up with studies" and "parents not interested in studies" (see Figure 5.35).

A high percentage of male and female drop-outs in the SC group are due to "financial constraints", "child is not interested in studies", and "parent not interested in studies". A high percentage of female drop-outs is noticed due to

reasons like "child not interested in studies", "unable to cope up with studies", and "to work for wage/salary" (see Figure 5.36).

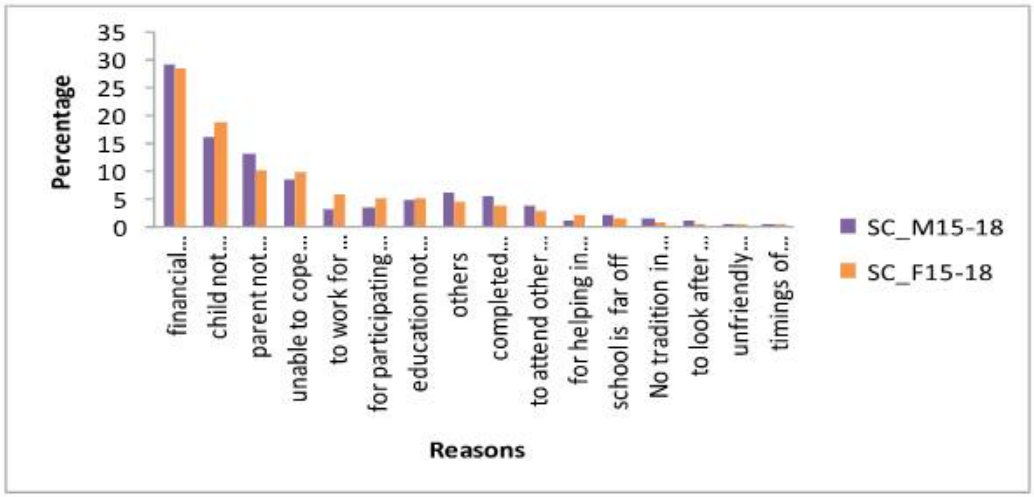
Figure 5.35: Reasons for drop-outs among ST category for 15-18 years (64th R)



Source: Author's calculations based on the 64th R

Scheduled Caste (SC):

Figure 5.36: Reasons for drop-outs among SC category for 15-18 years (64th R)

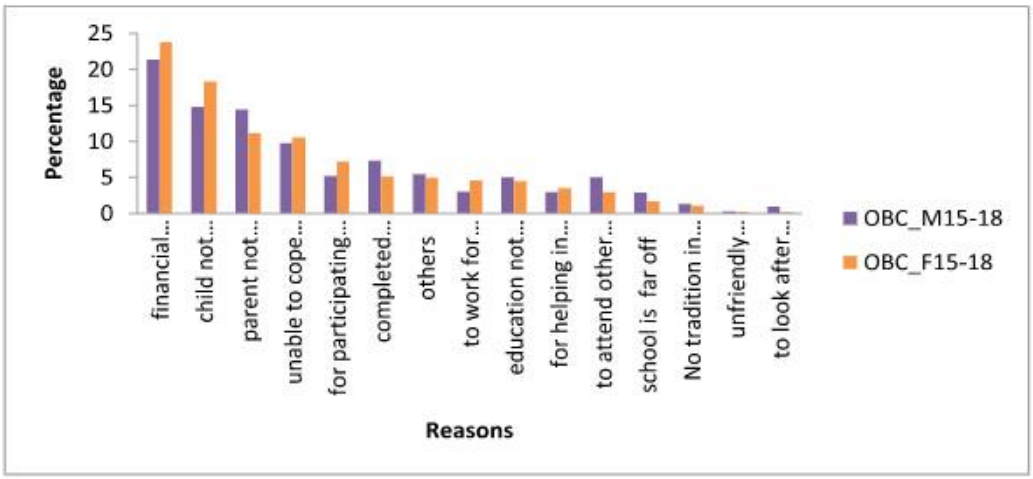


Source: Author's calculations based on the 64th R

Other Backward Class (OBC):

Due to "financial constraints" and "child not interested in studies", more drop-outs were noticed among females than males. A higher percentage of male drop-outs than females are observed for reasons like "parent not interested in studies". Other reasons for male drop-outs are "completed desired level of class/ education", "education not considered necessary", and "to attend other domestic chores" (see Figure 5.37).

Figure 5.37: Reasons for drop-outs among OBC category for 15-18 years (64th R)

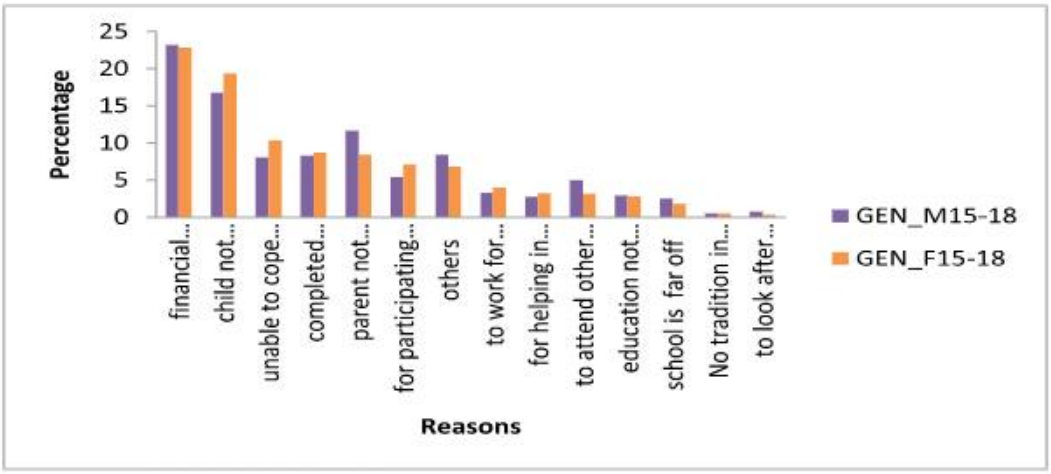


Source: Author's calculations based on the 64th R

Other (General) Category

"Financial constraints" constitute the highest percentage of drop-outs for both males and females. Drop-outs due to "child not interested in studies" are the second most important reason, and "unable to cope with studies" is the third highest. A higher percentage of female drop-outs compared to males was noticed due to "child not interested in studies" and being "unable to cope with studies" (see Figure 5.38).

Figure 5.38: Reasons for drop-outs among Other (General) category for 15-18 years (64th R)

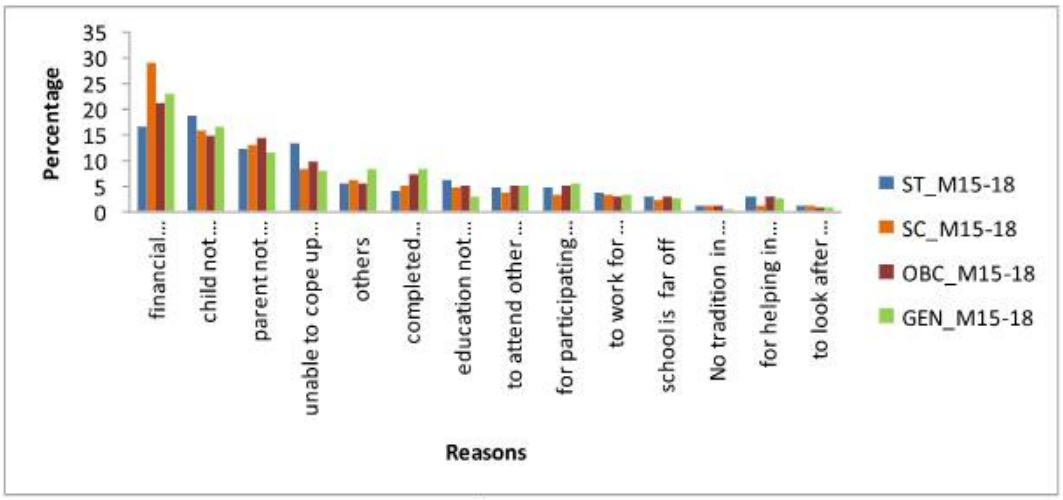


Source: Author's calculations based on the 64th R

Comparison of reasons among social groups for 15 – 18 years (Males)

We compared the reasons for not attending school among the social groups of males aged 15 – 18.

Figure 5.39: Comparison of reasons for male drop-outs for 15 – 18 years (64^{th} R by social groups)

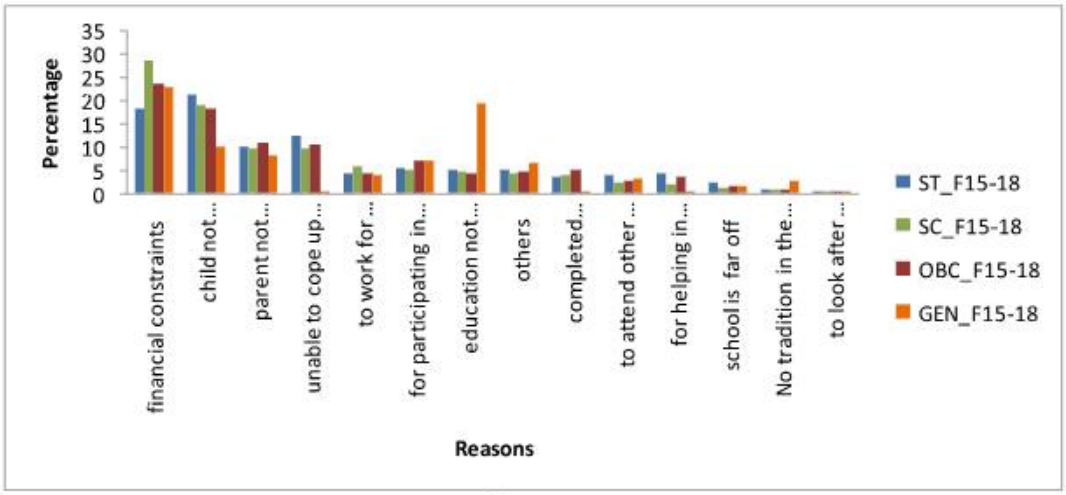


Source: Author's calculations based on the 64th R

The top three reasons among male drop-outs across the social groups are "financial constraints", "child not interested in studies", and "parent not interested in studies". A high percentage of drop-outs due to "financial constraints" are noticed among the SC category children compared to all the other groups. "Child not interested in studies", "unable to cope up with studies", and "education not considered necessary" show a high percentage of drop-outs among the ST group compared to other groups. Among the OBC category, a higher percentage of drop-outs noticed due to "parents not interested in studies" than other groups. A high percentage of drop-outs is also detected in the general category due to "financial constraints", "child not interested in studies", and "parent not interested in studies" (see Figure 5.39).

Comparison of reasons among social groups for 15 – 18 years (Females)

Figure 5.40: Comparison of reasons for female drop-outs for 15 – 18 years (64^{th} R by social groups)



Source: Author's calculations based on the 64^{th} R

The top three reasons for female drop-outs among all the social groups are "financial constraints", "child not interested in studies", and "parent not interested in studies". Many SC drop-outs were due to "financial constraints" among all the social categories. Among the ST group, a high percentage of drop-outs were observed due to "child not interested in studies" and "unable to cope up with studies" besides "financial constraints". A high percentage of drop-outs were noticed in the general category due to "education not considered necessary" compared to other groups. Drop-outs due to inability to cope with studies are lowest among the general category (see Figure 5.40).

Overall, among the age group 5 – 9 years, the highest percentage of drop-outs across all the social groups is due to "parents not interested in studies". While in the age group 10 – 14 and 15 – 18 years across the social groups, the highest percentage of drop-outs is due to "financial constraints". When we compare the reasons for drop-outs among the social groups, "financial constraints" was seen as the topmost reason for drop-outs among SC, OBC and General categories and

"child not interested in studies" was seen as the most critical reason among the ST group. Among all the social groups, the higher percentage of drop-outs is due to "financial constraints" observed in the SC group in all age- groups and "child not interested in studies" and "education not considered necessary" were the reasons for drop-outs among the ST group.

Next, we present the findings of the 71st R.

5.9.2 Gender-wise reasons for drop-outs (71st R by social groups)

The findings are presented for the sub-groups separately based on social groups by age and gender.

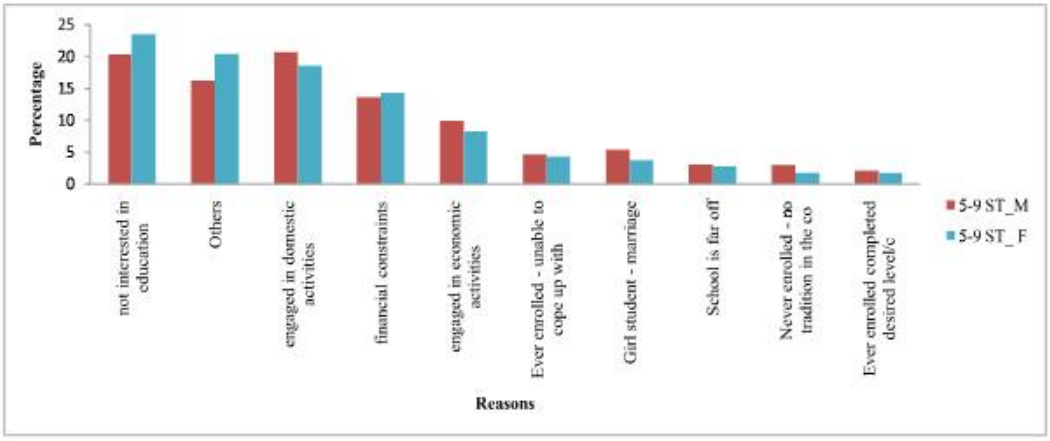
Age group 5 – 9 years

Scheduled Tribe (ST):

A high percentage of male and female drop-outs are observed due to the reasons "not interested in education", "others", and "engaged in domestic activities". A high percentage of female drop-outs compared to males were seen due to "not interested in education", "others" and "financial constraints". A high percentage of male drop-outs compared to females were due to being "engaged in domestic activities" (see Figure 5.41).

The top three reasons for high drop-outs are "not interested in education", "financial constraints", and "others". It is observed that the reasons for drop-outs among males and females are similar in this group. The percentage of drop-outs for being "engaged in economic activities" is slightly higher among females than males (see Figure 5.42).

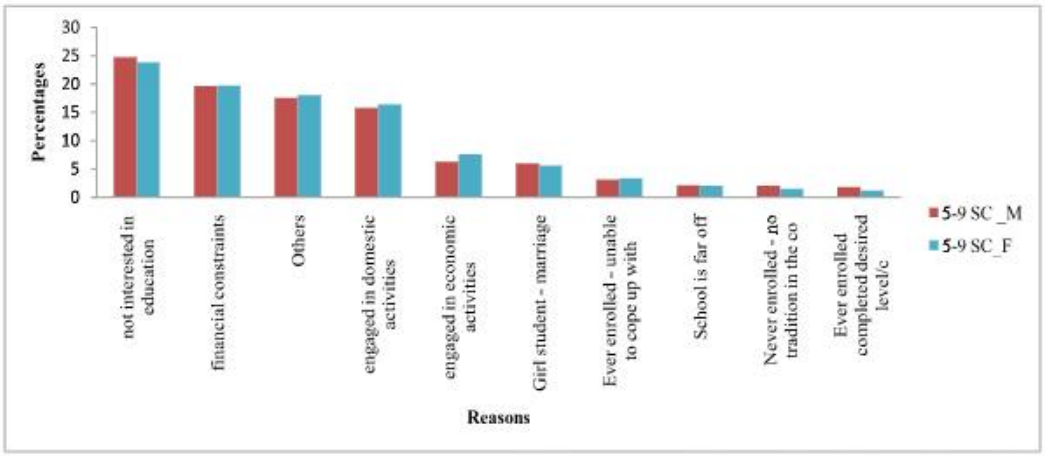
Figure 5.41: Reasons for drop-outs among ST category for 5-9 years (71st R)



Source: Author's calculations based on the 71st R

Scheduled Caste (SC):

Figure 5.42: Reasons for drop-outs among SC category for 5 – 9 years (71st R)

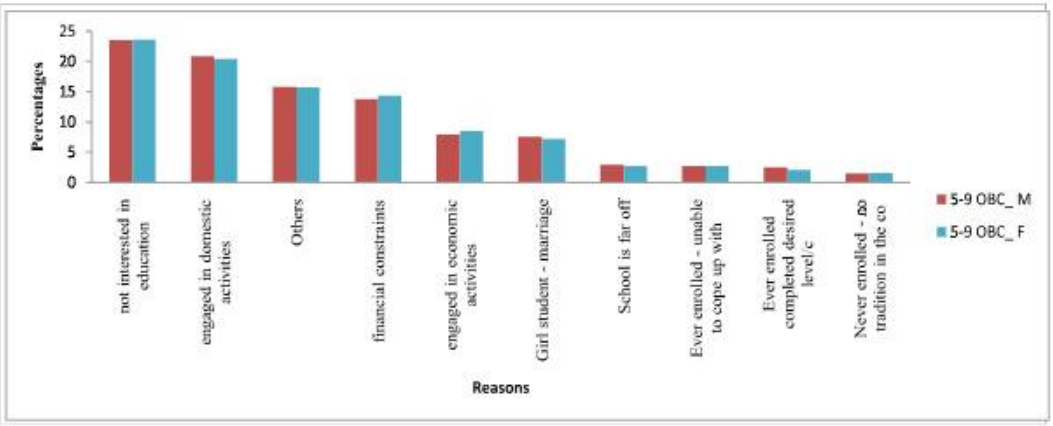


Source: Author's calculations based on the 71st R

Other Backward Class (OBC):

The reasons for a high percentage of drop-outs among males and females are "not interested in education", "engaged in domestic activities", and "others" (see Figure 5.43).

Figure 5.43: Reasons for drop-outs among OBC category for 5 – 9 years (71st R)

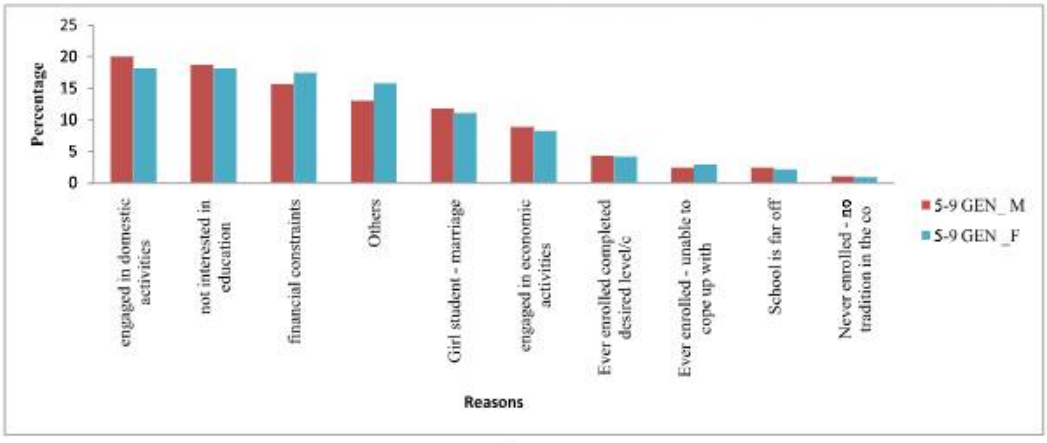


Source: Author's calculations based on the 71st R

Other (General):

The top three reasons for a high percentage of drop-outs among males and females are "engaged in domestic activities", "not interested in education", and "financial constraints". The percentage of male drop-outs is higher than that of females for the reason "engaged in domestic activities". The percentage of female drop-outs is higher than males for reasons like "financial constraints" and "others" (see Figure 5.44).

Figure 5.44: Reasons for drop-outs among Other (General) category for 5 – 9 years (71st R)

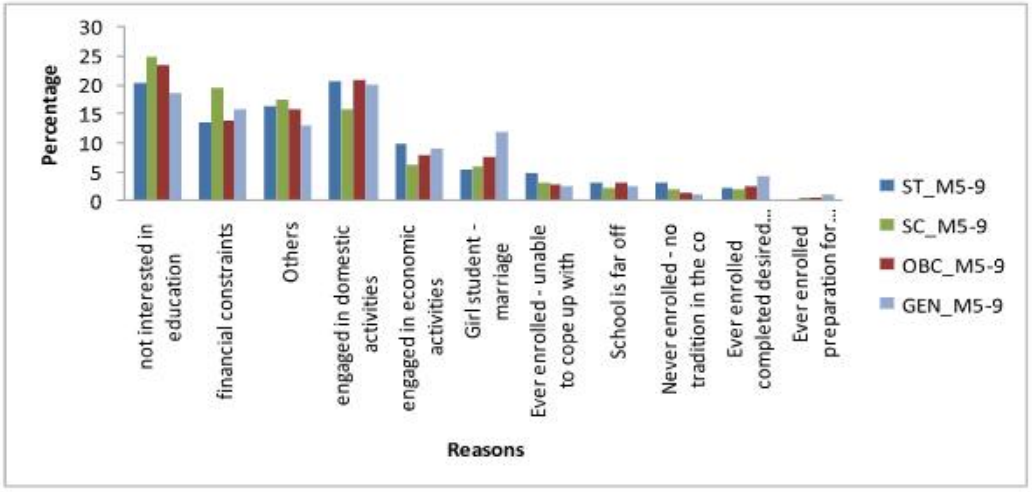


Source: Author's calculations based on the 71st R

Comparison of reasons among social groups for 5 – 9 years (Males)

We noticed that "not interested in education" is the most crucial reason for drop-out among all the social groups. A higher number of drop-outs was observed in the SC group than in other social groups due to the reasons "not interested in education", "financial constraints", and "others". The SC group showed a low percentage of drop-outs due to "engaged in domestic activities" compared to other social groups. Among the ST group, a high percentage of drop-outs were due to the reasons "not interested in education", "engaged in domestic activities", and "engaged in economic activities". The highest percentage of drop-outs among the OBC group is due to "not interested in education", "engaged in domestic activities", and "financial constraints". "Marriage" and "engaged in economic activities" contribute to a higher percentage of drop-outs in the general group than in other social groups. The "Girl Student Marriage" this reason is included only in the 71st R. However, the option for coding this reason was available for only females, but we noticed that there are responses coded for males in the data (see Figure 5.45).

Figure 5.45: Comparison of reasons for male drop-outs for 5 – 9 years (71st R by social groups)

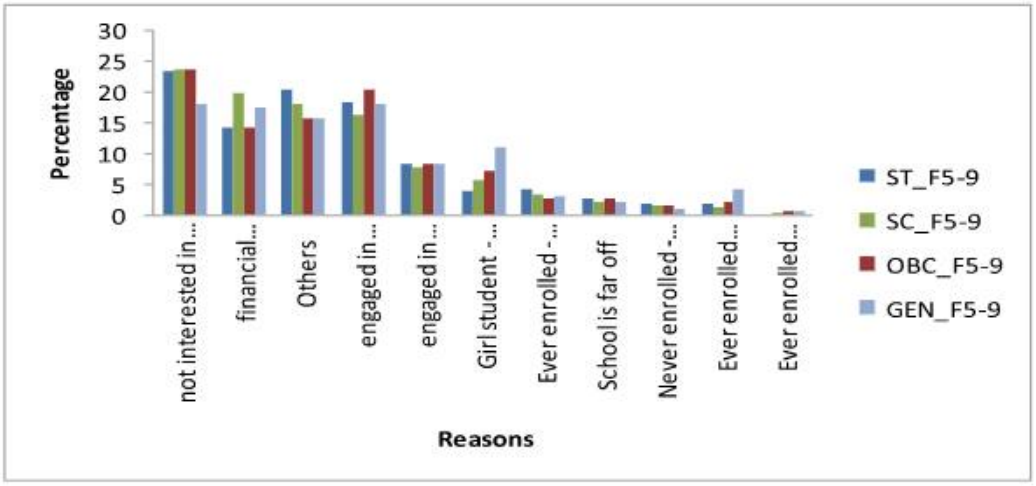


Source: Author's calculations based on the 71st R

Comparison of reasons among social groups for 5 – 9 years (Females)

The top three reasons for drop-outs among females across social groups are "not interested in education", "financial constraints", and "others". We notice that many drop-outs are due to not being interested in education among the ST, SC and OBC categories. A lower percentage was observed among the General category. A high percentage of drop-outs was noticed in the SC and general category due to "financial constraints" compared to other categories. Among the ST group, many drop-outs were observed for "other" reasons compared to other social groups. More than 10 % of drop-outs occurred due to marriage, which is higher among the general category than in other groups. A higher percentage of drop-outs is observed in the OBC group due to being "engaged in domestic activities" than in different social groups (see Figure 5.46).

Figure 5.46: Comparison of reasons for female drop-outs for 5 – 9 years (71st R by social groups)



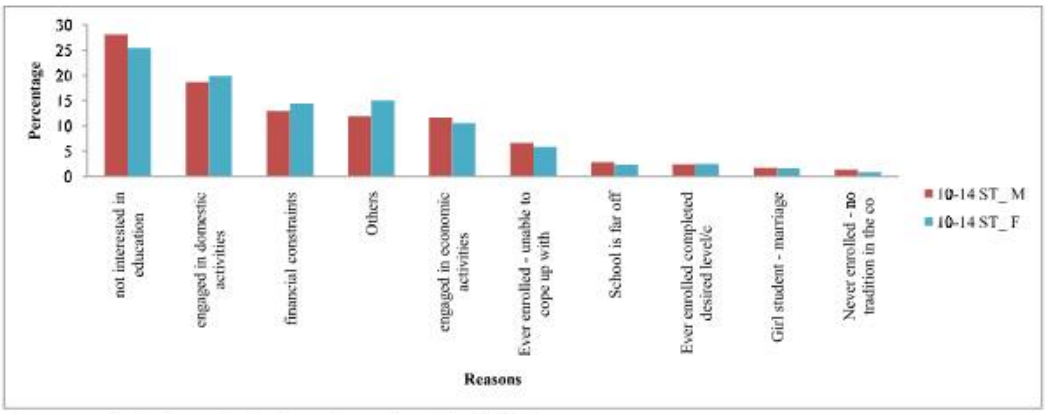
Source: Author's calculations based on the 71st R

Age group 10 – 14 years

Scheduled Tribe (ST):

The reasons for a high percentage of drop-outs among males and females are "not interested in education", "engaged in domestic activities", and "financial constraints". Among females, a high percentage of drop-outs occur compared to males due to the reasons "engaged in domestic activities", "financial constraints", and "others". A higher percentage of drop-outs among males than females are due to being "not interested in education" and "engaged in economic activities" (see Figure 5.47).

Figure 5.47: Reasons for drop-outs among ST category for 10 – 14 years (71st R)

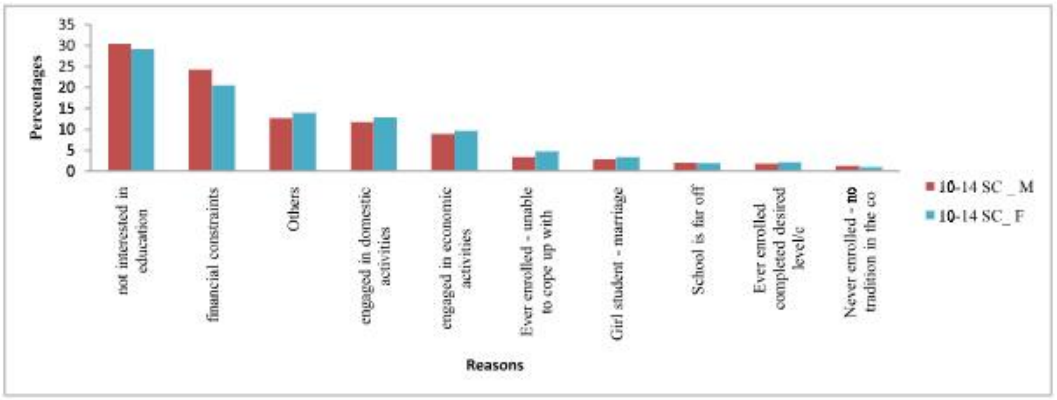


Source: Author's calculations based on the 71st R

Scheduled Caste (SC):

The top three reasons for high male and female drop-outs are "not interested in education", "financial constraints", and "others". The highest percentage of drop-outs is due to being "not interested in education" among males and females, which is almost 30%. Drop-outs due to "financial constraints" were higher among males than females. The drop-outs among females are higher than males due to the reasons "others", "engaged in domestic activities", and "engaged in economic activities" (see Figure 5.48).

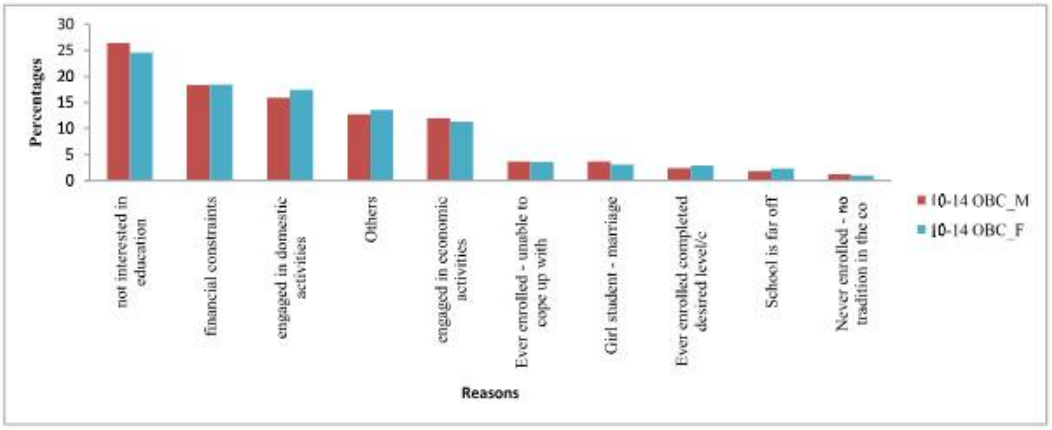
Figure 5.48: Reasons for drop-outs among SC category for 10 – 14 years (71st R)



Source: Author's calculations based on the 71st R

Other Backward Class (OBC):

Figure 5.49: Reasons for drop-outs among OBC category for 10 – 14 years (71st R)

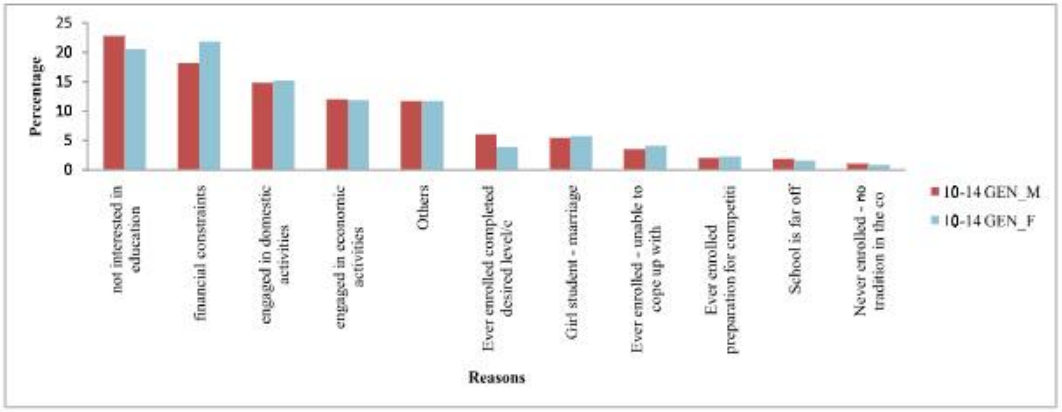


Source: Author's calculations based on the 71 stR

The top three reasons for drop-outs are "not interested in education", "financial constraints", and "engaged in domestic activities". Female drop-outs are higher compared to males due to the reason "engaged in domestic activities" and "others". The drop-outs due to financial constraints are almost the same for males and females.

Other (General):

Figure 5.50: Reasons for drop-outs among Other (General) category for 10 – 14 years (71st R)



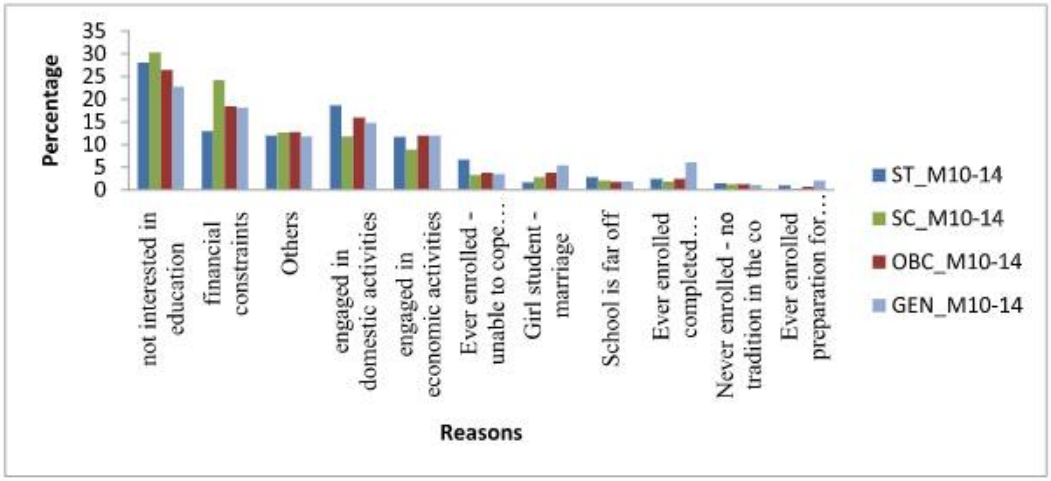
Source: Author's calculations based on the 71st R

The top three reasons for drop-outs are "not interested in education", "financial constraints", and "engaged in domestic activities". The percentage of drop-outs due to "financial constraints" is higher among females than males (see Figure 5.50).

Comparison of reasons among social groups for 10 – 14 years (Males)

The highest percentage of drop-outs is due to being "not interested in education" among all the social groups. A high percentage of drop-outs observed in the SC group are due to "not interested in education" and "financial constraints" compared to other social groups. A high percentage of drop-outs in the ST group is due to "not interested in education", "engaged in domestic activities", "engaged in economic activities", and "unable to cope up with studies" (see Figure 5.51).

Figure 5.51: Comparison of reasons for male drop-outs for 10 – 14 years (71st R by social groups)



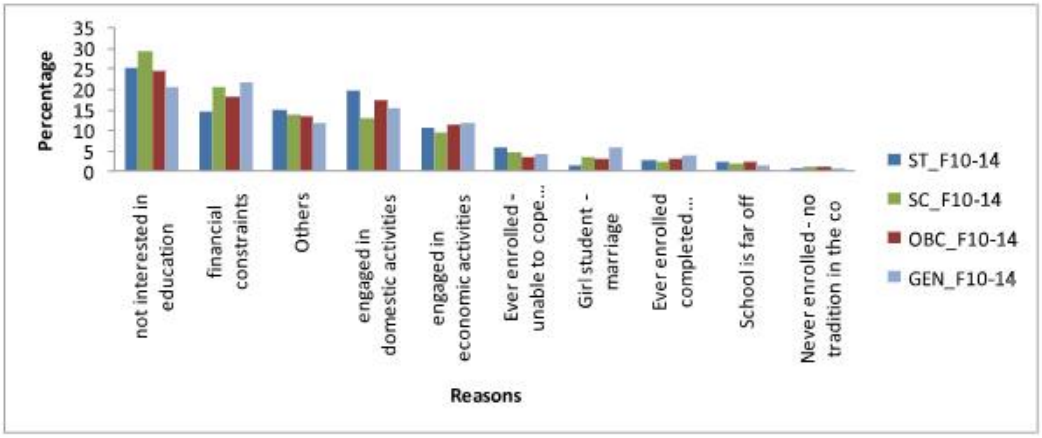
Source: Author's calculations based on the 71st R

Comparison of reasons among social groups for 10 – 14 years (Females)

We observe that "not interested in education" is the topmost reason for drop-outs among all the social categories. The second reason is "financial constraints", and the third is "others". The highest percentage of drop-outs observed due to "not interested in education" is from the SC group. The reason for high drop-outs due to "engaged in domestic activities" is among the ST group compared to other groups (see Figure 5.52).

Among the OBC categories, "not interested in education", "financial constraints", and "engaged in domestic activities" are noticed as the main reasons for drop-outs. Among the general category, "financial constraints" constitute the highest percentage of drop-outs compared to other social categories. (see Figure 5.52).

Figure 5.52: Comparison of reasons for female drop-outs for 10 – 14 years (71st R by social groups)



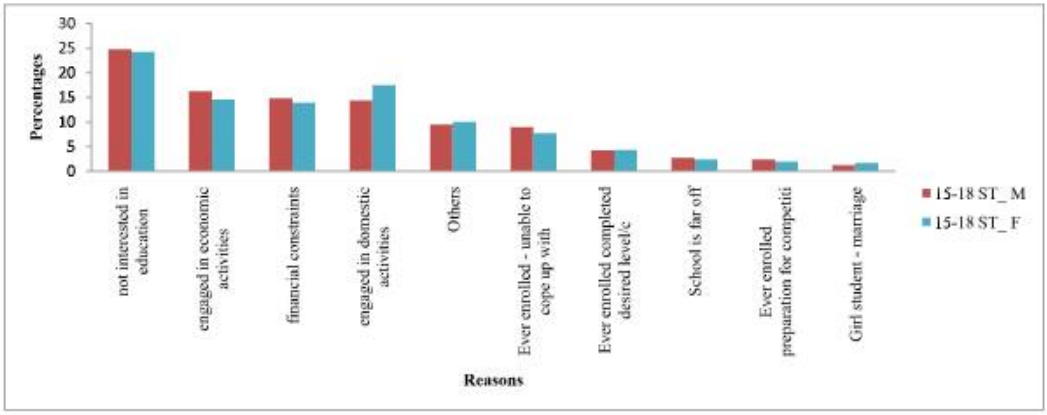
Source: Author's calculations based on the 71st R

Age group 15 – 18 years

Scheduled Tribe (ST):

The top three reasons for drop-outs are "not interested in education", "engaged in economic activities", and "financial constraints". The percentage of female drop-outs is higher due to the reason "engaged in domestic activities" than males (see Figure 5.53).

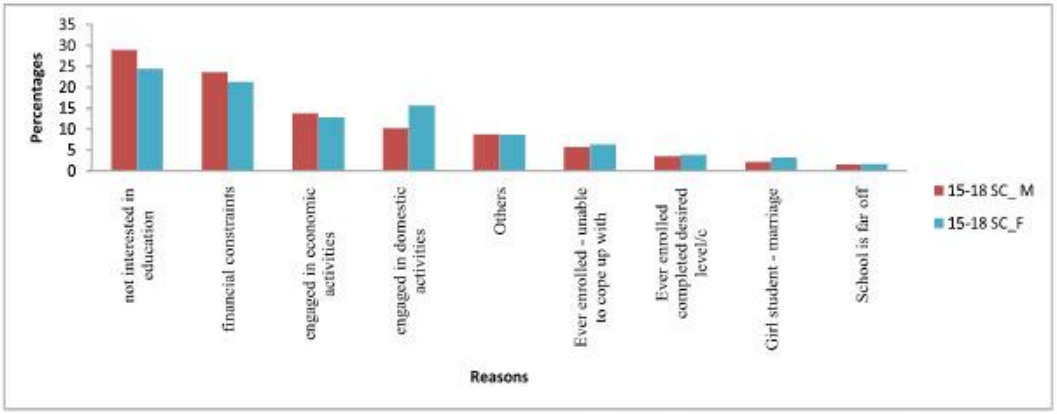
Figure 5.53: Reasons for drop-outs among ST category for 15 – 18 years (71st R)



Source: Author's calculations based on the 71st R

Scheduled Caste (SC):

Figure 5.54: Reasons for drop-outs among SC category for 15 – 18 years (71st R)

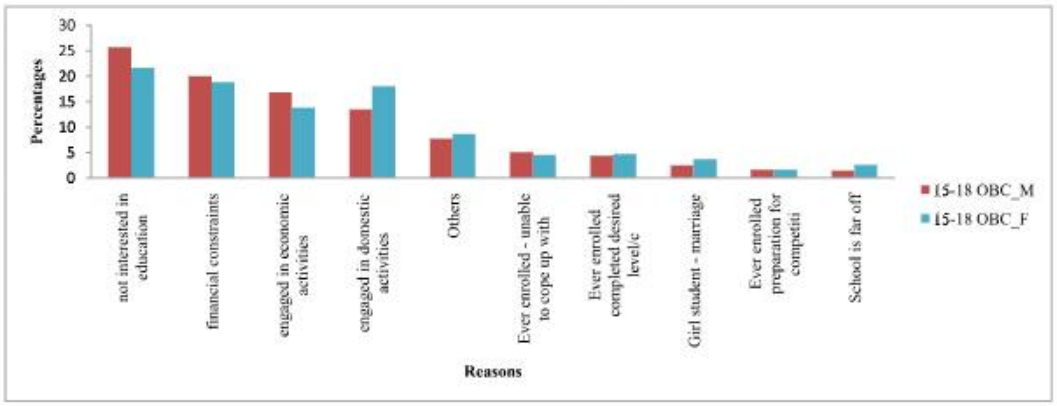


Source: Author's calculations based on the 71st R

The reasons for high drop-outs are "not interested in education", "financial constraints", and "engaged in economic activities". Among females, a high percentage of drop-outs was noticed due to being "engaged in domestic activities" compared to males. A high percentage of male drop-outs were noticed due to "not interested in education", "financial constraints", and "engaged in economic activities" (see Figure 5.54).

Other Backward Class (OBC):

Figure 5.55: Reasons for drop-outs among OBC category for 15 – 18 years (71st R)

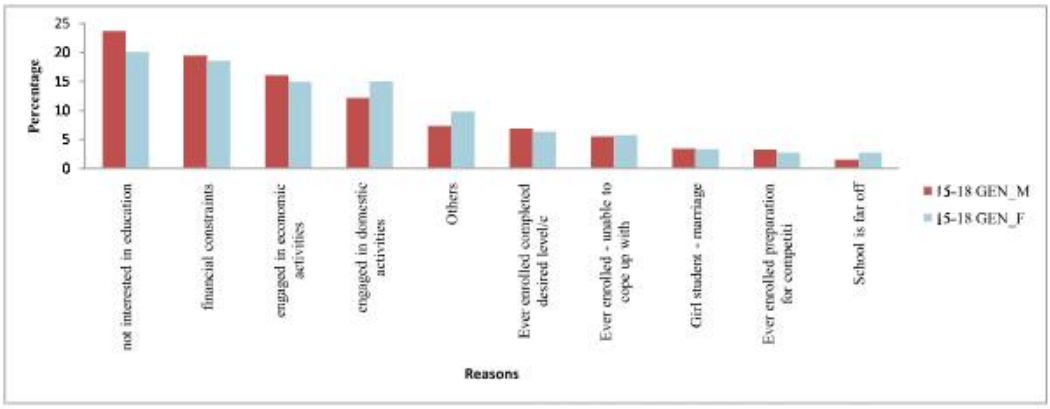


Source: Author's calculations based on the 71st R

The top three reasons for high drop-outs are "not interested in education", "financial constraints", and "engaged in economic activities". A higher percentage of female drop-outs is observed than males for the reason "engaged in domestic activities". The reasons for high male drop-outs compared to females are "not interested in education", "financial constraints", and "engaged in economic activities". The percentage of drop-outs due to marriage and school being far off is higher among females than males (see Figure 5.55)

Other (General):

Figure 5.56: Reasons for drop-outs among Other (General) category for 15 – 18 years (71st R)

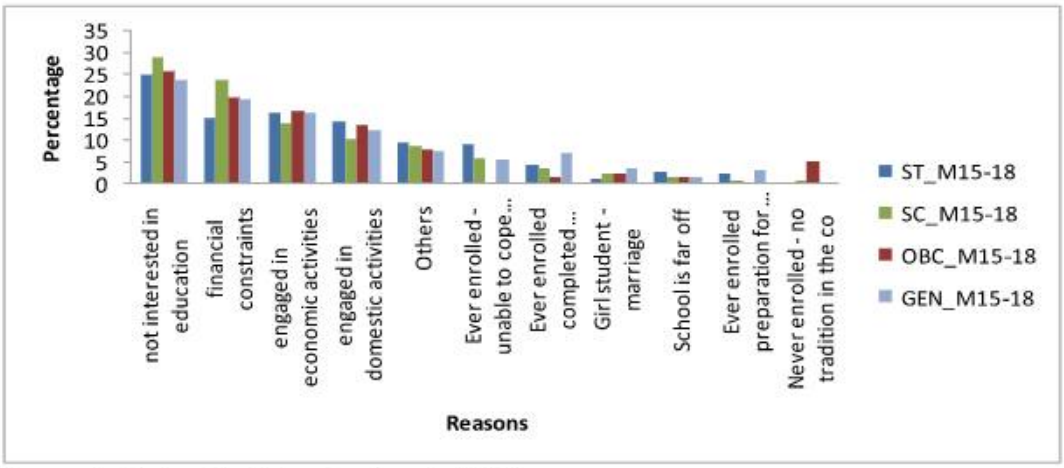


Source: Author's calculations based on the 71st R

The reasons for high male and female drop-outs are "not interested in education", "financial constraints", and "engaged in economic activities". The high percentage of male drop-outs compared to females was observed due to the reasons "not interested in education", "financial constraints", and "engaged in economic activities". The percentage of female drop-out is higher due to the reasons "engaged in domestic activities", "others", and "school is far off" compared to males (see Figure 5.56).

Comparison of reasons among social groups for 15 – 18 years (Males)

Figure 5.57:Comparison of reasons for male drop-outs for 15 – 18 years (71st R by social groups)



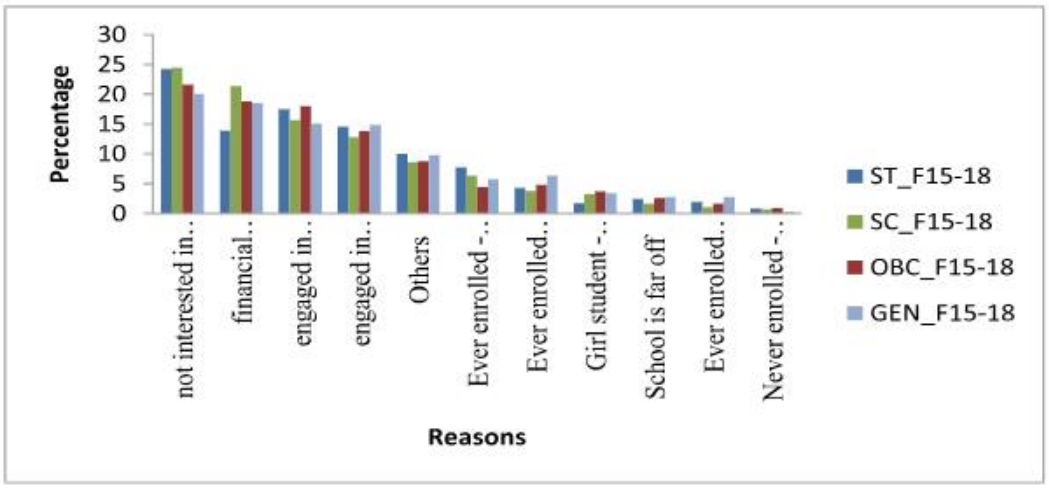
Source: Author's calculations based on the 71st R

The reason "not interested in education" contributes to the highest percentage of drop-outs in all social groups. A high percentage of drop-outs is observed in the SC group due to "not interested in education" and "financial constraints" compared to other groups. The reasons for the higher percentage of drop-outs in ST groups are reasons "engaged in economic activities", "engaged in domestic

activities," and "unable to cope up with studies". Among the OBC group, the reasons are "not interested in education", "financial constraints", "engaged in economic activities", "engaged in domestic activities", and "no tradition in the community to educate". A higher percentage of drop-outs was observed in the general category than in other groups due to the "completed desired level of education" (see Figure 5.57).

Comparison of reasons among social groups for 15 – 18 years (Females)

Figure 5.58: Comparison of reasons for female drop-outs for 15 – 18 years (71st R by social groups)



Source: Author's calculations based on the 71st R

A high percentage of drop-outs are noticed across all social categories due to the reason "not interested in education". In the ST and SC categories, the highest percentage of drop-outs is because they are "not interested in education". A high percentage of drop-outs noticed among the SC category compared to other social

groups is due to "financial constraints". Drop-outs due to the reason "engaged in domestic activities" were high in the OBC group compared to other social groups. The high percentage of drop-outs in the general category was due to being "engaged in economic activities" and "completed desired level of education" (see Figure 5.58).

Overall, we can conclude that the most crucial reason for drop-outs in the 71st R is "not interested in education". Financial constraints affect social groups that are economically backwards due to their social status, especially SC and ST. The findings suggest that gender stereotypes based on gender roles also affect drop-outs; more males are noticed dropping out as they are engaged in economic activities while females are involved in domestic activities, according to the data from the 71st R. The drop-out percentages have shown an increase in the higher age groups compared to lower age groups.

5.10 T-Test of significance between parentage of drop-outs in 64th R and 71st R

In this section, a t-test of Significance is carried out for the 64th R and 71st R. The t-test results are presented in three parts: males and females, and combined for males and females in the age group 5 to 18 years for both rounds.

Table 5:10 t-test results for the percentage of drop-outs between males and females in 64th R

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NSSO_64M	29	54.39069	1.751733	9.433369	50.80243	57.97895
NSSO_64F	29	51.42552	1.705965	9.186904	47.93101	54.92003
diff	29	2.965172	.4674	2.517026	2.007747	3.922598

mean(diff) = mean(NSSO_64M - NSSO_64F) t = 6.3440
Ho: mean(diff) = 0 degrees of freedom = 28

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Source: Author's calculations based on the 64th and 71st R

The t-test result shows significant differences in the drop-out rates for males and females in the 64th R. The female drop-out rate is significantly lower than the male drop-out rate in the 64th R at the state level.

Table 5.11: t-test results for the percentage of drop-outs between males and females in 71st R.

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NSSO_71M	30	38.60967	1.60911	8.813459	35.31867	41.90067
NSSO_71F	30	40.67833	1.625769	8.904702	37.35326	44.0034
diff	30	-2.068667	.5943548	3.255415	-3.284259	-.8530745

mean(diff) = mean(NSSO_71M - NSSO_71F) t = -3.4805
Ho: mean(diff) = 0 degrees of freedom = 29

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0008 Pr(|T| > |t|) = 0.0016 Pr(T > t) = 0.9992

Source: Author's calculations based on the 64th and 71st R

In the 71st R, the female drop-out rate is higher than that of males and is statistically significant.

Table 5.12: t-test results for the percentage of drop-outs among males in 64th R and 71st R

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NSSO_64M	29	54.39069	1.751733	9.433369	50.80243	57.97895
NSSO_71M	29	38.73931	1.660172	8.940302	35.3386	42.14002
diff	29	15.65138	.9747015	5.248928	13.65479	17.64796

mean(diff) = mean(NSSO_64M - NSSO_71M) t = 16.0576
Ho: mean(diff) = 0 degrees of freedom = 28

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Source: Author's calculations based on the 64th and 71st R

Considerable changes have occurred in the male drop-out rate from the 64th R to the 71st R (see Table 5.5).

Table 5.13: t-test results percentage of drop-outs among females in 64th R and 71st R

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NSSO_64F	29	51.42552	1.705965	9.186904	47.93101	54.92003
NSSO_71F	29	40.91724	1.664561	8.963937	37.50754	44.32694
diff	29	10.50828	1.023538	5.511921	8.411653	12.6049

mean(diff) = mean(NSSO_64F - NSSO_71F) t = 10.2666
Ho: mean(diff) = 0 degrees of freedom = 28

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Source: Author's calculations based on the 64th and 71st R

Significant changes have occurred in the female drop-out rate from 64th to 71st R.

Table 5.14: t-test results for the percentage of drop-outs among males and females in 64th R and 71st R

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NSSO~4MF	29	52.7969	1.709775	9.20742	49.29458	56.29921
NSSO~1MF	29	39.75379	1.633094	8.794481	36.40855	43.09904
diff	29	13.0431	.9407102	5.065879	11.11615	14.97006

mean(diff) = mean(NSSO_64MF - NSSO_71MF) t = 13.8652
Ho: mean(diff) = 0 degrees of freedom = 28

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Source: Author's calculations based on the 64th and 71st R

There has been a significant decline in the drop-out rate, as observed in the 71st R compared to the 64th R.

In this chapter, we individually discussed the drop-outs at each round and compared the percentage of drop-out rates in 64th R and 71st R based on states. Overall, when the results of both rounds were compared, we found a reduction in the drop-out rate from the 64th R, but there is still a high drop-out rate among females compared to males in the 71st R. In the 64th R, a high drop-out rate is seen among males; in the 71st R, a high drop-out rate is noticed among females. The states showing high drop-outs are socio-economically backwards, categorised as Empowered Action Group states – Bihar, Uttar Pradesh, Rajasthan, Jharkhand, Odisha and Madhya Pradesh. Besides, a few northeastern states, like Tripura and Meghalaya, are showing high drop-out rates, and West Bengal and Andhra Pradesh are other states that also show high drop-out rates. From the analysis of reasons for drop-outs, the study results show that engaging in domestic activities is not the most important reason for drop-out; it is a critical reason among females compared to males. A financial constraint is seen as the topmost reason among all the age groups in the 64th R. In the 71st R, financial constraint is seen as the second most important reason for the drop-out rate. The t-test results show that overall, there has been a reduction in the drop-out rate from 64th R to 71st R. Within the 64th R, the male drop-out rate was higher compared to females, and in the 71st R, the female drop-out rate is higher compared to males. There is a need to understand why female drop-outs are higher and explore the reasons for drop-outs, especially researching the actual reasons for drop-outs. We wanted to understand the reasons based on another database to know if the reasons are different.

The next chapter will discuss the reasons for drop-outs based on the NFHS data.

CHAPTER 6

ANALYSING SCHOOL DROP-OUTS PRE, AND POST-RTE ACT 2009 IN INDIA: USING DATA FROM NFHS 3 AND NFHS 4

The previous chapter presented the reasons for not attending the school based on NSSO data. This chapter discusses the reasons for 'not attending school' using the National Family Health Survey (NFHS) data from two surveys, i.e., NFHS-3 and NFHS-4. The NFHS-3 (2005-2006) and NFHS-4 (2015-2016) are analysed and the findings are presented. The details of the data sources and methodology are discussed earlier in Chapter 3. Here, we compare the reasons for drop-outs in the two surveys state-wise, based on age, gender, and social stratification. Unlike NSSO data, NFHS collects the reasons for not attending school for the age group 5 – 18 years only, and in both surveys, the reasons used for coding are identical. The code list for responses from children not attending school has 17 coding options in both surveys (See Table 3.16 in Chapter 3). We used the following age groups to classify the data: 5 – 9, 10 – 14, and 15 – 18 years. The findings from both surveys are discussed below.

6.1 GENDER-WISE PERCENTAGE OF DROP-OUTS IN NFHS-3

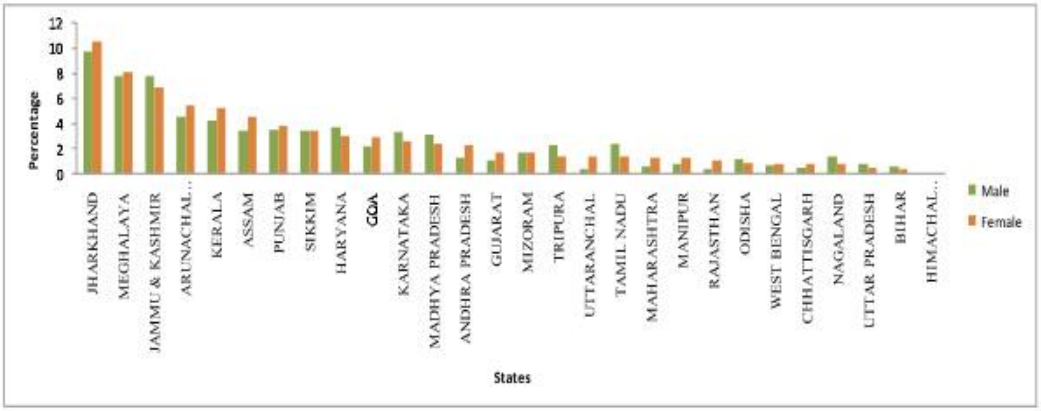
The reasons for drop-outs based on age and gender for the states have been analysed. For presenting the analysis, the age group 5 – 18 years is further divided into three sub-groups: 5 – 9, 10 – 14, and 15 – 18 years.

Age group 5 – 9 years

High drop-out rates are observed among the following states, namely, Jharkhand, Meghalaya, Jammu and Kashmir (J & K), Arunachal Pradesh and Kerala, and states having low drop-outs are Himachal Pradesh, Uttaranchal, and Rajasthan. There are high drop-outs among females in Jharkhand, Meghalaya, Jammu and Kashmir, Arunachal Pradesh and Kerala, and very low drop-outs in Himachal

Pradesh, Bihar, Uttar Pradesh and Nagaland. When the drop-outs among males and females in the age group 5 – 9 years are compared, the female drop-outs were higher than males in Jharkhand, Meghalaya, Arunachal Pradesh, Kerala, Assam, and Goa among few other states. On the other hand, high male drop-outs are observed in Jammu and Kashmir, Haryana, Karnataka, Madhya Pradesh, Tripura, and Tamil Nadu (See Figure 6.1).

Figure 6.1: Percentage of male and female drop-outs for 5 – 9 years (NFHS-3 by states)

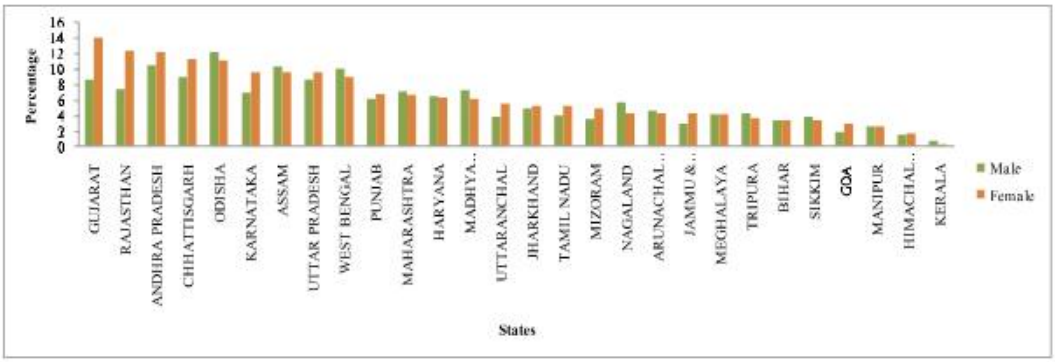


Source: Author's calculations based on NFHS-3

Age group 10 – 14 years

States showing high drop-outs are Gujarat, Rajasthan, Andhra Pradesh, Chhattisgarh and Odisha and low drop-outs are observed in Kerala, Himachal Pradesh, Manipur and Goa. High drop-out among males than females is observed in Odisha, Andhra Pradesh, Assam, West Bengal, and Chhattisgarh. High drop-outs among females compared to males are noticed in Gujarat, Rajasthan, Andhra Pradesh, Chhattisgarh, and Karnataka (See Figure 6.2).

Figure 6.2: Percentage of male and female drop-outs for 10 – 14 years (NFHS-3 by states)

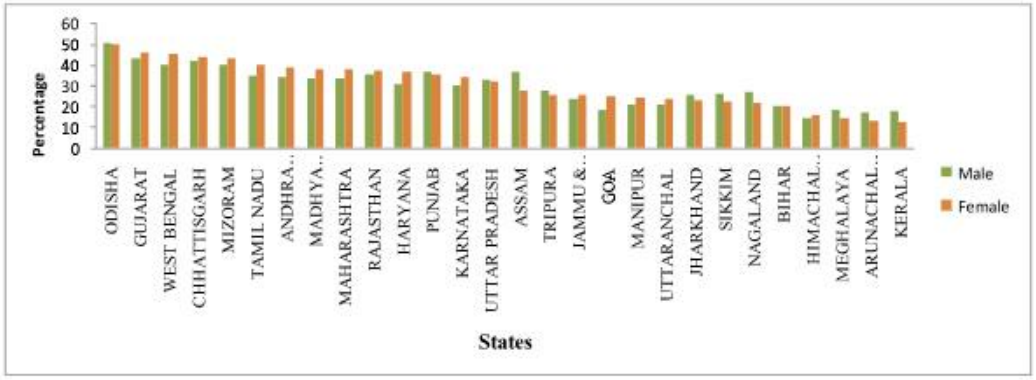


Source: Author's calculations based on NFHS-3

Age group 15 – 18 years

High drop-out states are Odisha, Gujarat, West Bengal, Chhattisgarh, and Mizoram. Kerala, Arunachal Pradesh, Meghalaya, and Himachal Pradesh showed low drop-outs (See Figure 6.3). High female drop-out rates compared to males are observed in most states except in Assam, Tripura, Jharkhand, Sikkim, Nagaland, Meghalaya, Arunachal Pradesh and Kerala.

Figure 6.3: Percentage of male and female drop-outs between 15 – 18 years in NFHS-3



Source: Author's calculations based on NFHS-3

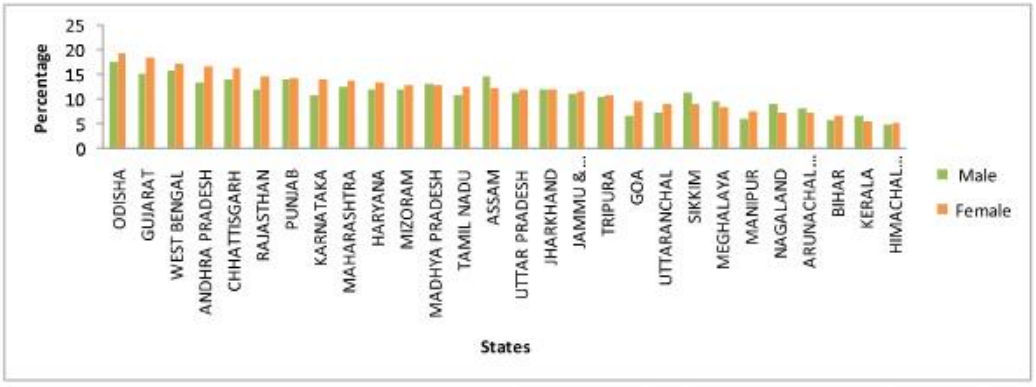
The states with high female drop-out rates are Jharkhand, Meghalaya, Gujarat, Rajasthan, Odisha, and West Bengal. Among the three age groups, drop-

outs in the 15 – 18 age group were comparatively higher. In Odisha, among males, the high percentage (51%) of drop-outs observed in the age group of 15 – 18 years, followed by (12%) drop-outs in the age group 10 – 14 years and the lowest percentage of drop-outs in the age group 5 – 9 years (1%).

Female drop-out rates are higher in most states than males in the 15 – 18 age group compared to lower age groups. We observed high male drop-outs in Assam, Jharkhand, Sikkim, Nagaland, Meghalaya, Arunachal Pradesh, and Kerala (Figure 6.3). High female drop-outs in Odisha, Gujarat and West Bengal and a low percentage of female drop-outs in Kerala, Arunachal Pradesh and Meghalaya in the age group 15 – 18 years.

Overall, among females in the age group 5 – 18 years, the highest percentages of drop-outs occurred at 15 – 18 years in all the states except Kerala, Arunachal Pradesh, Meghalaya, and Himachal Pradesh. The high female drop-out rates were observed in the NFHS3 compared to males.

Figure 6.4: Average percentage of drop-outs among states for 5 – 18 years (NFHS-3 by states)



Source: Author's calculations based on NFHS-3

The following section will present the data from NFHS-4.

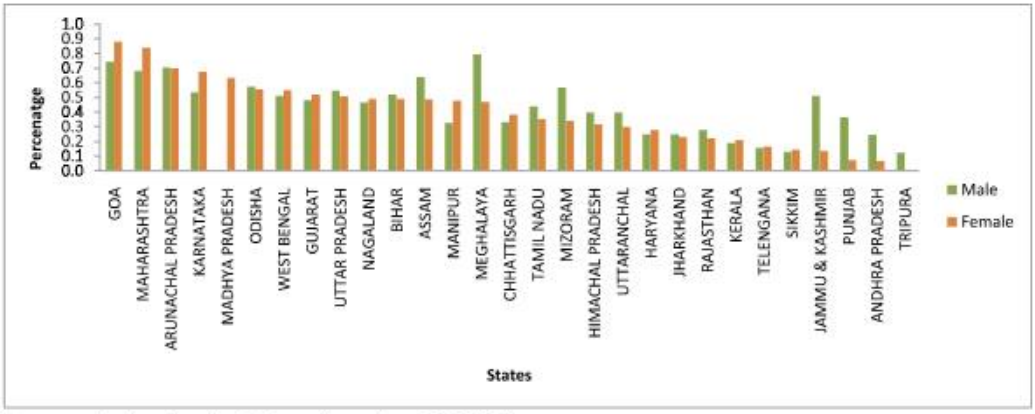
6.2 GENDER-WISE PERCENTAGE OF DROP-OUTS IN NFHS 4

A comparison of the drop-out rate between males and females has been attempted in NFHS-4.

Age group 5 – 9 years

Goa and Maharashtra show high female drop-out rates compared to males. Notably, in Madhya Pradesh, there were no male drop-outs, but there were female drop-outs. Male drop-outs are higher in Meghalaya, Assam, Mizoram, Jammu and Kashmir, Punjab, and Andhra Pradesh than female drop-outs.

Figure 6.5: Percentage of male and female drop-outs for 5 – 9 years (NFHS-4 by states)



Source: Author's calculations based on NFHS-4

Overall, the drop-out rate in all the states in NFHS-4 has fallen below 1% for the age group 5 – 9 years. The results of NFHS 4 show that in the age group 5 – 9 years, the states showing high drop-outs among males are Meghalaya (0.8%), Goa (0.7%) and Arunachal Pradesh (0.7%). The drop-out rates among males in Meghalaya are the highest among all the states, followed by Goa and Arunachal Pradesh. In the case of females, the following states showed high drop-outs, namely, Goa (0.9%), Maharashtra (0.8%) and Arunachal Pradesh (0.7%). Among females, the drop-out rate has declined compared to NFHS-3. Though the drop-

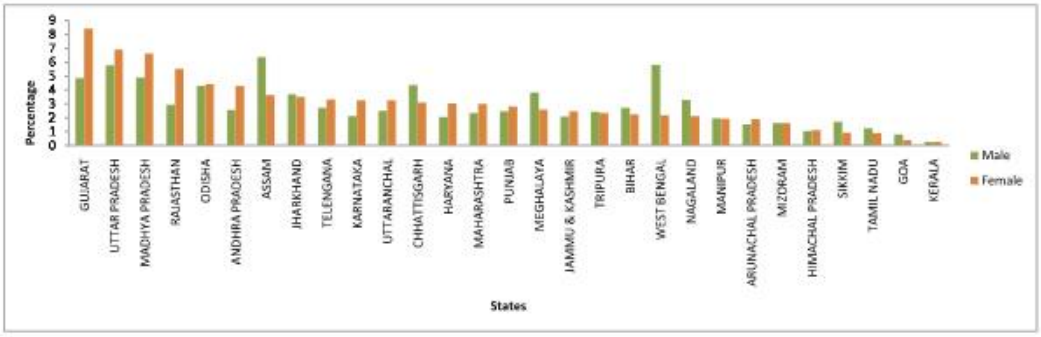
out rate is below 1%, Goa, Maharashtra, Arunachal Pradesh, Karnataka, and Odisha observed high drop-outs among females.

Age group 10 – 14 years

In the age group 10 – 14 years, the states showing high drop-outs among males are Assam(6%), West Bengal(6%) and Uttar Pradesh(6%), whereas in the case of females, the top-ranking states are Gujarat(8%), Uttar Pradesh(7%) and Madhya Pradesh(7%). The percentage indicates that female drop-outs are also higher in the 10 – 14 age groups in NFHS-4.

Meanwhile, low drop-out rates are observed in Kerala, Goa, Himachal Pradesh, and Tamil Nadu. The female drop-out rate is higher in Gujarat, Uttar Pradesh, Madhya Pradesh, Rajasthan, and Odisha. Low drop-outs among males and females in Kerala, Goa, Tamil Nadu, Sikkim, and Himachal Pradesh were noticed.

Figure 6.6: Percentage of male and female drop-outs for 10 – 14 years (NFHS-4 by states)



Source: Author's calculations based on NFHS-4

The drop-out rate is below 10% for both males and females. Female drop-outs are higher than males in most of the states. The states showing high male drop-out rates compared to females are West Bengal, Assam, Chhattisgarh,

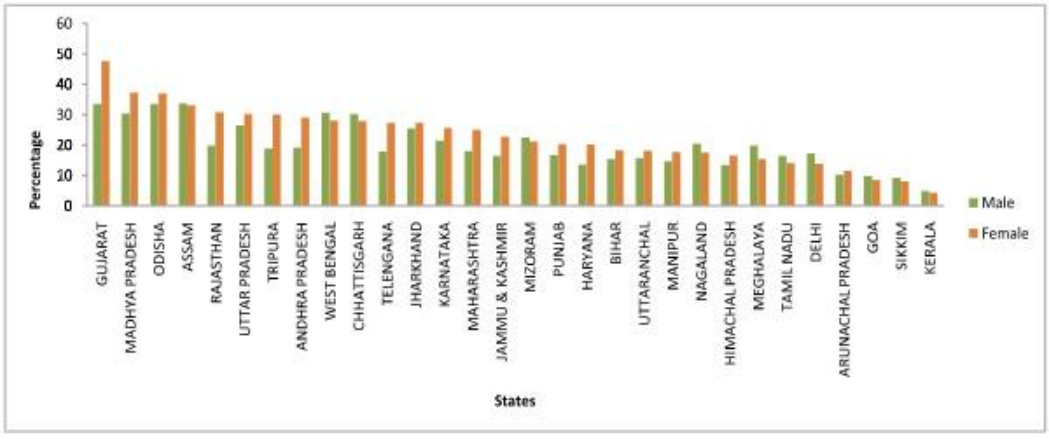
Meghalaya, and Nagaland. The top-ranking states that show a high percentage of female drop-outs are Gujarat, Uttar Pradesh, Madhya Pradesh, and Rajasthan.

Age group 15 – 18 years

In the age group 15 – 18 years, the drop-out rate among males is higher in Assam, Odisha, and Gujarat, with all three states showing a drop-out rate of 34%. However, among females, the states with the highest drop-out rates are Gujarat (48%), Madhya Pradesh (37%), and Odisha (37%). Female drop-outs are much higher in Gujarat, 14% more than the male drop-out rate. Assam, Odisha, Gujarat, West Bengal, and Madhya Pradesh are the five states reporting high male drop-outs. On the other hand, low drop-outs are reported among males in Kerala, Sikkim, Goa, and Arunachal Pradesh (See Figure 6.7).

States showing high drop-outs also report a high percentage of female drop-outs, such as Gujarat, Madhya Pradesh, Odisha, Assam, and Rajasthan. The low drop-out rate was observed in Kerala, Sikkim, Goa, and Arunachal Pradesh. Goa has reported a high drop-out rate among 5 – 9 years but a lower drop-out rate among 15 – 18 years.

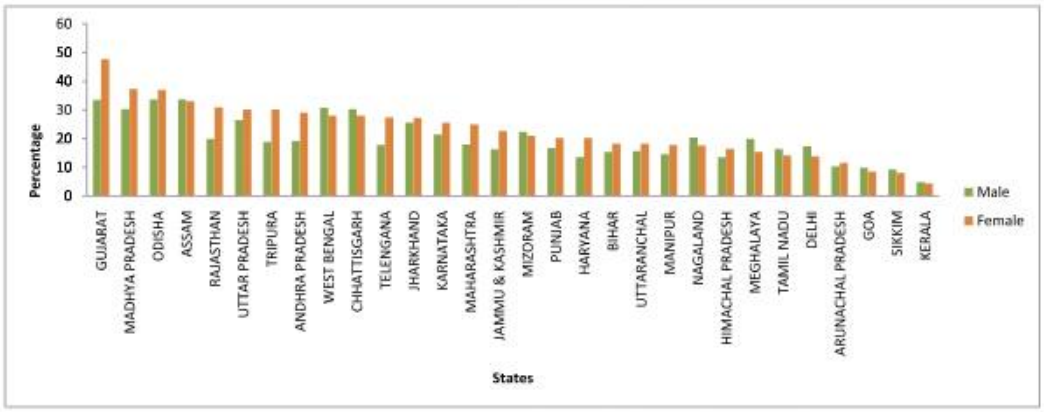
Figure 6.7: Percentage of male and female drop-outs for 15 – 18 years (NFHS 4 by states)



Source: Author's calculations based on NFHS-4

A high percentage of male drop-outs is reported in this age group compared to other age groups. We observed a reduction in the rate of drop-outs in NFHS-4 compared to the percentage of drop-outs reported in NFHS-3. We can notice that except in West Bengal, Chhattisgarh, Mizoram, Nagaland, Meghalaya, Tamil Nadu, Goa, and Sikkim, all other states are showing a higher percentage of female drop-outs than males in NFHS-4. Gujarat has reported a high female drop-out rate in the age groups 10 – 14 years and 15 – 18 years. A high drop-out rate is prevalent after 14 years of age, i.e., in the age group 15 – 18 years. In most states, we observe a higher percentage of female drop-outs than males.

Figure 6.8: Average percentage of male and female drop-outs for 5 – 18 years (NFHS 4 by states)



Source: Author's calculations based on NFHS-4

Overall, in the age group 5 – 18, when all three age groups are put together, the study shows that the percentage of drop-outs in the 15 – 18 years is very high. Compared to the other two age groups, the drop-out rate is high in the 15 – 18 years, and among females, it is much higher than males. In NFHS-4, though, we observed a reduction in drop-out rates compared to those surveyed in NFHS-3.

Now, we will compare the two surveys.

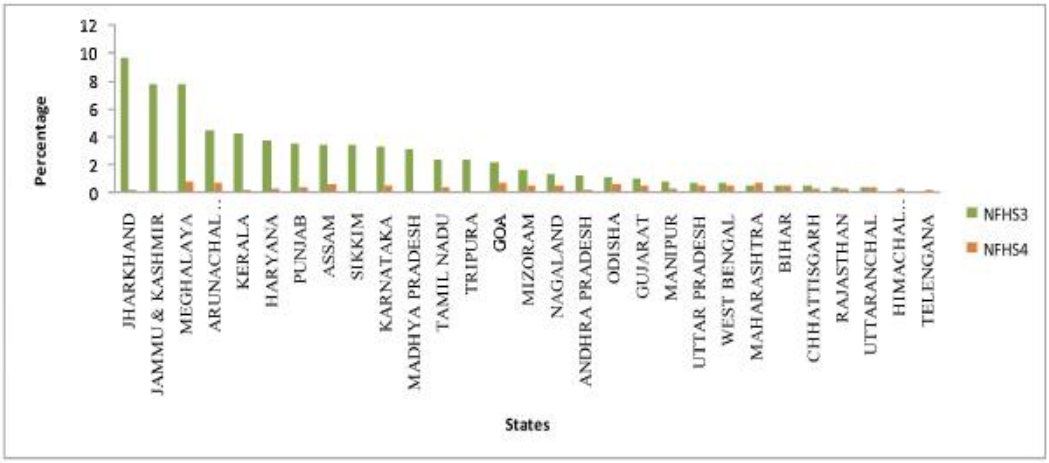
6.3 GENDER-WISE COMPARISON OF DROP-OUTS BETWEEN NFHS-3 AND NFHS-4

The comparison of the findings between NFHS-3 and NFHS-4 is presented below.

Age group 5 – 9 years

There has been a drop in the percentage of drop-outs reported from NFHS-3 to NFHS-4. In NFHS-3, Jharkhand reported a drop-out rate between 8 and 10 %, which fell drastically below 1%. There is a reduction in the percentage of drop-outs reported across all the states in India (See Figure 6.9). In NFHS-3, Telangana was part of Andhra Pradesh. In NFHS-4, data from the newly formed state Telangana is available for analysis (NFHS 5), but no previous data is available for comparison in NFHS-3.

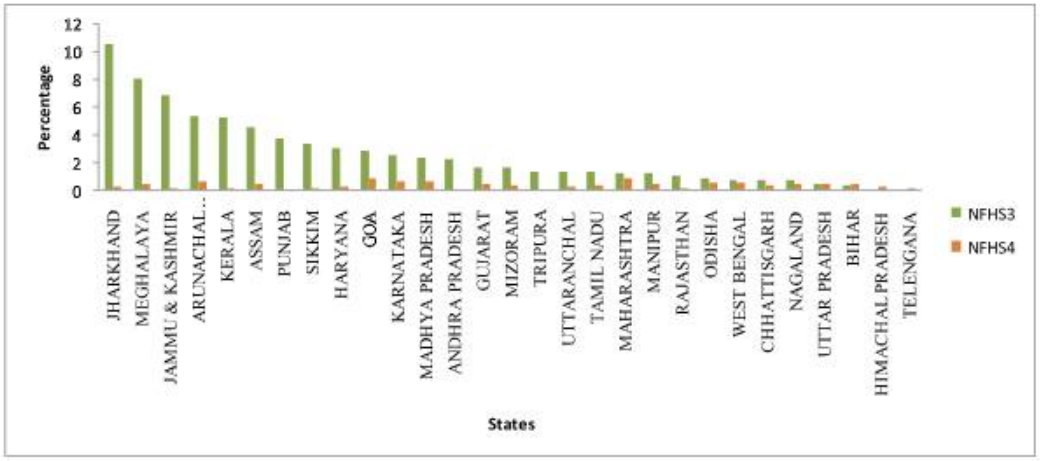
Figure 6.9: Percentage of male drop-outs among 5 – 9 years (NFHS 3 and NFHS 4 by states)



Source: Author's calculations based on NFHS-3 and NFHS-4

Among females, there has been a decline in the drop-out rate from NFHS-3 to NFHS-4. The drop-out rate has reduced to less than 1% across all the states in the NFHS-4.

Figure 6.10: Percentage of female drop-outs among 5 – 9 years (NFHS-3 and NFHS-4 by states)

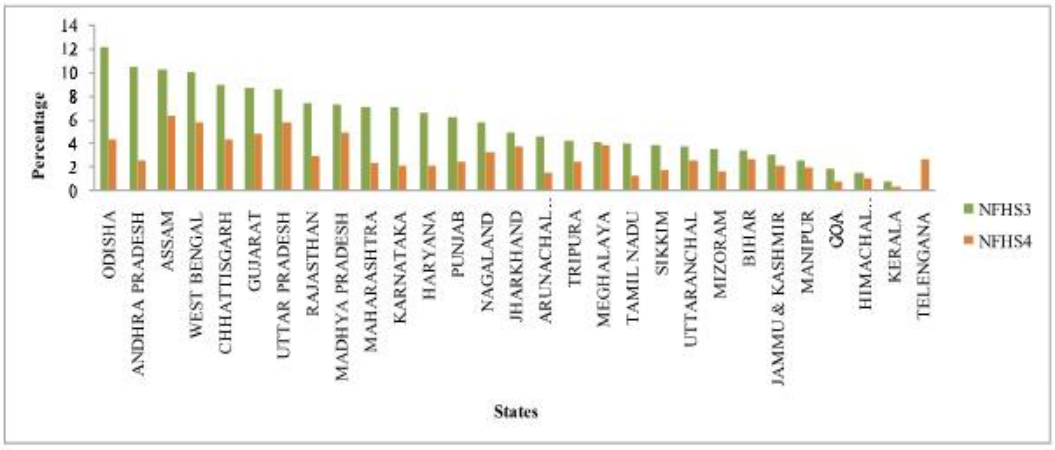


Source: Author's calculations based on NFHS-3 and NFHS-4

Age group 10 – 14 years

There has been a reduction in the percentage of drop-outs reported in NFHS-3 to NFHS-4. The decline in drop-out rate is observed all over India except in Telangana, for which no data is available for NFHS-3.

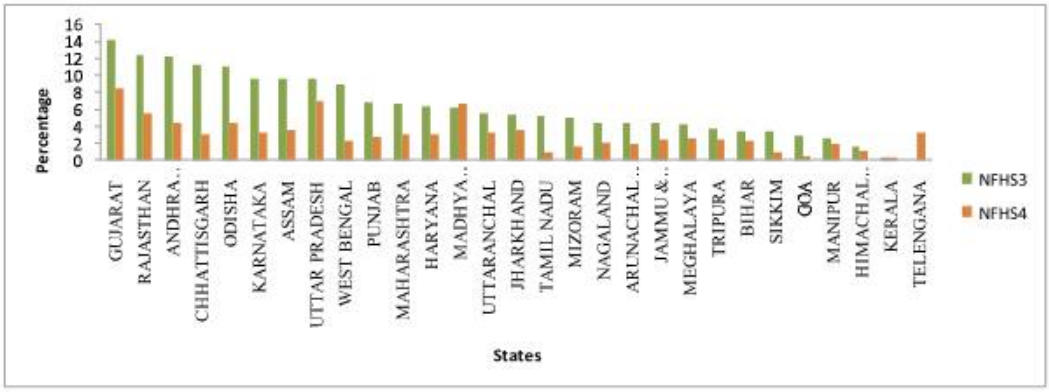
Figure 6.11: Percentage of male drop-outs among 10 – 14 years (NFHS-3 and NFHS-4 by states)



Source: Author's calculations based on NFHS-3 and NFHS-4

We observed a fall in the drop-out rate from NFHS-3 to NFHS-4 for all the states except Madhya Pradesh. Many states, including Gujarat, Rajasthan, Sikkim, and Goa, have shown progress in reducing the drop-out rate among females.

Figure 6.12: Percentage of female drop-outs among 10 – 14 years in NFHS-3 and NFHS-4

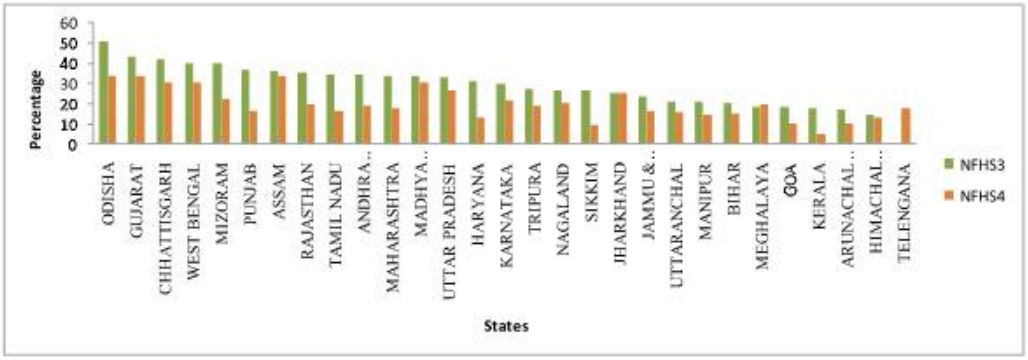


Source: Author's calculations based on NFHS-3 and NFHS-4

Age group 15 – 18 years

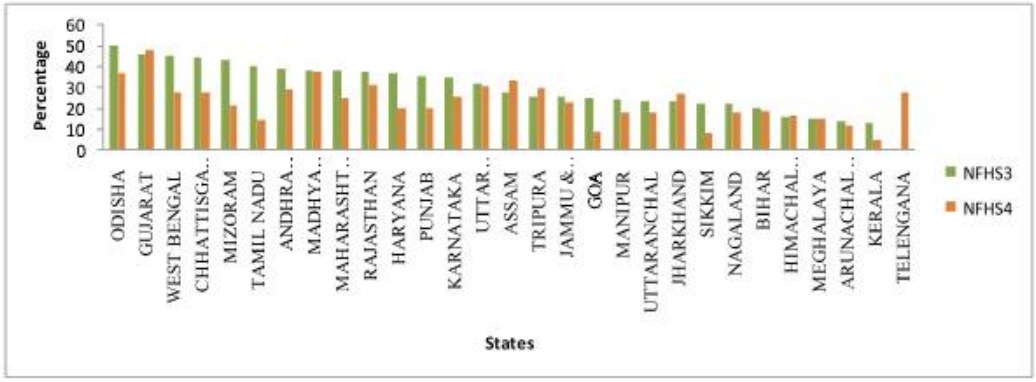
There is a reduction in the drop-out rate in all the states except Jharkhand. The drop-out rate reported in Meghalaya shows a slight increase in NFHS-4 compared to NFHS-3 (See Figure 6.13).

Figure 6.13: Percentage of male drop-outs among 15 – 18 years (NFHS-3 and NFHS-4 by states)



Source: Author's calculations based on NFHS-3 and NFHS-4

Figure 6.14: Percentage of female drop-outs among 15 – 18 years (NFHS-3 and NFHS-4 by states)

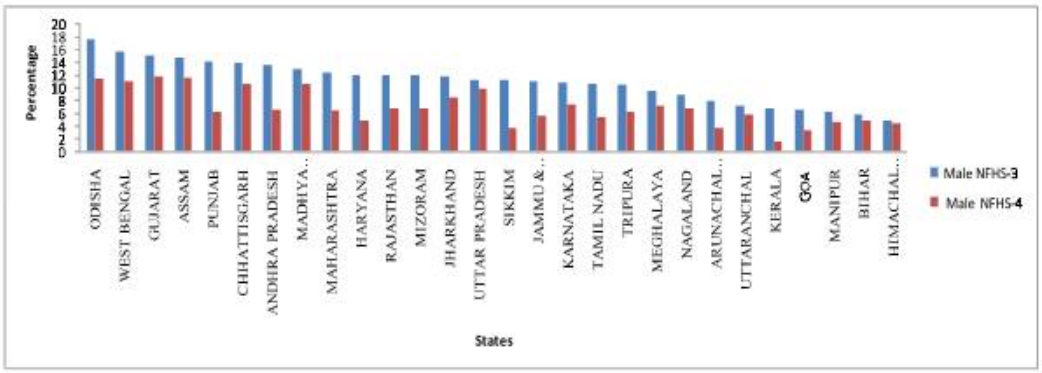


Source: Author's calculations based on NFHS-3 and NFHS-4

Odisha, West Bengal, Chhattisgarh, Mizoram, Tamil Nadu, Andhra Pradesh, Haryana, Punjab, and Goa have successfully reduced the drop-out rate. The drop-out rate has increased in terms of percentages in NFHS-4 in the following states: Gujarat, Assam, Tripura, and Jharkhand. Telangana has no previous data to compare for NFHS-3; therefore, the percentages are reported only for NFHS-4.

Age group 5 – 18 years

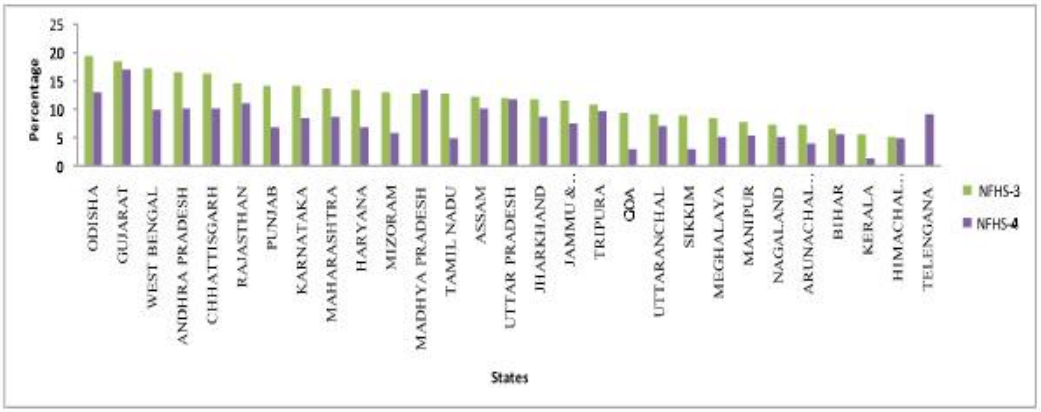
Figure 6.15: Percentage of male drop-outs among 5 – 18 years (NFHS-3 and NFHS-4 by states)



Source: Author's calculations based on NFHS-3 and NFHS-4

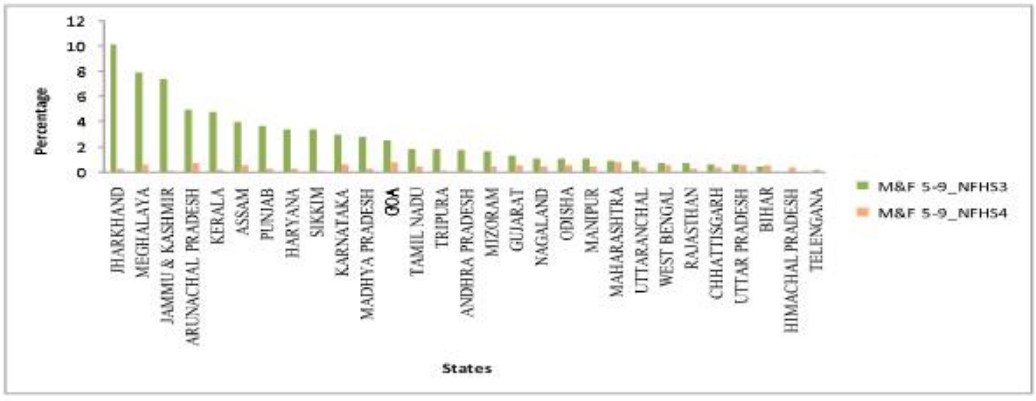
Overall, there has been a reduction in the drop-out rate of males across the age groups from NFHS-3 to NFHS-4. Few states have shown significant progress in reducing the drop-out rate by more than 50% from NFHS-3 to NFHS-4. Meanwhile, a few states are struggling to decrease drop-out rates. Even then, they can reduce the drop-out rate to some extent. During NFHS-4, among females in the age group 5 – 18 years, there is a decline in the drop-out rate compared to NFHS-3, except in Madhya Pradesh.

Figure 6.16: Percentage of female drop-outs among 5 – 18 years in NFHS-3 and NFHS-4



Source: Author's calculations based on NFHS-3 and NFHS-4

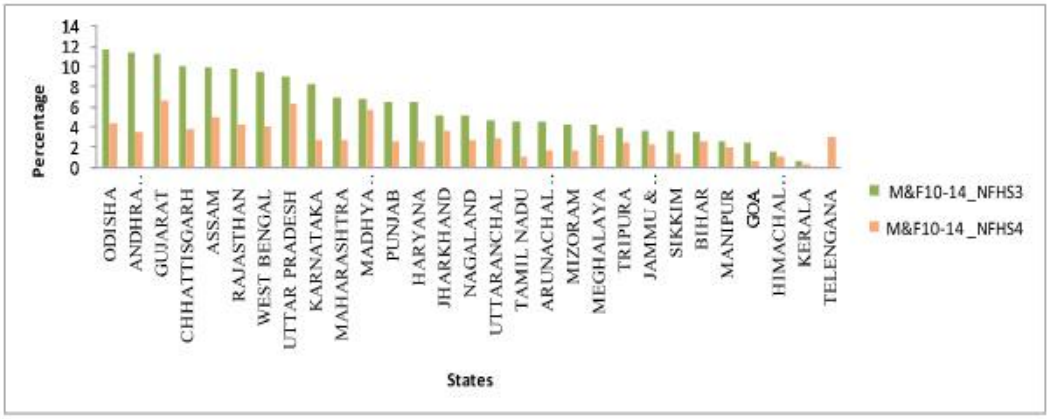
Figure 6.17: Percentage of drop-outs among 5 – 9 years in NFHS-3 and NFHS-4



Source: Author's calculations based on the raw data of NFHS-3 and NFHS-4

Next, the findings based on the drop-out rate for males and females are presented in NFHS-3 and NFHS-4. Almost all the states have successfully reduced the drop-out rate in the age group 5 – 9 years, according to the NFHS-3 and NFHS-4 data (See Figure 6.17).

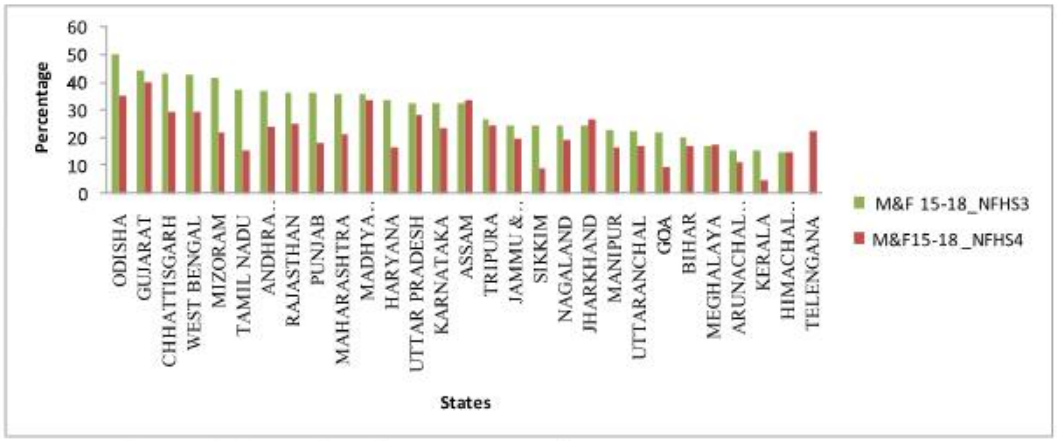
Figure 6.18: Percentage of drop-outs among 10 – 14 years (NFHS-3 and NFHS-4 by states)



Source: Author's calculations based on NFHS-3 and NFHS-4

In the age group 10 – 14 years, there has been a decline in the drop-out rate observed from NFHS-3 to NFHS-4.

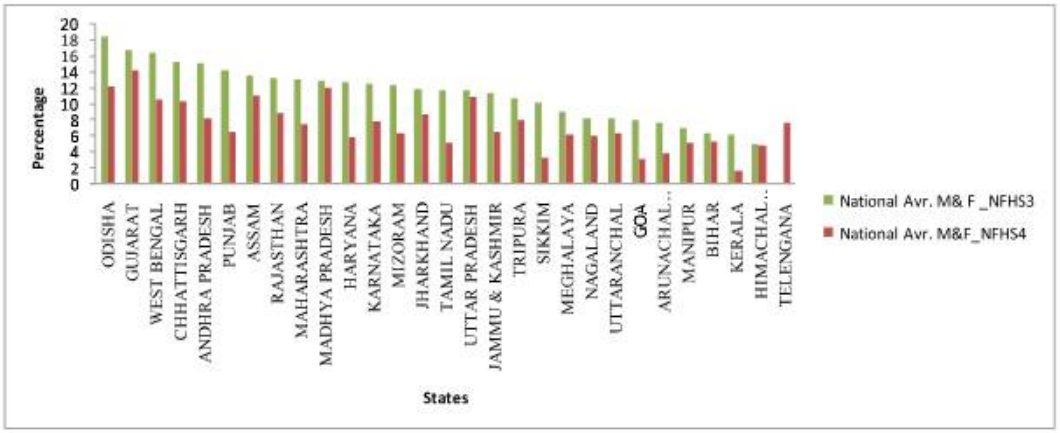
Figure 6.19: Average percentage of male and female drop-outs among 15 – 18 years in NFHS-3 and NFHS-4



Source: Author's calculations based on NFHS-3 and NFHS-4

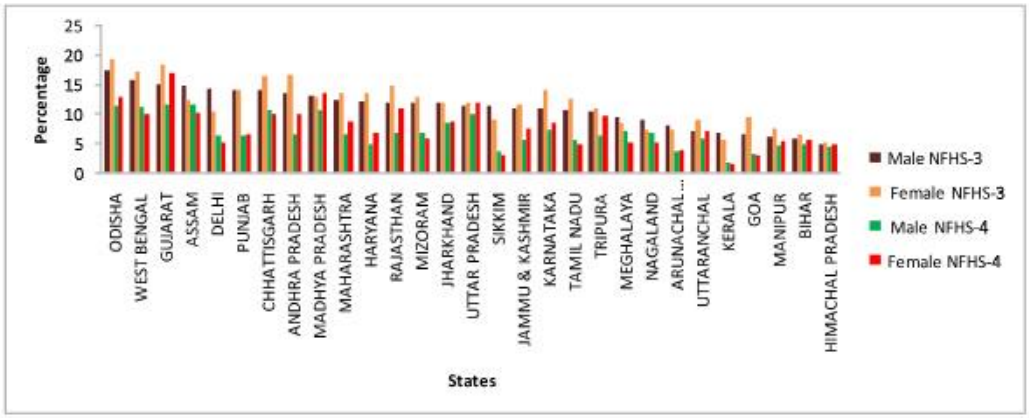
The drop-out rate is declining in the age group 15 – 18 years, showing progress from NFHS-3 to NFHS-4. There is a slight increase in the drop-outs from NFHS-3 to NFHS-4 in Assam, Jharkhand, and Meghalaya. All the states have shown a decline in the drop-out rate from NFHS-3 to NFHS-4 (See Figure 6.20).

Figure 6.20: Percentage of drop-outs among 5 – 18 years (NFHS-3 and NFHS-4 by states)



Source: Author's calculations based on NFHS-3 and NFHS-4

Figure 6.21: Percentage of male and female drop-outs among 5-18 years in NFHS-3 and NFHS-4



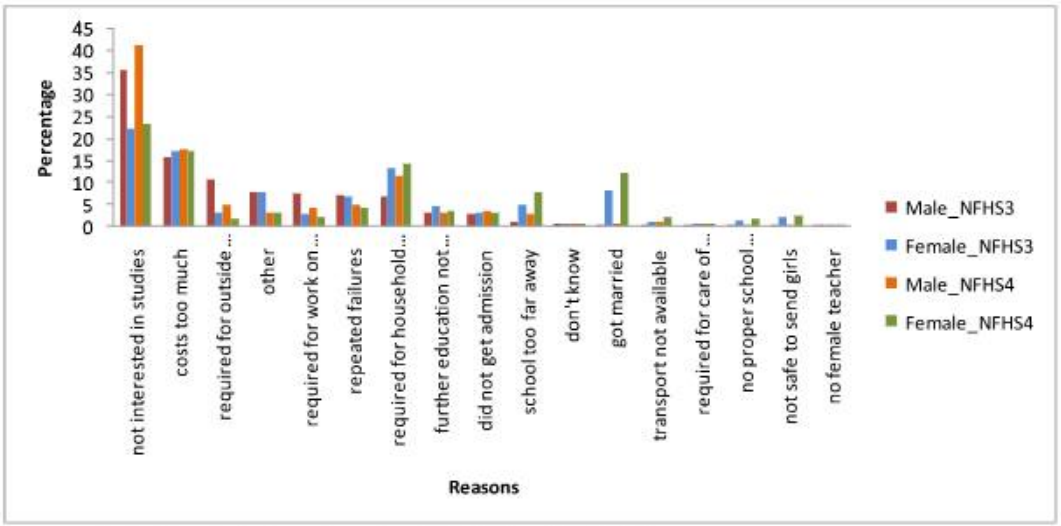
Source: Author's calculations based on NFHS-3 and NFHS-4

6.4 GENDER-WISE ANALYSIS OF THE REASONS FOR DROP-OUTS IN NFHS-3 AND NFHS-4

In both surveys, NFHS-3 and NFHS-4, the reasons for coding the responses were identical. The present analysis reports the reasons for not attending school in both the surveys among 5 – 18 year-olds. An attempt is also being made to create the categories of reasons and understand the reasons for not attending school.

The top five reasons for males and females together are: "not interested in studies" (32%), "costs too much" (17%), "require for household work" (13%), "got married" (7%) and "school too far away" (5%). These five reasons constitute almost 75% of the reasons for not attending the school. It is observed that the most important reason for not attending school is "not interested in studies" among males and females. "Cost too much" is a significant factor for children not attending school in both surveys. Marriage is an important factor influencing drop-out rates among females (See Figure 6.22).

Figure 6.22: Reasons for not attending school between males and females among 5-18 years in NFHS-3 and NFHS-4



Source: Author's calculations based on NFHS 3 and NFHS 4

Domestic responsibilities include reasons like "required for household work", "work on farm/ family business", and "working outside for payment". The specific reasons are studied based on age and gender. The primary reason for drop-outs for ages 5 – 9 years is "Other" in NFHS 3 among both genders. As no details are specified about what responses were coded under "Other", we cannot address this. The second most important reason is "did not get admission" among males and females in NFHS 3. And the third most important reason is "not interested in studies".

In NFHS 4, the highest percentage of drop-outs among both genders was because they "did not get admission", followed by "not interested in studies" and "costs too much". "School far away" is also noticed as one of the reasons for drop-outs among males in the age group 5 – 9 years in NFHS 4 (See Table 6.1)

In NFHS 3, in the age group 10 – 14 years, the highest percentage of drop-outs is due to "not interested in studies", followed by "costs too much" among both genders. The third-highest percentage of male drop-outs is due to "required for outside work for payment in cash or kind" among males and "required for household work" among females. The reasons noticed in the age group 10 – 14 years in NFHS 4 are as follows: the top-most is "not interested in studies" among males and females. The second most significant reason is "costs too much", followed by "required for household work" among both genders in NFHS 4.

The reasons for drop-outs observed in NFHS 3 in the age group 15 – 18 years are "not interested in studies" and "costs too much" among both genders. The third most important reason among males is "required to do outside work for payment in cash or kind". And among females, they are "required for household work". The 1st most significant reason for drop-outs in the age group of 15 – 18 years among males and females in NFHS 4 is "not interested in studies". In some states, "got married" is the most significant reason among females for not attending school. The states where girls are not attending school due to marriage

Table 6.1: Reasons for not attending school in NFHS 3 and NFHS 4

	NFHS 3						NFHS 4					
	5 - 9 Year		10 - 14 Year		15 - 18 Year		5-9 Year		10-14 Year		15-18 Year	
Reasons	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
School too far away	1.87	2.34	1.51	4.9	0.68	6.03	11.48	10.83	3.44	7.92	2.61	7.74
Transport not available	0.93	0.78	0.24	0.8	0.25	1.17	3.05	2.17	1.04	2.07	1	1.92
Further education not considered necessary	2.18	2.96	2.78	3.77	3.29	4.95	2.76	4	3.23	3.71	3.1	3.32
Required for household work	2.49	3.28	8.4	16.41	6.77	13.1	4.51	6.67	10.3	16.17	11.84	13.98
Required for work on farm/family business	0.62	0.31	6.27	3.54	8.28	2.91	0.73	1	3.59	2.24	4.45	1.96
Required for outside work for payment in cash or kind	1.09	0.62	9.53	4.38	11.78	2.82	1.02	1.17	3.66	2.22	6.12	1.65
Costs too much	4.35	6.15	18.11	21.74	16.28	16.93	11.48	11.17	18.99	19.68	17.34	17.01
No proper school facilities for girls	0.16	0.78	0.33	1.51	0.09	1.45	0.15	1.33	0.21	1.64	0.18	1.54
Not safe to send girls	0.16	0.16	0.14	2.73	0.09	2.13	0.15	0.33	0.05	2.93	0.08	2.22
No female teacher	0.16	0	0	0.19	0.04	0.24	0	0.17	0.2	0.29	0.15	0.36
Required for care of siblings	0.47	0.47	0.42	1.18	0.2	0.58	1.02	2	0.54	1.17	0.43	0.58
Not interested in studies	9.33	9.05	40.61	26.55	36.65	22.22	23.84	17.33	44.85	29.6	41.19	22.34
Repeated failures	0.16	0.47	3.63	4.24	8.94	8.07	0.44	0.17	1.86	1.7	6.61	4.69
Got married	0	0	0	0.71	0.48	11.19	0	0.17	0.14	0.75	0.74	14.69
Did not get admission	24.26	29.17	2.22	2.03	0.96	1.2	26.45	30.17	2.89	2.98	2.97	2.7
Other	49.92	42.75	6.14	6.94	4.61	6.19	10.76	9.67	4.16	4.37	2.67	2.88
Don't know	1.87	1.72	0.66	0.38	0.62	0.8	2.18	2.67	0.86	0.54	0.53	0.43

Source: Author's calculations based on NFHS 3 and NFHS 4

are Arunachal Pradesh, Assam, Bihar, Jharkhand, Kerala, Maharashtra, Manipur, Tripura and West Bengal.

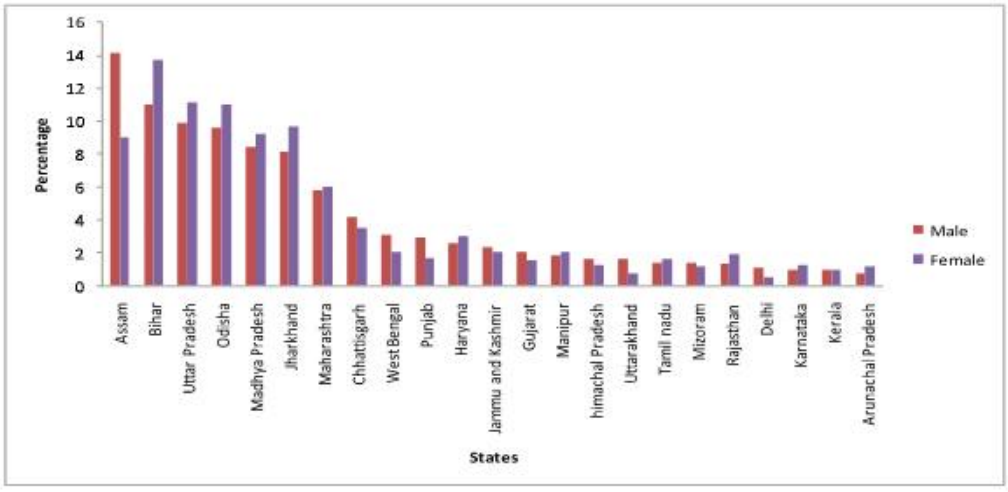
Education up to 14 years should be free and accessible under the RTE Act(2009), but it is observed that the reason "costs too much" was reported in all three age groups in NFHS 4. Schools may charge fees even for children below 14 years, and education above 14 years is not free. Therefore, there may be a higher percentage of drop-outs in the age group 15 – 18 years. Girls "required for household work" in the age group 15 – 18 years show that females do not attend school as they are burdened with household responsibilities.

Next, we have tried to understand the state-wise reasons for drop-outs based on the NFHS 4 to study the drop-out status in India.

6.4.1 State-wise reasons for drop-outs in NFHS-4

The detailed analysis of the reasons for drop-outs among states is studied based on NFHS-4 data only as it informs us about the post-RTE situation in the country. The first reason is "did not get admission". A high percentage of drop-outs is observed in the following states: Assam, Bihar, Uttar Pradesh, Odisha, Madhya Pradesh and Jharkhand. The female drop-out percentage is marginally higher than the males', except in Assam, where male drop-outs are more than female drop-outs.

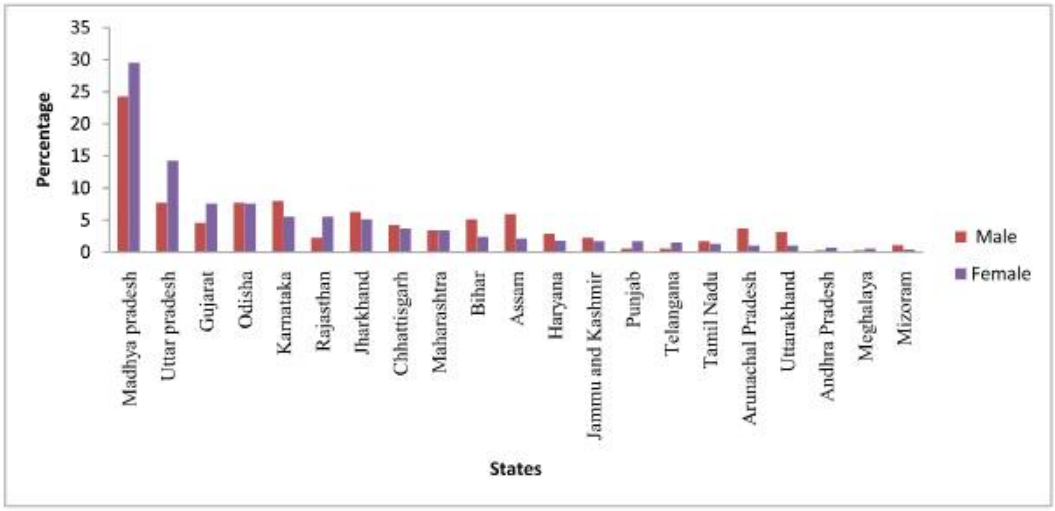
Figure 6.23: Proportion of drop-outs due to reason did not get admission



Source: Author's calculations based on NFHS-4

Overall, Madhya Pradesh reports the highest drop-outs due to the unavailability of transport facilities. More females have dropped out due to the unavailability of transport facilities in Madhya Pradesh, Uttar Pradesh, Gujarat, and Rajasthan.

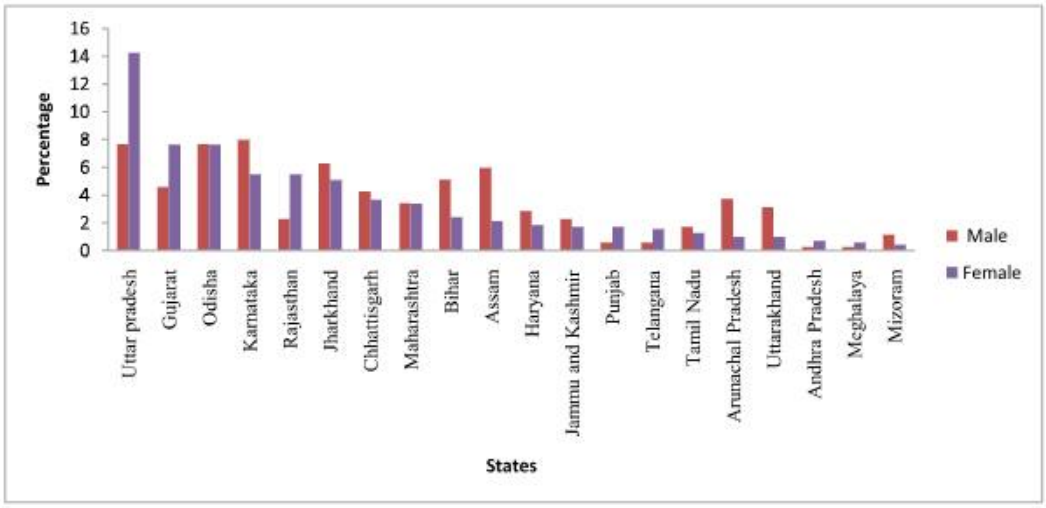
Figure 6.24a: Proportion of drop-outs due to transport not available



Source: Author's calculations based on NFHS-4

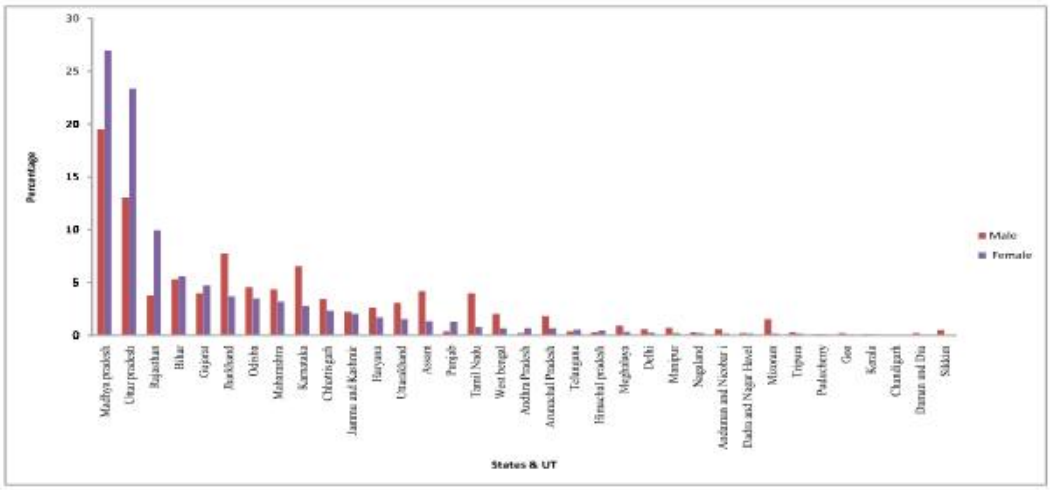
Excluding Madhya Pradesh, we observed that more males have dropped out due to unavailability of transport in Karnataka, Jharkhand, Bihar, Assam, Arunachal Pradesh, and Uttarakhand (See Figure 6.24a and 6.24b).

Figure 6.24b: Transport not available



Source: Author's calculations based on NFHS-4

Figure 6.25a: School far away

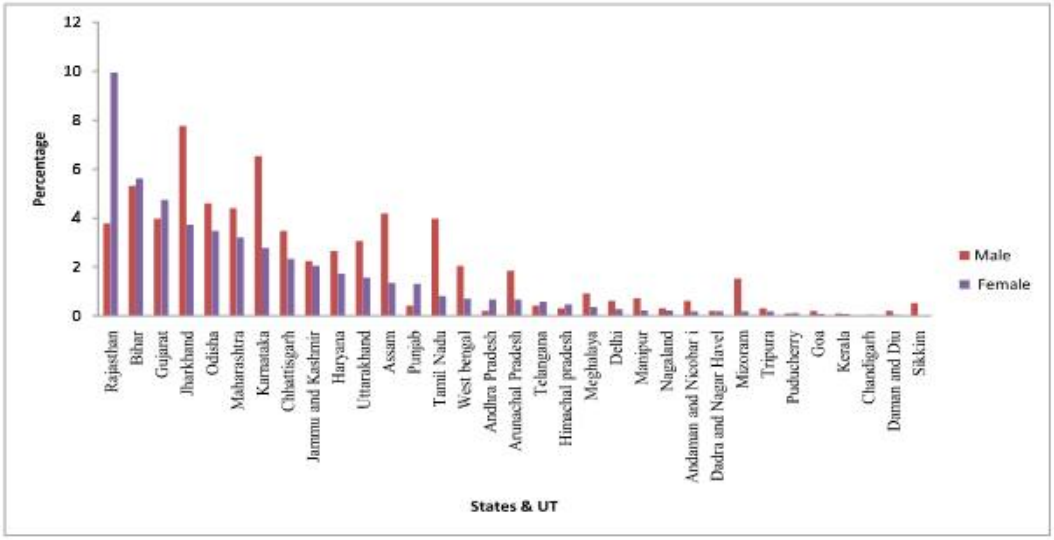


Source: Author's calculations based on NFHS-4

The top three states where children have dropped out due to "school being far away" are Madhya Pradesh, Uttar Pradesh, and Rajasthan. In these states, both males and females have dropped out, but compared to males, more females have dropped out as "school is far away". If the "school is far away", parents will be more concerned about the safety of the girl child while travelling alone and therefore will try to stop their education by not sending them to a school far away from home. (See Figure 6.25a).

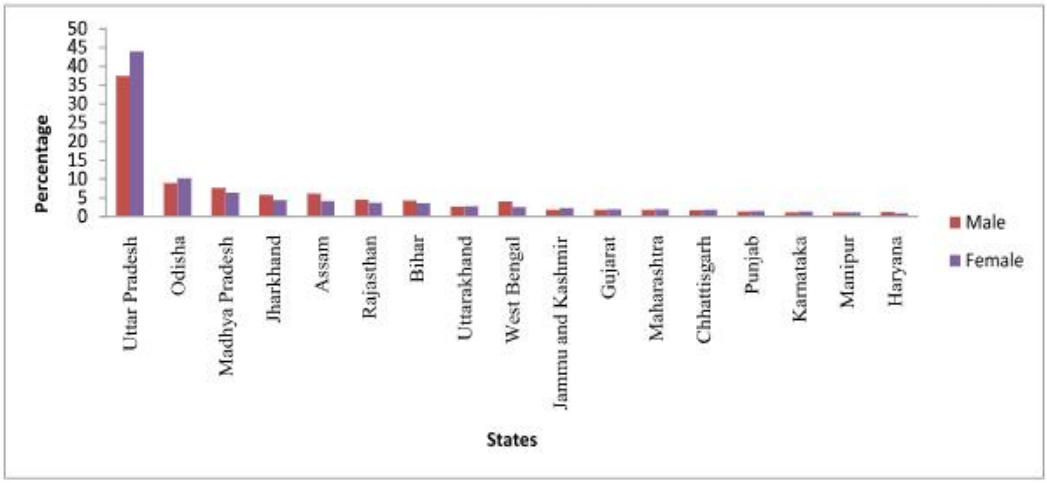
Very few states show where more males have dropped out of school than females. High drop-out among males observed due to "school being far away" are in Jharkhand, Karnataka, Assam, Tamil Nadu, Chattisgarh, Odisha, Uttarakhand, West Bengal, Mizoram and Arunachal Pradesh (See Figure 6.25a and 6.25b).

Figure 6.25b: School far away



Source: Author's calculations based on NFHS-4

Figure 6.26a: Costs too much



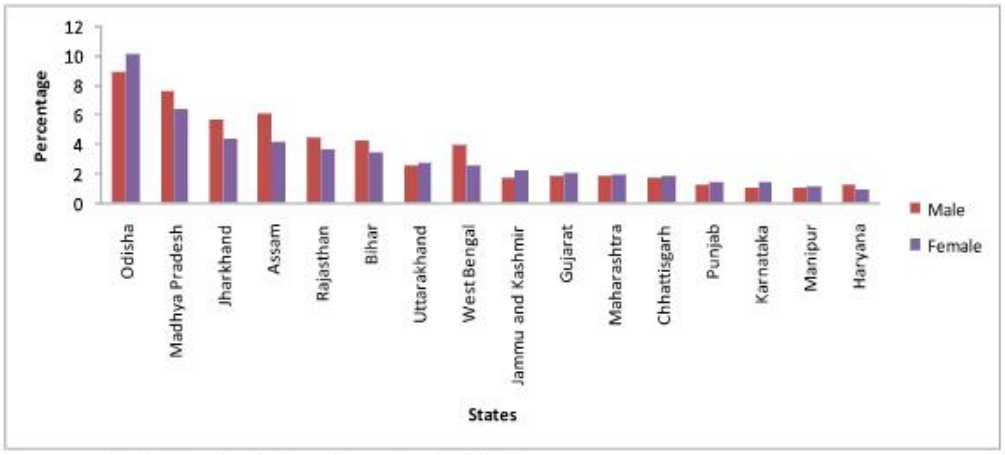
Source: Author's calculations based on NFHS-4

In the case of reason "costs too much",–Uttar Pradesh shows high drop-outs among males and females. More females than males have dropped out in Uttar Pradesh.

In most states, school education costs have kept more girls out of school than males. A few states have shown that males have dropped out due to financial

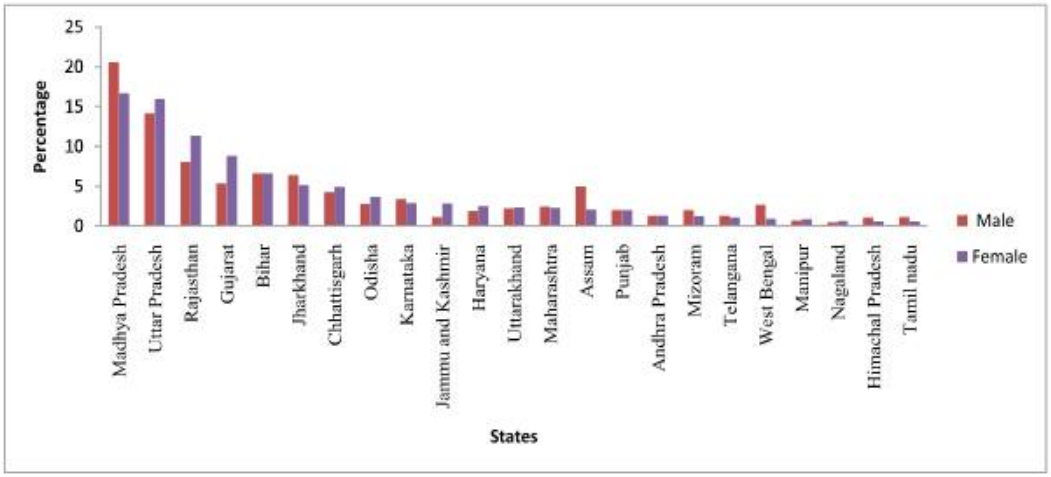
constraints: Madhya Pradesh, Jharkhand, Assam, Rajasthan, Bihar, and West Bengal. (See Figure 6.26b).

Figure 6.26b: Costs too much



Source: Author's calculations based on NFHS-4

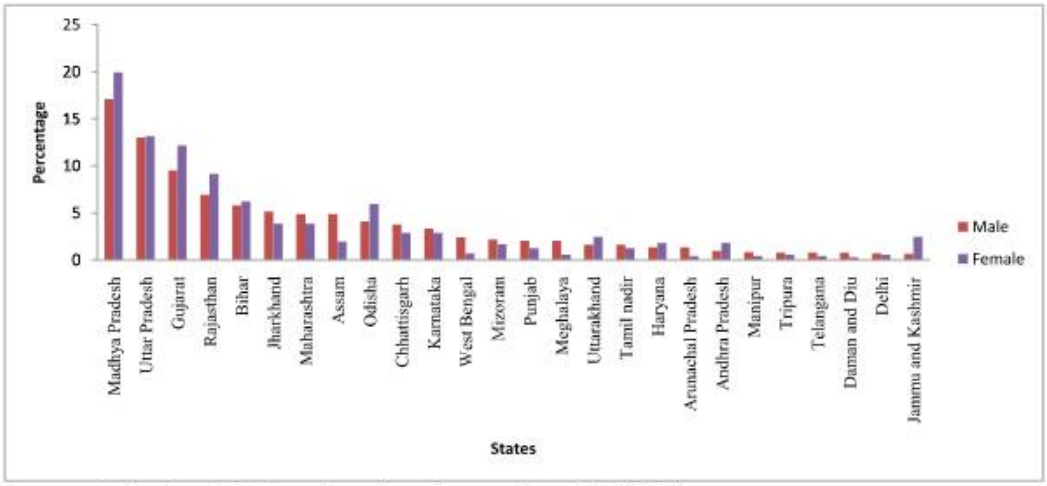
Figure 6.27: Required for household work



Source: Author's calculations based on NFHS-4

Except for Madhya Pradesh, Jharkhand, Assam, Mizoram, and West Bengal, which show male children are involved in household work, in the remaining states, female drop-outs are higher than males. (See Figure 6.27)

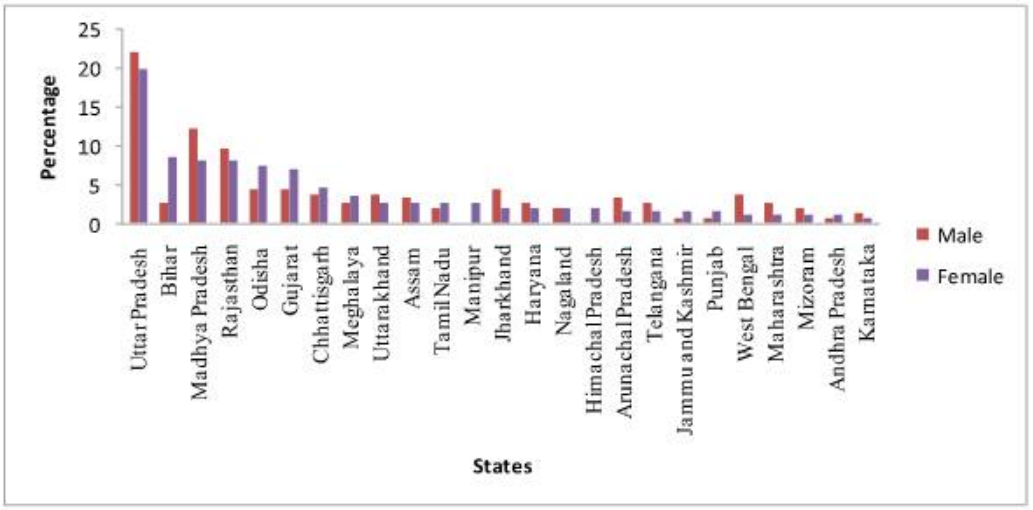
Figure 6.28: Required for work on farm/ family business



Source: Author's calculations based on the raw data of NFHS-4

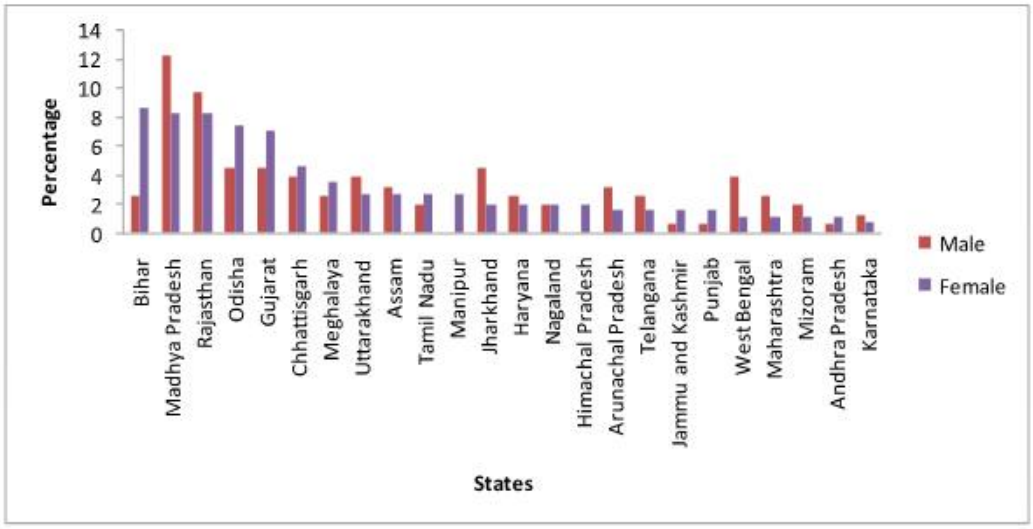
It is observed that males and females have dropped out of school as they were "required to work on farm and family business". In Madhya Pradesh, more females do not attend school due to this reason. Among the five states showing high drop-outs among females are Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh (BIMARU), and Gujarat (See Figure 6.28).

Figure 6.29a: Required for care of siblings



Source: Author's calculations based on NFHS-4

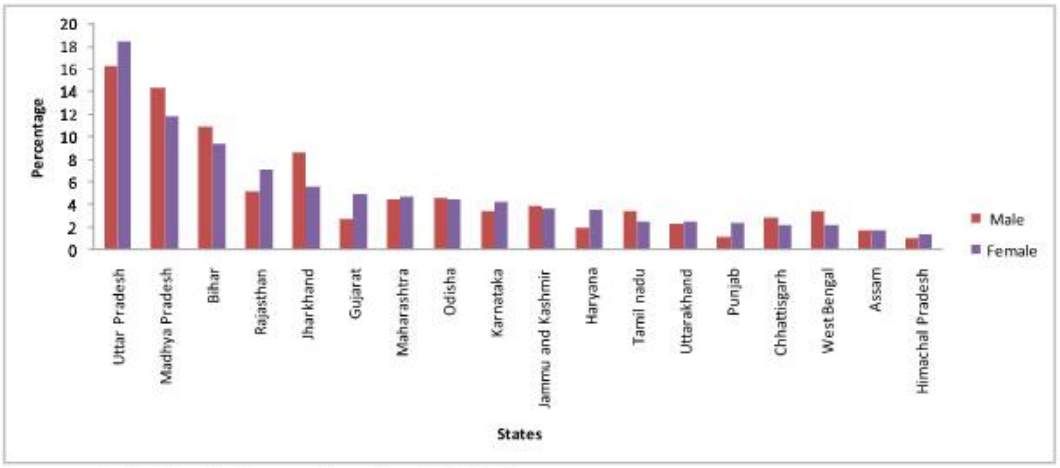
Figure 6.29b: Required for care of siblings



Source: Author's calculations based on NFHS-4

Drop-outs due to children being required to care for their younger siblings are high among the BIMARU states. (See Figures 6.29a and 6.29b). It is observed that more males drop-out of school as they need to look after their siblings. If no female child is available in the family, the elder male child may be required to care for younger siblings. As a result, that child was not able to remain in school (See Figures 6.29a and 6.29b)

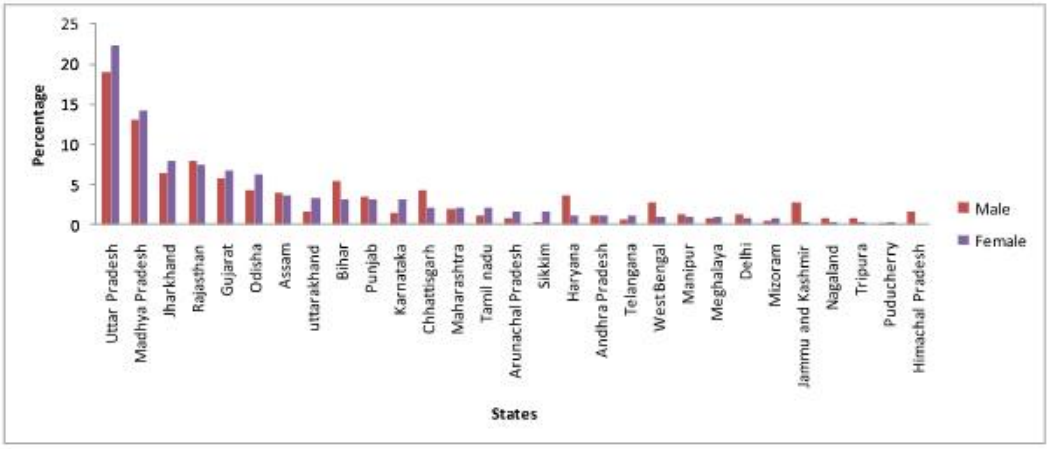
Figure 6.30: Further education not necessary



Source: Author's calculations based on NFHS-4

It shows that the girl child's education is not prioritised in the family. The states showing high female drop-out rates compared to males are Uttar Pradesh, Rajasthan, Gujarat, Karnataka, and Haryana. The states showing high male drop-out rates due to this reason are Madhya Pradesh, Bihar, Jharkhand, Chhattisgarh, and West Bengal. The societal belief is that the girl will get married one day, and her education will not benefit the parental family. In contrast, the male child will look after the parents and contribute to the family's income (See Figure 6.30).

Figure 6.31: Required for outside work



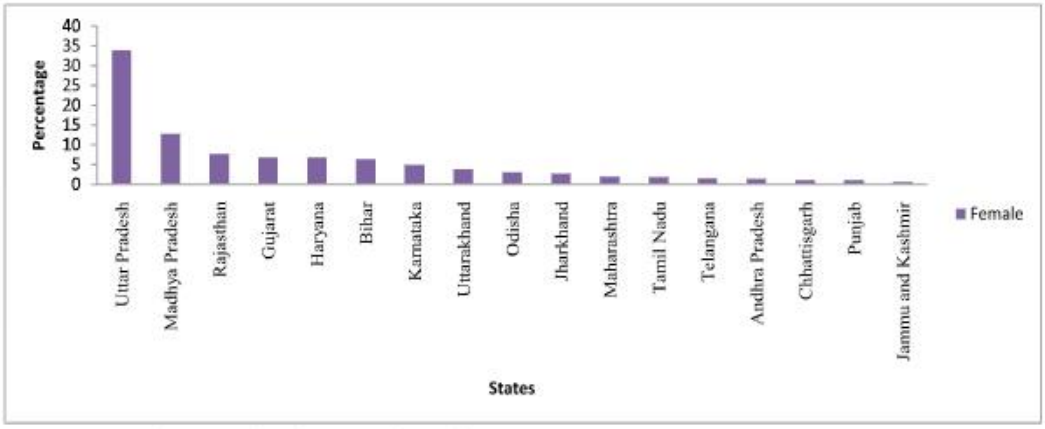
Source: Author's calculations based on NFHS-4

It is observed that compared to males, more females are engaged in outside work. More males are involved in outside work from states like Bihar, Chhattisgarh, Haryana, West Bengal, Jammu and Kashmir, and Himachal Pradesh (See Figure 6.31).

The following three reasons used for coding are relevant to the responses of females only. These reasons are "not safe to send girls", "no proper school facilities for girls", and "no female teacher". In the first case, the data reveals that Uttar Pradesh has the highest percentage, approximately 34%, for not sending girls to school, followed by Madhya Pradesh. The second case is when there are no proper school facilities for girls, and the two states that rank high are Uttar Pradesh and Madhya Pradesh. In the third case, the school does not have a female

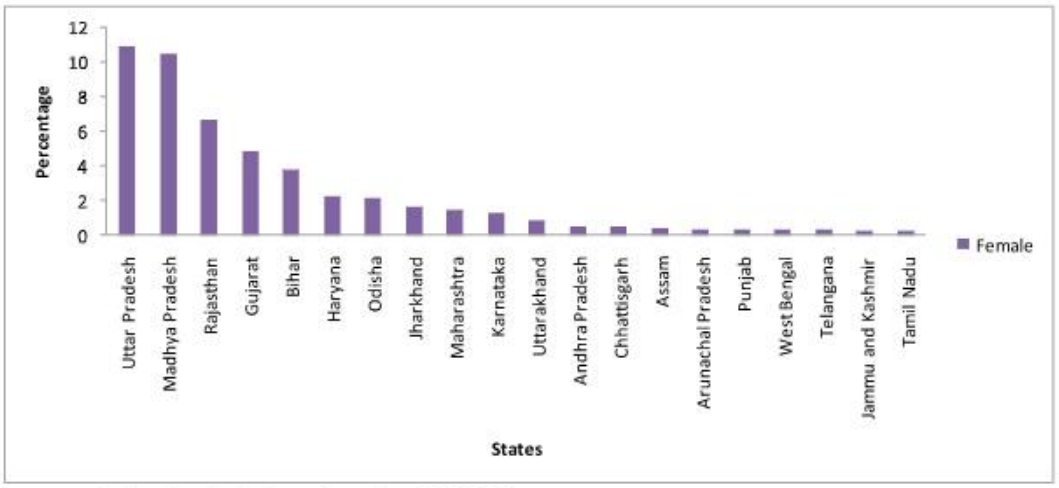
teacher. In this case, Uttar Pradesh and Madhya Pradesh also show higher percentages than other states among girls not attending school (See Figures 6.32, 6.33 and 6.34).

Figure 6.32: Not safe to send girls to school



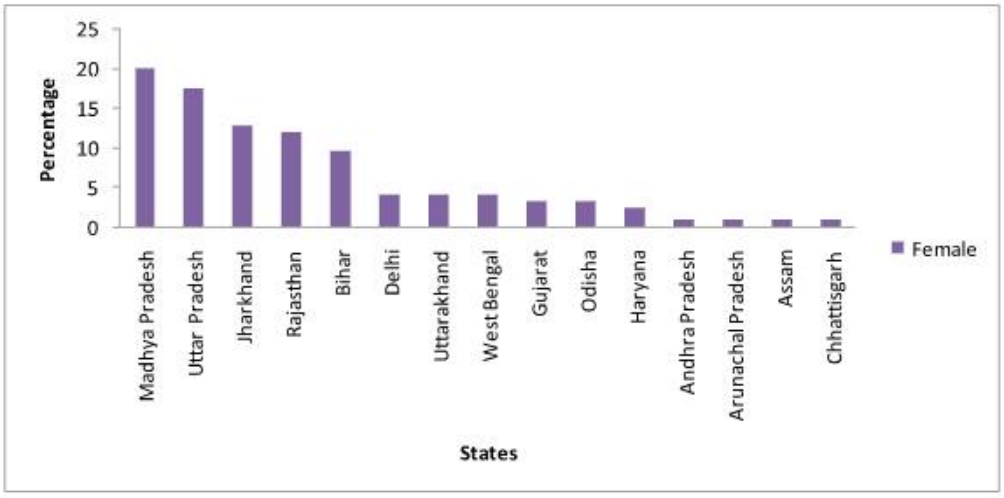
Source: Author's calculations based on NFHS-4

Figure 6.33: No proper school facilities for girls



Source: Author's calculations based on NFHS-4

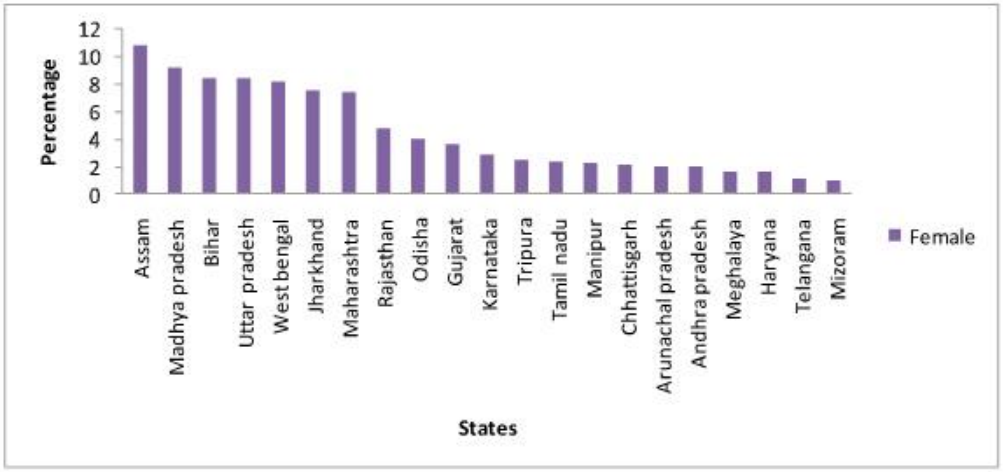
Figure 6.34: Non-availability of female teacher



Source: Author's calculations based on NFHS-4

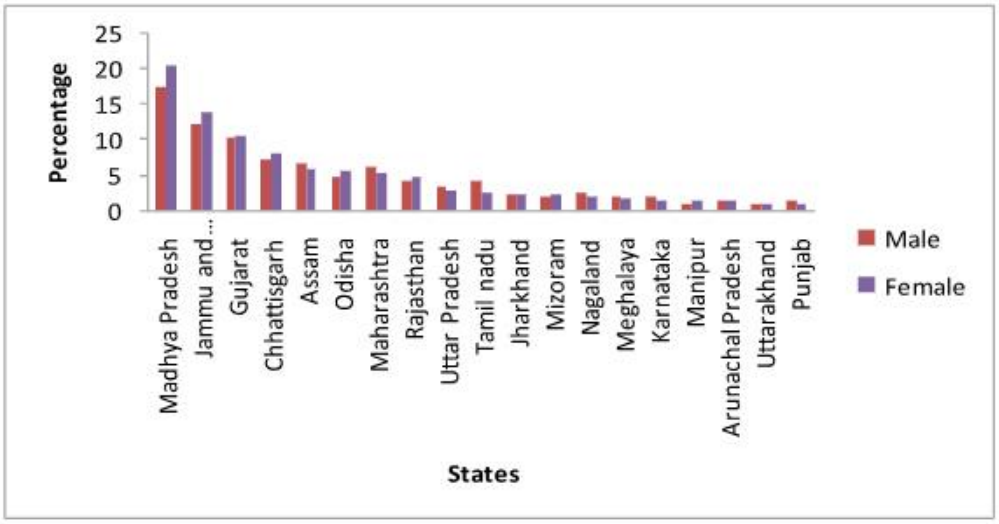
The following reason is marriage, i.e. "got married", for the child not attending school. The five states showing a high percentage of girls not attending school due to marriage include Assam, Madhya Pradesh, Bihar, Uttar Pradesh, and West Bengal (See Figure 6.35).

Figure 6.35: Girl -got married



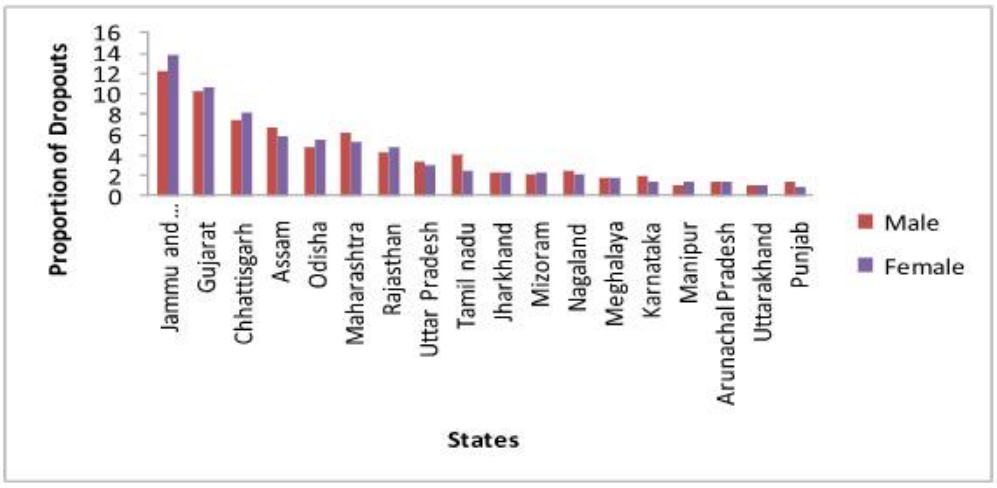
Source: Author's calculations based on NFHS-4

Figure 6.36a: Repeated failures



Source: Author's calculations based on NFHS-4

Figure 6.36b: Repeated failure

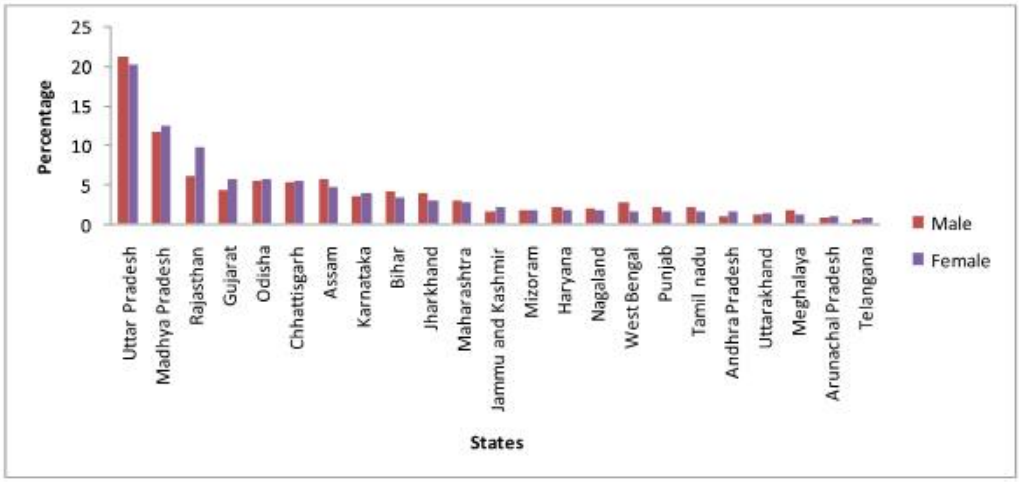


Source: Author's calculations based on NFHS-4

The following reason is "repeated failures" in the school, resulting in drop-out. For this reason, two states that show a high percentage of drop-outs are Madhya Pradesh and J & K in the case of both males and females. More females than males drop out of school when they fail and must repeat the same class (Refer Figure 6.36a and 6.36b).

In the case of the reason "not interested in studies", which is reported as one of the top-most reasons for not attending school, the first three high-ranking states are Uttar Pradesh, Madhya Pradesh and Rajasthan for both males and females. In Uttar Pradesh's case, more males than females are not interested in education. In the case of Madhya Pradesh and Rajasthan's case, female drop-outs are higher than males due to not being interested in studies(Refer Figure 6.37a and 6.37b).

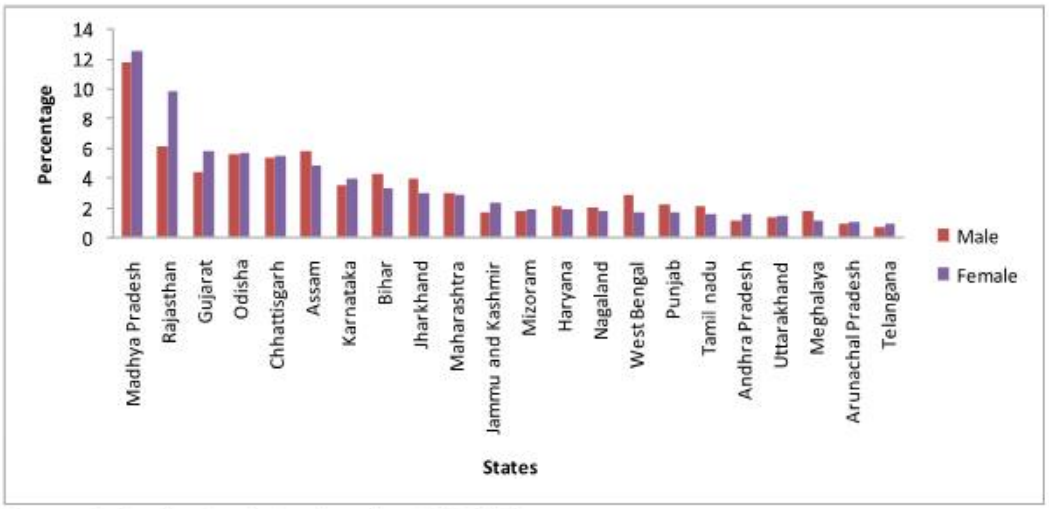
Figure 6.37a: Not interested in studies



Source: Author's calculations based on NFHS-4

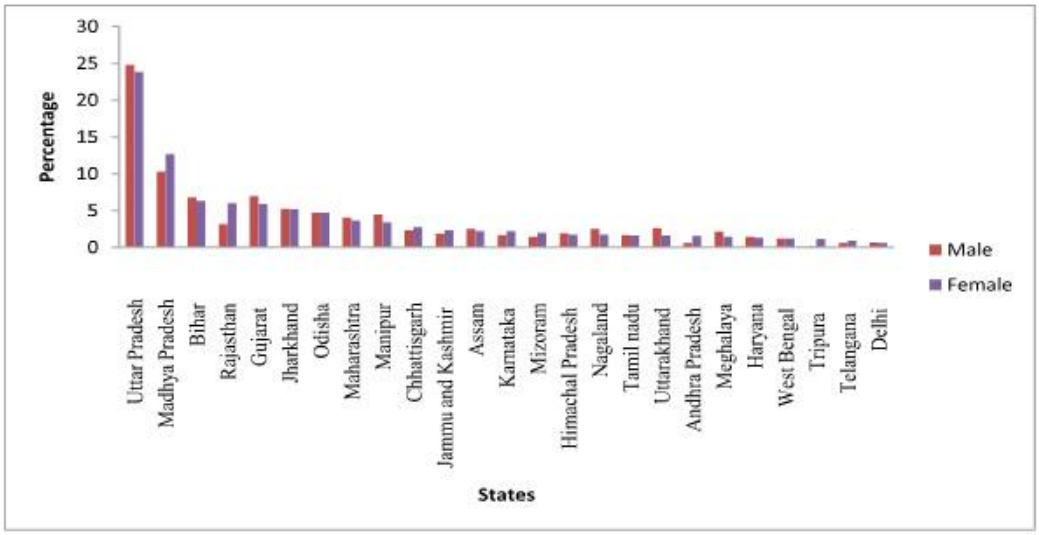
Next, there are two reasons: "other" and "don't know", which shows that approximately 24% of the reasons are classified under other in Uttar Pradesh. Figure 6.37b excludes Uttar Pradesh from observing the responses among other states in this category. The other states with many responses under this category are Madhya Pradesh, Bihar, Rajasthan, and Gujarat. There are more female drop-outs in Madhya Pradesh and Rajasthan for other reasons.

Figure 6.37b: Not interested in studies



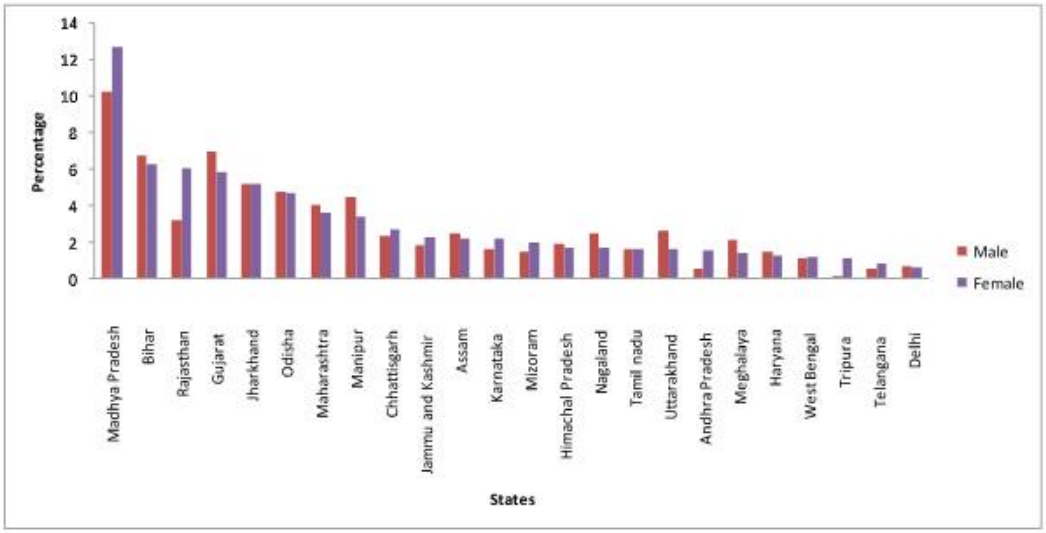
Source: Author's calculations based on NFHS-4

Figure 6.38a: Other



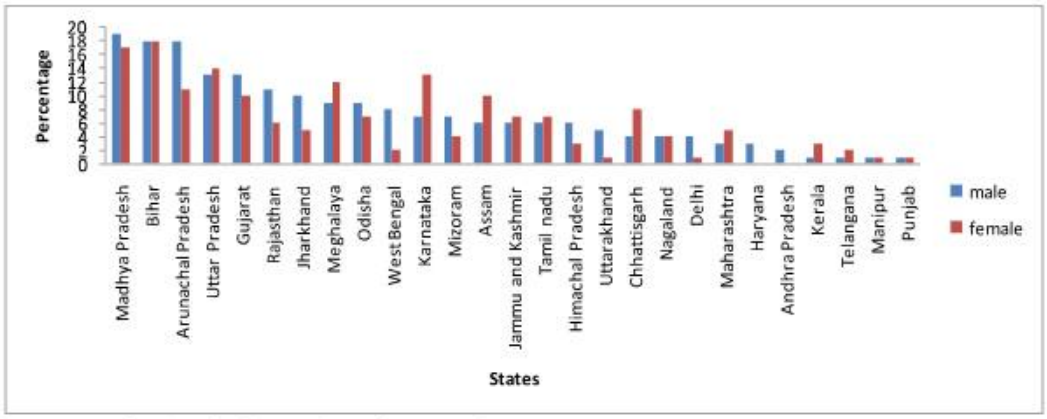
Source: Author's calculations based on NFHS-4

Figure 6.38b: Other



Source: Author's calculations based on NFHS-4

Figure 6.39: Don't Know



Source: Author's calculations based on NFHS-4

Under the "don't know" reasons category, many female drop-outs are noticed in states like Meghalaya, Karnataka, Assam, Chhattisgarh, and Maharashtra.

Next, we will present the percentage of drop-outs for males and females for NFHS-3 and NFHS-4.

6.4.2 Gender-wise comparison of drop-outs between NFHS-3 and NFHS-4

The study findings show that there has been a significant reduction in the drop-out rate from NFHS-3 to NFHS-4. The fall in percentages from NFHS-3 to NFHS-4 has been higher in case of male drop-out rate than females in most states (See Table 6.2)

It is observed that the drop-out percentage in lower age groups is small, and as the age group increases, the rate of drop-out increases. The percentage of drop-outs all over India shows that the drop-out for females is higher for females than males (See Table 6.3). Table 6.4 shows the percentage of drop-outs in NFHS-4. In NFHS-4, the study findings show that the drop-out rate among 15 – 18 year-olds is higher than the other two age groups under study.

Table 6.2: Percentage of School Drop-outs aged 5 – 18 Years by Gender in India(NFHS 3 and NFHS 4).

States	NFHS-3_M	NFHS-3_F	NFHS-4_M	NFHS-4_F
Jammu and Kashmir	10.96	11.66	6.57	7.45
Himachal Pradesh	4.84	6.06	4.52	4.98
Punjab	14.13	14.19	6.29	6.70
Uttaranchal	7.16	9.09	6.85	6.96
Haryana	12.08	13.49	4.92	6.83
Rajasthan	12.01	14.73	6.88	10.99
Uttar Pradesh	11.34	11.98	9.93	11.93
Bihar	6.85	6.63	4.85	6.71
Sikkim	11.31	8.98	3.61	2.87
Arunachal Pradesh	8.02	7.18	3.71	3.86
Nagaland	8.99	7.25	6.76	6.15
Manipur	6.14	7.66	4.69	6.48
Mizoram	11.99	12.95	6.73	6.75
Tripura	10.55	10.85	6.27	9.77
Meghalaya	9.58	8.41	7.13	6.15
Assam	14.70	12.30	11.73	10.18
West Bengal	16.67	17.33	11.10	9.90
Jharkhand	11.85	11.91	8.53	8.77
Odisha	17.55	19.35	11.47	12.94
Chhattisgarh	14.03	16.45	10.75	10.08
Madhya Pradesh	13.03	12.89	10.69	13.48
Gujarat	16.08	18.50	11.76	16.97
Maharashtra	12.42	13.68	6.51	8.68
Andhra Pradesh	13.54	16.65	6.57	10.04
Karnataka	10.92	14.10	7.31	8.50
Goa	6.66	9.49	3.31	2.93
Kerala	6.79	6.62	1.65	1.40
Tamil Nadu	10.73	12.69	6.52	4.78
Telangana	*	*	6.25	9.14

Source: Author's compilation based on NFHS-3 and NFHS- 4

*Note: * No data available for NFHS-3*

Table 6.3: Percentage of school drop-outs in NFHS-3 based on age groups in India

States	NFHS-3					
	5 – 9 Year		10 – 14 Year		15 – 18 Year	
	Male	Female	Male	Female	Male	Female
Andhra Pradesh	1.25	2.25	10.57	12.25	34.3	39.07
Arunachal Pradesh	4.53	6.43	4.59	4.33	17.18	13.5
Assam	3.41	4.54	10.3	9.56	36.57	27.68
Bihar	0.52	0.4	3.41	3.45	20.59	20.17
Chhattisgarh	0.51	0.74	8.92	11.28	41.85	44.35
Goa	2.17	2.9	1.9	2.96	18.42	24.84
Gujarat	1.03	1.7	8.69	14.1	43.22	46.08
Haryana	3.77	3.03	6.57	6.31	30.96	36.86
Himachal Pradesh	*	*	1.47	1.66	14.34	16.58
Jammu and Kashmir	7.82	6.88	2.97	4.3	23.75	26.61
Jharkhand	9.72	10.54	4.96	6.29	26.63	23.28
Karnataka	3.31	2.59	7.04	9.64	29.98	34.54
Kerala	4.24	6.25	0.82	0.34	17.89	12.79
Madhya Pradesh	3.14	2.41	7.31	6.25	33.49	38.15
Maharashtra	0.54	1.24	7.07	6.65	33.74	37.97
Manipur	0.8	1.24	2.6	2.58	20.85	24.24
Meghalaya	7.77	8.07	4.15	4.23	18.56	14.84
Mizoram	1.66	1.69	3.52	6.01	40.21	43.24
Nagaland	1.36	0.73	6.75	4.39	26.98	21.96
Odisha	1.15	0.88	12.15	11.12	50.73	49.75
Punjab	3.56	3.78	6.23	6.84	37.05	36.28
Rajasthan	0.41	1.06	7.47	12.4	36.36	37.56
Sikkim	3.4	3.38	3.85	3.34	26.48	22.25
Tamil Nadu	2.41	1.35	3.98	6.22	34.65	40.14
Tripura	2.35	1.39	4.26	3.68	27.36	26.89
Uttar Pradesh	0.77	0.47	8.6	9.52	33.08	31.98
Uttaranchal	0.38	1.37	3.79	6.52	21.04	23.56
West Bengal	0.69	0.78	10.07	8.98	40.35	46.31

*Source: Author's compilation based on NFHS-3 Note: * No drop-outs observed*

Table 6.4: Percentage of school drop-outs in NFHS-4 based on age groups in India

States	NFHS-4					
	5 – 9 Year		10 – 14 Year		15 – 18 Year	
	Male	Female	Male	Female	Male	Female
Andhra Pradesh	0.24	0.07	2.54	4.3	19.2	29.18
Arunachal Pradesh	0.71	0.7	1.53	1.9	10.35	11.54
Assam	0.64	0.49	6.35	3.62	33.69	33.1
Bihar	0.52	0.49	2.72	2.25	16.38	18.29
Chhattisgarh	0.33	0.38	4.35	3.09	30.27	27.92
Goa	0.74	0.88	0.79	0.39	9.85	8.54
Gujarat	0.48	0.52	4.86	8.41	33.5	47.68
Haryana	0.31	0.28	2.06	3.02	13.56	20.17
Himachal Pradesh	0.11	0.32	1.05	1.13	13.51	16.5
Jammu and Kashmir	0.25	0.14	2.08	2.46	16.38	22.72
Jharkhand	0.25	0.23	3.7	3.5	26.51	27.35
Karnataka	0.53	0.68	2.12	3.24	21.44	26.66
Kerala	0.19	0.21	0.29	0.28	4.8	4.41
Madhya Pradesh	0	0.63	4.88	6.61	30.35	37.31
Maharashtra	0.68	0.84	2.35	2.99	17.93	25
Manipur	0.32	0.48	1.98	1.94	14.64	17.74
Meghalaya	0.79	0.47	3.84	2.61	19.88	16.35
Mizoram	0.57	0.34	1.63	1.6	22.43	21.09
Nagaland	0.47	0.49	3.27	2.12	20.37	17.64
Odisha	0.57	0.56	4.31	4.4	33.67	36.98
Punjab	0.37	0.07	2.48	2.8	16.74	20.25
Rajasthan	0.28	0.22	2.96	6.53	19.85	30.89
Sikkim	0.13	0.14	1.71	0.93	9.24	8.09
Tamil Nadu	0.44	0.35	1.25	0.9	16.43	14.17
Telangana	0.16	0.16	2.72	3.29	17.89	27.41
Tripura	0.12	0	2.43	2.35	18.94	30.09
Uttar Pradesh	0.55	0.51	6.76	6.91	26.49	30.25
Uttaranchal	0.4	0.3	2.51	3.24	16.7	18.26
West Bengal	0.51	0.55	6.81	2.19	30.7	28.06

Source: Author's compilation based on NFHS-4

6.4.3 Classification of reasons for drop-outs.

We classified the reasons into eight categories, and the findings based on the classifications are presented below (See Table 6.5).

a) **Access to school-related factors:** The percentage of drop-outs due to access to school factors has shown a 4% increase from 9% in NFHS-3 to 13 % in NFHS-4. Similarly, among males, drop-out rates have increased from 4% in NFHS-3 to 7% in NFHS-4, showing a 3% increase in drop-out rates. Female drop-outs are observed to be higher than males due to access factors. Gender-related access also shows that more females have dropped out than males due to these factors, approximately 4% in both surveys.

Our findings show that children are out of school and unable to get admission. In some states, children aged 5 – 9 years eligible to enrol in preschool and primary education are out of school. The most crucial reason reported in the age group 5 – 9 years is "school too far away" for females in a few states. Safety and security are vital, especially for girls' children to access the school. According to the Act, all children between 6 and 14 years are entitled to free and compulsory education.

The RTE Act specifies that primary schools should be within walking distance of 1 km, and if the school is too far away, parents will hesitate to send a girl child to school due to safety issues. The study findings show that access to school education, "school too far away", "did not get admission", "costs too much", and "transport is not available" contribute to drop-outs in India. The reasons related to a child's interest/performance are repeated failures and no interest in studies. "Not interested in studies" does not explain why the child is not interested in studies. The child may not be attending school for various other reasons, such as being punished by a teacher, bullying, or being unable to cope due to a change in the medium of instruction or repeated failures. School sanitation and infrastructure facilities are also important. The reasons for

not attending school, especially "not interested in studies", should be probed further in future surveys. It will help understand why children are not interested in studies and will help improve school education in India.

b) **Gender-related access and stereotypes:** Girls are disadvantaged over boys for gender-specific factors such as marriage, school being far away, no proper school facilities, and not being safe to send girls to school. Girls between the ages of 15 and 18 do not attend school when they get married, and another reason is that children are required for household work. Girl's education is not given priority over household work. The child is also required to work outside for payment in kind or cash or maybe to earn income to support the family, where a family may not realise the advantage of sending the child to school, which can provide better employment opportunities in the future. India must ensure strict guidelines for providing free and compulsory education in schools. In NFHS 3, more female children were involved in domestic activities than males. The societal attitude that girls must learn to manage the kitchen and care for kids and family after marriage must change. Girls are expected to remain at home to complete domestic chores, indicating that access to education for girls is still a far-achievable goal in India.

c) **Domestic and Social factors:** Further education, which is not considered necessary, can be relevant for both males and females. It might be the case that a male child has started working to support the family. The other important reason for drop-outs is domestic responsibilities. Children who need to be in school are burdened with household responsibilities depending on social, economic, and cultural factors. Compared to males, the percentage of drop-outs due to domestic duties is higher among females, from 14% in NFHS-3 to 15% in NFHS-4. The reasons related to domestic responsibilities, such as being required for household duties, for the care of siblings, required for work on a farm/family business, and

needed for outside work for payment in cash or kind, are included under domestic responsibilities.

d) **Involvement in other economic activities:** The percentage of drop-outs due to child involvement in economic activities is higher among males than females. It is observed that there is a decline in the drop-out rate due to this reason, from 18% in NFHS-3 to 9% in NFHS-4. There is a 50% decline in percentage from NFHS-3 to NFHS-4. The drop-out percentage among females declined from 6% in NFHS-3 to 4% in NFH-4. In NFHS 3, more male children were involved in economic activities than females.

e) **Lack of interest in academics:** The classification of reasons shows that lack of interest in academics contributes to the highest male drop-outs in both surveys. The percentage of drop-outs among males was 47% in NFHS-3, which increased to 49% in NFHS-4. For females, the rate of drop-outs was 33% in NFHS-3, and it has shown a fall in percentage to 31%. The reasons reported are not by the children themselves but by the head of the household or a family member who may not have provided the actual reason for not attending the school. For boys, "not interested in studies" and "costs too much" are the reasons for not attending school. There are data gaps concerning school drop-outs due to a lack of data on school attendance. A significant drawback is that no school-level data on attendance or absenteeism is collected, which can help monitor drop-outs. The schools should submit the names of children not attending school to local authorities, which will help monitor the school attendance and completion of at least elementary education in India. The reasons for drop-outs will help understand the type of intervention planned or developed to provide universal access to education in India.

f) **Financial constraints:** The financial constraints are almost similar for males and females, 16% for males in NFHS-3 and 17% in NFHS 4. Meanwhile, for females, it was 17% in both surveys. The finding reveals

that the child is not attending school due to cost, which indicates that a fee is charged, or schools are levying admission fees, which is against the RTE Act, 2009 provisions. If there are no government schools and only private schools, there is a chance that the child cannot get admission to continue or complete elementary education because of high fees.

Education must be accessible for children up to 14 years; therefore, the drop-outs reported before 14 years due to payment of fees or any other costs involved in attaining school education is a concern and should be investigated. The child can achieve a minimum VIII grade up to 14 years as per the RTE Act 2009. If they wish to continue beyond eighth grade, parents may withdraw their children from school due to financial costs, as they have to bear the costs of continuing their child's education.

g) **Marriage:** Another reason category is that the child has got married and, therefore, cannot attend school, which is higher for females than males and has increased from 8% in NFHS-3 to 12% in NFHS-4 among females. Early marriage is a more crucial gender-specific reason directly associated with female education.

h) **Other Reasons:** The reason "other" is not specified further; therefore, it is unclear what reasons are coded under this category. Also, the reason "don't know" does not provide an adequate understanding of the reason for dropping out. Children are expected to contribute to family income, which is crucial for children from poor or marginalised families.

We notice that the factors influencing female drop-outs are access-related, household responsibilities, financial constraints and marriage. For males, the reasons are a lack of interest in academics, financial constraints, and children being involved in economic activities, which shows the gendered pattern for leaving or dropping out of school.

Table 6.5: Classification of the reasons based on gender between NFHS 3 and NFHS 4

Categories	NFHS 3				NFHS 4			
	Male		Female		Male		Female	
Access to School	N	%	N	%	N	%	N	%
school too far away	91	0.94	475	4.82	980	2.93	2,845	7.82
did not get admission	269	2.78	315	3.2	1,151	3.44	1,164	3.2
transport not available	28	0.29	105	1.07	351	1.05	708	1.95
Sub-total	**388**	**4.01**	**895**	**9.09**	**2,482**	**7.42**	**4,717**	**12.97**
Gender-related access								
not safe to send girls	10	0.1	210	2.13	26	0.08	837	2.3
no proper school facilities for girls	14	0.14	140	1.42	62	0.19	565	1.55
no female teacher	4	0.04	21	0.21	53	0.16	125	0.34
Sub-total	**28**	**0.28**	**371**	**3.76**	**141**	**0.43**	**1,527**	**4.19**
Domestic responsibilities								
required for household work	661	6.84	1,297	13.17	3,824	11.43	5,162	14.2
required for care of siblings	26	0.27	69	0.7	154	0.46	255	0.7
Sub-total	**687**	**7.11**	**1,366**	**13.87**	**3,978**	**11.89**	**5,417**	**14.9**
Children are involved in economic activities.								
required for work on farm/family business	708	7.33	283	2.87	1,414	4.23	722	1.99
required for outside work for payment	1,022	10.58	297	3.02	1,603	4.79	631	1.74

Sub-total	1,730	17.91	580	6.89	3,017	9.02	1,353	3.73
Lack of interest in Academics								
repeated failures	695	7.19	665	6.75	1,630	4.87	1,502	4.13
not interested in studies	3,450	36.7	2,174	22.08	13,864	41.44	8,522	23.44
further education not considered necessary	300	3.1	450	4.57	1,042	3.11	1,234	3.39
Sub-total	4,445	46.99	3,289	33.4	16,536	49.42	11,258	30.96
Financial Constraints								
costs too much	1,535	16.89	1,693	17.19	5,852	17.49	6,307	17.34
Sub-total	1535	16.89	1,693	17.19	5,852	17.49	6,307	17.34
Marriage								
got married	33	0.34	808	8.21	208	0.62	4,433	12.19
Sub-total	33	0.34	808	8.21	208	0.62	4,433	12.19
Other reasons								
Other	748	7.74	768	7.8	1,033	3.09	1,176	3.23
don't know	69	0.71	76	0.77	206	0.62	176	0.48
Sub-total	817	8.45	844	8.57	1,239	3.71	1,352	4
Grand Total	9,663	100	9,846	100	33,453	100	36,364	100

Source: Author's classification of reasons based on NFHS 3 and NFHS 4

6.5 GENDER-WISE DROP-OUTS BASED ON SOCIAL GROUPS IN NFHS-3 AND NFHS-4

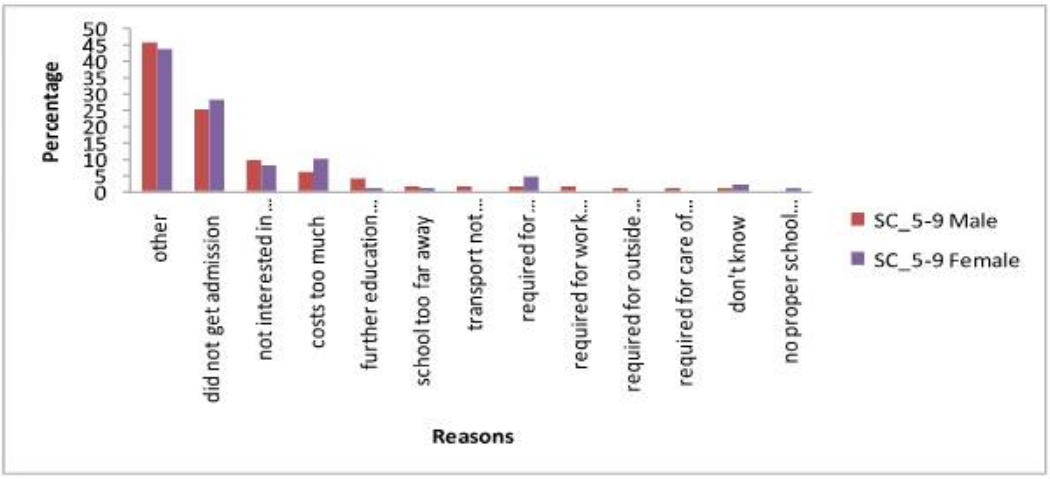
Gender-wise reasons for drop-outs are based on social categories, namely Schedule Tribe (ST), Scheduled Caste (SC), Other Backward Class (OBC), and Others, as the general category is discussed below**.** Firstly, the observations from NFHS 3 based on age and gender are presented for each social group, and combined data for all social categories based on age and gender are also presented.

6.5.1 Drop-outs based on social groups in NFHS 3

Age group 5 – 9 years

The reasons for drop-outs among SC category children aged 5 – 9 are presented below. The highest percentage observed is due to the reason "other" followed by the reason "did not get admission". The drop-out rate among female children due to "did not get admission" to school is higher than that of males. The other reasons are "not interested in studies" and "cost too much". The drop-out rate is very low for reasons like "no proper school facilities" (See Figure 6.40).

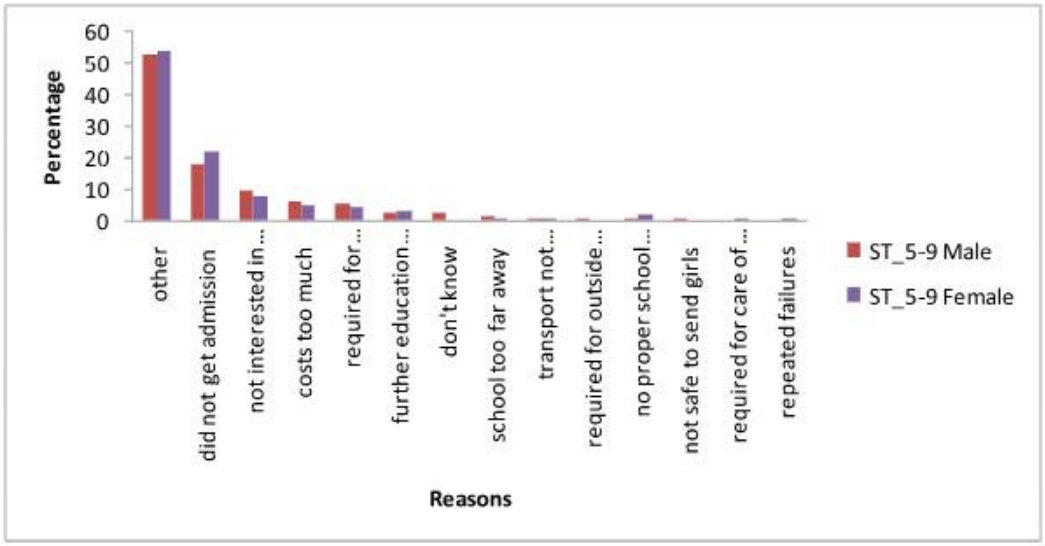
Figure 6.40: Reasons for drop-outs in the SC category among 5-9 years (NFHS 3)



Source: Author's compilation based on NFHS-3

The reasons for drop-outs among ST children are similar to the SC children, but the drop-out rate for reasons "other" is slightly higher among ST category children. The percentage of drop-out for "other" and "did not get admission" is higher among females. (See Figure 6.41)

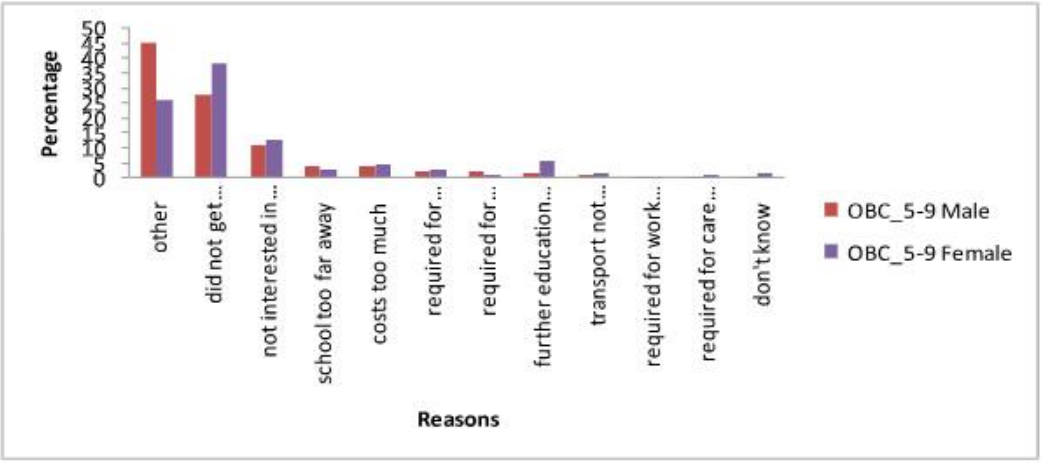
Figure 6.41: Reasons for drop-outs in the ST category among 5-9 years (NFHS 3)



Source: Author's compilation based on NFHS-3

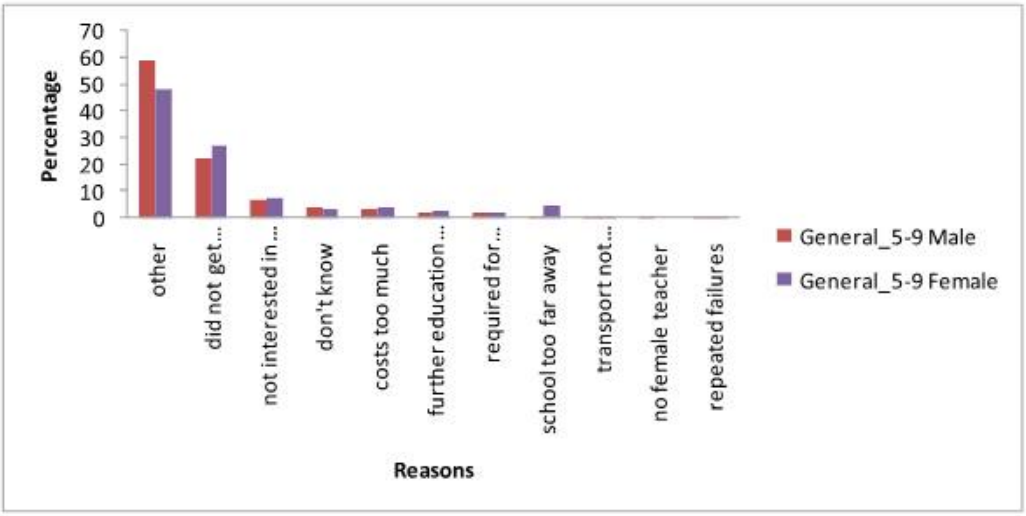
Next, the drop-out percentage among the OBC category is discussed. The drop-out rate among males is higher because of "other" reasons. Children who are not attending as they "did not get admission" are higher for females than males. Other reasons for children not attending school in this category are "not interested in studies" and "further education not considered necessary", which is also higher among females than males. (See Figure 6.42).

Figure 6.42: Reasons for drop-outs in the OBC category among 5-9 years (NFHS 3)



Source: Author's compilation based on NFHS-3

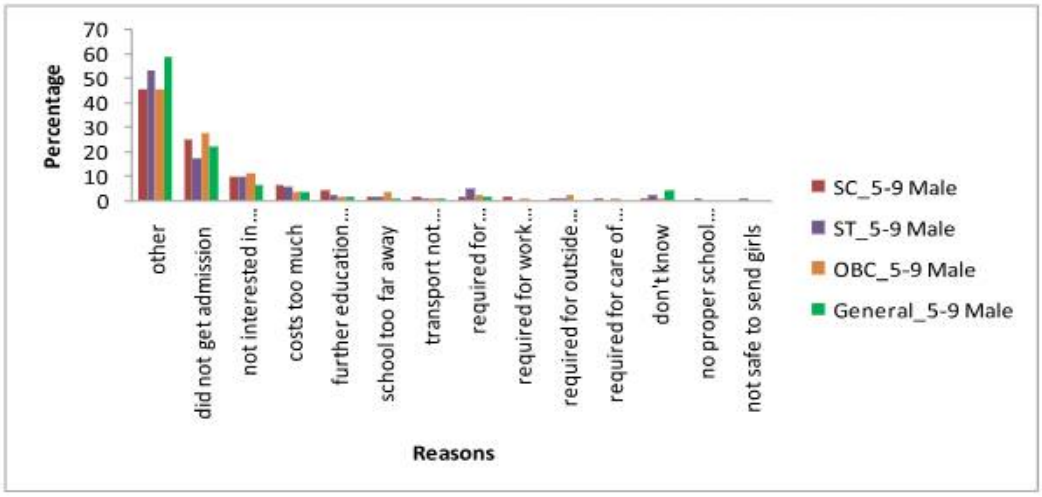
Figure 6.43: Reasons for drop-outs in the General category among 5-9 years (NFHS 3)



Source: Author's compilation based on NFHS-3

Among students from the general category, it is observed that the percentage of drop-outs is higher for males than females. The other reasons which show high drop-outs among females are "did not get admission", "costs too much", and "school being far away" (See Figure 6.43).

Figure 6.44: Combined reasons for males among all social categories 5-9 years (NFHS 3)

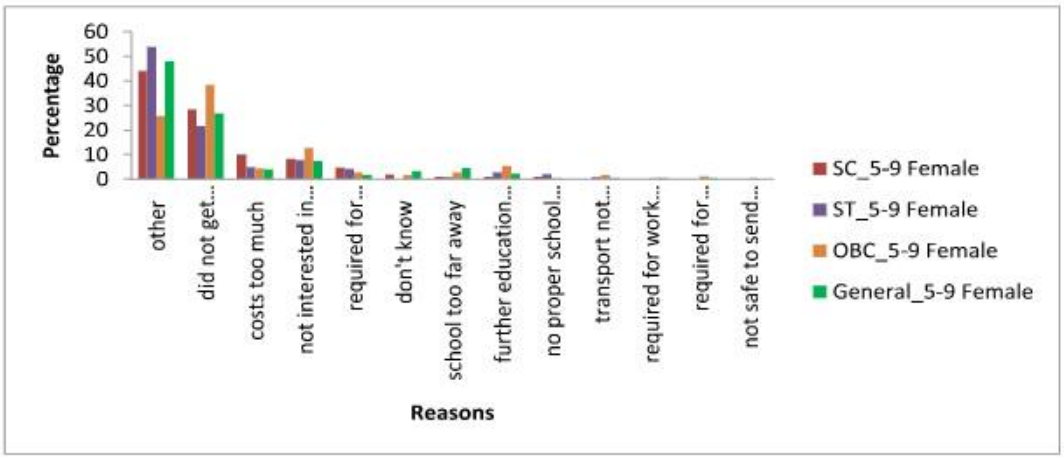


Source: Author's compilation based on NFHS-3

Next, the drop-out rate among males between 5 – 9 years across all the social categories is discussed. It is observed that the high percentage of drop-outs due to the reason "other" is seen among the general category, followed by ST. OBC and SC showed a similar rate of drop-outs under the reason "other". The drop-outs due to "did not get admission" are higher among OBC, SC, General and ST category children (See Figure 6.44)

The reasons for drop-outs among females aged 5 – 9 across social categories are explained. The percentage of female drop-outs is higher among ST, followed by General, SC and OBC due to 'other'. Female children who "did not get admission" are higher among OBC, followed by SC, General and ST. The third most important reason for drop-out among females is "costs too much", which shows a low tendency of families to spend money on girls' education (See Figure 6.45).

Figure 6.45: Combined reasons for females among all social categories 5-9 years (NFHS 3)

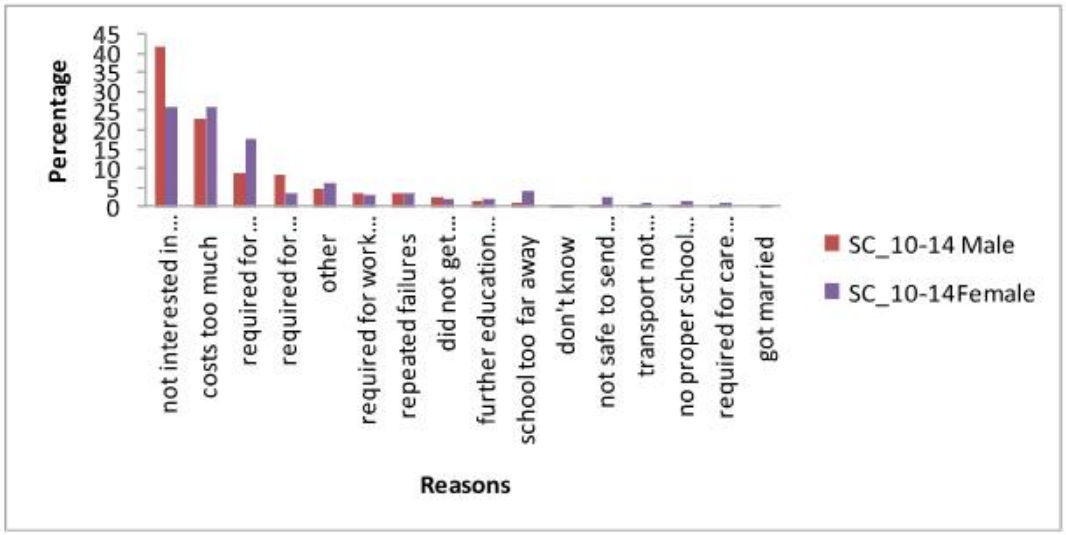


Source: Author's compilation based on NFHS-3

Age group 10 – 14 years

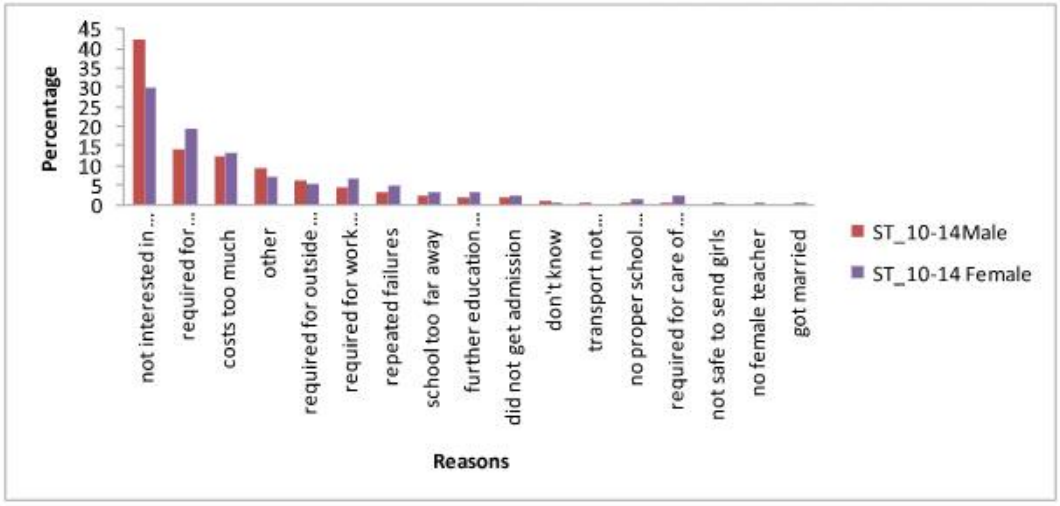
Figure 6.46 shows that the highest percentage of drop-outs in this age group are not interested in education. More male children have dropped out than females due to a lack of interest in education. The percentage of drop-outs observed among females is higher due to "costs too much" and "required for household work". "School too far away" also affects females more than males.

Figure 6.46: Reasons for drop-outs in the SC category among 10-14 years (NFHS 3)



Source: Author's compilation based on NFHS-3

Figure 6.47: Reasons for drop-outs in the ST category among 10-14 years (NFHS 3)

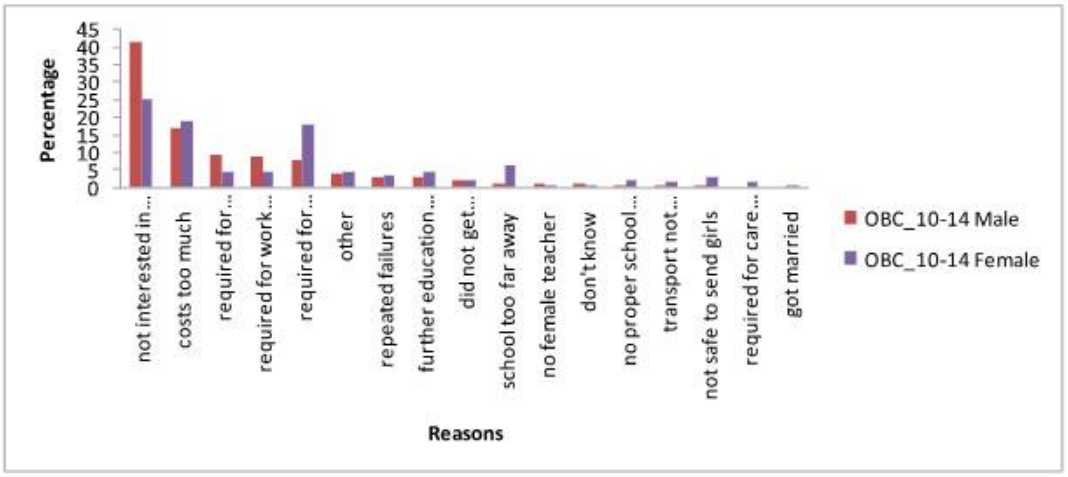


Source: Author's compilation based on NFHS-3

Next, we discuss the drop-outs among ST category children aged 10-14 years. The three most important reasons observed are "not interested in studies", "required for household work", and "costs too much". The percentage of female drop-outs as they are needed to help with household work is more than that of males (See Figure 6.47).

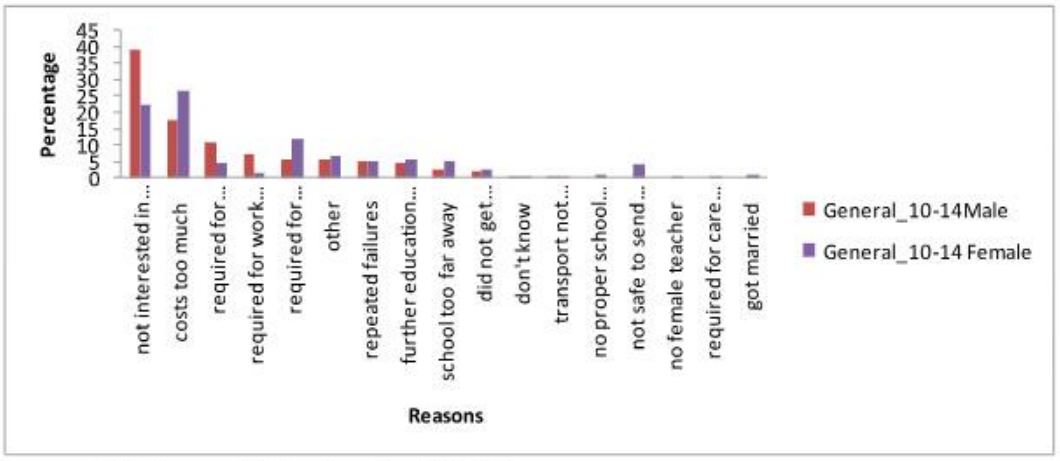
The percentage of female drop-outs is higher than males for most reasons, except that male drop-outs due to "not interested in studies" are higher than females. Among males, high drop-outs were observed due to "required for outside work on payment in cash or kind" and "required for work on farm or family business" (See Figure 6.48).

Figure 6.48: Reasons for drop-outs in the OBC category among 10-14 years (NFHS 3)



Source: Author's compilation based on NFHS-3

Figure 6.49: Reasons for drop-outs in the General category among 10-14 years (NFHS 3)

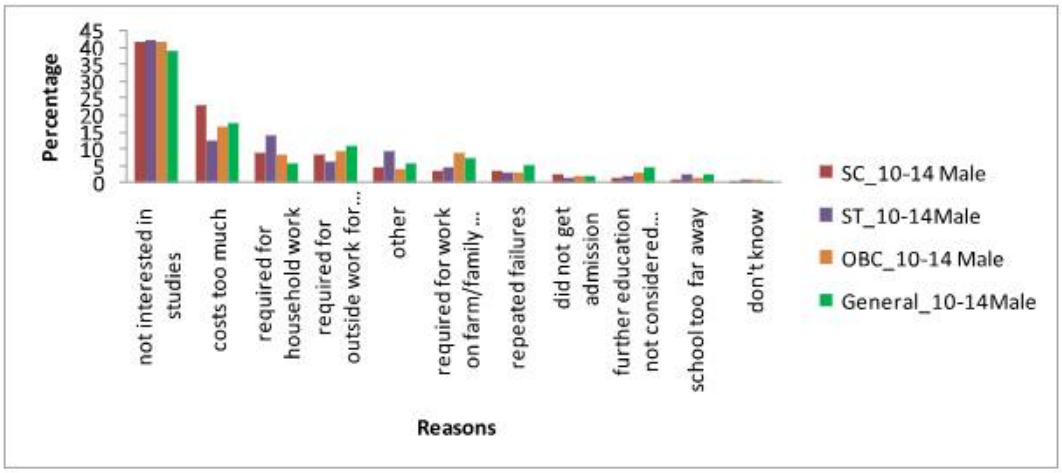


Source: Author's compilation based on NFHS-3

The high number of male drop-outs in the General category reported are due to "not interested in studies", "required for work on payment in cash or kind", and "required for work on farm or family business". The high drop-out rates are due to "costs too much" among females, "required for household work", "school too far away", and "not safe to send girls" to schools (Refer Figure 6.49).

It is observed that among all categories, a high percentage of male drop-outs are due to the reason "not interested in studies". Compared to all social categories, the high drop-outs among the SC group are due to "costs too much", which relates to financial constraints. Among males in ST groups, high drop-outs are seen as they were required for household work (See Figure 6.50)

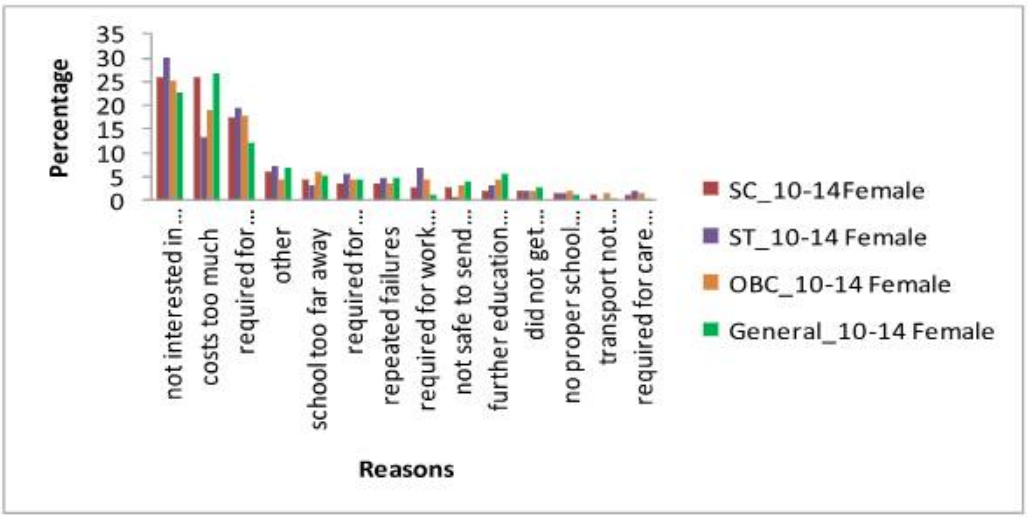
Figure 6.50: Combined reasons for males among all social categories 10-14 years (NFHS 3)



Source: Author's compilation based on NFHS-3

When we looked at the drop-outs among females across the social categories, the three critical reasons for high drop-outs in this age group are "not interested in studies", "costs too much", and "required for household work". The percentage of drop-outs due to "costs too much" is higher among females than males. The rate of females dropping out from ST, SC, and OBC is higher due to household responsibilities than in the case of females from the general category(See Figure 6.51).

Figure 6.51: Combine reasons for females among all social categories 10-14 years (NFHS 3)



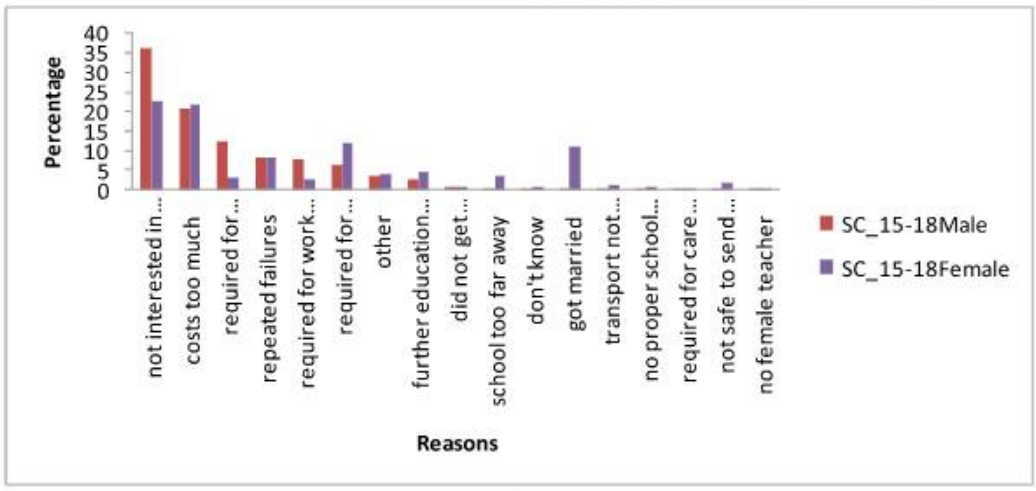
Source: Author's compilation based on NFHS-3

Age group 15 – 18 years

Among the age group 15 – 18 years, the reasons for drop-outs among SC category for males are "not interested in studies", "required for outside work on payment in cash or kind", and "required to work on farm or family business". Among the females, the high percentage of drop-outs is due to "costs too much", "required for household work", and "got married".

Among the ST category, more female children drop out of school as they are involved in household responsibilities, repeated failures and as a result of marriage. Among males, the reasons are that they are "not interested in studies" and expected to either work outside for payment in cash or kind to contribute to family income or to work on a farm or family business (See Figure 6.53).

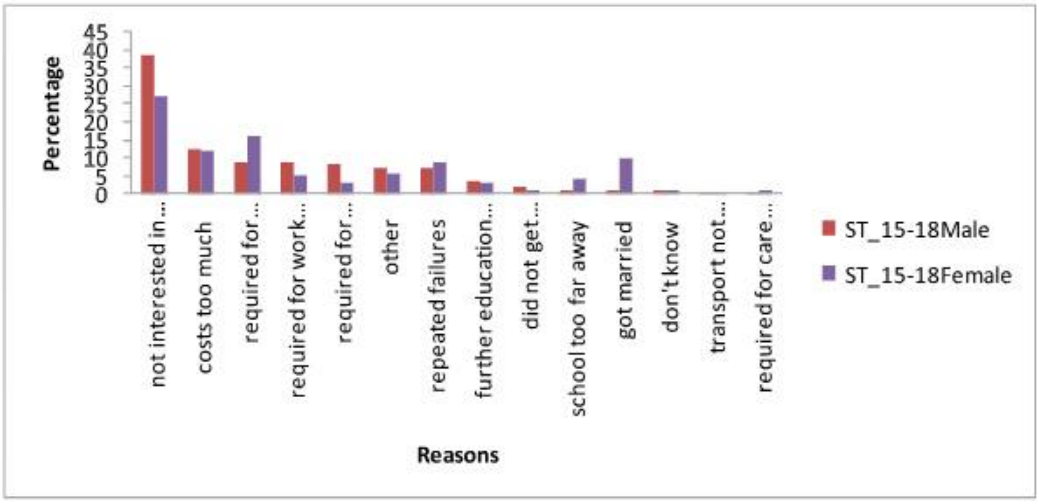
Figure 6.52: Reasons for drop-outs in the SC category among 15-18 years (NFHS 3)



Source: Author's compilation based on NFHS 3

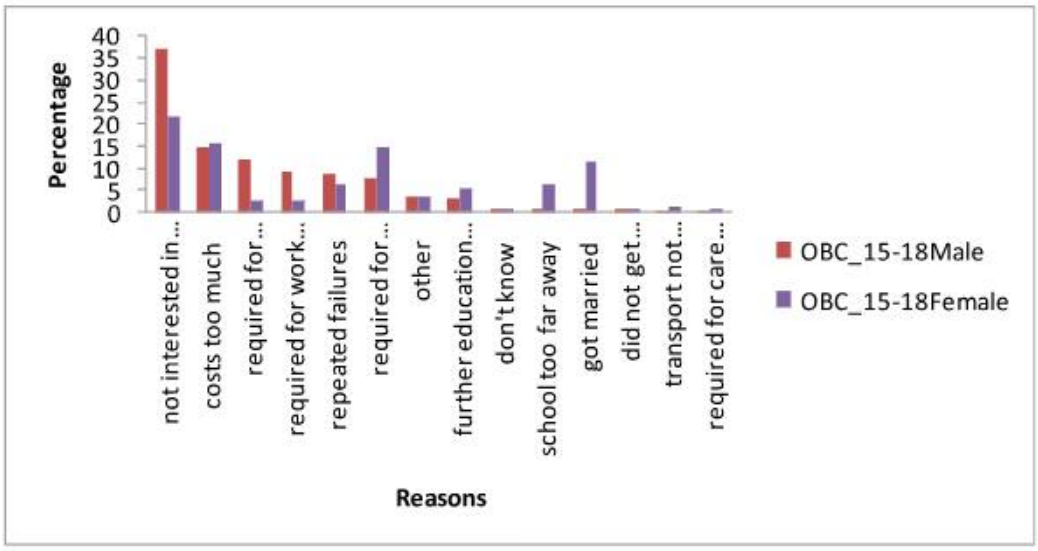
The reasons reported among OBC are similar to those of the ST category group. The reasons for female drop-outs are "required for household work", school being far away and marriage. Among males, the high drop-outs are due to "not interested in studies", "costs too much", "required to work outside for payment in cash or kind", or "required to work on a farm or family enterprise" (See Figure 6.54).

Figure 6.53: Reasons for drop-outs in the ST category among 15-18 years (NFHS 3)



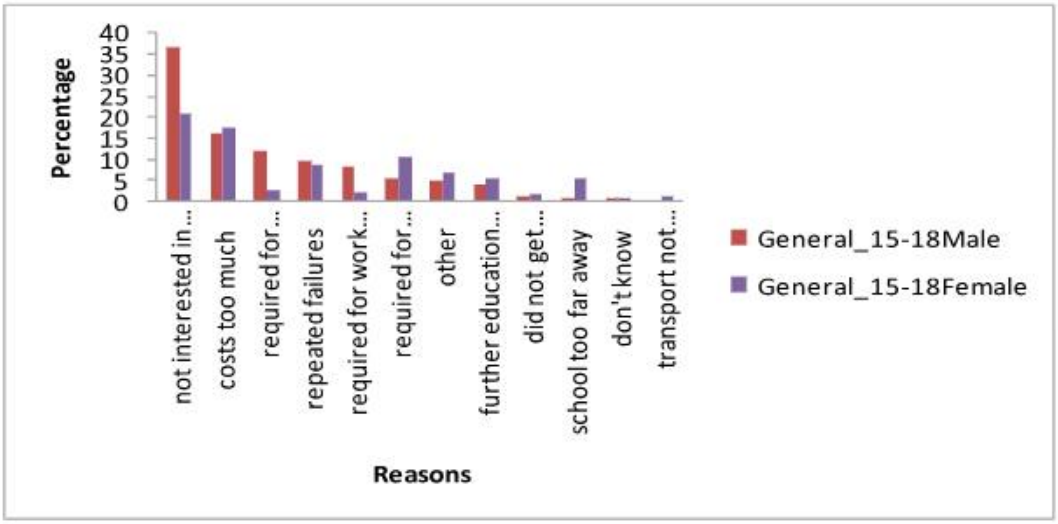
Source: Author's compilation based on NFHS 3

Figure 6.54: Reasons for drop-outs in the OBC category among 15-18 years (NFHS 3)



Source: Author's compilation based on NFHS-3

Figure 6.55: Reasons for drop-outs in the General category among 15-18 years (NFHS 3)

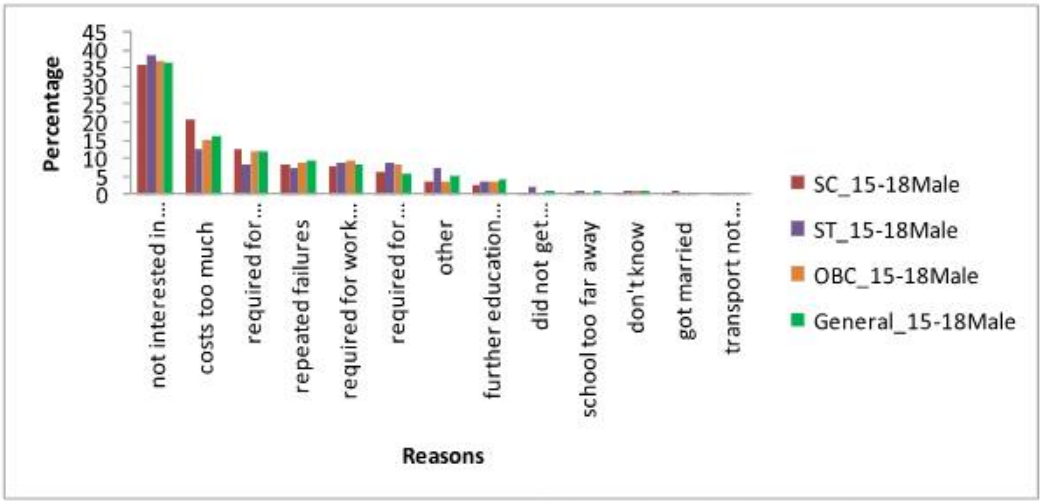


Source: Author's compilation based on NFHS-3

It was noticed that the percentage of drop-outs due to "not interested in studies" is higher among males. The other reason for male drop-outs is "costs too much" required for outside work on payment in cash or kind. Among females, the reasons are "not interested in studies", "costs too much", "required for household work", and "school too far away" (See Figure 6.55)

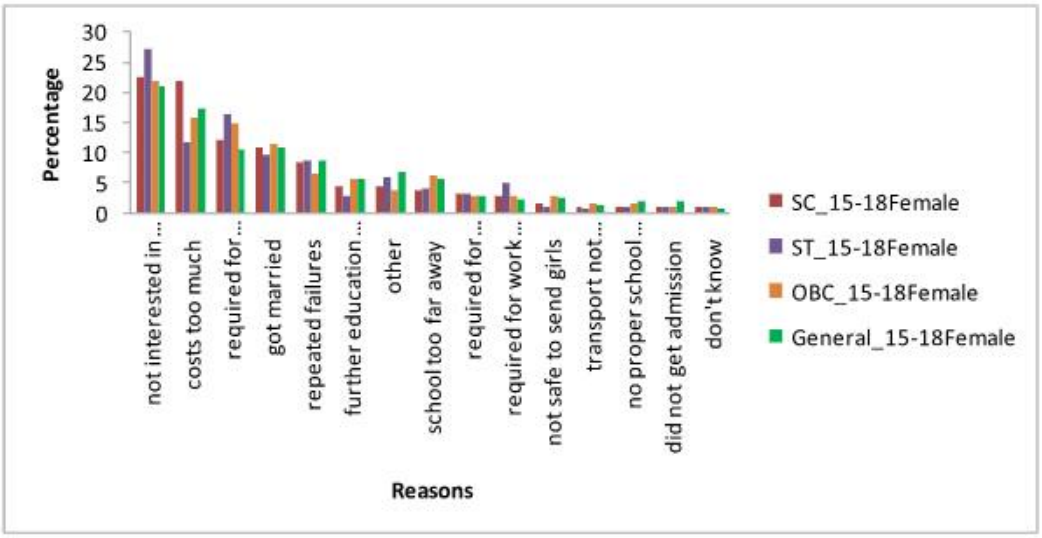
Across all the social categories, "not interested in studies" was the most important reason for not attending school among males. The other important reasons are "costs too much" and expected to work to support the family income by working outside for payment in cash or kind(See Figure 6.56). The most significant reason among females across all categories is "not interested in studies", and a high percentage of drop-outs is observed among the ST category. The second most crucial reason is financial constraints affecting children of the SC category compared to the other categories. A high percentage of females from the ST and OBC categories are not attending school as they are "required for household work". Marriage is a significant reason for high drop-outs among females in this particular age group compared to the younger age groups (See Figure 6.57).

Figure 6.56: Combined reasons for males among all social categories 15-18 years (NFHS 3)



Source: Author's compilation based on NFHS-3

Figure 6.57: Combined reasons for females among all social categories 15-18 years (NFHS 3)



Source: Author's compilation based on NFHS-3

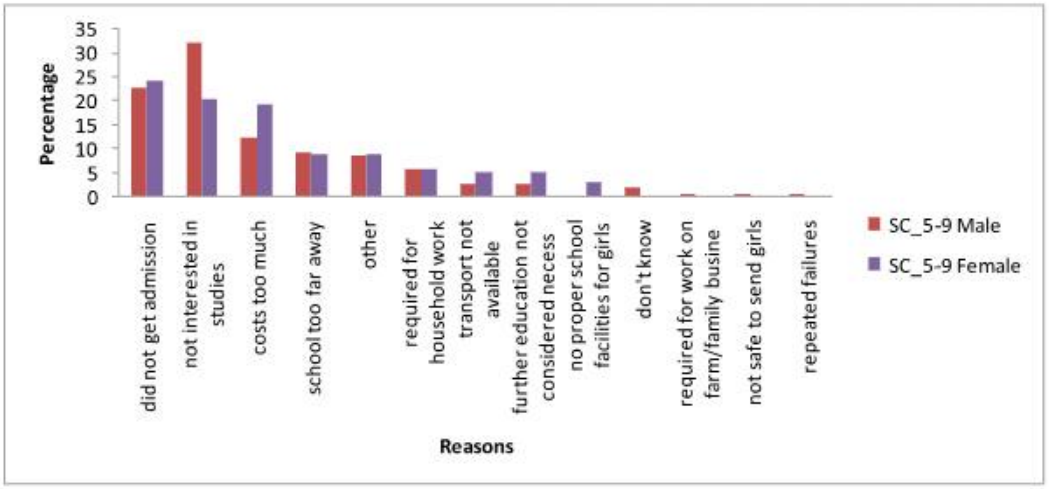
Next, the findings are presented for the NFHS 4.

6.5.2 Drop-outs based on social groups in NFHS 4

Age group 5 – 9 years:

It is seen that a high percentage of drop-outs in the SC category are due to children "did not get admission", "not interested in studies", and "costs too much". A high rate of male drop-outs is due to "not interested in studies" compared to females. Female drop-outs are observed due to reasons such as "did not get admission", "not interested in studies", "costs too much", and "further education not considered necessary" (See Figure 6.58).

Figure 6.58: Reasons for drop-outs in the SC category among 5-9 years (NFHS 4)

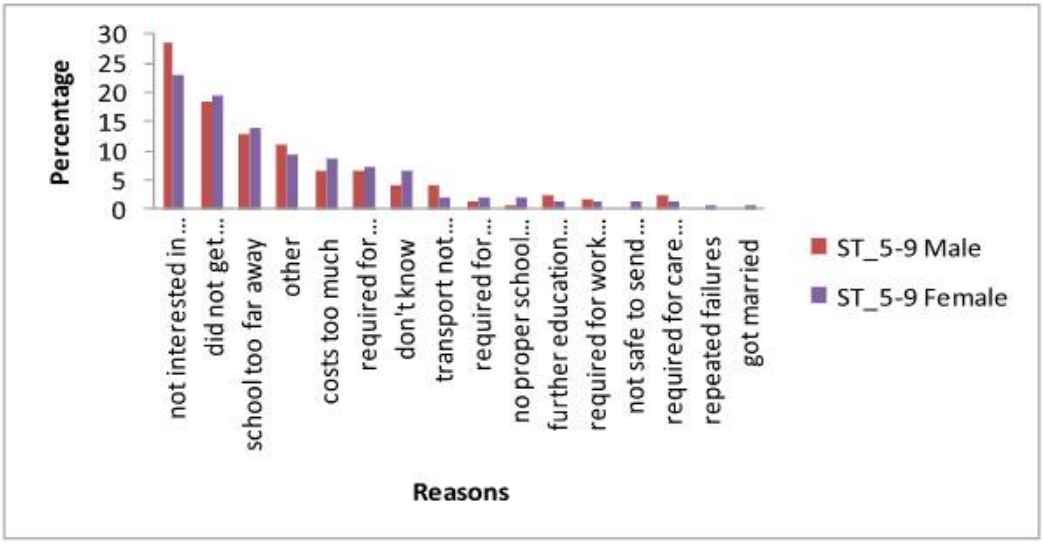


Source: Author's compilation based on NFHS-4

Among ST category children, the reasons for not attending school are "not interested in studies", "did not get admission", and "school too far away". The reasons noticed for female drop-outs are "did not get admission", "school too far away", and "costs too much".

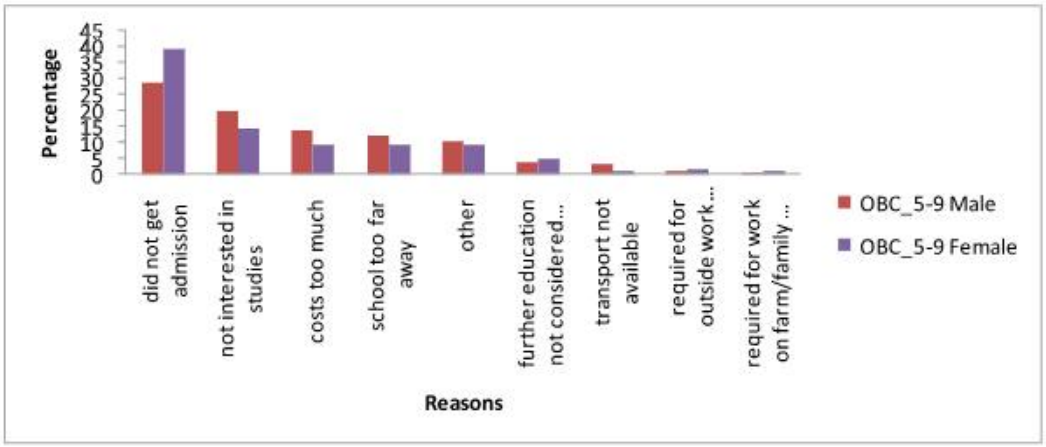
Among the OBC category, a high percentage of female drop-outs are due to the reason "did not get admission" to the school. The three most important reasons for both genders not attending school are "did not get admission", "not interested in studies", and "costs too much".

Figure 6.59: Reasons for drop-outs in the ST category among 5-9 years (NFHS 4)



Source: Author's compilation based on NFHS-4

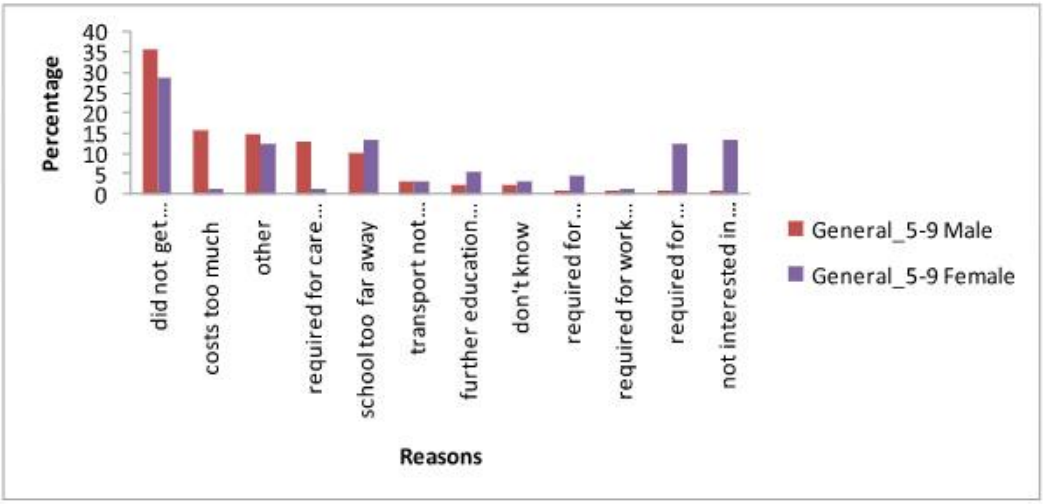
Figure 6.60: Reasons for drop-outs in the OBC category among 5-9 years (NFHS 4)



Source: Author's compilation based on NFHS-4

Among the general category, female drop-outs are more likely due to reasons such as "did not get admission", "school too far away", "required for household work", and "not interested in studies". The reasons for male drop-outs are "did not get admission", "costs too much", "other", and "required for the care of sibling" (See Figure 6.61).

Figure 6.61: Reasons for drop-outs in the General category among 5-9 years (NFHS 4)

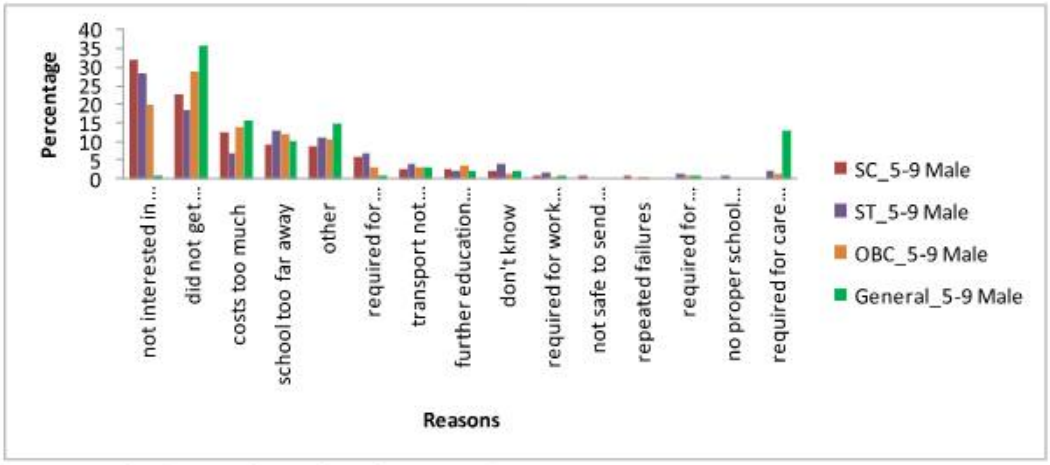


Source: Author's compilation based on NFHS-4

For males across all the social categories(See Figure 6.2), we observe that a high percentage of drop-outs from the general category were due to "did not get admission" compared to other social groups. The important reasons for a high drop-out rate are "not interested in studies", "did not get admission", "costs too much", and "school too far away".

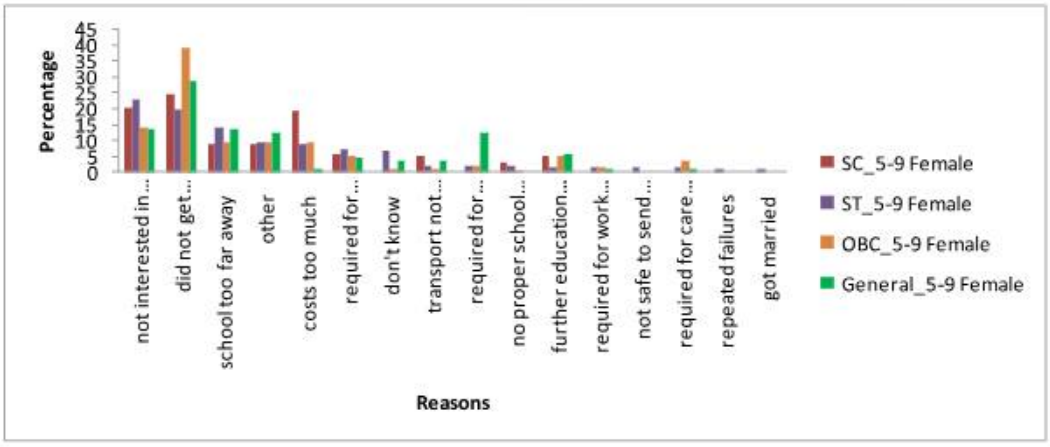
It is noticed that a high percentage of female drop-outs in the OBC category is due to "did not get admission". The high drop-out rate among the SC group is also due to "did not get admission" and "costs too much". "School too far away" impacts girls' education more than males, considering the girls' safety (See Figure 6.63).

Figure 6.62: Combined reasons for males among all social categories 5-9 years (NFHS 4)



Source: Author's compilation based on NFHS-4

Figure 6.63: Combine reasons for females among all social categories 5-9 years (NFHS 4)

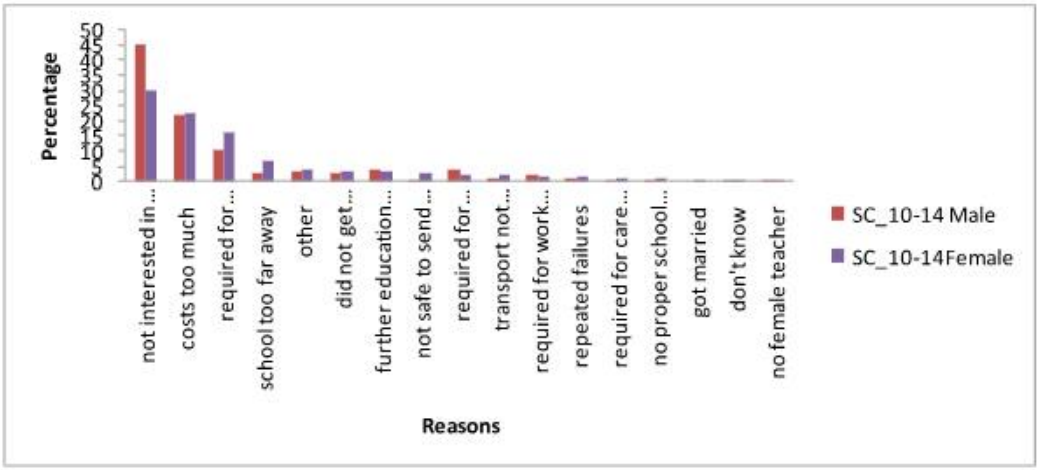


Source: Author's compilation based on NFHS-4

Age group 10 – 14 years:

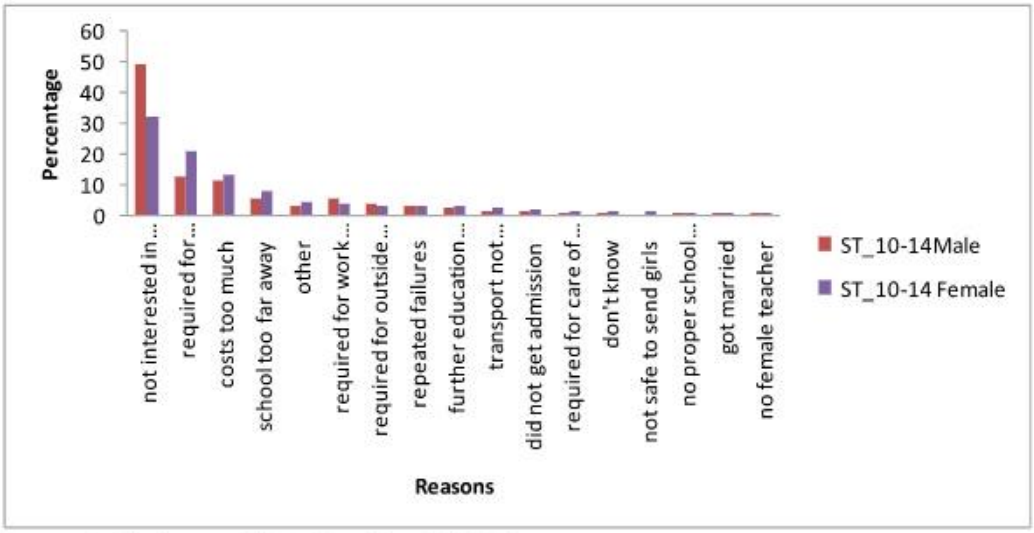
High drop-outs result from" not being interested in studies", "costs too much", and required for household work. The percentage of male drop-outs due to "not interested in studies" is higher compared to females (See Figure 6.64).

Figure 6.64: Reasons for drop-outs in the SC category among 10-14 years (NFHS 4)



Source: Author's compilation based on NFHS-4

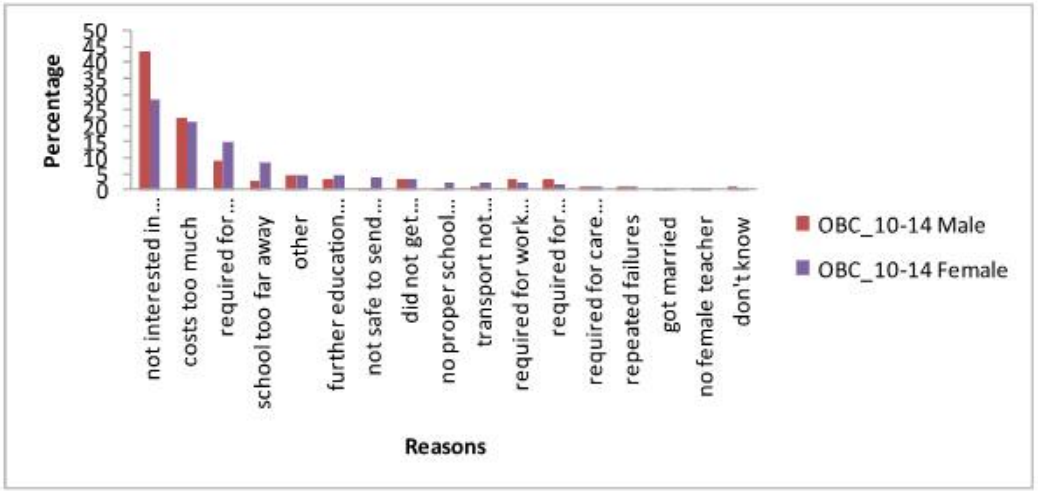
Figure 6.65: Reasons for drop-outs in the ST category among 10-14 years (NFHS 4)



Source: Author's compilation based on NFHS-4

The percentage of female drop-outs is higher for the reason "required for household work" than for males. The reasons why females drop-out are "not interested in studies", "required for household work", and "costs too much" (See Figure 6.65)

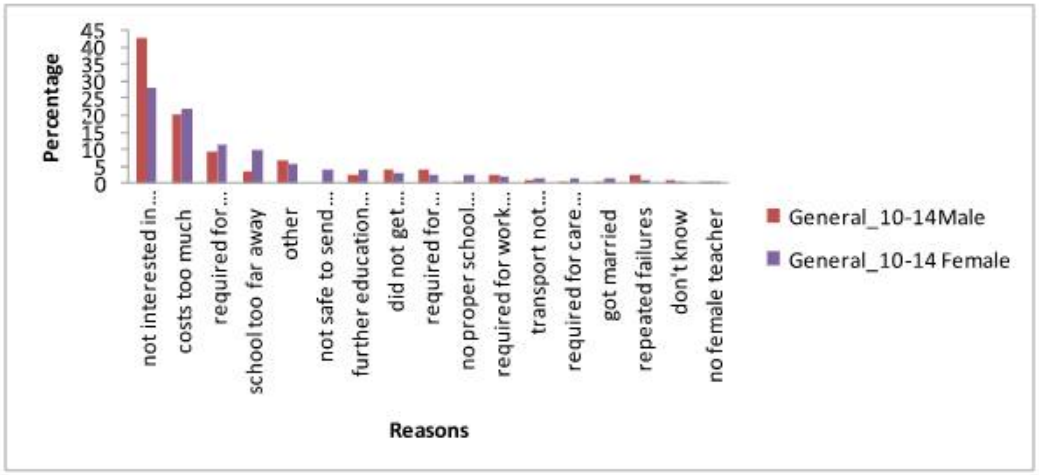
Figure 6.66: Reasons for drop-outs in the OBC category among 10-14 years (NFHS 4)



Source: Author's compilation based on NFHS-4

It may be concluded that "not interested in studies" is the most crucial reason for dropping out in the ST category. The male percentage is higher than females. "Costs too much" is also an important reason for drop-outs among both males and females. The high female drop-out rate was observed due to "school too far away" and "required for household work" compared to males. (See Figure 6.66).

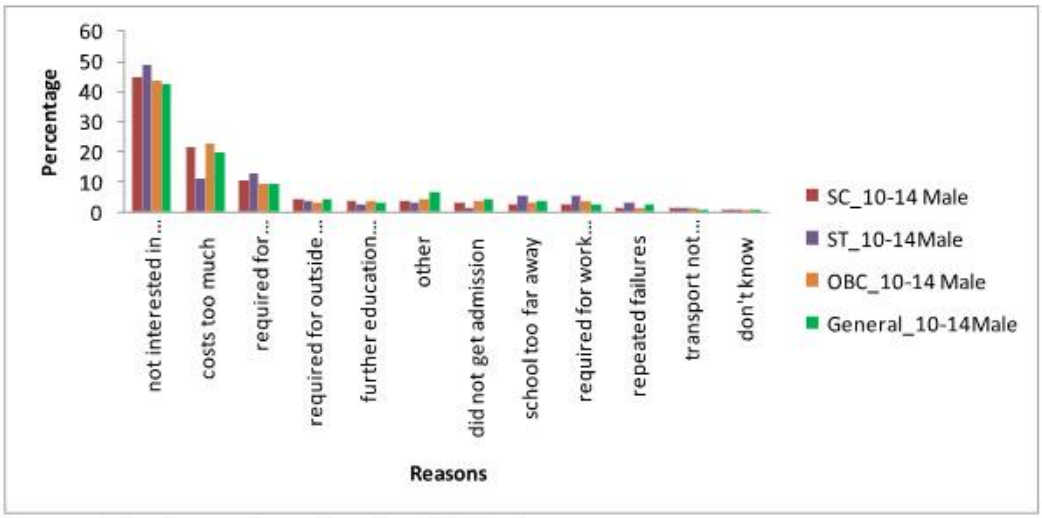
Figure 6.67: Reasons for drop-outs in the General category among 10-14 years (NFHS 4)



Source: Author's compilation based on NFHS-4

The reasons for drop-outs among females of the general category are "not interested in studies", "costs too much", "required for household work", school too far away", and "not safe to send girls to school".

Figure 6.68: Combined reasons for males among all social categories 10-14 years (NFHS 4)

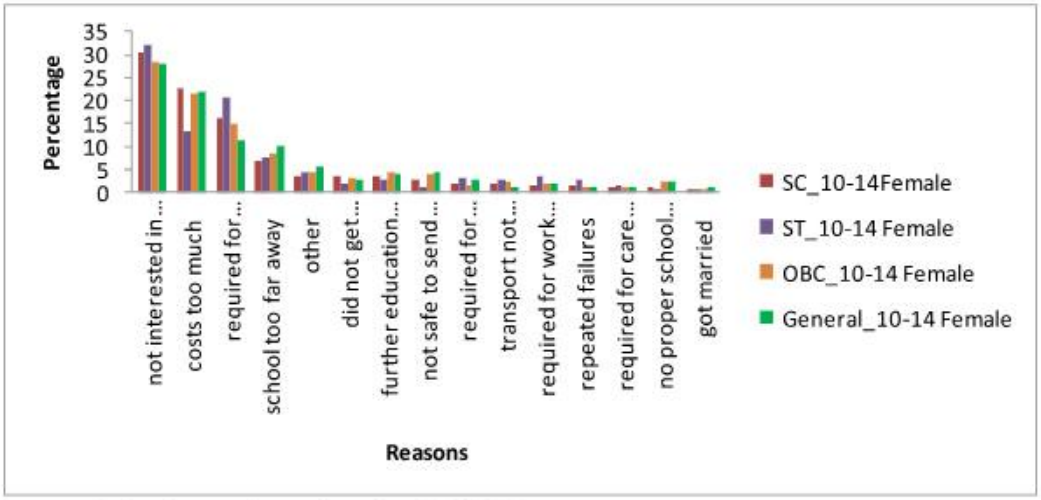


Source: Author's compilation based on NFHS-4

Thus, it is seen that "not interested in studies" is the most important reason for children not attending school across all social groups. The highest percentage

is noticed in the ST group among males and females. Costs too much is a common reason among males and females in this age group. A high percentage of females do not attend school as they must attend to household work compared to males (See Figure 6.68 and 6.69).

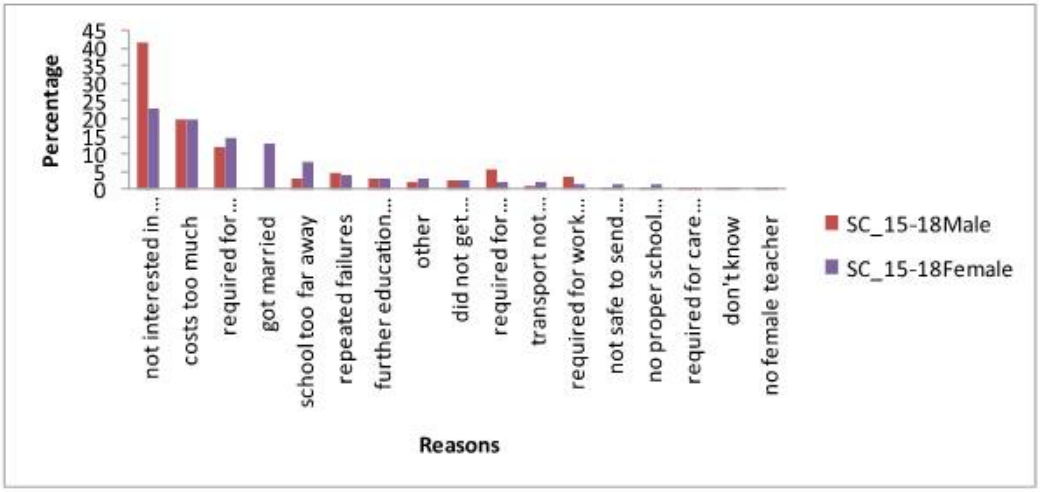
Figure 6.69: Combined reasons for females among all social categories 10-14 years (NFHS 4)



Source: Author's compilation based on NFHS-4

Age group 15 – 18 years

Figure 6.70: Reasons for drop-outs in the SC category among 15-18 years (NFHS 4)

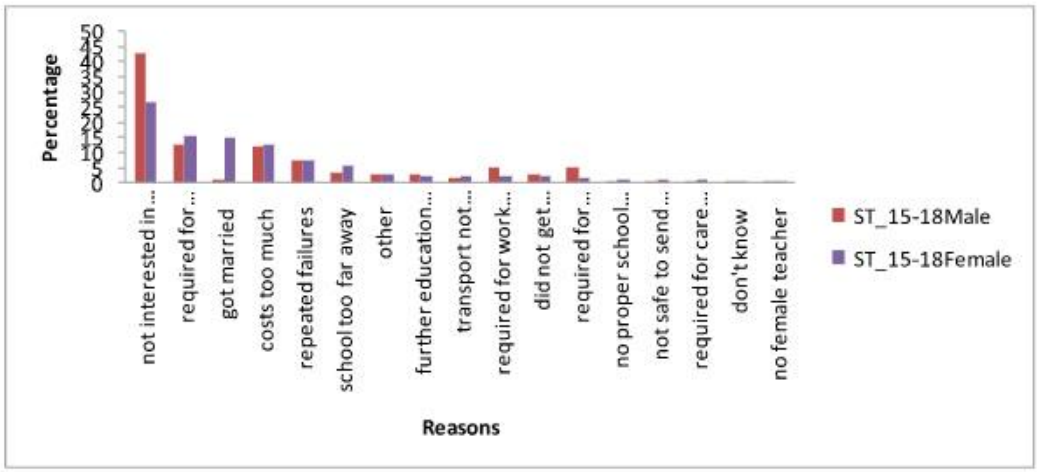


Source: Author's compilation based on NFHS-4

The reason "not interested in studies" is almost double that of female drop-outs compared to males. The other reasons are "costs too much", "required for household work", and "marriage", being the most important reasons contributing to female drop-outs(See Figure 6.70).

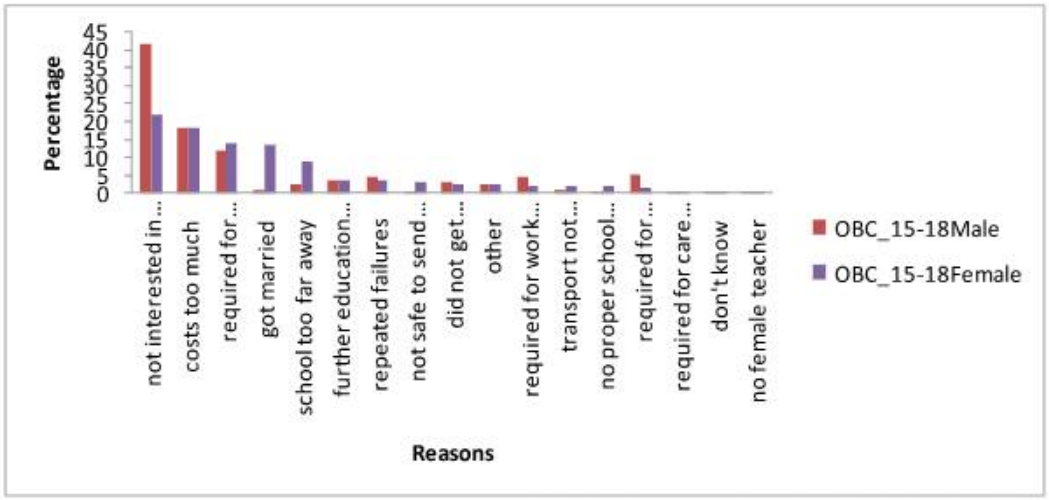
Among the ST group, we observe that female drop-outs are due to the reasons "not interested in studies", "required for household work", and "marriage" (See Figure 6.71).

Figure 6.71: Reasons for drop-outs in the ST category among 15-18 years (NFHS 4)



Source: Author's compilation based on NFHS-4

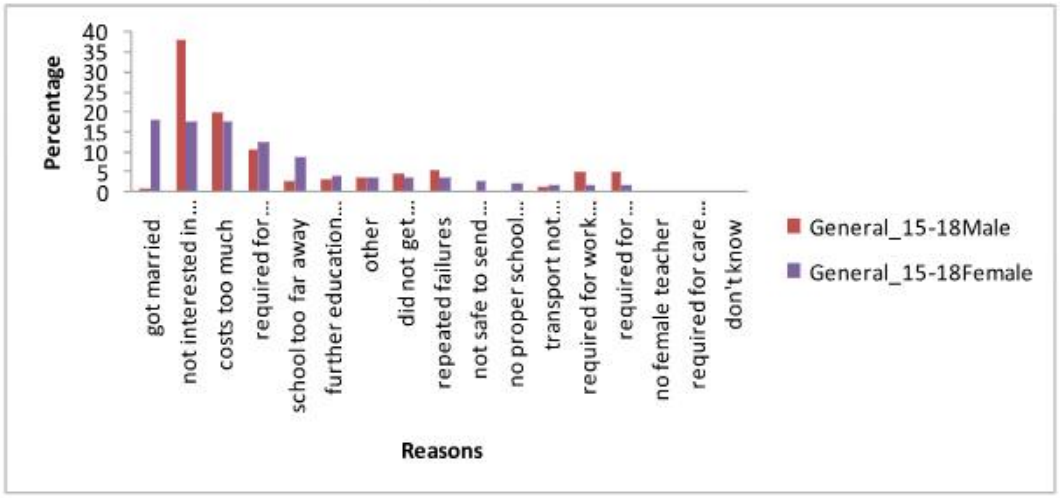
Figure 6.72: Reasons for drop-outs in the OBC category among 15-18 years (NFHS 4)



Source: Author's compilation based on NFHS-4

The reasons for drop-outs among the OBC group are "not interested in studies", "costs too much", "required for household work", "got married", and "school too far away" (See Figure 6.72).

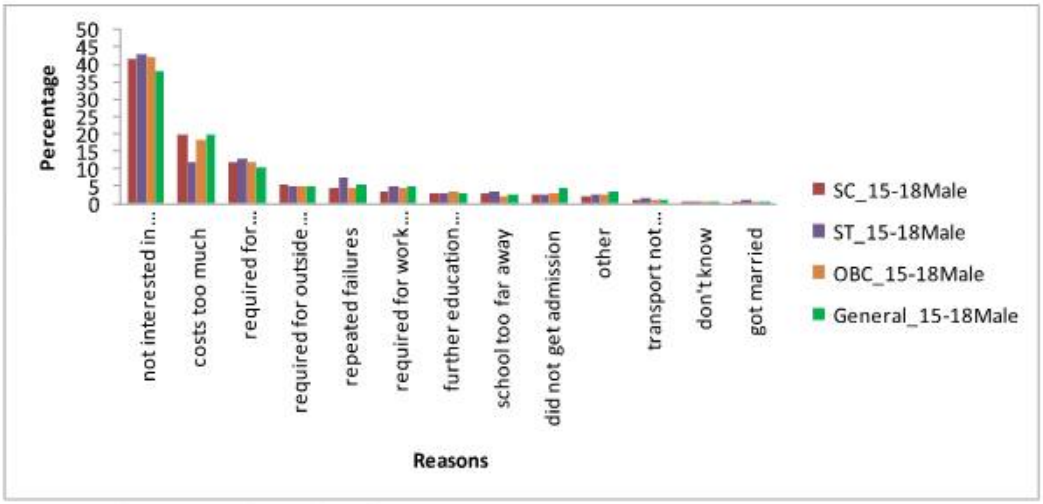
Figure 6.73: Reasons for drop-outs in the General category among 15-18 years (NFHS 4)



Source: Author's compilation based on NFHS-4

Among females, in the general category, the highest drop-out percentage is due to marriage, not being interested in studies, costs being too much, and being required for household work. Male drop-outs are due to "not interested in studies", "costs too much", and "required to outside work for payment in cash or kind".

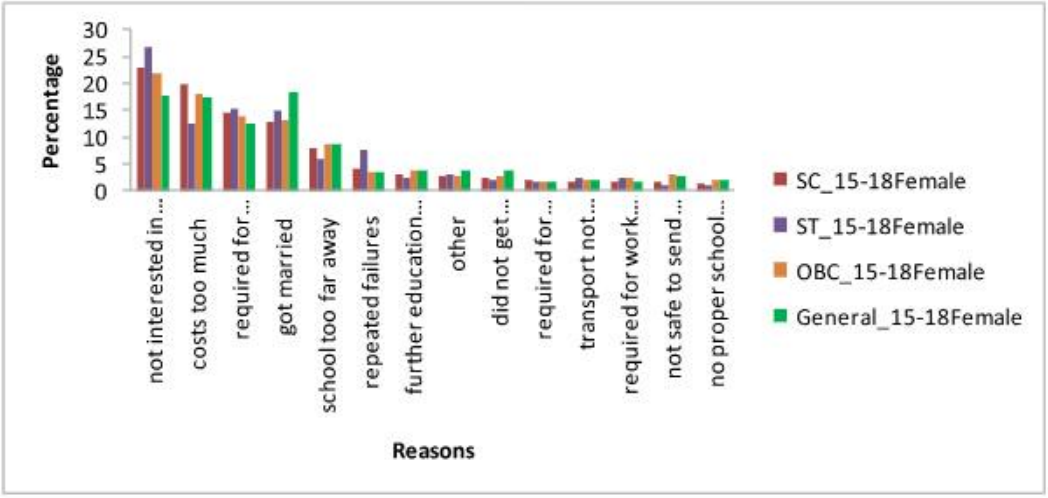
Figure 6.74: Combined reasons for males among all social categories 15-18 years (NFHS 4)



Source: Author's compilation based on NFHS-4

We observe that "not interested in studies" is the top reason for drop-out across all social groups. The reasons for drop-outs are common across all social groups. The high percentage of drop-outs observed among males is due to "not interested in studies", "costs too much", "required for household work", and "required for outside work on payment in cash or kind" (See Figure 6.74).

Figure 6.75: Combine reasons for females among all social categories 15-18 years (NFHS 4)



Source: Author's compilation based on NFHS-4

The high percentage of drop-outs among females across all social groups are "not interested in studies", "costs too much", "required for household work", "marriage", and "school too far away". Among females, a lower percentage of drop-outs is noticed because it is not safe to send girls to school, and there are no proper school facilities.

6.6 T-TEST OF SIGNIFICANCE BETWEEN PERCENTAGE OF DROP-OUTS IN NFHS-3 AND NFHS-4

This section presents the t-test results of significance between the two surveys. First, we ran the test to study the difference in drop-out rate between the genders within and between the two surveys. There are more female drop-outs than male drop-outs in NFHS 3.

Table 6.6: t-test results for percentage of drop-outs between Males and Females in NFHS 3

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NFHS3_M	29	11.10793	.6030453	3.247498	9.872649	12.34321
NFHS3_F	29	11.77655	.711951	3.833973	10.31819	13.23492
diff	29	-.6686207	.339553	1.828549	-1.364163	.0269222

mean(diff) = mean(NFHS3_M - NFHS3_F) t = -1.9691

Ho: mean(diff) = 0 degrees of freedom = 28

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0

Pr(T < t) = 0.0295 Pr(|T| > |t|) = 0.0589 Pr(T > t) = 0.9705

Source: Author's compilation based on NFHS-3

The average percentage of drop-outs among males is 11.10, and females are 11.77. The results show that the significant difference in average drop-out rate

between males and females in NFHS 3 is at 10%. There is a difference in drop-outs, but male drop-outs are comparatively less than female drop-outs and are statistically significant.

Table 6.7: t-test results for the percentage of drop-outs between males and females in NFHS 4

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NFHS4_M	30	6.909333	.4952023	2.712334	5.896531	7.922136
NFHS4_F	30	7.746	.6418614	3.51562	6.433246	9.058754
diff	30	-.8366666	.3407926	1.866598	-1.533666	-.1396675

mean(diff) = mean(NFHS4_M - NFHS4_F) t = -2.4551
Ho: mean(diff) = 0 degrees of freedom = 29

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 0.0102 Pr(|T| > |t|) = 0.0203 Pr(T > t) = 0.9898

Source: Author's compilation based on NFHS-3

The results are statistically significant, showing that female drop-outs are higher than male drop-outs and are significant at 5%.

Table 6.8: t-test result for percentage of drop-outs between males in NFHS 3 and NFHS 4

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NFHS3_M	29	11.10793	.6030453	3.247498	9.872649	12.34321
NFHS4_M	29	6.932069	.5120425	2.757433	5.883197	7.980941
diff	29	4.175862	.4018159	2.163845	3.352779	4.998945

mean(diff) = mean(NFHS3_M - NFHS4_M) t = 10.3925
Ho: mean(diff) = 0 degrees of freedom = 28

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Source: Author's compilation based on NFHS-3 and NFHS-4

The t-test result shows that there have been significant differences in the drop-out rate among males between NFHS 3 and NFHS 4. There has been a reduction in the percentage of drop-out rate.

Table 6.9: t-test result for percentage of drop-outs between females in NFHS 3 and NFHS 4

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Paired t test
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Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
NFHS3_F	29	11.77655	.711951	3.833973	10.31819	13.23492
NFHS4_F	29	7.697931	.662524	3.567801	6.340812	9.05505
diff	29	4.078621	.475068	2.558319	3.105488	5.051753

```
    mean(diff) = mean(NFHS3_F - NFHS4_F)                          t =   8.5853
Ho: mean(diff) = 0                              degrees of freedom =       28

Ha: mean(diff) < 0           Ha: mean(diff) != 0           Ha: mean(diff) > 0
Pr(T < t) = 1.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 0.0000

.
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Source: Author's compilation based on NFHS-3 and NFHS-4

It is assumed that the sample means are equal to zero; t-test results show no difference among the observations in NFHS 3 and NFHS 4. When the t-test was conducted, there were statistically significant differences between them. The statistically significant differences are observed in males and females from one survey to another. Within the specific surveys, the test result showed that in NFHS 3, the p-value is 0.05 between males and females. As observed, it is significant that the female drop-out rate is higher compared to males.

In the NFHS-4, the study found that states ranking high in drop-outs in NFHS-3 are not the same in NFHS-4. The results show that female drop-out rates are slightly higher than male drop-outs.

The states that showed high drop-out rates in NFHS-3 have greatly improved in NFHS-4. Overall, there is a decline in the drop-out rate in the age group 5 – 9 years in NFHS-4 among all states. The drop-out rate has reduced to less than 1% among all the states in NFHS-4. The states that rank high in male drop-outs are Meghalaya, Goa, and Arunachal Pradesh. Meghalaya, ranking third in NFHS-3 with an 8% drop-out rate, has shown remarkable improvement, declining to 0.8% in NFHS-4.

Next, the study compared the findings from the two surveys, NFHS-3 and NFHS-4. There is a reduction in the drop-out rate from NFHS-3 to NFHS-4, which can be attributed to the RTE Act 2009. In the age group 15 – 18 years, the drop-out rate has fallen from 50 % to 32% in Odisha. There is an overall reduction in the drop-out rate from 2005-2006 to 2014-2015, except in a few states.

On the one hand, the study findings show an overall reduction in the drop-out rate from NFHS-3 to NFHS-4. On the other hand, the results of this analysis reveal that even after the implementation/notification of the RTE Act in 2010, children cannot get admission to schools. In some states, children aged 5 – 9 years who should be enrolled for preschool and primary education are out of school.

According to the Act, all children between 6 and 14 years are entitled to free and compulsory education. The RTE Act 2009 specifies that primary schools should be within walking distance of 1 km, but there are reasons reported as "school too far away". The other reason reported is "costs too much". The finding reveals that a fee is charged for children, which indicates that schools are levying admission fees, which is against the provisions of the RTE Act 2009. Education is free up to 14 years of age. Therefore, the drop-outs reported before 14 years due to payment of fees or any other costs involved in attaining school education should be investigated.

If the RTE Act 2009 is extended up to 16 years, the child will be able to attain a minimum grade Xth, which is considered an essential qualification in the labour market. Currently, the child can achieve either eighth grade up to 14 years, and since education is not accessible and free, parents may withdraw their children from school as they have to bear the additional costs.

As far as gender-specific reasons are concerned, girls have a disadvantage over boys. The gender-specific reasons are marriage, school being far away, no proper school facilities, and not being safe to send girls to school. It is observed that many girls do not attend school when they get married. The girls between the age group of 15 – 18 years are not attending school as they got married and another reason is required for household work. But for boys, "not interested in studies" and "costs too much" are the reasons for not attending school. Young girls of school-going age between 10 – 14 years and 15 – 18 years are required for household work, whereas for boys in the age group of 10 – 14, it was reported as needed for household work. In many states, girls have dropped out as they are required for household work.

The child is required to work outside for payment in kind or cash or maybe to earn income for the family, where a family may not realise the advantage of sending the child to school to obtain better employment opportunities in the future.

Based on the study findings in this chapter, we noticed a significant reduction in the drop-out rate from NFHS-3 to NFHS-4, which can be, to some extent, attributed to the RTE Act 2009 in India. A gender gap in school education continues to prevail in India, and there is a need to sensitise local bodies to ensure every child is enrolled in school, and every child's absence needs to be monitored by school teachers to reduce the likelihood of drop-out. There is a need to minimise the number of drop-outs due to school-related factors by addressing the issues in terms of the provisions of the RTE Act 2009.

In the first section, study findings show that in NFHS-3 in the age group 5 – 9 years, the top three states with high male drop-outs are Jharkhand, JandK and Meghalaya. However, in the case of females, the top three states are Jharkhand, Meghalaya and JandK. In the second age group, 10 – 14 years, the top high-ranking states in the case of male drop-outs are Odisha, Andhra Pradesh, and Assam, whereas in the case of female drop-outs, it is Gujarat, Rajasthan and Andhra Pradesh. In the third age group, 15 – 18 years, the states showing high drop-outs in the case of males are Odisha, Gujarat and Chhattisgarh, and in the case of female drop-outs, the states are Odisha, Gujarat and West Bengal.

In the age group 5 – 18 years, high drop-outs are noticed among those 15 – 18. Jharkhand and Meghalaya among females, and Jammu and Kashmir show higher drop-outs among males than females.

Further, the study compares the rate of drop-outs separately for males and females. Female drop-outs are higher than male drop-outs in NFHS-3.

The study analysis of NFHS-4 shows that in the age group 5 – 9 years in Jharkhand, male drop-outs were 10% and females were 11%. In Meghalaya, male drop-out was 8%, whereas female drop-out was 8%; in Jammu and Kashmir, the male drop-out rate was 8%, and female drop-out was lower at 7%. The drop-out was higher among females in Jharkhand and Meghalaya but was lower in Jammu and Kashmir.

In the 10 – 14-year-old age group, the three top states are Gujarat, Rajasthan, and Andhra Pradesh. The male drop-outs in Gujarat showed 9%, but female drop-outs were 14%, which is 5% higher than male drop-outs. In Rajasthan, 8% were male drop-outs, whereas female drop-outs were 12%, and in Andhra Pradesh, male drop-outs were 10% and female drop-outs 12%. Among 15 – 18 years, the three top states are Odisha, Gujarat, and West Bengal. The male drop-outs in Odisha

are 51%, but the female drop-outs were 50%, which is 1% less than male drop-outs. In Gujarat, 43% are male drop-outs, whereas female drop-outs are 46%; in West Bengal, male drop-outs are 40% and female drop-outs 45%.

Unlike NFHS 3, we notice that a high percentage of female drop-outs in the age group 5 – 9 years was due to "did not get admission" compared to males in NFHS 4. The male drop-out rate is much lower in NFHS 4 than in NFHS 3. Marriage is the significant reason for drop-outs among females aged 15 – 18. Across all age groups, the study found more female drop-outs than male drop-outs.

Next, we were interested in analysing and understanding the school infrastructure facilities in the state of Goa and attempting to assess the impact of the RTE Act 2009 using UDISE data.

CHAPTER 7

ASSESSMENT OF SCHOOL INFRASTRUCTURE IN GOA: USING U-DISE DATA

This chapter presents the Goa state-specific analysis of schools and infrastructure facilities. We begin with a brief overview of the education system in Goa and then discuss the provisions notified by the Goa government concerning the RTE Act 2009. We then present a detailed analysis of data obtained through U-DISE for Goa. Lastly, we discuss the data obtained through the Right to Information Act 2005, followed by field observations made during field visits to schools during the study period (15 September 2015 to October 2023).

The state of Goa is situated on the west coast of India. Goa stretches over an area of 3,702 sq. km., 1,736 sq. km. in North Goa and 1,966 sq. km. in South. Goa is divided into two administrative districts (North Goa & South Goa). There are 12 talukas, 6 in North and 6 in South Goa. According to the 2011 Census, the total population of Goa is 14 58,545 (North Goa: 818,008 and South Goa: 640,537).

7.1 GOA'S EDUCATION UNDER PORTUGUESE COLONISATION

Goa was ruled by the Portuguese for 450 years, from 1510 to 1961 (Varde 2012), and the Portuguese rule strongly influenced Goa's education system (Cabral 2009). Malvankar (2015), in her study, provided insights into the development of education and its impact on Goan society during the colonial period. The author concludes that the Portuguese systematically used education as an instrument of religious conversion (Malvankar 2015). In 1841, government primary schools were set up in each village and a secondary school in each judicial division, i.e. Ilhas, Bardez and Salcete and later in Bicholim and Ponda taluka (Varde 2012). In 1846, the first school for girls was set up in Panjim, and later, in 1854, two more schools were established in Mapusa and Margao. Primary education was made compulsory for all children aged 7-13 years who had a school within a three km radius unless they were sick or physically or mentally unfit (ibid. 2012). A fine of

Rs.5/- to Rs.20/- was imposed on parents or guardians who did not enrol their children in the school. If children are not enrolled till the end of the first trimester, the fine would be Rs.20 to Rs. 50/- (ibid.2012). A special census was carried out for the age group 7-13 years to identify children not enrolled and take the necessary steps to enrol the children in the school (ibid. 2012). Private primary schools in Marathi and English medium were converted to government primary schools post-liberation (Newman 1984). School plays a significant role in a student's future (Malvankar 2019). There is a need to study the status of primary education regarding the quality of teachers and infrastructure facilities provided in the schools to ensure quality primary education in Goa (De Souza and Sawant Dessai 2018).

7.2 EDUCATION IN GOA POST LIBERATION

After attaining liberation, on 19th December 1961, in April 1962, the Government of India appointed a special committee under the Chairpersonship of Shri B.N. Jha to review the prevailing education system in Goa. In June 1962, the Government of India implemented crucial recommendations from the Jha Committee. The critical recommendations in view of the present research are:

1) The pattern of school education should be five years of primary education, three years of middle school and three years of higher secondary school.
2) Education should be free and compulsory for all children aged 6-11.
3) The age of entry should be six and above.
4) The medium of instruction in primary schools should be in the mother tongue or any other language. The decision was left to the guardians.
5) The school hours are 5 ½ to 6 hours (Botelho 2002; Varde 2012).

As per Article 45 of the Constitution, the state must provide free and compulsory education for children up to 14 years old (Government of India 2007). There was a lack of schools in remote areas, so the stress was laid on opening schools and then the compulsion. Later, compulsion was laid in stages 6 – 11 years and then from 11 – 14 years. Other problems were the quality of education, teacher training, and school buildings. With the increase in the number of schools, many functioning in temples, private residential houses, etc, there was a need to construct adequate school buildings. Many of the school buildings were built on land donated by people. In the third Five Year Plan, a programme for constructing school buildings was taken up after Liberation (ibid. 2012).

7.3 LEGAL FRAMEWORKS RELATED TO EDUCATION IN GOA PRE-RTE ACT 2009:

The Goa, Daman and Diu Secondary and Higher Secondary Education Board Act of 1975 was set up to establish a board for the territory by the name of "the Goa, Daman and Diu Board of Secondary and Higher Secondary Education" to provide secondary and higher secondary education. The board was required to advise the government on matters related to policy relating to secondary and higher secondary education in general and on the following issues, such as ensuring a uniform pattern of education, maintaining a consistent standard of education in secondary and higher secondary school; co-ordination between national policies and also coordination between primary, secondary, higher secondary and university education. To advise the government about the standard requirement for staff, buildings, furniture, equipment, stationery, and other amenities required for secondary and higher secondary schools (Government of Goa, Daman and Diu 1975).

The Goa School Education Act 1984 was passed by the Government of Goa, Daman and Diu to provide better organisation and development of school education in Goa, Daman and Diu. The act was the Goa, Daman and Diu School Education Act 1984. The Education Act 1984 was amended up to September 2002.

The Goa Compulsory Elementary Education Act 1995 was passed in the legislative assembly in 1995 and was assented by the Governor of Goa in 1996.

The RTE Act (2009) was notified as The Goa Right of Children to Free and Compulsory Education Rules in 2012. The details of the Act are explained separately in this Chapter.

7.4 ROLE OF THE DIRECTORATE OF EDUCATION IN GOA

The Directorate of Education deals with the organisation, development and regulation of school education in the state of Goa under the Goa, Daman & Diu School Education Act, 1984 provisions. The educational structure in Goa consists of pre-primary, primary, middle, secondary, and higher secondary education(Government of Goa 2016).

The state is divided into three educational zones, each comprising three to four talukas /blocks. The headquarters of these zonal offices are based in Panaji, Margao, and Mapusa. Panaji is the central zonal office covering Tiswadi, Ponda, Dharbandoda and Sanguem talukas. Margao office covers the South zone for Canacona, Quepem, Salcete and Mormugao talukas, and the Mapusa office covers the North zone, Pernem, Bardez, Bicholim and Sattari talukas/blocks.

At the block level, Assistant District Educational Inspectors (ADEIs) carry out the administrative, supervision, coordination, monitoring, etc., under the guidance and management of the Assistant Directors of Education who are in charge of the respective zones.

The academic year in Goa starts in early June every year, and the age requirement for entry at Grade I in school is six years. In Goa, elementary education is from I-VII, Primary education is from I-IV, and Upper primary education is from V-VII. Next, we will discuss the RTE Act 2009 and Goa.

7.5 THE RTE ACT 2009 NOTIFICATION IN GOA IN AUGUST 2012

The Government of Goa passed and notified the RTE Act 2009 in the state of Goa on 2 August 2012. The Goa Right of Children to Free and Compulsory Education Act, 2012, of the Government of Goa is popularly known as the RTE Act of 2012. RTE Act 2012 in Goa considers pre-primary education to be early childhood care and education for all children up to the age of six years. Goa's RTE Act, 2012 states that the primary stage means elementary education from Grades I to IV, and the upper primary stage is elementary education from Grades V to VIII. In contrast, the RTE Act 2009 at the national level states that primary education is from Grade I to Grade V and upper secondary is from Grade VI to Grade VIII. In the RTE Act 2009, elementary education is from Grade I to Grade VIII.

The RTE Act 2009 mandates that 1) every child from 6 to 14 years get an elementary education in a neighbourhood school, 2) the school for children studying in Grades I to V should be within walking distance of 1 km, 3) the school be within 3 km walking distance for children in Grades VI to VIII. Under the provisions of this Act, if a neighbourhood school does not exist, then it is the duty of the State government and the panchayat/municipality to establish a school within three years of the implementation of the Act, and parents and guardians must admit a child into elementary education in a neighbourhood school.

It is the responsibility of the Government or the local authority to upgrade existing schools with Grades from I to IV to include Grades from V to Grade VIII, and in respect of schools which start from Grade V onwards, the Government or the local authority to add Grade I to IV wherever required (GOG 2012).

Suppose the geographical area is prone to landslides, floods, terrain, and similar circumstances. In that case, the Government or the local authority is expected to locate the school in such a manner to avoid such dangers. In the areas where schools do not exist, the government or the local authority has to make adequate arrangements, like free transportation and residential facilities, to provide elementary education.

For children with disability, the Government has to make safe and appropriate transport arrangements so that they can access and complete elementary education successfully. Children with disabilities should receive free exceptional learning and support materials. Children with any disability are not only provided free elementary education, but the Act mandates that schools create a disabled-friendly environment for inclusive education by providing special facilities such as the construction of ramps, tactile tiles, and such physical aids.

The local authority is expected to maintain records of children, including children of migrant families up to the age of 14 years in their jurisdiction and ensure and monitor admission, attendance and completion of elementary education. Under the RTE Act 2012, the Government of Goa specified the State Council of Educational Research and Training (SCERT) as an academic authority.

For a child above six years who is not admitted to any school or if the child was admitted but unable to complete elementary education, a special provision exists to accept that child into a grade appropriate to their age. Further, to bring that child on par with others in the grade, the child has the right to exceptional training and is entitled to free and compulsory elementary education even after 14 years of age.

If, in a particular school, there is no elementary education, a child has the right to seek transfer within a state or outside to any other school to complete their elementary education. Under the Act, the head teacher or in charge should immediately issue a transfer certificate, and any delay in issuing a transfer certificate cannot be the reason to delay or deny admission to a child. Any delay in transferring or issuing the certificate will attract disciplinary action under service rules.

To ensure quality education, the Act stipulates a national curriculum and standardised teacher training, and the Centre provides technical support and resources to the state governments for promoting innovations, research, planning, and capacity building. Every school requires a Certificate of Recognition from State Authorities. It has to constitute a School Management Committee (SMC) consisting of the elected representatives of the local authority, parents or

guardians and teachers. The SMC should prepare a School Development Plan for government grants to be provided. Further, to maintain standards and quality of teaching, teacher's minimum qualifications for appointment and terms and conditions of service are laid out. If a teacher does not possess the minimum qualifications, that teacher should acquire the necessary qualifications within five years from the implementation of the Act. The Act also specifies the pupil-teacher ratio and prohibits the deputation of teachers on non-teaching assignments.

To encourage inclusive education, the Act makes it binding for a school to admit at least 25% of its students from weaker and disadvantaged groups and provide free and compulsory education until they complete the elementary level. The State will reimburse schools accordingly. The Act does not permit capitation fees or fees for screening for school admission, and no child can be denied admission due to lack of proof of age. A No Detention Policy should be followed, and no child can be expelled from school till the completion of elementary education. Further, no child can be subjected to physical punishment or mental harassment in school.

The RTE Act 2009 states that the medium of instruction should be in the child's mother tongue while also setting out curriculum and evaluation procedures.

The Directorate of Education annually collects data from all the schools and compiles the educational statistics for schools in Goa. The data collection tool of the Directorate was studied, and it was observed that only limited data was analysed by the statistics division. Only indicators relevant to the annual report are compiled and presented as a yearly report on their website. The Directorate partly follows the U-DISE format to collect school information, which is then submitted to the National Institute of Educational Planning and Administration (NIEPA).

7.6 U-DISE DATA ANALYSIS FOR GOA

We present the findings on school data from Goa from 2005-2006 to 2015-2016. The data analysis was carried out to understand the education system in Goa. Besides, we aim to study the critical requirements listed in RTE guidelines and assess the fulfilment or meeting of these requirements by comparing pre, and post-RTE periods. In this study, the pre-RTE period is taken as the year 2010-2011; during this period, the RTE Act 2009 was notified in India and Goa in 2012. We have analysed the status of schools on RTE requirements or provisions from 2010 to 11 and the status of schools after four years of RTE Act implementation in Goa for the years 2015 to 2016.

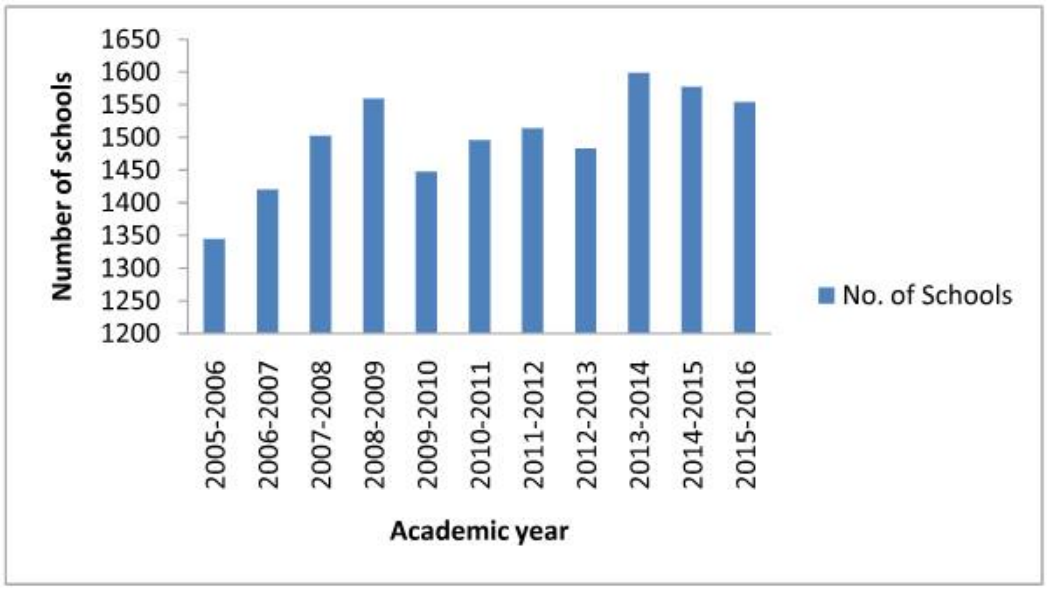
The data collected by U-DISE before the RTE Act's implementation later varied as more variables and codes were added to the existing variables or the variable names were changed. Therefore, while merging the data, the variables' names were kept identical after renaming them. New variables have been added each year after 2012 till 2015. There were many additions to a number of variables from 2012 till 2015.

7.6.1 Basic characteristics of schools pre, and post-RTE Act 2009

The schools for which data on the year of establishment is available show that schools established in 1842 in Goa continue to exist even in 2015-2016. 13% of the existing schools had been established before Goa's liberation, i.e. 19th December 1961. From 1961 to 1980, 61% of the schools were established, 20%

were established from 1981-2000, and 6% were established from 2001 to 2014. In 2005-2006, there were 1345 schools, and in 2015-2016 there were 1554 schools. Some schools have been imparting education for more than 100 years. We would consider the status and condition of the buildings in terms of the school infrastructure, which is very old and continues to impart education even in 2015-2016. We do not know the state of the facilities in terms of whether one can use them at present or if they have been renovated.

Figure 7.1: Number of schools in Goa from 2005 to 2015



Sources: Author's calculations based - U-DISE Data

The blocks are categorised based on the talukas; there were 11 talukas till 2011-2012, namely Bardez, Bicholim, Canacona, Mormugoa, Pernem, Ponda, Quepem, Salcete, Sanguem, Sattari and Tiswadi. In 2012, an additional taluka- Dharbandora- was added.

7.6.2 Profile of Schools:

There were 1496 schools in Goa in 2010 and 1554 schools in 2015. In 2010, 80% of the schools were based in rural areas and 20% in urban areas. There has been a 2% decline in rural schools and a 2% increase in urban schools from 2010 to 2015. In 2015, 78% of the schools were in rural areas and 22% in urban areas. Some areas may be categorised as urban as per the 2011 census of India. In 2010, 22% of the schools had a pre-primary section, and 27% in 2015. It shows an increase in 5% of schools which started pre-primary section in their schools. There has been an increase in the number of residential schools in Goa, from 16 schools in 2010 to 22 in 2015. 98% of the schools are co-educational, and 1% are each exclusively for boys and girls. In 2010, 5% of the schools were working in shifts, and in 2015, there were only 4% of the schools operating in shifts in Goa.

7.6.3 Medium of Instruction:

In 2010-11, Marathi was the primary medium of instruction in almost 60% of the schools, followed by English (26%) and Konkani (12%) as the main medium of instruction and the remaining 2% in other languages. In 2015-16, in 54% of the schools, the medium of instruction was Marathi, followed by 40% of the schools with English, 5% with Konkani medium and 1% with Urdu.

As per the RTE Act 2009, the medium of instruction should be in the child's mother tongue. We have noticed that the number of schools imparting local language as a medium of instruction has declined over the years.

7.6.4 School Management:

In 2010, 69% of the schools were managed by the Department of Education, 25% were private-aided schools, 4% were private unaided schools, and 1% were managed by Local bodies in Goa. In 2015, the Department of Education controlled 57% of the schools in Goa; 33% were private-aided, and 10% were private unaided schools. In Goa, the number of private-aided and unaided schools has increased, and the number of schools run by the government providing free education has decreased.

According to the RTE Act, there is a need to provide free education for up to 14 years as students coming from marginalised communities may find it difficult to pay fees in private, unaided schools if there is no neighbourhood school. Private aided and unaided schools must reserve admission for marginalised sections up to 25% of the seats for which the government will reimburse the fees of such students to the school.

7.6.5 School Category:

The school categories used in the U-DISE data collection are listed in the table below, whereas the school categories in Goa followed by the Directorate of Education, Government of Goa is presented below (Refer Table 7.1)

Table 7.1: School categories used in Goa and U-DISE data

School Category as per RTE ACT 2009 used in U -DISE data	School Category followed by Directorate of Education, Government of Goa
Primary only (1-5)	Primary only (1-4)
Primary with Upper Primary (1-8)	Primary with Upper Primary (1-7)
Upper Primary only (6-8)	Upper Primary only (5-7)
Upper Primary with secondary (5-10)	Upper Primary with secondary (5-10)
Secondary only (9-10)	Secondary only (8-10)
Primary with upper primary and secondary (1-10)	Primary with upper primary and secondary (1-10)
Primary with upper primary and secondary and higher secondary(1-12)	Primary with upper primary and secondary and higher secondary(1-12)
Upper Primary with secondary and higher secondary(6-12)	Upper Primary with secondary and higher secondary(5-12)
Secondary with Hr. Secondary(9-12)	Secondary with Hr. Secondary(8-12)
Hr. Secondary only/Jr. College(11 & 12)	Hr. Secondary only/Jr. College(11 & 12)

Source: Compiled by the author based (NIEPA 2015a; Government of Goa 2016)

In Goa, primary schooling is from Grade I to IV, and upper primary schooling starts from Grade V and continues till Grade VIII as per the RTE notification of the government of Goa.

In 2010, 68% were in primary schools, and 12% were from Primary to Higher Secondary, i.e., Grade I to XII. 5% of Primary Schools had Upper Primary, 11% had Upper Primary with Secondary and Higher Secondary, and 4% of the schools were Upper Primary only. In 2015, 63% of the schools were only Primary Schools, 14% were Upper Primary with Secondary (5-10), 11% were Primary with Upper Primary and Secondary (1-10), 6% were only Higher Secondary and 5% were Primary with Upper Primary (1-8).

7.6.6 Status of school facilities:

The findings concerning RTE Act provisions are assessed based on data availability.

a) **Building status:** In 2010, 64% of the schools were based in government buildings, 25% in rented space, 10% in private buildings and 1% in rent-free buildings. In 2015, 55% of the schools were based in government buildings, 28% in rented space, 15% in private buildings, 1% in rent-free buildings and 1% schools (i.e. eight schools) were reported as having buildings in dilapidated condition, and five schools were under construction.

b) **Drinking water:** The data on water sources included are 'handpump', 'well', 'tap water', 'others' and 'none'. In 2010, 90% of the drinking water was from tap water, and 4% of the schools relied on well water; in 2015, 93% had tap water, 3% well water, and 4% had other water sources. The dummy variable created to find the changes where tap water was available is equal to 1. The results showed that 10% of the schools did not have tap water in 2010, and in 2015, for 7% of the schools, the primary source of drinking water was not tap water.

c) **Electricity:** 97% of the schools had electricity connections in 2010. This increased to 99% in 2015. There was a 2% increase in schools connected with power supply.

d) **Boundary wall**: In 2010, 61% of the schools had a pucca boundary wall, 25% of the schools had no boundary wall at all, 6% had a pucca boundary wall, but it was broken, 3% had a partial boundary wall,2% of the schools had wired fencing, 1% had boundary wall under construction and others category. In 2015, 63% of the schools had pucca boundary walls, 19% had no boundary walls, 6% had broken boundary walls, 9% had partial boundary walls, and 1% had wired fencing.

e) **Playground:** 51% of the schools had playgrounds in 2010. This figure decreased to 49% in 2015.

f) **Medical checkups:** In 2010, 82% of schools conducted medical checkups in previous years; in 2015, 92% organised medical checkups.

g) **Availability of Ramps:** In 2010, 37% of the schools had ramp facilities catering to the needs of disabled children; in 2015, 45% had ramp facilities. This shows that even today, 55% of the schools do not have ramps, hindering access to educational institutes for disabled students.

h) **Head Teacher:** In 2010, only 28% of the schools had a head teacher; in 2015, only 18% had a head teacher.

i) **Separate room for Head Teacher:** In 2010, only 40% of the schools had separate head teacher rooms; in 2015, the percentage of schools having separate rooms for head teachers increased to 45%.

j) **Mid–Day Meal (MDM):** In 2010, 94% of the schools provided mid-day meals, but they were not prepared on the school premises, and 0.40% of the schools provided MDM prepared on the school premises. In 2010, 91% of the schools prepared and supplied MDM aided by self-help groups. In 2015, 83% of the schools, MDM was provided in schools but not prepared on school premises; in 83%, MDM was prepared and supplied by self-help groups. According to the RTE Act 2009 guidelines,

MDM had to be prepared on the school premises, but we noticed that in Goa in 2010, only 0.54% prepared MDM on school premises and in 2015, only 0.45% of the schools prepared MDM on school premises. Also, in 0.51% of schools, MDM was prepared and supplied by the Parent Teachers Association of the schools in 2015.

k) **All weather roads:** 99% of the schools were accessible through roads in 2010. In 2015, 98% were approachable and connected to the roads.

l) **School Management Committees (SMCs):** In 2015, more school management committees were formed than in 2010. Parent's involvement in SMCs has increased during the period 2010 to 2015.

m) **Admission for the Weaker section:** The data available is not collected systematically from all the schools, and due to inadequate data, we could not analyse the same.

7.7 SCHOOL SANITATION INFRASTRUCTURE FACILITIES

Data on three types of toilets are available: girls' toilet, boys' toilet and common toilet. Data on girls' toilets is available for all the years, from 2005 to 2015. Data on boys' toilets was collected from 2009 onward till 2015. Data on common toilets has been available from 2005 till 2012, but after RTE implementation in 2013, there is no data on common toilets by U-DISE. Data on common toilets is available only till the year 2012. The RTE Act 2009 was notified in Goa in 2012.

Table 7.2: Type of Toilets in Schools

2010 Pre-RTE						
School type	Girls ' Toilet		Boys ' Toilet		Common toilet	
**N=1489	YES	NO	YES	NO	YES	NO
Boys school (11)	10%	90%	73%	27%	36%	64%
Girls School (08)	100%	NIL	NIL	100%	25%	75%
Co-ed schools (1470)	68%	32%	63%	37%	42%	58%
**N= 1456	2012 Mid-RTE					
Boys school (10)	20%	80%	90%	10%	20%	80%

Girls School (08)	100%	NIL	NIL	100%	12%	88%
Co-ed schools (1438)	95%	5%	69%	31%	37%	63%
N=1554	2015 After four years of RTE					
Boys school (12)	17%	83%	100%	NIL	*	*
Girls School (11)	100%	NIL	NIL	100%	*	*
Co-ed schools (1531)	100%	NIL	100%	NIL	*	*

*Source: Author's calculations based on U-DISE data * No data on common toilets from 2013 onwards; therefore, 2012 data is provided ** School type not coded observations are excluded from N.*

a) Common Toilet

In 2010, 42% of the schools had a common toilet, while 58% did not have a common toilet, 68% co-ed schools had girls' toilets, and 63% had boy's toilets. 426(29%) schools had at least one common toilet, and 10% of the schools had at least two common toilets in schools. For 2015, there is no information available on common toilets. (Refer Table 7.2)

b) Boys' Toilet

At least one boy's toilet was present in 38% of the schools in 2010, and 14% had at least two boy's toilets. 38% of schools did not have boy's toilets. In 2015, 58% of the schools had at least one boy's toilet, and 21% had two boys' toilets. In girls' schools, there was no single boy's/men's toilet in the year 2015, and there are male teachers and staff even in girl's schools. Hence, the boy's toilet should be available (Refer to Table 7.2)

c) Girl's Toilet

32% of the schools did not have girl's toilets in 2010. 39% had only a single girl's toilet, and 16% of the schools had at least two girls' toilet. In 2015, 49% of the schools had at least one girls' toilet, 23 % had at least two girls' toilets, 9% had three girls' toilets, and 5% had at least four girls' toilets. No girls'/ladies' toilet was available in boys' schools in 2015. There are female teachers and staff even in a boys' school; therefore, the girls' toilet must be available (Refer to Table 7.2).

7.7.1 Compliance with WHO-WASH and SBSV Guidelines:

Table 7.3 depicts the compliance of a number of toilets for the number of children as per WHO-WASH standards and National standards for rural and urban schools separately considering pre, and post-RTE periods. There has been increasing compliance regarding the number of toilets in rural and urban areas for boys and girls' toilets among co-ed schools. Due to the lack of compliance in girls' schools in 2010, 66.7% of the schools subsequently complied with national and international standards.

The availability of a toilet is not enough. The functionality of the toilet is also important. The U-DISE data on functionality was collected by asking for information on the number of functional toilet seats (Refer to Appendix I -U-DISE data capture format). Functional toilet included a toilet with minimal odour, unbroken seat, regularly cleaned dry, working drainage system, accessible to users and closable door. Suppose separate data was available on the number of available toilets and the number of toilets not available for use due to broken seats or unclosable doors, etc. It would provide valuable information, but this data is lacking. Therefore, the total number of functional toilets that we assume to be functional may not be accurate.

Table 7.3: Compliance with WHO- WASH and SBSV standards for gender-specific toilets.

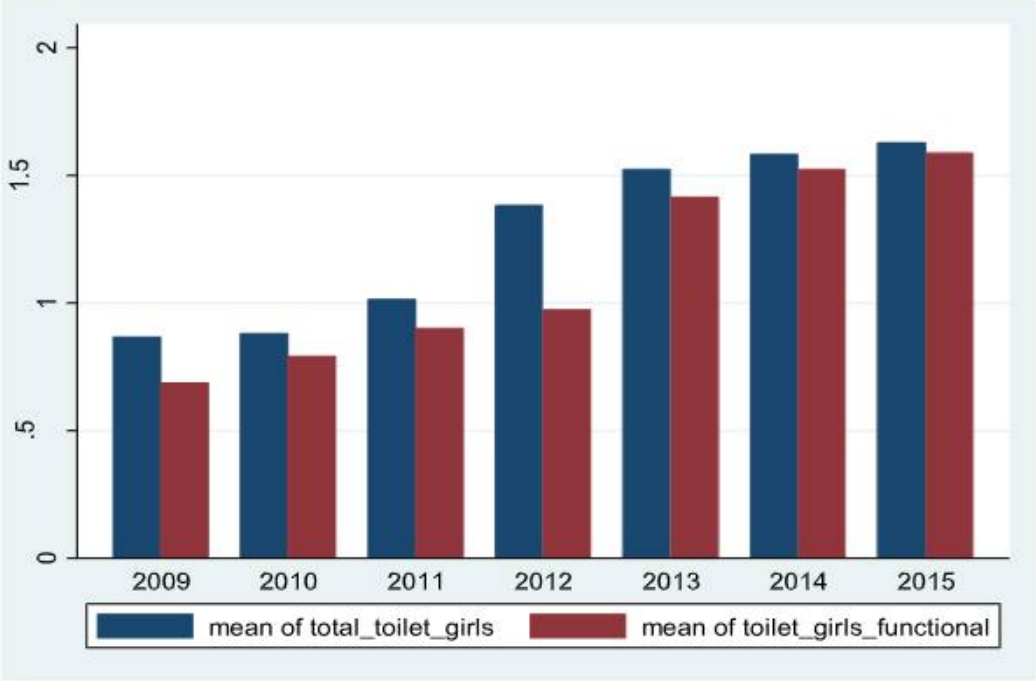
Rural /Urban and Year	No. of Boys / Boys Toilet		No. of Girls /Girls Toilet	
	WHO –WASH std 1:50 (% of Schools Comply 50 norm)	National Std. 1:40 (% of schools Comply 40 norm)	WHO WASH STD. 1:25(% of schools Comply 25 norm)	National std. 1:40 (% of schools Comply 40 norm)
Rural 2010				

Boys school N=5	20%	*	NA	NA
Girls School N=3	NA	NA	*	*
Co-ed N= 1191	47.2%	44.8%	44%	53.3%
Rural 2015				
Boys school N= 5	40%	40%	NA	NA
Girls School N=3	NA	NA	66.7%	66.7%
Co-ed N= 1198	86.6%	81.6%	76.4%	87.8%
Urban 2010				
Boys school N=6	16.7%	16.7%	NA	NA
Girls School N=5	NA	NA	*	20%
Co-ed N= 279	36.9%	31.2%	23.3%	37.6%
Urban 2015				
Boys school N=7	27.6%	27.6%	NA	NA
Girls School N=8	NA	NA	25%	37.5%
Co-ed N= 333	71%	61.6%	52.6%	71.5%

Source: Author's calculations based on U-DISE data
**Indicates no compliance of schools to the respective standards*

The functionality of girls' toilets and the total number of toilets in the schools were analysed from 2009 to 2015 (Figure 7.2).

Figure 7.2: Total number of toilets and functional girls' toilets in schools.



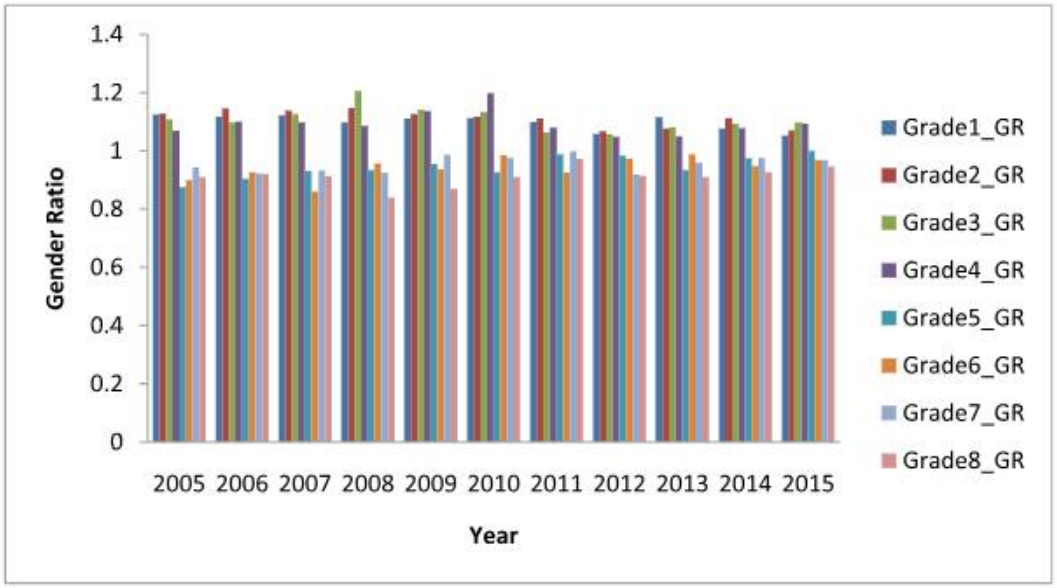
Source: Author's calculation based on U-DISE data

We noticed an increase in the number of functional toilets from 2012 to 2013, which we can attribute to the RTE Act 2009, which was implemented in 2012 in schools in Goa.

7.8 GENDER ENROLMENT RATIO IN CO-ED SCHOOLS

We calculated the gender enrolment ratio in co-ed schools, and we noticed that the gender enrolment ratio for classes/grades from V to VIII was below one from 2005 till 2014. In 2015, the gender ratio for grade V reached one, and for grades VI to VIII, the gender ratio was below 1. The low gender ratio in developed states is disturbing, and there is a need to look into this issue to improve the enrolment of girls in schools (Refer Figure 7.3 and Table 7.4). Data for Grade IX was available only from 2013 onwards.

Figure 7.3: Gender Ratio from Grade I to Grade VIII



Source: Author's calculations based on U-DISE data

The critical variables analysed in this chapter are sanitation facilities and the availability of gender-specific toilets and water. We carried out a t-test of Significance to determine if any significant changes took place after the implementation of the RTE Act 2009 (Refer Table 7.5).

Table 7.4: Gender Enrolment Ratio from Grade I to Grade XII in Goa

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Grade1_GR	1.12	1.12	1.12	1.10	1.11	1.11	1.10	1.06	1.12	1.08	1.05
Grade2_GR	1.13	1.15	1.14	1.15	1.13	1.12	1.11	1.07	1.08	1.11	1.07
Grade3_GR	1.11	1.10	1.13	1.21	1.14	1.13	1.06	1.06	1.08	1.09	1.10
Grade4_GR	1.07	1.10	1.10	1.09	1.14	1.20	1.08	1.05	1.05	1.08	1.09
Grade5_GR	0.88	0.90	0.93	0.93	0.96	0.93	0.99	0.98	0.93	0.97	1.00
Grade6_GR	0.90	0.93	0.86	0.96	0.94	0.99	0.92	0.97	0.99	0.95	0.97
Grade7_GR	0.94	0.92	0.93	0.92	0.99	0.98	1.00	0.92	0.96	0.98	0.97
Grade8_GR	0.91	0.92	0.91	0.84	0.87	0.91	0.97	0.92	0.91	0.93	0.95
Grade9_GR	*	*	*	*	*	*	*	*	0.84	0.82	0.87
Grade10_GR	*	*	*	*	*	*	*	*	1.05	1.08	1.13
Grade11_GR	*	*	*	*	*	*	*	*	*	0.93	0.88
Grade12_GR	*	*	*	*	*	*	*	*	*	1.05	1.05

*Source: Author's calculation is based on U-DISE data. Note: * denotes unavailable data.*

Table 7.5: Status of Schools Pre and Post-RTE Act 2009

ITEMS	Year	Rural			Urban		
		Mean	Std. Deviation	p-value (Mean difference)	Mean	Std. Deviation	p-value (Mean difference)
Boy's Toilet	2010	0.6	0.49		0.7	0.46	
	2015	1	0.05	0.00***	0.98	0.15	0.00***
Girl's toilet	2010	0.67	0.47		0.73	0.45	
	2015	1	0.06	0.00***	0.98	0.13	0.00***
Compliance (SBSV) 1:40 Boys	2010	0.44	0.5		0.3	0.46	
	2015	0.81	0.39	0.00***	0.59	0.49	0.00***
Compliance (SBSV) 1:40 Girls	2010	0.53	0.5		0.37	0.48	
	2015	0.87	0.33	0.00***	0.7	0.46	0.00***
Compliance (WHO WASH) 1:50 Boys	2010	0.48	0.5		0.36	0.48	
	2015	0.86	0.35	0.00***	0.68	0.47	0.00***
Compliance (WHO WASH) 1:25 Girls	2010	0.44	0.5		0.23	0.42	
	2015	0.76	0.43	0.00***	0.51	0.5	0.00***
Approach Road	2010	1.09	0.86		1.08	0.81	
	2015	1.02	0.13	0.0025**	1.02	0.15	0.1782
Drinking Water	2010	0.89	0.31		0.92	0.27	
	2015	0.92	0.27	0.0074**	0.95	0.22	0.2111
Availability of Ramps	2010	0.39	0.22		0.3	0.46	
	2015	0.49	0.5	0.00***	0.3	0.46	0.8257
MDM	2010	3.03	0.87		2.77	1.05	
	2015	2.66	0.98	0.00***	2.13	1.31	0.00***
SMC Female/ Male Member Ratio*	2010	0.93	1.45		1.03	1.74	
	2015	1.83	1.8	0.00***	2.13	2.16	0.00***
SMC Parent Female/ Male Member Ratio	2010	0.72	1.45		0.52	0.97	
	2015	2.04	1.9	0.00***	2.43	2.45	0.00***

Source: Author's calculations based on U-DISE data

Notes: In 2010, the number of schools in rural areas was 1201 and 290 in urban areas. In 2015, the number of schools was 1206 in rural areas and 348 in urban areas. *SMC ratio was calculated for Female/ Male members of SMC. In 2010, there were only 265 observations. In 2015, there were 1049 observations in rural areas. In the urban area in 2010, 84 and 233 observations in 2015 had parents as SMC Members.

From Table 7.5 above, we see that there have been significant changes in the provision of gender-specific toilets from 2010 to 2015 due to the RTE Act.

7.9 TESTS OF SIGNIFICANCE PRE, AND POST-RTE PERIOD

We carried out a t-test for the pre-and post-RTE period for 2010 and 2015 for different RTE requirements to see if any significant changes had occurred due to the implementation of the RTE Act.

We assumed that the sample means were equal to zero; t-test results showed that though there was not much difference among the observations from 2010 to 2015 when the t-test was conducted, it showed that there were statistically significant changes that have occurred from the Pre-RTE period (2010) to post-RTE (2015) after four years of the RTE Act.

Statistically significant differences in mean values indicate the fulfilment of the RTE requirements in schools. The high number of schools complying with the RTE guidelines has resulted in substantial changes in school infrastructure facilities within four years of RTE implementation. The improvement in infrastructure in terms of providing gender-specific toilet facilities has increased significantly in rural and urban areas. Schools with access to the specially-abled ramp facility were only significant in rural areas.

7.10 INFORMATION OBTAINED THROUGH THE RIGHT TO INFORMATION ACT 2005

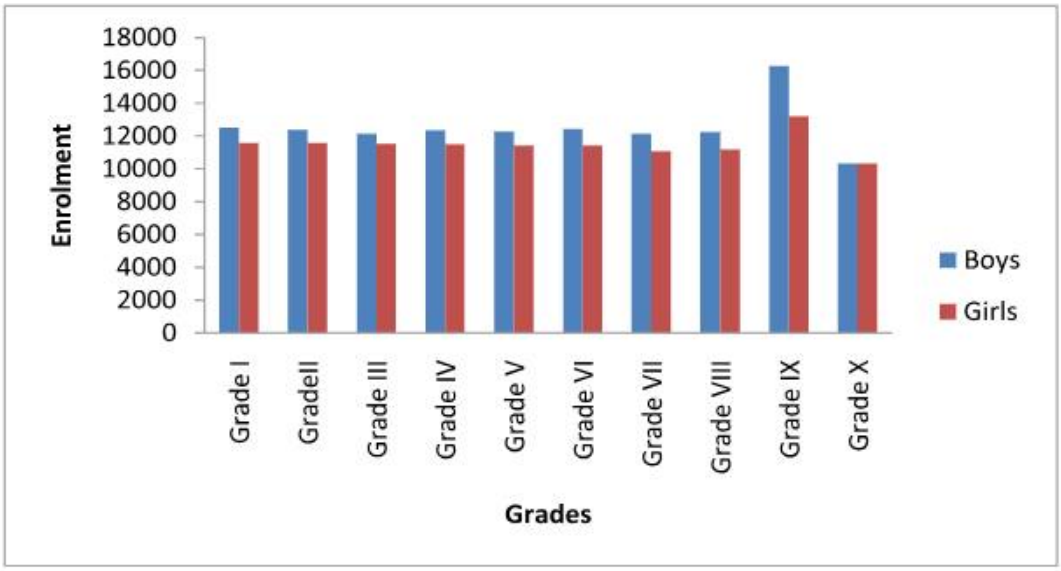
During the study, an attempt was made to get data by filing the Right to Information Act 2005 {Refer Appendix I (RTI Information application)}. The Directorate of Education replied that the applicant should write individually to each school and collect the information(Refer to Appendix II). We filed the first appeal since no response was received regarding other requested information. The additional information requested in the RTI was on new schools and the closure of schools from 2010 to 2015.

Another RTI application was filed to get information on a number of new schools and closed schools since 2010 (Refer to Appendix III). Though we received the reply (Refer to Appendix IV) stating that no information was available on the closure of schools later on, information was provided on new schools opened and also closed schools.

During the appeal, the concerned officers stated they could not reach out to all the schools in Goa. Therefore, during the hearing, the concerned officer agreed to share the data collected by the education department, provided that the applicant visits the directorate and does the data entry in the office. During the visit to carry out the data entry, it was discovered that the data forms could not be accessed for previous years as the office had shifted from one location to another office space. The administration could not provide access to other forms as they were kept in stores with many other documents, and it did not seem feasible. The data was also provided to U-DISE in a similar format. Therefore, we decided to utilise data from U-DISE to carry out the analysis. Also, another reason was that the Directorate informed in response to RTI that except for enrolment data, they do not maintain the data requested (See Appendix II)

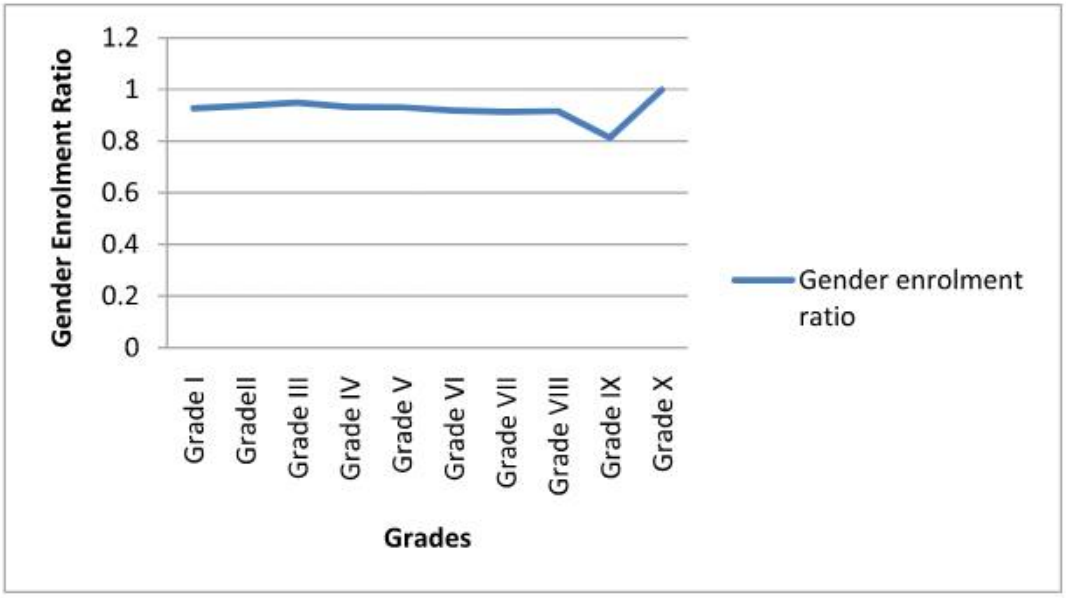
We tried to analyse the enrolment data from the educational statistics for 2015-2016 and calculated the grade-wise gender enrolment ratio. If we compare the data with U-DISE, we observe variations in the gender enrolment ratio. This may be due to the exclusion of central government school enrolment data by the Directorate of Education, Government of Goa.

Figure 7.4: Grade-wise enrolment in 2015-2016



Source: Compiled by the author based on (Government of Goa 2016)
Note: Excluding Central Government Enrolment for 2015-2016

Figure 7.5: Gender Enrolment Ratio for 2015-2016



Source: Compiled by the author based on (Government of Goa 2016)

Note: Excluding Central Government Enrolment for 2015-2016

We observed that the gender enrolment ratio for all the grades in 2015-2016, excluding central government enrolment data, is below 1(Refer Figure 7.6). This analysis was carried out using data based on educational statistics published by the Goa government.

We analysed the school data obtained on the newly opened and closed schools since 2010 after the appeal was filed. As per the data provided, 153 new schools were opened throughout Goa from 2010 to 2015. 73% of the schools started with Grade I, and 27% started from Grade V. The medium of instruction for newly opened Grade I schools was 57% Marathi, 28% Konkani, 10% English, 3% Urdu, and 2% Hindi. The medium of instruction for grade V schools was 96% English, 2% Marathi and 2% Hindi. 49% of the schools were opened in 2012-13.

About the closing of schools, a total of 179 schools were closed. 86% of schools closed due to no enrolment, and 14% due to enrolment of less than ten students. The Directorate of Education had amalgamated 49 schools with other nearby schools. Most of the schools closed were government primary schools; two among them were Govt. middle schools closed due to no enrolment, which were English medium schools. Both were located in rural areas.

Table 7.6 Number of new schools opened since 2010

Taluka	Grade I	Grade V	Total	%
Bardez	15	5	20	13.07
Bicholim	11	2	13	7.5
Canacona	12	3	15	9.8
Dharbandora	2	0	2	1.31
Mormugao	7	5	12	7.84
Pernem	11	2	13	7.5
Ponda	19	7	26	16.99
Quepem	4	2	6	3.92
Salcete	15	10	25	16.34
Sattari	3	1	4	2.61
Tiswadi	12	5	17	11.11
Total	111	42	153	100

Source: Author's compilation based on RTI information

7.11 OBSERVATIONS FROM THE FIELD

During the study period, the author had an opportunity to be part of three academic field visits carried out by the Women's Studies Programme. One was at Vavurla, Molkarnem, and Kajughoto in Quepem, Goa. At Vavurla, the primary school was based in the village in a rented space in a house. The school was functioning in a single room where a single teacher taught the students of grades I to IV together. The school was located in a high-terrain area that served the tribal population within the village.

The school at Molkornem was a high school that also catered to the tribal population. Because of its sanitation and hygiene practices, this school was awarded the Swachh Vidyalaya Puraskar. The performance of the schools is evaluated under the following categories: water, toilets, hand washing facilities with soap, operations and maintenance, behaviour change and capacity building. This school had gender-specific toilets and menstrual hygiene facilities in the girls' toilet.

The school at Kajughoto was a primary school built by the community, and it is also located in a hilly area. The children face difficulty in accessing middle and secondary education. This school had a limited number of students attending Grades I to Grade IV.

To check the feasibility of collecting primary data from schools, the researcher visited four schools based in the North Goa district and attempted to collect data using a study questionnaire. The researcher had to conduct follow-up visits and successfully obtained data from only two schools after multiple visits. The school attendance data could not be obtained easily as the researcher had to make a copy of the attendance register for respective months. During the visit, on anonymity, the school's headmaster revealed that the students who had not collected their leaving certificate were still on the attendance roll, showing additional students. The students not attending are still considered enrolled in a particular grade. Also, observations were made during the school visits regarding the number of functional toilets. The photo documentation of the toilets of only

one school was done (Refer to Photos 1 to 4). The number of toilets reported as functional were in bad condition; for example, the flush was not working, there were broken doors, and there was no running tap water.

The toilets were locked in the boy's and girl's toilets. There was no main door at the entrance for the boys' toilet and urinals, and there was no running water. Two toilets had no door, and one was locked in the boy's toilet.

Regarding girls' toilets, two toilets were locked, and there was no flush tank in one of the toilets. A flush tank was available in one toilet, but no tap water. Two plastic drums were filled with water in the girl's toilet. Also, a sanitary napkin dispensing machine and incinerator were installed in the girls' toilet. There were no mugs available in the toilets. A bucket with water was available for hand washing, but there was no soap or liquid soap facility. One staff toilet in that particular school was used, especially by female staff and teachers.

Photo 1: Broken doors of toilets in government school



Source: Author's documentation on 2/8/2018 during a visit to a school

Photo 2: Locked toilets



Source: Author's documentation on 2/8/2018 during a visit to the school

Photo 3: a) Toilet for teachers and non-teaching staff and b) Non-functional girls' toilet without water



Source: Author's documentation on 2/8/2018 during a visit to a school

Photo 4: Hand washing area, sanitary napkin dispenser and incinerator



Source: Author's documentation on 2/8/2018 during a visit to a school

Through the photos, we noticed that there is no proper maintenance of toilets and no running water inside the toilets.

In this chapter, we have presented the Goa-specific findings based on the U-DISE data. The RTE Act 2009 has proved to be effective in improving the school infrastructure facilities in Goa. The gender enrolment ratio at the secondary level needs to be addressed. The field visit to the government school revealed that the basic hand washing facility is lacking and toilets are not functional. We noticed that a sanitary napkin dispenser and incinerator had been installed. The toilet facility's functionality should be assessed by the students using the facility. Basic sanitation facilities must be provided in schools to manage menstruation effectively, which will encourage girls to complete their education and be empowered.

Next, we present the objective wise findings of the study.

CHAPTER 8

FINDINGS

In this study, we have assessed the impact of the RTE Act 2009 and the fulfilment of WHO-WASH standards and SBSV and MHM guidelines in schools in India. In this chapter, we have presented objective wise findings of the study. We have revisited the research questions and examine how far the research objectives have been met using the secondary databases: U-DISE IHDS, NSSO, and NFHS. The key findings of the study are briefly stated below.

This study found that 1) there has been significant improvement in the provision of infrastructure facilities in the schools after the implementation of the RTE Act 2009, 2) the gender enrolment ratio has improved post-RTE Act 2009, 3) there has been improvement in the availability of school toilet facilities and better compliance of toilets to WHO WASH standards and SBSV for boys and girls post-RTE Act 2009. The assessment of reasons for school drop-outs showed an overall reduction in drop-outs. However, we found the female drop-outs are higher than males at the secondary level. The reasons for drop-outs need to be studied in detail from the secondary databases, and we could not find the reasons linked to school infrastructure, especially WASH factors. The data related to MHM infrastructure facilities is absent in all the databases assessed. We have suggested considering more coding options in future surveys, which can assist in understanding the reasons for drop-outs in India. The study has also identified the data gaps in all the databases, which provides direction to researchers, education planners and administrators for ensuring data gathering, which can assist in monitoring the programs and policies to ensure education for all. There were many provisions of the RTE Act 2009 that we could not assess due to the nonavailability of data in the public domain. The absence of data poses a hurdle to monitoring of the implementation and fulfilment of the provisions of the RTE Act 2009.

Regarding the infrastructure requirements given in SDG 4 under target 4a, WHO standards for WASH requirements and the national guidelines on SBSV and MHM, we found limited data to carry out the analysis and is discussed in the limitations of the study in the concluding chapter.

We now revisit the research questions and the four research objectives of this study.

8.1 OBJECTIVE 1: TO EVALUATE THE ROLE OF THE RTE ACT 2009 IN FULFILLING SDG TARGETS RELATED TO EDUCATION AND COMPLIANCE WITH WASH STANDARDS GIVEN BY THE WHO, SBSV AND MHM GUIDELINES OF THE GOVERNMENT OF INDIA.

To meet this study objective, we first studied the various provisions of the RTE Act 2009. We compared the study instruments used in the four databases to identify the data to monitor and assess the requirements of the Act. We were able to locate the data related to school infrastructure, which can help us monitor specific provisions of the RTE Act 2009 and will also assist in meeting the SDG targets related to school infrastructure as outlined in SDG 4a. We also assessed the policies and programs linked to WASH in schools given by international and national agencies. The following research questions helped us meet the objective 1.

8.1.1 Has the RTE Act 2009 increased access to education by increasing enrolment and reducing drop-out?

We found improvement in access to education through an increase in enrolment and a reduction in the drop-outs post-RTE Act 2009 in India. We also calculated the gender enrolment ratio using panel data created using the U-DISE database. We have seen improvement in the gender enrolment ratio at the secondary level in most states. However, a few states, Arunachal Pradesh, Haryana, Punjab, Kerala, Goa and Gujarat, show a gender enrolment ratio below one at secondary school in 2015 post-RTE Act 2009, as discussed in

Chapter 4. Overall, we found improvement in the enrolment of girls in schools and the gender enrolment ratio at secondary levels post-RTE Act 2009. However, it is still a concern that females are more likely to drop-out of school at higher grade levels. We noticed an overall improvement in the enrolment ratio among girls at the secondary level post-RTE Act 2009. Before the RTE Act 2009, we observed that the gender ratio was below one, mainly from Grades VI-VIII, which showed improvement in 2015, reaching a score equal to one. We can attribute this improvement to the RTE Act 2009, which mandates compulsory education of children up to 14 years, approximately up to Grade VIII. The goal of the RTE Act is to provide quality universal elementary education. Our study contributes to the existing literature by presenting the calculation of the gender enrolment ratio from Grade I to Grade VIII for all the states and UTs at the national level. Also, it compares the gender enrolment ratio during the pre, and post-RTE Act 2009.

We could not calculate the gender enrolment ratio beyond Grade VIII as enrolment data for Grade IX to Grade XII was available only from 2013 onwards and could not be compared for the pre-RTE period. Only the U-DISE database provided gender-segregated grade-wise enrolment data, enabling us to assess school enrolment during pre, and post-RTE periods. Regarding access to education, we did not find data to analyse the data related to the admission process followed in schools, like admission screening and accepting donations at the entry-level.

The data on students repeating the grade is available for the U-DISE database. However, the No-Detention Policy (NDP) was enforced in the RTE Act 2009, and the reasons for drop-outs include failure or repeating the class, making it challenging to calculate the drop-outs using U-DISE data. About drop-outs, we lack data on new enrolment in each grade and on the number of students who passed in the respective grades. Also, data on the number of students admitted between the academic years due to school change will be required to assess the grade-wise drop-outs. To calculate the grade-wise and gender-wise drop-outs, we need the gender-segregated data on the number of

students enrolled in each grade, gender-wise how many were promoted from one grade to another, and gender-wise the number of students repeating each grade from the previous academic year. Besides, the data must be provided if any new student is enrolled in a particular grade.

Studies reviewed also used secondary databases to study the school drop-outs in India (Rangachar 2002; Jayachandran 2007; Sikdar and Mukherjee 2012; Gouda and Sekher 2014; Mukesh and Srivastava 2015; Dutta 2017; Adukia 2017; Ghosh 2018). Researchers have used the individual datasets of singular rounds of NSSO in their studies. However, our study tries to contribute to this literature by presenting a different approach to using the databases based on the available data type. We attempted to study the school drop-outs using the two rounds of NSSO (64^{th} R and 71^{st} R) and NFHS (NFHS 3 and NFHS 4) databases. We calculated the percentage of drop-outs from the household data based on the reasons for not attending school. We found a reduction in the drop-outs during post-RTE Act 2009 in NSSO and NFHS databases.

Regarding the reduction in drop-outs, NSSO and NFHS databases have helped us understand the reasons for drop-outs in India during pre and post-RTE Act 2009. Further, we analysed and presented the gender and age-wise reasons for drop-outs to understand the gender and age of children dropping out of school. There has been an increase and improvement in the enrolment rate post-RTE Act 2009; we cannot wholly attribute the improvement to the RTE Act 2009 as the government has taken many other policy initiatives to improve school enrolment in India.

We added to the existing literature by providing analysis based on the age, gender, and social group at the national level by comparing it to the pre and post-RTE Act 2009. We have also been able to contribute by presenting gender-wise reasons for drop-outs and raising the alarm about the failure to monitor the provisions of the RTE Act 2009 of providing free and compulsory education.

Next, we move to the research question 2 of Objective 1

8.1.2 Will India meet the SDG targets of Goal 4, especially the infrastructure requirements given in Target 4a?

We attempted to understand India's position in meeting the targets listed in SDG 4 in providing quality education. As we were trying to evaluate the RTE Act 2009, we observed that SDG 4 had listed the following infrastructure requirements under target 4a that schools need to meet to ensure quality education:

(i) proportion of schools with access to electricity,
(ii) internet for pedagogical purposes,
(iii) availability of computers,
(iv) adapted infrastructure and materials for students with disabilities,
(v) basic drinking water,
(vi) single-sex specific basic sanitation facilities, and
(vii) basic hand washing facilities (UN 2016: 7)

We identified the data from U-DISE and IHDS databases to assess the above-listed school infrastructure Requirements. NSSO and NFHS databases do not provide data on infrastructure facilities in schools. As far as the above infrastructure requirements are concerned, we found the following from the analysis:

We found that the proportion of schools with access to electricity has improved post-RTE Act 2009. U-DISE data collects data on the availability of internet connectivity but is not available in the public domain. The provision of computers in schools improved over the years post-RTE Act 2009. The computer-aided lab was provided in schools, which showed a meagre percentage increase in schools having this facility compared to 2010, and a very high percentage of schools still do not have computers available for pedagogical purposes. The data on the internet connectivity functional in the labs is not available in the public domain.

Regarding the availability of adapted infrastructure and materials for students with disabilities, we found that the schools have been equipped with ramps post-RTE Act 2009. In contrast, data on railings and disabled-friendly toilets has been collected but is unavailable in the public domain. We saw from the analysed school data that the schools have improved in providing basic drinking water facilities. However, whether the drinking water is safe and adequate is not known. The number of single-sex-specific toilets has increased. Concerning improvement, the mere availability of a toilet is not enough; the toilet should also be functional. The definition of the functional toilet by U-DISE does not include the availability of water inside the toilet (NIEPA 2015: 5). U-DISE collects data on the functional toilet with water availability separately, but the data is not available for analysis in the public domain. Finally, the basic handwashing facilities should include the availability of soap and data on the availability of handwashing facilities with soap is collected but not placed in the public domain.

Compared to U-DISE data, we also assessed the infrastructure requirements based on IHDS data. We found improvement in infrastructure facilities in schools in IHDS II compared to IHDS I. However, the schools surveyed in both rounds of the IHDS database differ; therefore, we could not compare the schools to assess the improvement in infrastructure facilities.

Meeting the targets listed in SDG 4 under 4a related to infrastructure requirements from the findings shows that we can assess a few specific aspects of the infrastructure as data is unavailable. On a few indicators, data was collected but was not available in the public domain, making it challenging to understand the achievement of the SDG 4 targets under 4a. Due to limited data availability, data gaps make it difficult to monitor the fulfilment of the targets.

We contribute to the literature by providing evidence through our findings on the status of schools in meeting the infrastructure requirements listed in SDG 4a. The data assessed provided evidence on the school infrastructure requirements status and compared it to pre- and post-RTE Act

2009. There was an improvement in the infrastructure facilities post-RTE Act 2009 compared to the pre-RTE period.

The infrastructure requirements assessed as per the provisions of the RTE Act 2009 have improved significantly in 2015 compared to 2010. The reviewed databases suggest a revision of study instruments used in the databases to provide adequate data to determine the school infrastructure requirements as listed in SDG 4 under target 4a. Due to the lack of data on specific indicators, monitoring the fulfilment of SDG 4 target 4a is complex. Therefore, a better management information system for school-level data is suggested.

Next, we attempt to answer the research question on the status of school toilets in India.

8.1.3 Are adequate toilets for boys and girls in schools meeting the WASH guidelines?

In this study, we tried to assess whether the schools are meeting the guidelines set by international and national policies concerning the availability of toilets for boys and girls. Before 2012, the type of toilet data collected included boy's toilets, girl's toilets, and common toilets, and the data was coded as a dichotomous variable with yes and no responses. The data on boys, girls, and common toilets informed us about the availability of toilets in schools. The data on the common toilets was no longer collected by U-DISE after 2012. Data on the number of toilets was made available from 2009-2010 separately for boy's and girl's toilets based on the type of school, which helped us in calculating the compliance ratio for boys (1: 50 and 1: 40) and girls (1: 25 and 1: 40) given by WHO and SBSV guidelines respectively. The number of gender-specific toilets available in schools has shown improvement post-RTE Act 2009. The findings showed increased compliance with WHO-WASH and SBSV toilet guidelines post-RTE Act 2009 compared to 2010. Compliance was calculated for rural and urban schools for all states and UTs.

Using the IHDS database, we found that in IHDS I, 31% of the schools did not have toilet facilities, and the schools surveyed in IHDS II showed an increase in the number of toilets. In the IHDS database, data was collected on the location of toilets, which is absent in the U-DISE database. The location of toilets for girls, if present inside or outside the building, plays a significant role in considering the safety of the students. The location of girls' toilets inside the building has increased in IHDS II. The IHDS database also specifies the type of toilets available, which provides information on the quality of the toilet. The percentage of Ventilated Improved Pit (VIP) latrine facilities available for girls and boys increased in schools in IHDS II compared to IHDS I. The education administrators must systematically collect the toilet data and regularly verify it for functionality and maintenance. The data on functional toilets, including water availability, need to be available in the public domain, which is absent in the databases reviewed in this study.

Providing gender-specific toilets improved incredibly in schools, especially co-ed schools post-RTE Act 2009. This improvement can be attributed to emphasising the provision of sex-specific toilets in schools in various government intervention policies (The RTE Act 2009, BBBP, SBSV and MHM) to promote girls' education. Also, SDG 4 under target 4a and the WHO-WASH standards provide the guidelines based on international deliberations. The analysis related to the availability of toilets and comparison of toilet facilities available pre and post-RTE Act 2009 adds to the existing literature. There is no similarity in the data collected regarding questions between the U-DISE and IHDS databases. This study also provides new evidence by presenting data related to compliance with toilet ratios as per WHO –WASH standards and SBSV guidelines of the government of India. We did not find any studies looking at compliance with toilet ratio for schools in India as per WHO-WASH or SBSV Guidelines. We also compared the compliance to the pre and post-RTE Act 2009 periods.

8.1.4 Are these toilets functional as per the WASH guidelines?

The definition used by the U-DISE data to define a functional toilet did not include the availability of water inside the toilet till 2015 – 2016. We observed that though the study instrument collects data on water availability inside the toilet as a separate question, this data is not available in the public domain. How many of these toilets have water availability? In this study, we used the data supplied for functional toilets by U-DISE with minimal odor, unbroken seats, regularly cleaned and dry, working on the drainage system, accessible to users, and closable door (NIEPA 2015a: 5) was made available in the public domain. How many of the above toilets have water available for flushing and cleaning? Data on the number of urinals available in the schools was not available for analysis; separate toilets were available for boys and girls. In IHDS II, data on the functionality of toilets, including whether toilets are available for student use, have adequate water, and whether they are clean or not, was collected by observation. The analysis shows that students' toilets were locked in 23% of the schools and were not accessible to students for use. 41% of the schools in IHDS II reported having combined toilet facilities available for teachers and students. The criteria used to define a functional toilet need to be redefined to include the water inside the toilet for cleaning and handwashing. The present findings related to functional toilets add to the existing literature by providing insights into the guidelines for available toilets in schools and comparing the availability of toilets during pre and post-RTE periods.

Next, we assess the fulfilment of WASH guidelines adhering to international and national policies.

8.1.5 Are the schools meeting WASH guidelines given by WHO, RTE Act 2009, SBSV, and MHM?

We now discuss the findings of schools meeting the WASH guidelines stated by WHO, RTE Act 2009, SBSV, and MHM.

a. WHO WASH standards for schools in low-cost settings are:

i) access to good quality water facilities
ii) children and staff are to be provided sufficient, accessible, private, secured, clean and culturally appropriate toilets
iii) one toilet for every 25 female students
iv) one toilet for female staff
v) one toilet plus one urinal (or 50 cm of urinal wall) for every 50 male students
vi) one toilet for male staff
vii) males and females to have separate toilet facilities and entrances (Adams et al. 2009:22)

From the listed WASH requirements stated by WHO, we were able to assess only a few of them. To determine the water quality, we looked at the source of drinking water, but whether the drinking water is from an improved or unprotected source is unknown from the options used in coding during data collection. As per the WHO WASH standards, we attempted to calculate the ratio of toilets for female (1:25) and male (1:50) students. The compliance for WHO-WASH standards for boys and girls showed a significant increase in the number of toilets available in schools and a better compliance ratio from 2010 to 2015 based on the available functional toilet (which does not include water inside the toilet) data provided until 2015-2016. We found improvement in the toilet facilities in schools for both males and females, with separate toilets, whereas whether the entrance to toilets is separate is unknown. The guidelines also suggest culturally appropriate toilets, which cannot be assessed due to a lack of data. We did not find data on the availability of toilets for male and female staff; therefore, we suggest collecting this data and making it available in the public domain. Data on the number of urinals available in the schools is recorded but not available in the public domain.

Next, we look at WASH-related provisions of the RTE Act 2009.

b. WASH-related provisions of the RTE Act 2009

The RTE Act 2009 requires that each school meet the following infrastructure requirements related to WASH:

i) separate toilets for boys and girls,
ii) safe and adequate drinking water facility, and
i) a kitchen for cooking mid-day meals (GOI 2009:12).

We found that the provision of separate toilets for boys and girls in schools has improved and is being met in 2015 post-RTE Act 2009 compared to the pre-RTE period. Based on the findings, we could assess only the availability of drinking water facilities. However, whether the drinking water is safe and adequate could not be evaluated, as knowing the source of drinking water cannot justify whether the water provided in schools is safe. Water is required for multiple purposes: processing and cooking food, cleaning utensils, handwashing, flushing and cleaning inside the toilet, drinking water, and washing during MHM. We noticed that the RTE Act 2009 does not consider the MHM needs of the students. Handwashing is also not included in the provisions of the RTE Act 2009. In the U-DISE database, whether a mid-day meal is provided is collected and provided in the public domain. However, whether cooking space and other related infrastructure are provided is not available in the public domain to assess if a kitchen is available for cooking. Cooking involves the provision of facilities for processing the food with water availability. We could not assess the infrastructure requirements related to kitchen and drinking water.

Next, we look at the fulfilment of WASH requirements per SBSV school guidelines.

c. WASH requirements as per SBSV Guidelines

The SBSV guidelines suggest functioning and well-maintained water, sanitation and hygiene facilities in schools, which include:

i) Separate toilets for boys and girls, with one unit having one toilet (WC) plus three urinals.

ii) one unit for every 40 students

iii) Menstrual hygiene management facilities (soap, adequate and private space for changing, proper water for cloth washing and disposal facilities for menstrual waste, including an incinerator and dust bins).

iv) Group handwashing facilities with soap are available for 10-12 students to wash their hands simultaneously.

v) Child-friendly and sustainable safe drinking water and adequate water for handwashing are to be followed daily.

vi) Water for school cleaning, food preparation, and cooking.

vii) Safely managed storage of drinking water practices.

viii) Regularly maintain sanitation facilities through the Annual Maintenance Contract(AMC).

i) Regular/daily inspection of water and sanitation facilities(GOI 2014: 17).

Regarding SBSV guidelines, we found that we cannot assess all the WASH requirements listed due to the unavailability of data. Data on the number of toilets is available. Still, data on the number of urinals, MHM facilities, group handwashing facilities, whether the safe and child-friendly source of drinking water is available, the quantity of water available for use, water storage facility and regular maintenance of the sanitation facilities are not available. Data on the above aspects is unavailable in any of the databases reviewed in this study. We assessed the status of providing separate toilets for boys and girls in schools. Data on water availability for school cleaning, food processing and cooking has not been collected. We calculated the ratio of toilets based on enrolment data only up to Grade VIII as we did not have the enrolment details after Grade VIII till 2013. We carried out the analysis pre and post-RTE period, and we found that there has been an improvement in the number of toilets available for male and female students as per the SBSV guidelines. The compliance for SBSV guidelines on boys' and girl's toilets shows a significant increase in the number of

toilets available in schools and a better compliance ratio from 2010 to 2015 based on the available functional toilet (which does not include water inside the toilet) data provided until 2015-2016.

By finding the compliance ratio for the SBSV guidelines for toilets, we create evidence to inform the researchers, educational planners, and administrators, drawing their attention to consider collecting data on other requirements and the need to monitor the policies to ensure the successful implementation of the guidelines.

Next, we look at the WASH requirements mentioned in the MHM guidelines.

d. WASH requirements as per MHM Guidelines

The MHM guidelines require schools to have basic water and sanitation infrastructure, which includes:

i) A separate toilet for girls and boys
ii) A separate toilet for male and female teachers.
iii) 500 litres of water storage capacity and supply for every 100 students,
iv) soap availability for handwashing,
v) space for washing and cleaning menstrual products,
vi) facilities for the safe disposal of used menstrual products
vii) water is to be available inside the toilet with a tap or a dedicated water container in each toilet or cubicle
i) A mug for dispensing water for personal cleaning and hygiene (GOI 2015:17)

More specifically, the MHM guidelines focus on providing MHM facilities; currently, none of the databases collects the data. The data collected on toilets with water availability is unavailable in the public domain, limiting the analysis of school sanitation facilities, which is needed as per requirement number 'vii' listed in the guideline above. The data on monitoring MHM guidelines is unavailable except for separate toilets for girls and boys; we

could not assess any other school WASH requirements about MHM guidelines. We identified the gap in the literature on the availability of MHM facilities in schools and their importance for promoting girls' education (Pednekar et al., 2022). Therefore, we attempted to study the same using secondary databases to assess the schools with MHM facilities. We did not find data on MHM facilities till 2015-2016. Recent U-DISE plus data capture format collects data on the availability of sanitary pad vending machines, incinerators in the toilet, and the availability of soap for handwashing (MoE 2023). The data on various aspects of WASH is not available for researchers to analyse in the public domain. This study reviewed the databases up to 2015-2016. Though we have not used the database after 2015, we have kept a check on revisions in the data capture format to keep us updated. Also we checked the data made available recently, though the data is collected the data on MHM facilities is still not available in the public domain.

The current data gaps can inform and direct the researchers and organisations involved in national-level surveys to fill the gap, enabling researchers to monitor the programs and policies using this data. For the first time in this study, an assessment of policies was attempted to monitor the implementation of the RTE Act 2009 and WASH-related policies in schools by using secondary databases and comparing the status of WASH facilities during pre and post-RTE Act 2009. In November 2023, the Ministry of Health and Family Welfare, Government of India, placed the draft national menstrual hygiene policy in the public domain, inviting comments and suggestions. This will be the first policy to lay the foundation for prioritising the MHM needs of all girls and women in the country. MHM facilities are an essential component of WASH requirements, and this new policy advocates for inclusive and gender-responsive WASH facilities in schools (MOHFW 2023).

8.1.6 To what extent available secondary data help us monitor WASH facilities in schools?

WASH guidelines provide the measure to assess whether the facilities are adequate. WASH plays a significant role in an individual's life. We can

monitor limited WASH facilities using secondary data. To evaluate, we require adequate and timely data from the schools, which needs to be strengthened by the government agencies or institutions responsible for collecting data. We do not have information on whether the data on the functionality of toilets is verified. We assessed whether the schools meet the guidelines set by international and national policies concerning the availability of WASH facilities in schools(Pednekar, Desouza, and Mukhopadhyay 2024). No data on MHM facilities was available until 2015-16. Also, data on hand washing facilities with soap is unavailable in the public domain. Our study focused on and reviewed the databases until 2015-2016 only and did not attempt to analyze the data beyond the period specified due to the study's limited scope. We can take up the task of analyzing the data beyond 2015-2016 in the near future. There is a need for empirical studies and revision of the instruments used in the survey to collect the data, allowing the researchers to monitor the availability of the WASH facilities in schools in India. There is a difference in WASH infrastructure compliance between rural and urban areas. The IHDS databases provide data on basic toilet facilities but do not provide information related to hand washing and facilities related to menstrual hygiene management. NSSO and NFHS databases are based on household surveys and do not collect data on WASH-related school infrastructure facilities. We cannot fully monitor the WASH facilities using secondary databases reviewed in this study.

We add to the literature by presenting the findings related to compliance with the WHO-WASH school facilities about providing separate toilets for male and female students.

8.1.7 Are there any differences in WASH compliance in school infrastructure between urban and rural areas?

We observed an improvement in the overall compliance ratio to toilets in 2015 for WHO –WASH and SBSV guidelines compared to 2010 among boys and girls. Compliance with WHO-WASH and SBSV guidelines among girls was

lower compared to boys in rural and urban areas. The difference in compliance could be due to variation in the ratio of students per toilet as per WHO — WASH guidelines between boys(1: 50) and girls (1: 25). The ratio of students per toilet among boys is almost double that of female students. The infrastructure requirements specified in the guidelines differ based on gender.

No literature was available regarding schools' compliance with WHO-WASH and SBSV guidelines. In this study, for the first time, we attempted to conduct an exercise that compares the status of WASH facilities in schools and relates it to pre- and post-RTE Act 2009 assessment.

Next, we answer the research questions related to the second objective of our study.

8.2 OBJECTIVE 2: TO STUDY THE IMPACT OF EDUCATIONAL POLICIES IN INDIA ON SCHOOL INFRASTRUCTURE AND SCHOOL DROP-OUTS FROM A GENDER PERSPECTIVE.

The research questions associated with this objective attempt to assess the impact of the RTE Act 2009 on school enrolment, infrastructure and school dropouts from the gender perspective. Also, the questions are related to meeting the provisions of the Act and whether the RTE Act has helped in achieving the WASH requirements given under various policies WHO-WASH, SBSV, and MHM discussed in the thesis. Below, we have listed the research questions and answers based on our analysis.

8.2.1 Can we measure and examine the gender ratio grade-wise to understand the differences in enrolment?

Yes, we could estimate and calculate the gender ratio in enrolment up to Grade VIII in co-ed schools, as enrolment data for Grade IX to Grade XII was added only from 2013 onwards in the U-DISE database. In this study, we calculated the gender ratio up to Grade VIII only. Gender-wise and grade-wise enrolment data is provided, which helps estimate the gender ratio and differences in

enrolment status at different grades. However, gender-segregated data on enrolment is unavailable in the IHDS, NSSO and NFHS databases. U-DISE is the only database reviewed in this study that provides school-level data on an annual basis at the national level.

We add to the literature by presenting the grade-wise gender enrolment ratio compared to pre and post-RTE Act 2009 from Grade I to Grade VIII to understand the gender enrolment status in schools at the national level. In our study, we have tried to understand the enrolment ensuring completion of elementary school education (up to Grade VIII) in India.

8.2.2 Are schools able to meet the provisions of the RTE Act 2009?

We found that the accessibility of schools has improved significantly after the RTE Act 2009 was enacted and notified in April 2010. We could not assess whether the schools could meet all the provisions of the RTE Act 2009 (Listed in Chapter 1). With the help of U-DISE and IHDS databases, we attempted to monitor if the schools were able to meet the following infrastructure-related provisions of the RTE Act 2009 as given below:

1. building accessible in all weathers,
2. at least one classroom and a room for the head teacher cum storeroom,
3. barrier-free access for all children,
4. separate toilets for boys and girls,
5. safe and adequate drinking water facility,
6. a kitchen for cooking mid-day meals,
7. a playground and
8. a safe and secured compound wall (GOI 2009:12).

Regarding the availability of barrier-free access for children with special needs, we did not find adequate data to assess the same till 2015-2016. Similarly, whether at least one classroom is allotted to each grade in school could not be evaluated, as we did not find the data on classrooms assigned for each grade. We found an improvement in the provision of separate toilets for boys and girls, the availability of playgrounds, and the

efforts to provide secure compound walls for school buildings after implementing the RTE Act 2009. About the kitchen, there is provision to ensure that mid-day meals are cooked on school premises. The U-DISE only collected information on mid-day meals provided by government and government-aided schools. However, we do not have data on the number of schools cooking mid-day meals post-RTE Act 2015 in the public domain; therefore, we could not assess this. We could determine the provision related to the school constitution of School Management Committees. How much SMCs were instrumental and influential in making decisions related to the school development program is unknown, and we could not assess the same due to a lack of data.

We did not find the data about other provisions of the Act available in the public domain. We have, however, contributed to the literature by analysing the data on infrastructure provisions and identifying the gaps and challenges in assessing the same. We could add to the existing literature regarding specific infrastructure provisions and suggest future directions for generating adequate data.

Next, we try to find we can assess the impact of the RTE Act 2009.

8.2.3 Can we assess the impact of the RTE Act 2009 using secondary data?

The reviewed databases were independent and did not focus on data collection related to the RTE Act 2009 provisions. To assess the impact of the RTE Act 2009, we did not find secondary databases that collected data only on the requirements of the RTE Act 2009. U-DISE database contains a lot of information about schools across India. U-DISE data included questions related to the RTE Act 2009 provisions from 2010 onwards. The data on specific requirements of the Act were assessed, and some provisions data were collected as per the data capture format. Still, the data was not available in the public domain or was inadequate in terms of completeness.

However, in this study, we have utilised data from 2005-2015, which enabled us to understand the fulfilment of the specific provisions of the RTE Act 2009 related to infrastructure requirements discussed in the second objective section under point number 8.2.2. However, we found insufficient data to assess the impact of the RTE Act 2009 as the data collected is unavailable to researchers in the public domain. Since only limited data is available in the public domain, we cannot assess the impact of the RTE Act 2009 using secondary data.

IHDS data also provides data relevant to specific infrastructure provisions of the RTE Act 2009 only. Since no recent IHDS survey has been conducted after IHDS-II in 2011-2012, the data available is more than a decade old to assess the impact of the RTE Act 2009. Further school information data cannot be compared between the IHDS rounds as there is variation in the school questionnaire used in both rounds. Also, the schools surveyed in IHDS-I differ from IHDS-II, limiting our analysis to assess the impact of the RTE Act 2009. The IHDS questionnaire does not include questions related to the provisions of the RTE Act 2009, and during 2011-2012, the RTE Act implementation process started.

NSSO and NFHS databases are based on household surveys and do not provide data related to the provisions of the RTE Act 2009. The NSSO offers data on education participation and expenditure from the household perspective, and both these databases provide data on reasons for not attending school, which we tried to assess for pre- and post-RTE periods and link the reasons related to the RTE Act provisions. We attempted to calculate the percentage of drop-outs based on age, gender and social groups. We observed that though the RTE Act 2009 is to provide free and compulsory education to all children between 6 and 14 years, children are still out of school due to cost factors and access-related factors. We contribute to the literature by identifying the challenges regarding data gaps in assessing the impact of the RTE Act 2009 using secondary data. The education planners and administrators need to make an effort to generate data related to the provisions

of the RTE Act 2009 to monitor its effectiveness in meeting the universal agenda of providing elementary school education in India.

We can assess the impact of the RTE Act 2009 in meeting the WHO-WASH, SBSV and MHM guidelines from the available information.

8.2.4 Has the RTE Act 2009 improved WASH compliance in schools given by WHO, SBSV & MHM guidelines?

Yes, we have seen an improvement in WASH compliance as per the standards and guidelines of WHO, SBSV, and MHM regarding the availability of student toilets. The improvement in the availability of separate gender-specific toilets in co-ed schools was seen. Compliance has also improved regarding the number of student toilets as per WHO-WASH and SBSV Guidelines. Regarding the specifications of WASH requirements, we assessed a few of the requirements discussed earlier in objective 1. Data related to drinking water facilities is available, but data on whether the drinking water source is functional and safe for drinking was unavailable. There are data gaps in monitoring the targets related to WASH infrastructure in schools in India, as discussed above.

Due to the lack of data available in the public domain, it is challenging to assess the fulfilment of national and international commitments. No data was available on school MHM facilities until 2015-2016 in any of the databases reviewed in this study. Through the above findings, we can inform the research community of the strengths and weaknesses of the secondary databases in evaluating the WASH-related facilities in schools and the challenges to assess the impact of the RTE Act 2009 in meeting the WHO-WASH standards, SBSV and MHM guidelines.

8.2.5 Are there significant improvements in WASH facilities post-RTE Act 2009?

Yes, there are significant improvements in the WASH facilities post-RTE Act 2009, as evidenced by U-DISE data analysis. We found a lot of improvement in WASH facilities in schools as per the RTE Act 2009. The SBSV guidelines came into existence in 2014, and MHM in 2015. Our study tried to assess the fulfilment of the new guidelines within one year of their implementation. However, we cannot use their influence to some extent to improve the WASH facilities in schools in India. The RTE Act 2009 specified that there should be separate toilets for boys and girls, which we were able to monitor using U-DISE and IHDS databases, and we noticed significant improvements in the availability of toilets in schools post-RTE Act 2009. Safe and adequate drinking water facility: there has been improvement in the availability of drinking water. However, data regarding whether the continuous drinking water facility is available, safe, and adequate is not available for assessment in the public domain. The RTE Act 2009 has no provision regarding the availability of MHM facilities in schools. However, the SBSV and MHM guidelines specifically talk about the MHM facilities. The data on the availability of MHM facilities in schools for assessment is missing in all the four databases assessed till 2015- 2016. We could only evaluate limited facilities of schools falling in the ambit of WASH requirements as the guidelines we tried to monitor and evaluate. In the few facilities we could assess, we found significant improvements post-RTE Act 2009.

The study attempted to assess the status of WASH facilities post-RTE Act 2009 and contribute to the existing literature by giving direction to education planners and administrators on revising and strengthening the data collection process at the national level.

8.2.6 What is the status of school infrastructure after the implementation of the RTE Act 2009?

We have found that the school infrastructure has improved after implementing the RTE Act 2009. We noticed a significant improvement in the availability of separate gender-specific toilets, drinking water, playgrounds, and boundary walls available in schools after the enforcement of the RTE Act 2009. We analysed to check the status of school infrastructure during the pre, and post-RTE Act 2009 and found that the percentage of toilets available in schools during the pre-RTE period increased significantly in the post-RTE period for boys and girls.

Through the study, we have successfully monitored the implementation of the RTE Act 2009 regarding infrastructure requirements during pre and post-RTE Act 2009 and contributed to the existing literature.

8.2.7 With the RTE Act 2009, has there been any improvement in school enrolment from a gender perspective?

Yes, there has been improvement in enrolment data from a gender perspective, which is evident from the findings presented on the gender enrolment ratio in Chapter 4. We found that after five years of implementing the RTE Act 2009 (2015), the gender enrolment ratio has improved significantly compared to 2010 all over the country. We found that the percentage of schools based in government buildings reduced in 2015 (64%) compared to 2010 (55%). And schools based in private buildings increased to 15% as compared to 10% in 2010. The number of private schools increased in almost all the states in 2015 compared to 2010. Regarding school enrolment of marginalized and disadvantaged communities, the closure or unavailability of public schools may impact the completion of elementary education. We have found from the analysis of reasons based on social groups that the children from SC and ST communities are more likely to drop-out before completion of elementary schooling.

Our study tried to understand the girls' education status and the enrolment of girls in school. We find that post-RTE Act 2009, the enrolment ratio has improved significantly compared to the pre-RTE period. The improvements cannot be attributed totally to the implementation of the RTE Act 2009, and there may be other factors that may have contributed to improving the enrolment, which we may have overlooked. We acknowledge the state government's efforts in implementing schemes such as distributing bicycles for female students, which have contributed to keeping girls in schools, resulting in a better enrolment ratio at the secondary level. However, our study contributes by providing evidence that there is improvement in enrolment in schools after the implementation of the Act (2015) compared to the pre–RTE period (2010).

Next, we discuss the third objective of our study, which focuses on Goa-specific analysis.

8.3 TO EVALUATE THE RTE ACT IMPLEMENTATION IN INDIA WITH PARTICULAR REFERENCE TO GOA

The research questions related to objective three are discussed below:

8.3.1 What is the status on implementation of the RTE Act 2009 in Goa?

For Goa, the state notified the RTE Act 2009 in August 2012. We assessed the implementation of the Act in Goa for pre- and post-RTE Act 2009, and the findings are discussed in Chapter 7. We found an improvement in the infrastructure facilities, such as providing separate toilets for boys and girls in schools. Similar to the challenges faced in assessing the status of implementation of the RTE Act 2009 at the national level, we could not monitor all the infrastructure requirements of the Act due to inadequate data.

8.3.2 Has school infrastructure improved in Goa after implementing the RTE Act 2009?

The school infrastructure facilities have improved significantly after implementing the RTE Act 2009 in Goa. Post-RTE Act 2009, we have seen that all the schools in Goa have at least a minimum of one toilet for girls and boys. The other school infrastructure has also improved, providing drinking water, a playground, and a safe and secured boundary wall. We could not assess all the infrastructure requirements due to inadequate data, as data was unavailable in the public domain.

8.3.3 Do schools in Goa comply with the WASH guidelines or targets given by the RTE Act 2009, WHO, SBSV and MHM?

Yes, the compliance with the WASH guidelines as we have listed in objective one and research question e. We find Goa's findings to be similar to national-level findings. Goa is small in size and is considered a highly developed state. We found that infrastructure requirements in schools have improved significantly in Goa. However, during the field visit, we noticed that toilets were inaccessible to students as they were locked or broken. During the field visit, we observed that the schools had sanitary vending machines and incinerators inside the toilets, as discussed in Chapter 7. Suppose the availability of MHM facilities is to be assessed. In that case, one cannot rely entirely on secondary databases as the data collected is inadequate, unavailable in the public domain, or never collected. There is a need for an empirical study to understand the status of WASH facilities in schools explicitly designed to assess the fulfilment of the policies and programs we attempted to evaluate based on the secondary data is inadequate.

We contribute to the literature by presenting our findings related to the evaluation of the RTE Act 2009 carried out for Goa, comparing the pre, and post-RTE periods. Also, the assessment of WASH requirements is made available for schools in Goa for the first time.

Finally, we discuss the last objective of our study.

8.4 TO CRITICALLY EVALUATE THE DATA GAPS IN SCHOOL DATA.

The research questions related to objective 4 are to identify the data gaps in the secondary databases.

8.4.1 Can we measure the drop-out rate in India using available secondary data?

In our study, we reviewed four national-level databases. U-DISE and IHDS databases provide data related to schools. NSSO and NFHS provide data at the household level. None of the databases directly focus on measuring the drop-outs in India. The NSSO and NFHS databases provide the data on reasons for not attending school. Both databases offer different reasons used in the survey to code the reasons for not attending school. In the case of NSSO, we found a difference in reasons used for coding in 64 R and 71 R. Between the two rounds of NSSO, we could not compare the reasons. In the NFHS database, both NFHS 3 and NFHS 4 used a standard set of reasons, and we could link the reasons to some extent to the provisions of the RTE Act 2009. The duration and time of the survey differ, leaving no scope for comparability between the two databases and linking the rounds. We compared the reasons based on age, gender and social groups for each round separately for each database. We noticed that the codes in both databases did not have reasons, which may be the probable causes or reasons for drop-out among children. Many other reasons associated with drop-outs are not considered in either of the databases. There is a need to explore and collect data from school authorities about students not attending school. The t-test result between the two rounds of NSSO shows a substantial decline in the drop-out rate from 64 R to 71 R based on gender. To assess the drop-outs, we need to have adequate data on the number of children enrolled in each grade at the start of the academic year and the number of students promoted or detained in the class

enrolled. We used the reasons to estimate the percentage of drop-outs from the total sample population surveyed in the age group analysed in the study. We found a decline in the drop-out rate; however, the drop-out rate among girls continues to be higher than among males at the secondary level. There is a need to explore and study the reasons for drop-outs, especially among girls.

8.4.2 What methods are used to collect data, and how can these processes be strengthened?

The U-DISE and IHDS are school-based surveys, and survey questionnaires were used to collect information from schools. The secondary databases reviewed have limitations, and the survey instruments used to collect data need revision. The Ministry of Human Resource and Development (2019) has expressed concern about the quality and reliability of U-DISE data related to infrastructure and enrolment data (MHRD 2019). In our study, we obtained the data from NIEPA –an agency responsible for data collection and processing till 2017-2018. From 2018-2019 onwards, data collection will be carried out by the Department of School Education and Literacy headed by the Ministry of Human Resource and Development, Ministry of Education, New Delhi. However, it is evident from our research that the data is inadequate to use for assessment. Still, some data has allowed us to conduct the analysis, which can help improve the data collection process. The data should be made available in a limited time for researchers and policymakers to monitor and develop the intervention. The government must regularly follow a timely and continuous data collection process. Data should be correctly verified, and the reliability of data also needs to be checked.

Regarding the IHDS database, school data was collected in two rounds: IHDS I in 2005-2006 and IHDS II in 2011-2012. The focus of IHDS data on schools was restricted to primary schools only. The data collected is outdated in terms of time period, as no recent survey has been conducted after 2011-2012. We have used this database as it provides information on school infrastructure and covers primary education falling in the ambit of the RTE

Act 2009. The sample schools surveyed in IHDS I differed from those observed in IHDS II, limiting our analysis as we could not compare the status of infrastructure improvement in the schools between the two rounds. We assessed each round separately. IHDS data revealed that there is discrimination based on caste in 4% of the schools concerning drinking water sources, which is a violation under the RTE Act 2009.

We can strengthen the processes by monitoring the progress of every student at the school and household level. Data on each student should be collected from schools to help reduce drop-outs. Researchers will need annual school data, allowing us to monitor the different educational policies. There is a need to incorporate the questions related to the RTE Act 2009 provisions as we cannot monitor and evaluate the implementation of the RTE Act 2009 with available data. As we deal with schools, it is also essential to strengthen the data related to WASH facilities in schools.

8.4.3 What can we know from the available data? Is there sufficient data to monitor the progress of the above guidelines?

We found and identified gaps in the databases regarding the availability of data and the type of data accessible to researchers, educational planners and administrators. There is inadequate data to assess the progress of the guidelines we attempted to evaluate in this study, limiting our analysis. We utilised U-DISE data from 2015 to 2016, and there are limitations to this data, as stated in the report released by MHRD. GOI is questioning the validity and reliability of the data(GOI 2019). NIEPA no longer collects the data and is managed by the Department of School Education and Literacy, Ministry of Human Resource and Development, Government of India. We attempted to access the recent data capture format, and we observed new additions and deletions in the data capture form from 2018 – 2019 onwards, which we can explore and carry out an assessment of after the completion of this study. The new U-DISE plus format includes questions on the availability of menstrual

absorbents and incinerator facilities in the school. The criteria used to define a functional toilet till 2015 -2016 differed from those used in the recent surveys(MoE 2023). Based on the findings of this research, we conclude that even though the RTE Act 2009 mandates free and compulsory education, we found that the children are still out of school.

8.4.4 From available data, can we know the reasons for drop-outs among boys and girls?

NSSO and NFHS provided data on why boys and girls did not attend school. The reasons are provided in the NSSO database for the age group 5-29 years and NFHS from 5- 18 years. The NSSO and NFHS databases collected reasons for not attending school through household surveys. We identified the following reasons for drop-outs in schools based on the analysis:

a) Indirect Cost of Education.

According to the RTE Act 2009, education is free for children from 6 to 14 years. Economic factors are a significant factor leading to high drop-outs in NSSO 71 R. Education expenditure tends to increase at higher grades as there is a need for textbooks, educational equipment, and laboratory fees for specific subjects. Additional financial investment from parents is a requirement for school education besides the Act's provisions. Economic costs are one of the crucial reasons children do not attend school at the secondary level.

Financial constraint is the second-highest reason for children below 14 years and in the age group 15 – 18 years. It draws attention to the fact that students may be charged admission fees, violating the right to receive free education below 14 years and the need to cater to the needs of children above 15 years. Children aged 15-18 years are more likely to drop-out due to cost factors. The government must monitor the RTE Act implementation to ensure no fees are being charged to seek admission or any other purpose for the age groups below 14, burdening parents to withdraw their children from school as

they cannot pay the additional costs demanded by schools. The financial constraint may also include the indirect cost of sending a child to a school, such as transport costs, the purchase of books, and other requirements for the child's education. The education administrator should monitor children's access to free textbooks. As per the RTE Act 2009, there is a provision to provide school textbooks for children enrolled. There is also a need to monitor the provisioning of school textbooks without any bias.

b) Importance of Education

The reason education is not considered necessary and that parents are not interested in education is significant for girls. The two reasons, 'not interested in education' and 'others', do not explain why a child is out of school or not attending school, and therefore, we cannot infer the actual reason for not attending school from these two codes. The child's point of view as to why they are not listening or have dropped out is unknown due to a lack of data. We grouped the reasons into five categories, and we noticed that in the 64th R, social factors led to high drop-outs in the age group 5-9 years and in later age groups, economic factors led to high drop-outs in 64th R. In the 71st R, economic and education-related factors contribute to a high percentage of drop-outs. Regarding education data on drop-outs, the findings show that the importance of education by family and society did not play an important role.

c) Medium of Instruction

The medium of instruction also plays a significant role in a child's education. It could be one of the reasons for dropping out, especially when there is a change in the medium of instruction from primary to middle school. The RTE Act 2009 specifies that the medium of instruction should be in the mother tongue. However, at higher grades, the shift in instruction results in drop-out and inability to cope. Many children may also struggle to understand the syllabus as the medium of instruction changes when a child moves from primary to middle school.

d) Engaged in Domestic responsibilities

The societal expectations that females have to take care of household activities among all sections of society are still creating hurdles in girls' education. The study reveals that the burden of household activities is proving to be a disadvantage to female children accessing school education in India. A high percentage of drop-outs among the SC and ST categories are due to "financial constraints" and "engaged in domestic activities" during both rounds of NSSO. The drop-outs due to financial constraints testify that economic backwardness among the social groups continues to affect access to education.

e) Lack of interest in education or failure

The reason "not interested in education" should be probed further as it is unclear whether the child or the parents are not interested in education and why the child is not interested in learning. It is crucial to explore why children/parents are not interested in education. The reason why a child may not be able to cope with studies also needs to be studied and explored. The inability to cope with studies needs to be explored further to find out why the child could not manage with the studies. There may be various reasons related to the inability of a child to cope with studies/failure in studies. Some of the reasons could be a lack of time due to extra domestic work or engaged in outside work, which does not provide time to study at home. We cannot ignore that children may be first-generation learners who do not receive additional support to understand certain concepts or mathematical problems, which may also be linked to the child's birth order (Jejeebhoy, 1993; Chouhan, 2017). We noticed that children, especially girls, are involved in completing household chores, so we suggest flexibility in school timings.

We must understand the dynamics of enrolling in shift schools regarding girls' schooling. Children, especially girls, are overburdened with housework due to their engagement in household business or other activities.

f) Engaged in family business/ enterprise or outside for employment

The option for coding children engaged in family farms/businesses was not available in the 71st R, whereas this code was available in the 64th R. The choice of the "child engaged in economic activities" does not provide detailed information on whether a child is involved in family business or engaged in economic activity outside the household for payment. We feel this reason may have included reasons like children being involved in household enterprises, as a separate coding option was not available for coding in 71 R. If the option to code the reason children engaged in farm/family business activities were separately coded, It would have possibly helped us to identify the number of children dropping out due to their involvement in economic activities and inform us of children employed as child labour outside the home, for which interventions need to be designed accordingly.

g) Child marriage

Marriage as a reason was applicable for coding the responses only for female students in the 25.2 schedule in 71st R. We found that child marriages are still prevalent in India between the 5 – 9 years age group from the available data. Though in India there is a prohibition of child marriage, we found the reason for not attending school is marriage, and when we tried to find out the age, we found that it was due to child marriage. It is essential to curb child marriages in India, especially if girls need to complete elementary education.

h) Achieved the desired level of education

Preparation for competitive examination –this reason could be coded only after attaining a certain level of elementary and secondary education. If this reason is coded for children below 14 years, can we guarantee that the child has reached the desired education? At 14 years, one cannot attain the desired level of education unless completing elementary schooling is considered the desired level. Due to the inability to cope, children may discontinue formal

education and join informal school or vocational courses. Children unable to cope with formal schooling may choose to leave the school after attaining primary education as technical institutes provide admission to children for technical courses after Grade VIII. The children who have obtained the school leaving certificate to seek admission in technical courses cannot be considered school drop-outs as they continue to be enrolled in education. They are considered drop-out as they are not in formal schooling and are often reported as leaving or not attending school. If the reasons for not attending school are collected from schools, the children enrolled for technical courses will not be counted as drop-outs. The school-level data will assist in calculating the drop-out rate without under -or over-reporting. However, the household-level child tracking survey will provide data on children doing home-schooling.

i) Availability and quality of teachers

The quality of teachers may not be satisfactory, which is also one of the reasons. The quality of teacher's data with educational qualifications is not available to verify.

j) Miscellaneous other reasons

There should be an option to specify reasons under the 'other' code category. The child may drop-out of school for many other reasons like failure in a particular grade, being ashamed of repeating the same grade, fear of corporal punishment, the children are scared of teacher's scolding, bullying, absence of adequate teaching aids or school infrastructure facilities like gender-specific functioning toilets; there are very few teachers, the children involved in the family farm/business needs to be included in coding to know the exact reasons for not attending the school.

From the reasons reported for not attending school, it is apparent that the RTE Act 2009 has not met the goal of providing universal access to education. Until every child gets access to education, Sustainable

Development Goal 4, which is to provide quality education, will remain an unfulfilled goal in India. India must ensure strict guidelines for providing free and compulsory education in schools. The findings of this study inform us that there is a need to understand the reasons for not attending school and find appropriate strategies to overcome the issues of access to education in India.

There are data gaps concerning data on school drop-outs. School sanitation and infrastructure facilities are also important. The availability of public schools / private schools will also determine the drop-outs. In that case, there is a possibility that the child will not get admission or continue or complete elementary education because of high fees. The possibility of a child not getting admission from primary school to middle school cannot be left out when there is a change in school. Also, migration could be another reason for not getting admission, leading to drop-out. Local authority plays a vital role in identifying the children not enrolled in school.

Rules and guidelines of the RTE Act 2009 should be mandatory in all states/ UT. If in any state/UT, it is found that children are not attending school or are out of school in the age group 6-14 years, it should be reported to the concerned authority so that necessary action is taken.

Girl's education is not given priority over household work. The attitude that girls need to handle and manage the kitchen and kids after marriage needs to change. Societal expectations that girls need to remain at home to complete domestic chores indicate that access to education for girls is still a far-achievable goal in India. The schools should submit the names of children not attending school to local authorities, which will help monitor the school attendance and completion of at least elementary education in India.

The Constitution of India guarantees elementary education from 6 to 14 years, and the Right to Education Act 2009 in India aims to provide free and compulsory education to every child. However, we found that access to

education needs to be ensured for every child to have their right to education offered.

If the reasons for drop-outs are collected, it will help us understand the type of intervention that is needed to ensure universal access to education in India. The study findings based on NFHS show that factors related to access to school education, such as "school too far away", "did not get admission", "costs too much", and "transport is not available", contribute to drop-outs in India.

An attempt was also made to analyse gender-specific reasons such as no proper school facilities for girls, not safe to send girls, and no female teachers. Further education, which is not considered necessary, can be relevant for both males and females. It might be the case that a male child has started working to support the family. For females, education is not considered necessary as they have to deal with domestic responsibilities.

Similar to the findings of Gouda and Sekher, "access to school" contributes more towards female drop-outs than males. Also, child-related reasons show more drop-outs among females than males. Children are expected to contribute to family income, which is crucial for children from poor or marginalised families.

The reason for drop-outs that they are unable to cope with their studies, which is higher for females than males. This may be due to the additional household responsibilities assigned to female children; therefore, they may find it challenging to cope with their studies. Parents may want their male child to work and contribute towards the family's income rather than be in school.

Female children involved in domestic activities show that there is discrimination towards female children's education in some families. There are gender stereotypes that females are meant to manage household duties, which

is considered their primary duty, and education is secondary. Therefore, females have fewer opportunities to remain in school as parents do not wish to invest in girls' education. They are treated as *'Paraya Dhan',* and one day, they will marry and be part of another family. Parents do not think that if they educate their daughter, they will be empowered and financially independent to support herself and her family, including her parents.

From the study findings, we can conclude that there has been a significant reduction in the drop-out rate from NFHS-3 to NFHS-4, and to some extent, it can be attributed to the RTE Act in India. There is a lack of data to identify female drop-outs related to puberty, whether schools have adequate facilities to provide sanitary napkins and dispose of used ones, and whether privacy for changing and washing facilities is available. The availability of sanitation facilities is linked to school attendance, which needs to be studied. A gender gap in school education continues to prevail in India. This gap must be filled by developing adequate interventions and adopting best practices from better-performing states. There is a need for gender sensitisation to break the stereotypes and societal attitudes towards girls as they influence their education status.

8.4.5 What are the further data requirements for evaluating and monitoring the progress towards the guidelines?

Below, we present the data gaps that need to be filled in to evaluate or monitor the progress of SDG 4 –target 4a -.

First, we present the data requirements and Infrastructure Data followed by Enrolment data:

I) Infrastructure data:

a) Classrooms: Data on the classroom availability for each teacher is required to monitor the guidelines of the RTE Act 2009. U-DISE provides information on the total number of classrooms available in the school and whether they are in good condition and require major or

minor repairs. The condition of rooms other than classrooms is also provided.

Gap: Information on the number of classrooms allotted for each grade in school is unavailable. There may be more than one division for particular Grades. We cannot infer whether each teacher has a separate classroom for each grade.

b) **Toilets for students:** The toilet data is required to monitor the RTE Act, 2010, SDG 4, WHO and SBSV guidelines. The data on the presence of gender-specific toilets is available in IHDS and U-DISE data. U-DISE also provides information on whether the toilet is functional. It includes details on minimal odour, unbroken seats, regularly cleaned, dry, working drainage system, accessible to users, and closable door. U-DISE also collected data on only urinals, but it was unavailable in the public domain until 2015-2016.

Gap: Data on water availability in toilets was collected by U-DISE but not in the public domain until 2015–2016. The data on adequate or functioning water availability in toilets is also unavailable in IHDS data.

c) **Type of Toilets:** The data on the type of toilets is collected in IHDS in both rounds. It helps to know the quality of toilets available.

Gap: The data on the type of toilets in schools was not collected by U-DISE, and the IHDS data is a decade old. Data on the type of toilets will help us understand the quality of toilets provided in the school, which should be incorporated in the recent data capture format.

d) **Toilets for Teachers and Non-teaching Staff of schools:** WHO guidelines suggest that gender-specific toilets be available for the school staff. In the IHDS II survey, data on whether toilets are public for teachers was collected by observation (up to IV Grade).

Gap: No data is available on a gender-specific separate number of toilets allotted for teachers and non-teaching staff of schools.

e) **Toilets for children/staff with special needs:** U-DISE collects data on the availability of toilet facilities for children with special needs.

Gap: The data on children was not available in the public domain until 2015-2016, and no data on facilities provided for staff is available.

f) **Ramps for disabled children:** According to the RTE Act 2009, barrier-free access to school should exist. SDG 4 targets require adapted infrastructure and materials for students with disabilities. U-DISE collects information on the presence of ramps, access to classrooms and handrails.

Gap: The data is not available in the public domain.

g) **Hand washing facility:** SDG 4, WHO and SBSV guidelines suggest hand washing facilities. U-DISE data collects information on the availability of hand washing facilities near toilets/urinals.

Gap: The data is not available in the public domain. There is a lack of data on the availability of handwashing facilities. There was no data collected on the availability of soap at the point of hand washing facility until 2015-2016.

h) **Menstrual Hygiene-related facilities:** Menstrual hygiene management facilities are prescribed under SBSV and MHM guidelines.

Gap: Earlier, no data on the availability of menstrual absorbents or access to sanitary napkins on the school premises were collected by any of the databases reviewed in this study till 2015-2016. The new U-DISE plus questionnaire for 2021–2022 includes questions on the

availability of incinerators and sanitary pad dispensers. However, these data are not available in the public domain.

i) **Space for MHM:** MHM guidelines specify the need for separate toilet and sanitation blocks to be located safely to assure privacy/adequate privacy wall. It should also provide sufficient space in the cubicle for girls to change their napkins/clothes and wash themselves.
Gap: No data are collected explicitly on MHM space provided in the schools.

j) **Drinking water:** According to SDG 4 targets and WHO guidelines, drinking water facilities should be available in the school. Data on the presence of drinking water facilities is available in IHDS I, IHDS II and U-DISE data. U-DISE also collects data on functional water sources.

Gap: Data on functional water sources was unavailable in the public domain until 2015-2016. It was reviewed under study and made available in the public domain from 2018-2019 onwards. However, the quantum and source of water availability are not available. The quantum and source must be collected as per the WHO-WASH expanded joint monitoring programme(UNICEF and WHO 2022).

a) **Functioning toilet:** As per MHM guidelines, girls and female staff must have clean, easily accessible water and soap to wash them, wash their clothing if soiled and wash menstrual cloths or reusable napkins. Water must be inside the toilet cubicle. The UDISE provides information on whether the toilet is functional or not. Until 2015-2016, the toilet was considered functional with minimal odor, had an unbroken seat, was regularly cleaned and dried, had a working drainage system, was accessible to users and had a closable door(NIEPA 2015a). Recent criteria for the toilet to be considered functional are if a toilet has water available, minimal foul smell, has an

unbroken seat, is regularly cleaned, has a working drainage system, is accessible to users and has a closable door(MoE 2023).

Gap: UDISE collects data on the availability of functional toilets and then separately asks how many of them have running water available for flushing and cleaning. While the data for functional toilets (the first part of the query) are placed in the public domain, the data on running water for flushing and cleaning are unavailable.

k) **Disposal of menstrual waste:** Safe disposal of used and soiled materials should be provided as per MHM guidelines.

Gap: The data on the availability of disposal facilities were not collected by any of the agencies until recently. The current questionnaire of UDISE þlus has included a question on this. However, no data were available in the public domain while writing the thesis.

l) **Kitchen for cooking:** According to the RTE guidelines, a mid-day meal is to be cooked in the school. Adequate space and proper hygiene and cleaning are to be maintained. IHDS I, IHDS II and UDISE collected data on whether (a) the kitchen is available in the school and (b) if a mid-day meal is cooked within the school premises or not.

Gap: Regarding (a) above, the UDISE database only records whether the kitchen space is available but does not record whether the school is equipped with water and a cleaning area. Since these data are not collected, there is no mechanism for assessment (MoE 2023). Concerning (b) above, these data were collected by UDISE but not placed in the public domain as per the data we accessed, and the current data capture format does not collect this information (MoE 2023).

m) **Computers and Internet connectivity:** SDG 4 targets the availability of computers for pedagogical purposes and Internet connectivity. The data on the availability of computers is available in IHDS I, IHDS II

and U-DISE. Information on internet availability is available in U-DISE. Data on the availability of the total number of computers and whether they are functional was collected by U-DISE.

Gap: The data on internet availability is not available in the public domain. The data on functioning computers is not available in the public domain. U-DISE collects data on whether the school has computer-aided learning, but this information is also unavailable in the public domain. None of the databases managed data on whether the school had functioning internet facilities until 2015-2016.

n) **Boundary wall:** As per the RTE Act 2009, schools should have secured buildings with protected boundary walls. The data on whether the boundary wall exists is available in the IHDS II. U-DISE provides information on the type of boundary wall.

Gap: There is no gap in data on this indicator.

o) **Playground:** According to the RTE Act 2009, the school should have playgrounds. Information on whether the playground is available or not is provided in U-DISE. It also records data if no playground exists and whether the land is public for playground development.

Gap: The data is collected on the availability of land for the playground but is not available in the public domain until 2015-16.

These gaps in data are essential to assess the WASH-related and school infrastructure facilities in schools to monitor the targets listed in national and international commitments and need to be addressed through proper interventions.

II. Attendance and enrolment data

a) **Attendance Data:** Attendance means the day-to-day presence of the student in the school. As per the RTE Act 2009, guidelines suggest

barrier-free access to schools. This data is required to check if children regularly participate in school activities.

Gap: The databases discussed here do not collect attendance information. U-DISE collected attendance data for two years, 2010-11 and 2011-12, but it is unavailable in the public domain.

b) **Enrolment Data:** Enrolment means the student is admitted to the school. We require the data on enrolment to monitor the RTE Act 2009 provision to ensure children in the age group 6 to 14 years are in or have access to school. U-DISE provides the data on enrolment from 2005 -06 to 2015-16. The gender-disaggregated data on enrolment based on grade, social categories, disability, and repeaters is available until eighth grade in 2012. Data from 2013 enrolment in Grades IX to XII is also made available. Data on new admissions for Grade I is provided for schools having the primary stage only.

Gap: The data on new admissions and the number of students promoted from one grade to another is unavailable. Therefore, we could not accurately calculate the drop-outs for each grade. IHDS I and IHDS II provide data on how many students are enrolled in the school, but no gender-specific data is available in this survey. There is a gap in data related to enrolment data for new admissions besides Grade I, and age-specific data on enrolment, which is vital for monitoring children between 6 and 14 years of age, is not collected.

c) **Examination results:** Data on promotion from one grade to another is vital to monitor the RTE Act 2009 to ensure children are not dropping out. U-DISE collects data on examination results for IV/V Grade and VII /VIII Grade only, which is available from 2009-10. Data on the number of children who appeared and passed in V, VII and VIII Grades was available in the public domain. Based on this data, we can know whether failing students will continue their grades or drop-out.

Gap: If the data on all grades is available, it will be easier to calculate the school drop-out rate. Data has been collected recently on X and XII Grade, which is also unavailable in the public domain.

Next, we discuss the findings on enrolment, infrastructure, and school retention.

8.5 INTERCONNECTEDNESS BETWEEN ENROLMENT, INFRASTRUCTURE AND RETENTION

The enrolment and retention of a child into a school are linked to the school infrastructure. If the school has met basic essential infrastructural requirements and is located in an accessible location, children are more likely to continue and complete the desired level of education. Children are more likely to continue their education if the school is accessible in all weathers and has an approachable road. The inaccessible location of the school is more likely to create a disadvantage for girls' schooling, considering their safety and the security in the school. The empirical studies show evidence that school sanitation facilities are linked to school absenteeism, especially for girls who have attained puberty (Bharadwaj and Patkar 2004; Marni Sommer 2010; Van Eijk et al. 2016; Marni Sommer et al. 2021). The reviewed educational policies provide standards and guidelines on sanitation requirements in schools. When we tried to assess the school facilities using secondary data, we learned there is a lack of data, especially on the availability of MHM facilities and sanitation infrastructure in schools. We also tried to understand and study the reasons for not attending school. The reasons documented in the databases do not reflect the causes related to school sanitation facilities, especially for girls, except in the NSSO database.

The study has identified the data gaps, providing directions for future research surveys. Researchers have mainly used enrolment data to study drop-out rates as attendance data is unavailable. Currently, no data on attendance on a large scale is available. A child may be enrolled in school but not attend. Attendance data can help us monitor individual child-related

progression in school. U-DISE collected attendance data for two years, i.e., from 2010 to 2011 and 2011 to 2012, but this data is not available in the public domain. If a new round of IHDS is undertaken shortly, it can be expanded to collect information on secondary and higher secondary classes. This would also help monitor the completion of elementary and secondary education in India.

We need to ensure that each child has access to and completion of minimum elementary education by providing necessary infrastructure facilities, including WASH facilities, which will reduce gender inequalities in education in the country. The three critical components suggested by Herz and Sperling to achieve the goal of universal education are leadership and political will at the national level, developing comprehensive national education strategies, and mobilising internal and external resources. The research demonstrates that investing in girls' education delivers high returns for the nation.- resulting in smaller families, disease prevention and women's well-being. Educating girls is a profitable investment that contributes to the country's healthy development (Herz and Sperling 2004).

Similarly, additional quality, functionality and adequacy information should be collected while monitoring the WASH facilities. One way to address this data challenge could be to plan specific sample surveys that collect data on school infrastructure, enrolment and reasons for drop-outs. It would allow researchers and policymakers to monitor and assess the impact of progress in school WASH infrastructure on drop-outs, especially girls. Accordingly, appropriate intervention strategies could be planned to reduce the drop-out rate, achieve gender equality and achieve health targets through better sanitation.

Primary net enrolment for countries with constitutional guarantees of the right to education and free and compulsory education at the primary level is higher; however, gaps are noticed in the protection of

rights in secondary and higher education. The constitutional right to education makes the government accountable for providing free and compulsory education. Higher net enrolment rates are favourable and significantly associated with the constitutional right to primary or secondary education (Heymann, Raub, and Cassola 2014). There is a need for strategies to monitor the availability and applicability of legislative reforms at the school level (Hoque, Mahanta, and Sarkar, 2022).

The literature focusing on the cost and financing of the Right to Education (RTE) Act in India highlights the importance of addressing the financial aspect of education policies to ensure their successful implementation. Overall, the document provides insights into the financial implications of the RTE Act and the need for adequate funding to achieve quality education for all children in India. It emphasises the need to increase resources for investment in school education, particularly in educationally backward states (Mehrotra 2012). We suggest that the Gender Inclusion Fund and Inclusion Fund will prove effective in removing the disparities in education if adequate measures are taken to address the problems associated with access to education.

In the next chapter, we present the conclusion of the study.

CHAPTER 9

CONCLUSION

In this chapter, we present the conclusion of the study and discuss the limitations, research contributions, and recommendations for future research.

9.1 QUESTIONS THAT REMAIN UNANSWERED DUE TO DATA GAPS

Through the analysis, we conclude that we could not effectively monitor the implementation of the RTE Act 2009 due to a lack of data on the other provisions besides specific infrastructure provisions we could assess. There is a need for an empirical study to evaluate the implementation of the RTE Act 2009 in ensuring free and compulsory education for children aged 6 – 14 years. Besides, monitoring SDG 4 targets related to the scope of this research was possible for indicators where data was available in the public domain. Due to a lack of age-appropriate enrolment data with grades, we could not assess the drop-outs. We cannot evaluate entry and re-admission facilities, and easy transfer from one school to another is taking place as per the Act's provisions. We cannot assess the provision related to the allotment of the classrooms in the schools per teacher. To determine the teacher-pupil ratio and if each teacher has at least one classroom to manage, it could not be assessed due to the absence of data on the number of classrooms allotted for each grade. Besides, there is no data available on subject-specific teachers. U-DISE data does not consider the pupil-to-facility ratio for drinking water, gender-appropriate sanitation and handwashing facilities or an indicator to monitor the physical status of WASH infrastructure. The functionality of water supply and toilets remains a challenge. Currently, access to WASH facilities is not officially monitored through an existing monitoring mechanism or MIS. There is a need to strengthen this so that better data collection and sharing can help inform programmatic improvements.

There is a need to strengthen the present data collected and process the same to create an environment that enables monitoring and evaluating policies.

9.2 AREAS THAT NEED INTERVENTION

We identified the following area that needs intervention:-

9.2.1 Preschool enrolment data

Research shows that preschool education is vital in early childhood care and education. Retaining children in primary school can depend on the successful preparation for primary school by undergoing preschool education (Mehrotra 2012). The National Education Policy 2020 also stresses foundational education for the first five years, starting from 3 to 6 years of preschool education and 6 to 8 for grades I and II. There is no data available to assess the enrolment for early childhood education. Children enrolled in preschool education should be counted as registered, and children not enrolled will be counted as drop-outs, per the UIS definition of estimating the drop-outs. However, 102 countries do not have data on children enrolled in pre-primary education, amounting to 36 million out-of-school children (UIS 2019).

9.2.2 Inadequate data on WASH indicators in schools

UNICEF supported the Education Sector in developing and rolling out a national Swachh Vidyalaya Puraskar (SVP), or "Clean School Award". The SVP is based on a detailed monitoring system that exhaustively covers all WASH aspects with 39 dedicated indicators. UNICEF continues its efforts to advocate for gender-appropriate WASH facilities. It includes gender-segregated and private sanitation facilities, provisions related to menstrual hygiene management like shortage of sanitary pads in schools for emergencies faced by girls, changing room/space, safe disposal of used sanitary pads through incinerators awareness generation on MHM amongst adolescent girls (and their mothers wherever possible) to overcome social taboos; through skilled teachers and resource persons. Furthermore, UNICEF's advocacy

supported the WASH in Schools parameters under "Clean India Clean School" and the SVP to include provisions for making the WASH in School facilities suitable for persons with disabilities (PWD)(UNICEF 2019).

The inadequate data prevents us from monitoring school WASH facilities. The reviewed databases show that data is collected but unavailable in the public domain, limiting the analysis. Further, we did not find data on MHM indicators lacking in all the databases until 2015 – 2016.

9.2.3 Inadequate Data to monitor RTE Act 2009 provisions

There are various provisions of the Act, and due to a lack of data, we cannot monitor its success or failure. We evaluated a few of the Act's infrastructure-related provisions based on U-DISE and IHDS data. U-DISE data provides information on the annual data of all schools, whereas IHDS data is based on a sample of schools surveyed at a specific period. We could not evaluate the fulfilment of the RTE Act 2009 provisions due to a lack of data.

9.2.4 Lack of data in calculating drop-outs and reasons for school drop-outs

We wanted to estimate drop-outs using secondary data and find out probable reasons for the school drop-outs. We found that the enrolment data includes enrolment at Grade I, whereas, as per the RTE Act provision, transfer of schools is possible, and entry at school is granted based on age if the child was not admitted. However, the data on new enrolment at each grade and enrolment due to school transfer is absent. Due to a lack of data, we could not estimate the drop-out rate based on U-DISE and IHDS databases. However, NSSO and NFHS provide data on reasons for not attending school. We utilised the data on reasons to estimate the school drop-outs and understand the reasons for drop-outs. We learned that no school-level data is available on children not attending school. The reasons used in NSSO and NFHS do not cover all the probable reasons; therefore, there is a need to revise the data collection tools to incorporate or provide more comprehensive options to

collect the reasons for drop-outs. If the child leaves the school as they cannot cope and joins the vocational school, they may be considered a dropout. This may be the over-reporting of the drop-out rate among children. The RTE Act 2009 specifies no detention policy; however, the U-DISE continued to provide data on repeaters. Data on promotion to the next grade needs to be provided in the public domain.

9.3 RECOMMENDATIONS FOR MONITORING AND ASSESSMENT OF THE RTE ACT 2009 IMPLEMENTATION AND OUTCOMES

Researchers and policy organisations, including the government, require relevant data to assess whether the provisions of law and international commitments are being fulfilled. Our study looks at the largest databases related to education. We find three categories:

a) Data was collected and available in the public domain

b) Data is collected but not available in the public domain

c) Data not collected

We identified the gaps in data availability, and we suggest the following steps to be considered in the data collection:

a) Need for data on drop-outs: The NSSO and NFHS collected data on the individuals not attending school and why every individual in the surveyed household did not attend school. There is a need for more detailed probing of reasons for not attending school so that appropriate intervention strategies may be planned to address the issue of drop-outs.

b) New coding options for recording reasons: New codes should be incorporated in future NSSO and NFHS surveys, such as burdened with household chores, bullying, corporal punishment, engaged in

family business/farm work, engaged in outside work, medical illness, mother's death, father's death, due to attainment of puberty, lack of water in toilets, and absence of MHM facilities. These reasons will help us determine the inequalities based on gender to address the issues of gender equality and also to keep more girls in school after identifying and addressing the challenges.

c) **Monitoring the reasons:** The states that reported that children "did not get admission", "school too far away", "transport not available", and "cost too much" should be monitored closely. Extra effort should be made by state and central government to make appropriate budgetary provisions to meet the desired targets. Though the RTE Act 2009 makes provisions for ensuring access to education, the implementation of the RTE Act 2009 has to be monitored by the local, state, and central authorities.

d) **Need for Child Tracking Survey:** Child tracking surveys can effectively ensure universal elementary education for all. Odisha was the first state to conduct a state-wide household survey to develop a computerised database for children between 0 and 14 years old to record their schooling status (UNESCO 2016). However, no state has managed to do it regularly and maintain the database effectively. There is an urgent need to develop a child tracking database to ensure and fulfil the goal of universal education for all.

We found data gaps in the reasons for not attending school in NFHS and U-DISE databases, which must be filled by modifying the current research tools. Schools should be tasked with monitoring children enrolled in their schools and those not attending school. Those children not in school should not be counted as enrolled when data is compiled and sent to respective authorities. Constant follow-up of students who remain absent for more than 45 days and ensuring that

students complete elementary and secondary education will provide equitable access to education for all.

e) **Infrastructure facilities need to be assessed:** The Directorate of Education, Government of Goa, publishes the annual statistical report for every academic year and makes it available on its website. The statistical information provided is only about enrolment data, and no data is provided on the school infrastructure facilities available in schools in Goa. The annual reports of education departments of respective states must incorporate data on infrastructure facilities.

f) **Significance of WASH facilities:** Data on WASH-related facilities should be collected and publicly available for researchers. Data on functional toilets with the availability of water and hand washing facilities with water and soap need to be made available in the public domain. The data on handwashing facilities with water and soap at different locations near the toilet, facilities near the kitchen, and where mid-day meals are served need to be incorporated in the recent data capture formats used for data collection. The availability of menstrual absorbents, the place for disposal of menstrual waste, privacy for changing, and water availability for cleaning are facilities listed by the MHM guidelines for schools to be included in the survey instrument.

Data availability would help us understand the status of school sanitation facilities. It can help us find the link between sanitation infrastructure facilities and education status by gender. There is also a need to understand the availability of sanitation facilities, especially MHM and girls who drop-out in India. The Swachh Vidyalaya Puraskar was instituted by the Ministry of Human Resource Development, Government of India, in 2016 to recognise and celebrate good school sanitation and hygiene practices. The' Clean School Award' is announced after assessing the schools that meet the WASH

and other indicators. The schools fill out their nomination forms at individual levels, and schools are recommended for awards after verification of the facilities. There is little awareness about this initiative, which can make the schools strive to meet the basic WASH requirements.

g) **Need for data on RTE Provisions:** For assessing the impact of the RTE Act, 2009, in ensuring the completion of elementary education and understanding the school's status in providing quality education, the SDG 4 goal and specifically targets related to school infrastructure, we need more detailed data. We also need information on how many students were admitted from weaker sections of the population, enrolment data based on age, and attendance data based on gender. There is a need to collect gender-disaggregated data on enrolment based on gender and each grade if the child was admitted between the academic year and transferred from another school.

h) **Prioritising girls' education:** As suggested by Herz and Sperling, we also emphasise the need to make girls' schooling a priority by creating flexible school timings, making girls' schooling affordable, ensuring all the basic facilities are provided at school, especially provision of private toilets, MHM facilities, ensuring safety and security by giving boundary wall, gender-sensitive curriculum breaking the gender stereotypes, and availability of female teachers in schools (Herz and Sperling 2004). Providing basic sanitation facilities will encourage girls to remain and complete their education. The study shows that the availability of gender-specific toilet facilities creates opportunities for girls to be in school. The increase in the number of toilets and availability of separate toilets is an essential indicator for the rise in girls' enrolment rate. However, the provision of MHM facilities will ensure that girls will not drop-out after attaining puberty. The study shows that WASH facilities contribute to reducing the female drop-out rate as there were significant changes in the

school infrastructure after implementing the RTE Act 2009, contributing to increased gender enrolment in schools.

i) **Making schools accessible:** Until every child gets access to education, Sustainable Development Goal 4 to provide quality education will remain an unfulfilled goal in India. If India needs to monitor and fulfil the Sustainable development goals, especially Goal 4, the policymakers need to address and intervene to remove all the barriers to access to school education. The schools should not be too far away, and no child should remain out of school because they were not admitted to school. This should be the responsibility of each local and state government.

From the analysis, we understand that children between 6 and 14 years are still out of school or drop out due to financial constraints, though education is guaranteed free for this age group under the RTE Act 2009. It is crucial to monitor the financial constraints, which are the primary reason for drop-outs in the higher age groups. There is a lack of data on admission fees charged by schools and financial expenditure incurred on education for children below 14 years. The financial restrictions may include the indirect cost of sending a child to a school, like transport costs, purchase of additional books, and other requirements for the child's education like raincoats, umbrellas, school sports shoes and sports uniforms. A study conducted in Bangladesh (2013) suggested strategies for ensuring universal access to education: a) to reduce the direct and indirect cost of schooling by providing school materials such as school uniforms and textbooks, b) entry to school at the right age, and to monitor the absenteeism in schools to identify likely drop-out and intervene (Sabates, Hossain, and Lewin 2013).

j) **Constitutional Rights and Education**: Primary net enrolment for countries with the constitutional guarantee of the right to education and free and compulsory education at the primary level is higher; however, gaps are noticed in the protection of rights at secondary and higher education. The constitutional right to education makes the government accountable for providing free and compulsory education. Higher net enrolment rates are favourable and significantly associated with the constitutional right to primary or secondary education (Heymann, Raub, and Cassola 2014). There is a need for strategies to monitor the availability and applicability of legislative reforms at the school level (Hoque, Mahanta, and Sarkar, 2022).

k) **Investment in Education:** The literature focusing on the cost and financing of the Right to Education (RTE) Act in India highlights the importance of addressing the financial aspect of education policies to ensure their successful implementation. Overall, the document provides insights into the economic implications of the RTE Act and the need for adequate funding to achieve quality education for all children in India. It emphasizes the need to increase resources for investment in school education, particularly in educationally backward states (Mehrotra 2012). We feel that the Gender Inclusion Fund and Inclusion Fund will prove effective in removing the disparities in education if adequate measures are taken to address the problems associated with access to education.

l) **The RTE Act 2009 and NEP:** The RTE Act 2009 ensures free and compulsory education from 6 to 14 years and does not include preschool years of education, which is less than six years. Up to 14 years, the minimum education a child can attain is grade VIII, and we notice that more drop-outs are found to be in the age group of 15 to 18 years. The National Education Policy (NEP) 2020 covers the age group

3 to 18 years, whereas the RTE Act 2009 ensures that it is free and compulsory for children from 6 to 14 years. In light of the NEP, the RTE Act 2009 should also cover the ages three to 18. If the age is extended, it will provide an opportunity for early childhood care and complete education up to a higher secondary level. Early childhood care for every child will create a good learning environment and lay the foundation for primary school education (Mehrotra 2012). The government must try to extend the RTE Act 2009 to a minimum of Grade X and a maximum of Grade XII up to 18 years. Sripati and Thiruvengadam (2004) explored the provisions relating to education in the original Constitution, the actions taken by the government to implement those provisions, and the debate surrounding the constitutional amendment. The amendment faced criticism for limiting the right to education to a specific age group and not considering the importance of early childhood education (Sripati and Thiruvengadam 2004).

9.4 LIMITATIONS OF THIS RESEARCH

In this research, we have used the U-DISE data from 2005-2006 to 2015-2016 only due to the scope of our study. The ASER database is also an important database used in educational debates. However, the raw data was unavailable in the public domain; therefore, we could not use it in our study. There are significant gaps in the data to assess the WASH achievements and the completion of elementary education. Due to a lack of data, we could not evaluate the impact of the RTE Act 2009 on providing universal elementary education. Though U-DISE has specific questions related to the RTE Act 2009, the data collected is not available in the public domain, or the data collected is inadequate. Also, for some of the provisions, no data is available at all.

Regarding infrastructure provisions, we assessed schools that could meet the provisions, but not all schools have met these requirements to the

fullest, which every school has to strive to achieve in India. We could not calculate the gender enrolment ratio beyond Grade VIII as Grade IX data was available only from 2013 onwards due to a lack of data to compare for the pre-RTE period. Though we calculated the compliance based on the number of toilets available, the data provided has an extreme value in the number of toilets reported in schools. This may be due to data errors that question the validity and reliability of the U-DISE data. IHDS data was collected in 2011 – 2012; no recent data is available, making this dataset outdated.

Also, assessing 2011-2012 data to evaluate the impact of the RTE Act 2009 was too early in the case of IHDS data. Since 2011-2012 was the last survey conducted, we had to rely on the IHDS II data for assessment. We found no school-level data on drop-out, and there is no adequate data to calculate the drop-out rate. No uniformity was followed in collecting the reasons for drop-outs within the NSSO between the different rounds and surveys. Therefore, comparing NSSO and NFHS data and IHDS and U-DISE was impossible. The period of each of the data varies except that U-DISE data is collected on an annual basis. Timely data is required to monitor the policies and make them available in the public domain so researchers can analyse them.

We could not assess the achievements of WASH targets or the school drop-outs. The data provided by U-DISE is self-reported by schools. Since it is not verified through observation, there could be over- or under-reporting, especially data on enrolment and certain infrastructure facilities.

The data on various provisions of the Act listed in Chapter 1 is unavailable, creating limitations for the study. We list here the provisions which could not be assessed due to lack / insufficient data:

a) Entry and re-admission data on enrolment
b) Data on transfer from one school to another
c) Training of teachers

d) Monitoring completion of elementary education
e) Data on steps taken by local authority
f) Role of parents in ensuring enrolment of their child in school
g) Data on preschool enrolment
h) Data on school and teachers' responsibilities in ensuring completion of elementary education
i) Reservation of 25% of seats
j) Data related to screening for admission and accepting donations
k) Data on admission without proof of age
l) No detention policy
m) Corporal punishment
n) Qualification of teachers
o) Pupil-teacher ratio
p) Protection of child

Our study period was 2015-2016, and the SBSV (2014) and MHM (2015) guidelines existed in 2014 and 2015, respectively. We tried to assess compliance with these guidelines in terms of WASH requirements. It was too short to conduct the assessment within one year in the case of SBSV and MHM within a few months of its implementation.

9.5 RESEARCH CONTRIBUTIONS

Through this study, we have identified the data gaps in the four national educational databases, which can help researchers and policymakers design future research tools and create the possibility of evaluating and monitoring educational policies in India. We present the contribution of this study, which will help the researchers, education planners, and administrators direct their strategies to meet the goal of universal education. We list the contributions of this study below:

1. In our study, for the 1st time, we attempted to evaluate the implementation of the RTE Act 2009 in India by using secondary

databases, especially the infrastructure provisions of the Act and assess the status of schools pre and post-RTE Act 2009.

2. Our study provides a detailed analysis for strengthening the future data collection process and the significance of data availability in the public domain to researchers, education planners, administrators, and policymakers for developing necessary strategies to provide universal access to education.

3. For the first time, we systematically tried to monitor the fulfilment of the WASH commitments given by international (SDG 4a and WHO) and national (RTE Act 2009, SBSV and MHM) agencies.

4. We calculated the grade-wise gender enrolment ratio at the national level to understand the gender enrolment ratio during pre and post-RTE Act 2009 for all the states and UTs.

5. Through this study, we contributed by presenting the compliance ratio to WHO-WASH standards for schools to boys' toilets (1:50) and girl's toilets(1:25) in India. Compliance with WASH standards was compiled for the first time up to Grade VIII, linking the findings to pre, and post-RTE Act 2009.

6. We also provided the findings of assessing the compliance to SBSV guidelines for boys and girls (1:40) for the first time at the national level. Also, it links it to pre- and post-RTE Act 2009 up to Grade VIII only.

7. This study attempted to assess the status of WASH facilities in schools across states in India during the pre and post-RTE period.

8. MHM indicators are not part of the RTE Act 2009; monitoring WASH school facilities regarding MHM is critical. There is a

need to strengthen this data if India wants to meet the targets, especially for SDG 4, 5 and 6.

9. Each school must have a continuous water supply and a hand washing facility with soap near toilets/urinals and eating areas. Handwashing facilities are also crucial to cope with school health emergencies such as the COVID-19 pandemic.

10. The data on WASH-related targets is unavailable, especially MHM facilities in schools, which need to be included in the current management information system.

11. There is a need to standardize the data collection of reasons for drop-outs by incorporating more reasons.

12. In this study, we systematically analysed two rounds of NSSO and NFHS surveys and analyzed the reasons for drop-outs by age, gender and social groups at the national level –linking it to pre and post-RTE Act 2009 for the first time.

13. Researchers have used individual surveys for their studies, while we have used two rounds of NSSO and NFHS, compared the two rounds, and assessed the drop-outs using both databases.

14. Through this analysis, we have found that SDG 4, SDG 5 and SDG 6 are interconnected, and we cannot achieve gender equality if sanitation needs are not fulfilled and met, which creates hurdles in completing school education.

9.6 RECOMMENDATION FOR FUTURE RESEARCH

Handwashing facilities are crucial in preventing the spread of diseases and infection, and each school should have adequate handwashing facilities. There is a need to study the availability of handwashing facilities with soap and water and the use of these facilities throughout school hours. The national

surveys can try to incorporate these components while collecting data from schools and management information systems, especially U-DISE, to obtain the data regarding the MHM and WASH facilities and make the data available in the public domain.

NSSO can conduct school-level surveys to assess the effective implementation of the policy to reduce drop-outs and ensure completion of elementary education in India. There is a need to systematically record the reasons for not attending school at the school level, and the codes used for not attending school must be revised to incorporate all the possible reasons for dropping out. If the data is collected at the school level for not attending the school, it will provide deeper insight into why drop-outs occur. The NSSO survey on education is presently collected at the household level, and a further study could be conducted to collect school data. The school-level data on the reasons for drop-outs is unavailable in any of the databases reviewed in this study.

We suggest monitoring the school attendance of every child to ensure the successful completion of elementary education. We need adequate and timely data comparable with other databases to monitor the policies and programs, showing robustness during the analysis. The reasons for teacher absenteeism should also be studied as the teacher may be absent from the school for medical reasons or not attending school regularly due to the school's location in a remote place, or the teacher is involved in non-teaching duties like enumeration for the census, making a list of eligible voters, election or census duty. Also, many schools are managed by single teachers due to the low enrolment of students observed during field visits to the schools in Goa. The reasons include the fact that the school remains closed when the teacher is absent, the child may lose interest in studying, the child does not understand what is being taught, or, due to fear of punishment given by the teacher, may not attend school. These reasons should be incorporated into future surveys.

The surveys must incorporate more coding options, such as fear of corporal punishment, bullying, lack of sanitation facilities like no water in the toilet and MHM facilities, insufficient transport facilities, migration, medical condition of the child and the reasons for the child not getting admission need to be probed further. Studies have shown that the death of parents is a reason for drop-outs, especially for girls, especially if there are younger siblings in the house to take care of (Sathwika and Geetha Reddy 2019). However, these reasons are unavailable for coding the responses in NSSO and NFHS surveys. Incorporating these reasons will help identify the actual reasons and determine if the reasons coded under the other categories are specified.

The NSSO can explore the coding categories used by other national-level surveys like the National Family Health Survey, which also collects data on not attending school. The National Family Health Survey collects data on reasons such as "did not get admission", "transport not available", and "not safe to send girls to schools". These codes for coding the responses are not available in the NSSO survey.

Similar to NSSO coding options, we noticed reasons like "not interested in studies", "don't know", and "other" in the NFHS database, which does not explain why the school children are not interested in education. A child's interest/performance is also lost due to repeated failures and no interest in studies. Reasons such as "not interested in studies", "don't know", and "other" need to be inquired about or probed further to understand the reasons for not attending school. It will help us understand why children are not interested in studies and will help improve school education in India.

Regarding probing of responses, we cannot ignore the role of the interviewer in coding the actual reason for not attending the school, which will assist in addressing the issue of eliminating drop-outs from schools. The interviewers need to understand the importance of the data they are collecting and should check the reliability of the responses. Therefore, an effort must be

made to monitor every child's progress and address the difficulties faced to ensure universal access to education and reduce drop-out rates.

We conclude that from the openly accessible databases reviewed in our study, we did not find adequate information to monitor the impact of critical WASH-related guidelines and legislations like RTE, SDG4, WHO-WASH, SBSV and MHM and for assessing the status of school drop-outs, especially girls. More detailed data is needed to help monitor the progress in fulfilling the desired WASH targets and assess its impact on drop-outs, especially girls. There also has to be accountability for the data provided by schools, which are collected and provided in the public domain. It is essential to provide timely data to monitor the policies and programs that can help provide education for all.

APPENDIX I

RTI APPLICATION 1

From:
Sulochana Pednekar
H. No.441, Oxel, Siolim,
Bardez, Goa -403517
Date: 30/8/2018

To,
The Public Information Officer,
Directorate of Education,
Provorim- Goa -403521

Sub: Request to provide information under RTI Act 2005(6)

Sir/ Madam,

Kindly provide me information under RTI Act 2005(6) as follows:

1. Provide me the details of all the schools in Goa with their Name, address of the school, the enrolment of students for each class (from lowest to highest class) for the academic year 2017-18.

Enrolment in the Academic year **2017-18** (please specify no. of divisions separately)

Classes	Pre-primary		I		II		III		IV		V		VI		VII		VIII		IX		X		XI		XII	
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G
General																										
SC																										
ST																										
OBC																										
Total																										

2. Provide me the Xerox copy or scan copy of the attendance of classes from Vth standard to the highest class for all co-ed and girls schools only for the academic year 2017-18.

3. Provide me the details of school funds allotted to each school and expenditure incurred by the schools excluding Mid-Day-Meal under
   - a)School Development Grant ,
   - b) School Maintenance Grant and
   - c)Teaching Learning Material

   (Funds allotted to each and expenditure incurred under each head)

4. Is the hand washing facility available near the toilet and urinals?
   [1.*Yes with soap, 2.Yes without soap 3.Not Available*]

5. If yes, what type of water facility? 1.Piped water 2. Non-piped water 3. Others specify _____

6. Main source of drinking water facility [*Hand pumps =1, Well =2, Tap water =3, others Specify* _____ *=4, none =5*]

7. Whether drinking water facility is functional [*Yes = 1, No = 2*]

8. Electricity connection available in the school [*Yes = 1, No = 2, Yes but not functional =3*]

9. Does school have Balrath?[*Yes = 1, No = 2*] If Yes How many Balraths does school have? How much average distance does Balrath cover in kms per day ?

10. How many students travel in Balrath according to category?
1.SC___2. ST_____3. OBC _____4. General _____

11. Does school use KTC Bus Service?[*Yes = 1, No = 2*] How many students travel in KTC Bus according to category?
1.SC___2. ST_____3. OBC _____4. General _____

12. Does School have a counsellor? What is the Gender of the Counsellor? How many days in a month does the counsellor visit the school?

13. Current Status of Toilets and urinals for boys and girls available in the school.

	Numbers of Toilets		Numbers of Urinals	
Current Status of Toilets and urinals	**Girls only**	**Boys only**	**Girls only**	**Boys only**
Total no. of toilet seats and urinals Constructed/Available				
Total no. of toilet seats and urinals functional with minimal odor				
Total no. of toilet seats and urinals functional with unbroken seat				
Total no. of toilet seats and urinals functional and regularly cleaned dry				
Total no. of toilet seats and urinals functional with working drainage system				
Total no. of toilet seats and urinals functional with accessible to users				
Total no. of toilet seats and urinals functional with closable door				
Total no. of toilet seats and urinals functional with damaged door				
Total no. of toilets has water available inside the toilet for flushing and cleaning?				
How many of above toilets have water available outside the toilet for flushing and cleaning?				

14. Total no. of toilets and urinals reserved only for Teachers / Staff in the school? (Please specify number as per category)
1.Male _____ 2. Female____3.Common_____

15. Is there any toilet that is friendly to Children with Special Needs (CWSN)? [Yes – 1, No – 2]

16. Does the school have sanitary vending machine and Incinerator? When was this service installed in the school?

17. Who provided the funds for the same? Is it provided as a CSR activity or school has installed it .Please specify who has provided/ installed the facility in the school.

Kindly let me know when the information is ready by calling me on my mobile number 9850478215. My address is specified above.

Yours faithfully,

Sulochana Pednekar
H. No. 441, Oxel, Siolim,
Bardez Goa - 403517



Source: Author's file copy

APPENDIX-II

Response to RTI Application 1

Government of Goa
DIRECTORATE OF EDUCATION
Alto - Porvorim, Bardez - Goa

Email:- dir-educ.goa@nic.in Tel:-0832-2416025,2416033 Fax:-0832-2416136

No.DE.STAT/06/RTI/PART - III/2018-19/ 814 Dated:- 19/09/2018

To,
Sulochana Pednekar
H. No. 441, Oxel, Siolim,
Bardez, Goa 403517.

Sub: Request to provide information under RTI Act 2005(6)

Madam,

With reference to your Right to Information application dated 30/08/2018, on the above cited subject, the information pertaining to point No. 1 is in the publication **the Educational Statistics at a Glance 2017-18** which is uploaded on the official website of this Directorate,(www.education.goa.gov.in).

If the hard copy of the above information is required then there are 155 pages and @ of Rs. 2/- per page works out to Rs. 310/- (Rupees Three Hundred Ten Only).

Information on point No 2 to point No 17 is not maintained by this Directorate as required by you. However in each school PIO is appointed from whom information may be collected by applying to them individually.

You may collect the information on point No. 1 from Statistics Section of this Directorate after 7 days of making payment of Rs. 310/- (Rupees Three Hundred Ten Only) to Account Section of this Directorate.

Yours Faithfully

(Digamber Kalapurkar)
Statistical Officer/PIO

Source : Author's file copy

Appendix III

RTI Application 2

From:
Sulochana Pednekar
H. No.441, Oxel, Siolim,
Bardez, Goa -403517
Date: 30/8/2018

To,
The Public Information Officer,
Directorate of Education,
Provorim- Goa -403521

Sub: Request to provide information under RTI Act 2005(6)

Sir/ Madam,

Kindly provide me information under RTI Act 2005(6) as follows

1. How many schools have been closed from 2010 till date.
2. Please provide the name and address of the schools closed and reasons for closing the same and the medium of instruction of these closed schools.
3. How many new schools are opened from 2010 till date, provide their name and address and medium of instruction.
4. Please provide me with a copy / scan copy of any communication that is sent from Directorate of education, Government of Goa to Central Government with regard to implementation of RTE ACT 2010 in Goa.

Kindly let me know when the information is ready by calling me on my mobile number 9850478215. My address is specified above.

Yours faithfully,
Sulochana Pednekar



Page 1 of 1

Source: Author's file copy

Appendix IV

Response to RTI Application 2

No.DE/Plan/PRC/RTI/2018/15-34
Government of Goa,
Directorate of Education,
Alto Porvorim, Bardez - Goa

Dated: 24/09/2018

To,
Sulochana Pednekar,
H. No. 441, Oxel, Siolim,
Bardez, Goa-403517.

Sub:-Application under RTI Act-2005

Madam,

With reference to your letter dated 05.09.2018 on the above cited subject, it is to inform you that the information sought by you is as under:.

Point No. 1 & 2 - Nil

Point No. 4 - Nil, No such correspondence is traceable.

Yours faithfully,

(Maria Rose Grace D'Souza)
Public Information Officer (Plg.).

Source: Author's file copy

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List of Publications

1. Pednekar, Sulochana, Shreya Some, Kajal Rivankar, and Renuka Thakore. 2022. "Enabling Factors for Sustainable Menstrual Hygiene Management Practices: A Rapid Review." *Discover Sustainability* 3 (1): 28. https://doi.org/10.1007/s43621-022-00097-4.

2. Pednekar, Sulochana, Shaila Desouza, and Pranab Mukhopadhyay. 2024. "Monitoring WASH and School Dropouts in India: Is There Adequate Data? An Assessment of Four National Databases." *Journal of Water, Sanitation and Hygiene for Development*, January, washdev2024195. https://doi.org/10.2166/washdev.2024.195.