

**SWACHH BHARAT - A DISTANT DREAM:
CASE STUDY OF OPEN DEFECATION IN DELHI**

*Dissertation submitted to the School of Social Sciences, Jawaharlal
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DECLARATION


I, Rajib Das, hereby declare that the dissertation entitled, “**SWACHH BHARAT - A DISTANT DREAM: CASE STUDY OF OPEN DEFECATION IN DELHI**” submitted to the School of Social sciences, at Jawaharlal Nehru University, in partial fulfilment for the award of the degree of **MASTER OF PHILOSOPHY**, is a bonafide work. This dissertation has not been submitted for the award of any degree of this or any other university.

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CERTIFICATE

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DEBRAJ,
KRISHANU &
SAPTARSHI

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List of Used Abbreviations

APL	Above Poverty Line
AUWSP	Accelerated Urban Water Supply Programme
BJP	Bharatiya Janata Party
BPL	Below Poverty Line
BSUP	Basic Services to the Urban Poor
CLTS	Community Led Total Sanitation
CPWD	Central Public Works Department
CRSP	Central Rural Sanitation Programme
CSP	City Sanitation Plan
DDA	Delhi Development authority
DJB	Delhi Jal Board
DSIIDC	Delhi State Industrial Infrastructure Development Corporation
DUSIB	Delhi Urban Shelter Improvement Board
EAG	Empowered Action Group
EDMC	East Delhi Municipal Corporation
EIUS	Environmental Improvement in Urban Slums
FYP	Five Year Plan
GDP	Gross Domestic Product
GHMC	Greater Hyderabad Municipal Corporation
HRW	Human Rights Watch
ICED	International Centre for Environment Audit and Sustainable Development
IEC	Information Education and Communication
IHDS	India Human Development Survey
IHHL	Individual Household Latrine
IHSDP	Integrated Housing and Slum Development Programme
ILCS	Integrated Low Cost Sanitation
ISRO	Indian Space Research Organization
JJ Colony	Jhuggi Jhori Colony
JMP	Joint Monitoring Programme
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
L&DO	Land and Development Office
MCD / DMC	Delhi Municipal Corporation
MDG	Millennium Development Goal
MLA	Member of Legislative Assembly

MoDWS	Ministry of Drinking Water and Sanitation
MoHUPA	Ministry of Housing and Urban Poverty Alleviation
MoUD	Ministry of Urban Development
NBA	Nirmal Bharat Abhiyan
NCR	National Capital Region
NCT	National Capital Territory
NDMC	North Delhi Municipal Corporation
NGO	Non-Governmental Organization
NGP	Nirmal Gram Puraskar
NGT	National Green Tribunal
NRHM	National Rural Health Mission
NUSP	National Urban sanitation Plan
ODF	Open Defecation Free
PDS	Public Distribution System
PPP	Public Private Partnership
SBM	Swachh Bharat Mission
SDG	Sustainable Development Goal
SDMC	South Delhi Municipal Corporation
SKA	Safai Karmachari Andolan
STP	Sewage Treatment Plants
SWM	Sewage Waste Management
SWOT	strengths, weaknesses, opportunities, and threats
TARU	The Action Resource Unit
TSC	Total Sanitation Campaign
ULB	Urban Local Body
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UTI	Urinary Tract Infections

Chapter: 1

INTRODUCTION

1.1 Introduction

The 2011 census data reveals that, for the first time, the absolute increase in the urban population in between 2001 and 2011 was higher than that of the rural population.¹ Conversely, the access to basic amenities are lacking day by day like drinking water and toilet facility which are critical determinants of the quality of urbanization. For example, about 16 per cent have no access to safe drinking water and 27 per cent have no access to toilet facility as per 2011 census in India.² With the increase in population the demand for every single key component increased roughly from five to seven-fold.³ However the current urban infrastructure is painfully short of its required infrastructure. In India, the access to basic amenities varies in accordance with level of urbanization and the size class of cities and towns, big cities shows better availability of basic services compared to small urban centres.^{4,5}

Food, cloth and shelter are the three basic needs of a human being. Proper sanitation is the fourth basic need for present day's human.⁶ For human progress, together with education, the health of the person is also important. Sanitation facilities available in the surroundings control one's health, education and surrounding environment. The Dublin International Conference on Water and Sustainable Development in January 1992 for the first time recognized "*the basic right of all human beings to have access to clean water*

¹ Increase of 91 million populations in urban areas and 90.4 million populations in rural areas at the same period of time.

² Census of India 2011. Table HH:06, HH:08 and HH:11. Registrar General of India, Government of India.

³ Dasra (2012). Squatting rights: access to toilets in urban India. Mumbai, India: *Dasra Catalyst for social Change*; September 2012, Forbes Marshall Trusted Partners. pp.4

⁴ Bhagat, R. B. (2011). Urbanisation and access to basic amenities in India. *Urban India*, Vol. 31(1), pp.12

⁵ Kundu, A., Bagchi, S., & Kundu, D. (1999). Regional distribution of infrastructure and basic amenities in urban India: issues concerning empowerment of local bodies. *Economic and Political Weekly*, Vol. 34 (28), pp.1895

⁶ Hussain, R., & Mangla, B. (2014). Toilet as an asset: Necessity versus luxury. *Developing Country Studies*, 4(9), pp.106.

and sanitation at an affordable price."⁷ It may be said that sanitation is more important than anything else in the process of human development just like education and employment, because the lack of hygiene and improper sanitation is a situation relatively closer to the people who are suffering from poverty, illiteracy and unemployment.⁸ Thus the topic needs attention and detailed study as a most important indicator of development and to study the inequalities in sanitation services, especially toilet facilities and practice of open defecation. It is very important in the context of India because about half of the population of India practices open defecation and more than half of the global open defecators are in India.^{9,10} Additionally, it is also a threat to public health due to spread of many diseases from open defecation. Sanitation studies in India has mostly emphasized on child health and women's health risk¹¹ but has rarely talked about the practice of open defecation and related issues. There are very few research works done on defecation despite its common prevalence all across the globe and as a bodily process.¹² Practice of open defecation is very dangerous to health and its impact on health and economic aspect needs the accountability of the government in proper implementation of the initiated programmes to solve the problem. The word 'sanitation' in itself sounds dirty as it is often associated with caste based occupation in India, sanitation programmes are often put under the projects and initiatives of 'Water' by the government policy makers.¹³

Ancient Greek Philosopher Socrates said that "*It is not living that matters, but living rightly*".¹⁴ As the health condition of any human being is needed to be good there should

⁷ World Meteorological Organization (2011). The Dublin Statement on Water and Sustainable Development. *United Nations*. Accessed on 21st May, 2017. <http://www.wmo.int/pages/prog/hwrrp/documents/english/icwedece.html>

⁸ Pathak, B. "Toilet History". Sulabh International. Accessed on March 31, 2017. <http://www.sulabhtoiletmuseum.org/history-of-toilets/>

⁹ WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation <http://www.wssinfo.org>

¹⁰ WHO/UNICEF Joint Monitoring Programme. (2014). Progress on drinking water and sanitation: 2014 update. *World Health Organization*. pp.22.

¹¹ Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2015). Sanitation-related psychosocial stress: a grounded theory study of women across the life-course in Odisha, India. *Social Science & Medicine*, 139, pp.80.

¹² Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.100.

¹³ WaterAid (200?) The Human Waste: A call for urgent action to combat the millions of deaths caused by poor sanitation. *WaterAid & Tearfund*. pp.6.

¹⁴ Mentioned by Jain, A. L (April 29, 2012). Breaking the sanitation taboo. *The Hindu*. Accessed on 29th November 2016.

be good sanitary condition in the surroundings. A population that consumes unsafe drinking water, has inadequate living space, unhygienic environment, and water stagnation around settlement and disposes human excreta into the open spaces is more likely to have a negative impact on health and suffer from diseases like diarrhea, dysentery, parasitic worm infection and many other water borne diseases.¹⁵ This gradually leads to the loss of working days, all because of ill health which further results in huge economic loss.^{16,17} Diarrhea causes death among under-five children mostly among those who lack improved sanitation and diarrheal death among children under five years of age is very high in India and accounts one-fourth of world's total diarrheal deaths among under-five years of children.¹⁸ Diarrhea among children are common in India because about half of the children's feces is disposed in open which leads to microbial contamination of water causing diarrhea, as feces of children contains more germs than adults.¹⁹ Around half a million children dies around the world because of poor quality of drinking water, sanitation and hygiene, this causes diarrheal diseases.²⁰ From this, it can be said that there is a direct relationship between water consumption, sanitation and health of an individual. The practice of open defecation is considered as a major reason for diarrhea and parasitic infection in intestine among children under-five years of age.²¹ According to UNICEF, "*Open defecation refers to the practice whereby*

¹⁵ For example,

Annual Report (2011-12). Ministry of Drinking Water and Sanitation, Government of India.

Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.136

Ortiz-Correa, J. S., Resende Filho, M., & Dinar, A. (2016). *Water Resources and Economics*, 14, pp.32.

Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ... & Thomas, V. A. (2007). *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 101(11), pp.1124.

Patil, S. R., Arnold, B. F., Salvatore, A. L., Briceno, B., Ganguly, S., Colford Jr, J. M., & Gertler, P. J. (2014). *PLoS Medicine*, 11(8), e1001709. pp.2.

¹⁶ Annual Report (2011-12). Ministry of Drinking Water and Sanitation, Government of India.

¹⁷ Ortiz-Correa, J. S., Resende Filho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp. 32.

¹⁸ Patil, S. R., Arnold, B. F., Salvatore, A. L., Briceno, B., Ganguly, S., Colford Jr, J. M., & Gertler, P. J. (2014). The effect of India's total sanitation campaign on defecation behaviors and child health in rural Madhya Pradesh: a cluster randomized controlled trial. *PLoS Medicine*, 11(8), e1001709. pp.2.

¹⁹ UNICEF. Eliminate Open Defecation. *UNICEF India*. For further reference, look up: <http://unicef.in/Whatwedo/11/Eliminate%ADOpen%ADDefecation> Accessed 27th April, 2017.

²⁰ UNICEF. Water, Sanitation and Hygiene (WASH). https://www.unicef.org/media/media_45481.html Accessed 29th May, 2017.

²¹ Patil, S. R., Arnold, B. F., Salvatore, A. L., Briceno, B., Ganguly, S., Colford Jr, J. M., & Gertler, P. J. (2014). The effect of India's total sanitation campaign on defecation behaviors and child health in rural Madhya Pradesh: a cluster randomized controlled trial. *PLoS Med*, 11(8), e1001709. pp.2.

people go out in fields, bushes, forests, open bodies of water, or other open spaces rather than using the toilet to defecate.”²²

According to the WHO/UNICEF joint monitoring program, an “*improved*” sanitary facility is “*one that hygienically separates human excreta from human contact.*”²³ Then there is an additional problem of its differential impact on different people, that is to say that men, women, older person and children face the problem differently across social and economic classes.²⁴ Lack of adequate sanitation and water supply creates unhygienic living and working conditions for the urban poor.²⁵ This is more so in the case of slums, where the available space is itself very low. The very fact is that the problems related to sanitation, falls more heavily on children and women than on adult men.²⁶ So, keeping in view these pressing problems, basic sanitation has been recognized as a human right and its universal access is being proposed as a global target for 2030²⁷ for those who do not have access to toilet at home and faces problems in daily psychological routines and rhythms of daily life.²⁸

In a patriarchal society like India, for women the daily struggle begins much before the everyday works start. Shortage of water supply forces people to defecate in open but due to existing patriarchal norm women are not allowed to access public spaces at day time in front of public²⁹ they wait for the night to fall or for the twilight and try to relieve themselves. Waiting so long for twilight to relieve themselves has serious health effect and increases chances of psychological stress, contracting Urinary Tract Infections

²² UNICEF. Eliminate Open Defecation. *UNICEF India*.

<http://unicef.in/Whatwedo/11/Eliminate%ADOpen%ADDefecation> Accessed 27th April, 2017.

²³ WHO/UNICEF. (2010). Progress on sanitation and drinking-water: 2010 update. Geneva and New York: WHO/UNICEF. pp.34

²⁴ McGranahan, G. (2015). Realizing the right to sanitation in deprived urban communities: meeting the challenges of collective action, coproduction, affordability, and housing tenure. *World Development*, Vol. 68, pp.243

²⁵ Dasra, (2012). Squatting rights: access to toilets in urban India. Mumbai, India: *Dasra Catalyst for social Change*; September 2012, Forbes Marshall Trusted Partners. pp.4

²⁶ McGranahan, G. (2015). Realizing the right to sanitation in deprived urban communities: meeting the challenges of collective action, coproduction, affordability, and housing tenure. *World Development*, Vol. 68, pp.243

²⁷ United Nations (2012). The Millennium Development Goals Report 2012. New York: United Nations

²⁸ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.108.

²⁹ Elledge, M. F., & McClatchey, M. (2013). India, Urban Sanitation, and the Toilet Challenge. *RTI Research Brief*.

(UTIs) and chronic constipation.^{30,31} Cross-country studies reveal that the safe disposal of excreta is highly correlated with the survival of child. And the practice of safe disposal and improved sanitation is very helpful for the each individual as well as the entire community.³²

In deprived rural and urban India, it is common cultural practice for both men and women to defecate in open air, and more common among children to defecate in public spaces. Fecal material attracts flies, can pass germs through food, further it can contaminate shallow groundwater aquifers used for drinking by mixing with untreated solid waste.³³ In those areas where significant share of sanitary facilities are “unimproved”,³⁴ an important part of the shared burden is usually the local people, especially the poor. Due to unimproved sanitation, many of the cities in India are facing an acute shortage of safe drinking water, especially during summer season³⁵ as also the slum areas of the cities. The income levels of the urban poor are very low and uncertain and due to these reasons the urban poor find it very difficult to invest money for good sanitation and for other health needs. As a result the burden of insanitary condition poses a great threat to poor people. It has found that the share of population belongs to Below Poverty Line (BPL) and slums population is live in urban areas.³⁶ There are countless literatures that suggest that poverty is one of the major reasons for poor sanitation of the individual. But the reality of poor sanitation is not only determined by poverty but has multi-faced reasons and factors. The lack of sanitation increases living costs by spending more for medical expenses. This eventually decreases the amount that could be spent on other basic needs like in children’s education and nutrition this threatens safety and welfare and is mostly

³⁰ Dasra (2012). Squatting rights: access to toilets in urban India. Mumbai, India: *Dasra Catalyst for social Change*; September 2012, Forbes Marshall Trusted Partners.

³¹ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.109.

³² UN Department of Economic and Social Affairs (UNDESA), Water for Life Decade 2005-2015, Access to Sanitation. <http://www.un.org/waterforlifedecade/sanitation.shtml> Accessed on 17th May, 2017.

³³ Patil, S. R., Arnold, B. F., Salvatore, A. L., Briceno, B., Ganguly, S., Colford Jr, J. M., & Gertler, P. J. (2014). The effect of India's total sanitation campaign on defecation behaviors and child health in rural Madhya Pradesh: a cluster randomized controlled trial. *PLoS Med*, 11(8), e1001709. pp.2.

³⁴ An “unimproved” sanitation facility is defined as one which does not hygienically separates human excreta from human contact, according to WHO-UNICEF, Joint Monitoring Programme (JMP).

³⁵ Kadi, A. S., Halingali, B. I., & Ravishankar, P. (2012). Problems of Urbanization in Developing Countries: A Case Study in India. *International Journal of Science and Nature*, Vol. 3 (1), pp.94-95

³⁶ Agarwal, S. (2011). The state of urban health in India; comparing the poorest quartile to the rest of the urban population in selected states and cities. *Environment and Urbanization*, Vol. 23(1), pp.21

applicable for the poor people.³⁷ A study by Forbes Marshal Trusted Partners found that that the poorest one-fifth of urban households bear the highest per capita economic impact of inadequate sanitation, at times paying more than three-fourth of the average Indian household.³⁸

Households that do not have functioning toilets and proper availability of drinking water spend more time in collecting water which leads to a curtail in children's education and women's working hours.³⁹ It is observed from the existing literature that if women with economic and decision making power in a household tries to improve sanitary conditions.⁴⁰ This is because the women has to stay inside the house for longer times or even for the entire day owing to the patriarchal structure of the society, which differentiates between the public and the private space, making the women stay at home. In India, it is not only the individual or household unit that is responsible for the bad impact of sanitation but it is more the government who has also failed to provide the adequate facilities for their maintenance. Tackling with the problem of inadequate sanitation not only requires building infrastructure but also maintenance, and creating greater awareness of the issue.⁴¹ The mere presence of toilets is not sufficient to increase the usage of toilets. There should be availability of other basic needs also like electricity in toilet, water supply and must be safe for women and girls. Together with focusing on increase in latrine usage coverage there should be effort to be put to reform the cultural practice of cleaning the toilets by small minority of people belongs from a particular caste.⁴²

The Government of India has taken many initiatives to provide basic and improved sanitation to its citizens, especially to the poor people. Initially the programmes were confined to rural parts of the country, likewise; Central Rural Sanitation Programme

³⁷ Dasra (2012). Squatting rights: access to toilets in urban India. Mumbai, India: *Dasra Catalyst for social Change*; September 2012, Forbes Marshall Trusted Partners. pp.4

³⁸ *Ibid.*

³⁹ Ortiz-Correa, J. S., Resende Filho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.41.

⁴⁰ McGranahan, G. (2015). Realizing the right to sanitation in deprived urban communities: meeting the challenges of collective action, coproduction, affordability, and housing tenure. *World Development*, Vol. 68, pp.248

⁴¹ Dasra (2012). Squatting rights: access to toilets in urban India. Mumbai, India: *Dasra Catalyst for social Change*; September 2012, Forbes Marshall Trusted Partners. pp.9

⁴² Palnitkar, S. (1988). New Culture of Urban Sanitation (CORO): Mumbai (Bombay), India. *THE MEGA-CITIES PROJECT*, pp.2

(CRSP, 1986), Nirmal Bharat Abhiyan (NBA, 1999), Nirmal Gram Puraskar (NGP, 2003), Total Sanitation Campaign (TSC, 2008) followed by the most recent programmes both in rural and urban areas, i.e., Swachh Bharat Mission (SBM, 2014). SBM was launched in 2nd October, 2014 by Prime Minister of India, under the rule of Bharatiya Janata Party (BJP) at the centre. At present it can be said that SBM is playing a major role in providing sanitation facilities all across the country. Attention paid by the government purely towards urban sanitation was only in the twenty-first century.⁴³ This work has tried to focus on sanitation issues in the slum area of Delhi by placing emphasis on toilet facilities and open defecation.

The practice of open defecation in India is considered as “*shameful practice*”.^{44,45} The practice of open defecation is now a humiliating practice and it has a historical construct of the notion. Srinivas writes it was socially acceptable and was sociable to know each other during and on the way of defecation.⁴⁶ It was until people started to build toilets at the backyard of their home and the very “*communal bond of defecation*” started to break.⁴⁷

During inauguration of SBM (Clean India Mission), Prime Minister Narendra Modi said: “*I come from a poor family, I have seen poverty. The poor need respect and it begins with cleanliness. I, therefore, have to launch a ‘clean India’ campaign...*”⁴⁸ The question arises from here ‘*are poor people dirty because they practice open defecation*’? The answer is obvious ‘No’. There are many poor houses made up of mud and is neat and clean than mosaic floor of the rich. The government needs to focus on provision of basic services to maintain their minimum standard of living. This will automatically help in reducing open defecation. Community toilets and public toilets to reduce and eliminate open defecation have been built in urban areas which are either pay-per-use or sometimes free of cost toilets but these have gained very little success. Quite often the government-

⁴³ It was in 2008 under NUSP. MoUD (2008), *National Urban Sanitation Policy*, New Delhi: Ministry of Urban Development, Government of India.

⁴⁴ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.111.

⁴⁵ Srinivas, T. (2002). Flush with Success Bathing, Defecation, Worship, and Social Change in South India. *Space and Culture*, 5(4), pp.371.

⁴⁶ *Ibid.* pp.370.

⁴⁷ *Ibid.* pp.371.

⁴⁸ The Indian Express (August 16th, 2014). Full Text: Prime Minister Narendra Modi’s speech on 68th Independence Day. *The Indian Express* (New Delhi). Accessed June 10th, 2017.

run pay-per-use toilets faces problems of under-maintenance and it further leads to practice of open defecation.

Open defecation in India is often seen as a problem from the side of individual who refuses to change their behavior to adopt latrine use. Blaming individual often hides institutional inability and the failure of the policies and programmes of government on sanitation drive. This study tries to understand the process.

1.2 Statement of Problem

Right from the beginning of the twentieth century to the latest census year, India's total population has increased from 238 million to 1210 million and urban population from 25.8 million to 377 million in terms of its absolute number⁴⁹. With increase in total population, the urban population is also increasing; this population in turn puts a pressure on existing resources and facilities available to the entire urban population. Therefore this creates the problem related to infrastructure, housing, unemployment, sanitation facilities and health of the people. In India 55 per cent of total household do not have latrine facility and in urban areas, it is 19 per cent and in case of six metro cities in India, Mumbai (33 per cent) has the highest percentage of household without latrine facilities followed by Delhi (10.5 per cent) and Hyderabad (1.5 per cent). Going into the details, the practice of open defecation is highest in Delhi (3.3 per cent) out of the six metro cities, which are caused due to inadequate sanitation facilities⁵⁰. The section of population that suffers the most is the poor. Poverty can be seen as a possible reason that pushes them to the edge of this problem. In this paper the households which do not have latrine and toilet facility have been considered for the study.

In light of the situation mentioned above, the present research seeks to address the challenges of urban sanitation in Delhi. As the growth of urbanization continues the problems related to housing, water supply, accessing open spaces, sanitation, environmental problems and unemployment are also increasing. The present study attempts to examine the social, economic and political conditions related to urban

⁴⁹ Census of India, Registrar General of India, Government of India, 1901-2011.

⁵⁰ Indian Human Development Survey (IHDS) 2011-12.

sanitation. In this paper the poor sanitation conditions related to open defecation has been more emphasized.

The study focuses on sanitation problems and its consequences on the population that gets affected by it. Delhi has been selected for the study because of multiple reasons. *Firstly*, New Delhi (district of Delhi) is the capital city of the country. *Secondly*, at present, Delhi is the fastest growing city among all six metropolitan cities and expected to cross Mumbai (presently most populated) by next couple of years. *Thirdly*, the post-monsoon situation in Delhi stands witness to the water borne diseases like Diarrhea and mosquito borne diseases like Malaria, Dengue and Chikungunia, which spread due to water stagnation in several parts of the city.

The percentage of poor people living in urban areas is mostly in the slums, that is why slums of Delhi are the core study area of this paper.

1.3 Objectives

- To study the factors responsible for practicing open defecation.
- To address the impact on gender, social and economic classes for practice of open defecation.
- To assess the impact of government policies to eliminate open defecation.
- To find the best suited approach to eliminate the existing practice.

1.4 Research Questions

- What are the factors responsible for existing practice of open defecation?
- Does different gender, social and economic classes determine access to toilet facilities?
- How far have the State and the Central Government policies worked to eliminate open defecation?
- What are the best possible ways to eliminate the practice of open defecation?
- Is the practice more due to institutional unaccountability or due to the lack of awareness of the people?

1.5 Data Sources

- World Bank, Data Bank from 1991 to 2015, on World Development Indicators on practice of open defecation for total and urban areas for the entire world and South Asian countries for comparison with India. Data on practice of open defecation are given by the Joint Monitoring Programme (JMP) of the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) based on national censuses and nationally representative household surveys.
- Census of India, 2001 and 2011. Household amenities data. Registrar General of India, Government of India. State-wise total and urban areas data on household latrine facilities taken for comparison with Delhi. And also data on practice of open defecation taken from 2011 census for the same reason.
- The India Human Development Survey-II (IHDS-II), 2011-12 is a nationally representative, multi-topic survey of 42,152 households including total population of 204,568. In the study area of Delhi, 1,266 households including total population of 6,648 has been surveyed. Data from household file has not been considered for the study.
- Primary survey, on sanitation facilities with major emphasis on practice of open defecation. Data also collected on livelihoods, migration, water availability, waste disposal, behaviors, problems and perceptions related to the practice of open defecation. All these questions were asked on household basis. Data on individual level was also taken for the study. Settlements having pay-per-use toilet blocks were also surveyed.

1.6 Methodology

There are few broad research methodologies that have been applied, to study the practice of open defecation and existing public and individual toilet facilities. Firstly, data has been collected through a detailed interview in a primary survey of three slum sites Azadpur, Seelampur and Bhim Basti to study about open defecation.

Purposive sampling is done in selection of slums and quota sampling has been done for household units. Interviews are carefully conducted with household members regarding the sanitation issues but, initially they are made comfortable with discussions on other

social problems of the area. The interviews are conducted in Hindi and have been later translated into English for narration purposes. The details and personal information of the interviewee are kept confidential. For representation and analysis of the data, a range of descriptive statistical tools are used. A SWOT analysis is also done to evaluate the policies and programmes.

1.6.1 Sampling

For further analysis, primary survey conducted through the use of structured questionnaire, field observation and field evaluation used to gather household information on practice of open defecation. Primarily three settlements sites were selected across three Municipal Corporations (North, East and South Delhi Municipal Corporation, as NDMC, EDMC and SDMC respectively), one from each. For hypothesis testing, one random slum settlement sites selected from any of the municipal corporations (selected from SDMC). Settlements selected on the basis of their surrounding location like ones along the railways, near forest area or along the drains all of which have a possibilities of practicing open defecation due to available public open space. Quota sampling techniques used for collecting household information related to sanitary practice in the households in respected slum sites.

The sample sizes considered for each are least 35 households. Total sample to be taken from three different settlement sites are 112 and for hypothesis testing 11 households have surveyed against the 112 households that is, roughly 10 percent of the total sample size. Since each settlement are taken from the three municipal corporations, respectively, the fourth sample site is likely to reflect the conditions of the slums under these municipal corporations.

1.6.2 Selection of Indicators

The questionnaire is broadly divided into eight major parts, (1) background of the household; (2) availability and usage of toilets and defecation sites; (3) sources of water; (4) availability of toilets in the last residence; (5) availability of toilets in place of work and in school (6) knowledge about effects of open defecation and behaviors; (7) public

facilities; and (8) each individual's basic information in a separate sheet (individual sheet).

In the section '*background of the household*', questions were asked related to their livelihood; on migration status, domicile of the area, head of the household's education, religion and caste to find whether there are any associations of these factors with the practice of open defecation. The information on household's income, expenditure, head's occupation, availability of amenities, assets are also collected to understand association between economic and living conditions and practice of open defecation.

Questions were asked in two parts in '*availability and usage of toilets and defecation sites*' section. The first part is the household about the availability of the toilet facility in the household premises and its details. Data collected are on whether bathroom is attached to the toilet or not, type of toilet and its drainage connection, any member of the household go out or not, money spent on construction of toilets, advantages and disadvantages of toilets to understand the present situation of the households with toilet facility. Second part of the section collected data on households without latrine facility at home and captured information on available public toilet facilities and open defecation sites. In case of public toilet facilities data has been collected on the charges of the usage, about bathing and washing facilities together with urinals and latrine facilities. This part also captured information on practice of washing hands after the use of toilet, distance from house, facilities availed by BPL & Antodaya households and whether household members go for open defecation even after using public facilities, i.e., pay-per-use. On practice of open defecation, data collected were about defecation sites and distance from home, whether there were any spatial / different sites for male and female to defecate to understand the social dynamics of co-operation between people. Information on problems from outsiders, during monsoon and at night time is collected. Data on water source for defecation and accidents at defecation sites also collected.

The third section is on '*sources of water*' which is collected to examine whether the availability of drinking water and water for household usage have any relation with practice of open defecation or not. In fourth section, information on '*availability of toilets in the last residence*' captures the history of the households on sanitation practice. Contemporary study often talks about the toilet facility at home but a major portion of

one's daily time passes in his or her place of work and it is important to capture the condition of toilet facility at place of work and at school for children. So, the fifth section covered '*availability of toilets in place of work and in school*'.

The section on '*knowledge and awareness about effects of open defecation and behaviors*' is focused on behavioral characteristics and awareness about the practice of open defecation by the household members and to understand their approach about construction of toilets, their beliefs on advantages and disadvantages of using a latrine, influence of local politics and municipalities on building of latrines and facilities on sanitation. This section also collected information on diseases directly or indirectly caused due to practice of open defecation.

In '*public facilities*' section, questions were asked to the caretaker of the pay-per-use public toilet installments. Information collected are, on the year of construction of toilets, to understand the years of service of particular public facility, total population covered against total number of seats available, timings of the toilets service, type of latrine, drainage conditions and money charged per single use or family use or monthly use.

The last section captured information on '*individual's basic information*'. Information collected on individual's age, sex, immunization, educational attainment, marital status, occupation and practice of open defecation in a separate sheet. It can capture individual's behavior and responses in practice open defecation with his or her age, educational attainment and occupation.

After collection of data, they are tabulated with the help of SPSS software. Simple percentage method and linear correlation are commonly used to know the association between variables.

1.6.3 Statistical Tools

Cross tabulation- Cross tabulation is a method to quantitatively analyse the relationship between multiple variables. Also known as contingency tables cross tabulation groups' variables to understand the correlation between different variables. It is usually used in statistical analysis to find distributive patterns, trends, and probabilities within the data. The Pearson chi-square test essentially tells whether the results of a crosstab are

statistically significant. So basically, the chi square test is a correlation test for categorical variables.

Linear correlation- The purpose of a linear correlation analysis is to determine whether there is a relationship (not causal) between two sets of variables. There can be no relation, or there can be a positive or a negative relationship between two variables. Correlation coefficient (r-value) measures the strength of the relationship.

SWOT analysis is used to look at and defines internal factors (strengths and weaknesses) and external factors (opportunities and threats) that the study area as a whole is passing through. It is a useful tool that allows evaluation of project/model/idea/policies and suggests researches on strategic planning. This analysis helps to justify the objectives of the study. It helps in reviewing current strategies of eliminating the practice of open defecation and potential solutions to eliminate open defecation by correcting its weaknesses and threats.

1.7 Study Area

The study area selected for the case study is the Delhi slum. Delhi slum has been selected for many reasons as Delhi is the capital city of India and one of the highly focused areas because it is the seat of central government and at the same time it is one of the fastest growing cities in India.

According to the Census of India 2011, Delhi has nearly 16.8 million populations with 1.79 million living in slums. About 10.5 per cent of households do not have latrine facilities in Delhi and it is nearly 50 per cent in Delhi slums. The data shown for slum areas are thought to be higher than what is reported by the Census of India which could be backed from the field survey given the fact that the slums are economically backward and have space constraints.

Provision of services to the people of Delhi is provided by different bodies of the state government and independent bodies. Important government bodies are Delhi development Authority (DDA) – responsible for urban planning of Delhi since 1957,⁵¹ Municipal Corporation of Delhi (MCD) - responsible for providing health service, water

⁵¹ DDA (2012). Functions, Duties & Norms in the Planning Department, Government of Delhi. www.dda.org.in

supply, drainage, solid waste management, street lighting and many others, Delhi Jal Board (DJB) - working for providing potable drinking water, treatment and disposal of sewage⁵² and Delhi Urban Shelter Improvement Board (DUSIB) - working under Delhi government to improve the quality of life of Slum & Jhuggi Jhopri Dwellers.

1.7.1 Municipal Corporation of Delhi

74th Constitutional Amendment Act introduced in 1992 gave greater powers to Urban Local Bodies (ULB) for policy making and implementing to strengthen their functions for betterment of the residents. Municipal Corporation of Delhi (MCD) has the prime responsibility to provide civic services to the population of Delhi. MCD was trifurcated in 2012 into North Delhi Municipal Corporation (NDMC), East Delhi Municipal Corporation (EDMC) and South Delhi Municipal Corporation (SDMC). NDMC further got divided into 6 zones and 104 wards.⁵³ SDMC was also further divided into 4 Zones and has 104 wards.⁵⁴ EDMC was divided into 2 zones and has 64 wards.⁵⁵

Initially three settlements were surveyed for the core case study and one different settlement for testing hypothesis. The first three settlements are from three different Municipal Corporations of Delhi and for hypothesis test one settlement was randomly taken from Delhi Municipal Corporation. Delhi government identified residential areas in eight categories ranging from A-category residential colony as highest standard residential areas to H-category residential colony as lowest standard residential areas from September 2014 onwards and the study area considered for the case study found that all the areas are falling from E-category onwards.

The initial three settlements – Jailorwala Bagh slum and Wazirpur Industrial Area slum are located in between Wazirpur Industrial Area and Azadpur Railway Station and comes under NDMC Rohini Zone. The areas are owned by DDA and Indian Railways respectively. This slum area is the part of Ashok Vihar ward (68) and this settlement comes under the residential category of E. The second settlement is Ajit Nagar and

⁵² Delhi Jal Board, "About Us". Government of NCT of Delhi. Accessed on April 5th, 2017. <http://www.delhi.gov.in>

⁵³ Official Site of the North Delhi Municipal Corporation. http://mcdonline.gov.in/tri/ndmc_mcdportal/ Accessed on June 10th, 2017.

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

Kailash Nagar slum located near Seelampur Metro Station along the Rail line connecting Old Delhi Railway Station. This settlement comes under Dharampur Ward (233), Shahadra South zone of EDMC. Ajit Nagar and Kailash Nagar settlement comes under the residential category of F. The third settlement is Bhim Basti, Jonapur located alongside the national highway connecting Delhi and Faridabad surrounded by Forest area of Delhi Forest Department and private Farm land. Bhim Basti comes under the South zone and Aya Nagar ward (175) of SDMC. Bhim Basti comes under the residential category of F. Settlement chosen for hypothesis testing is Rajiv Camp settlement and Mahatma Gandhi Camp near Punjabi Bagh DTC depot and Road Number 77, falls under SDMC, West zone and Madipur A ward (103). According to DUSIB, total numbers of households in the slum are 3045 in Azadpur slum (NDMC),⁵⁶ 565 in Junapur Bhim Basti (SDMC), 1533 in Seelampur⁵⁷ and 918 households in Punjabi Bagh slum⁵⁸, near Punjabi Bagh DTC Terminal (SDMC).⁵⁹ Demographics and socio-economic characteristics would be discussed in the third chapter.

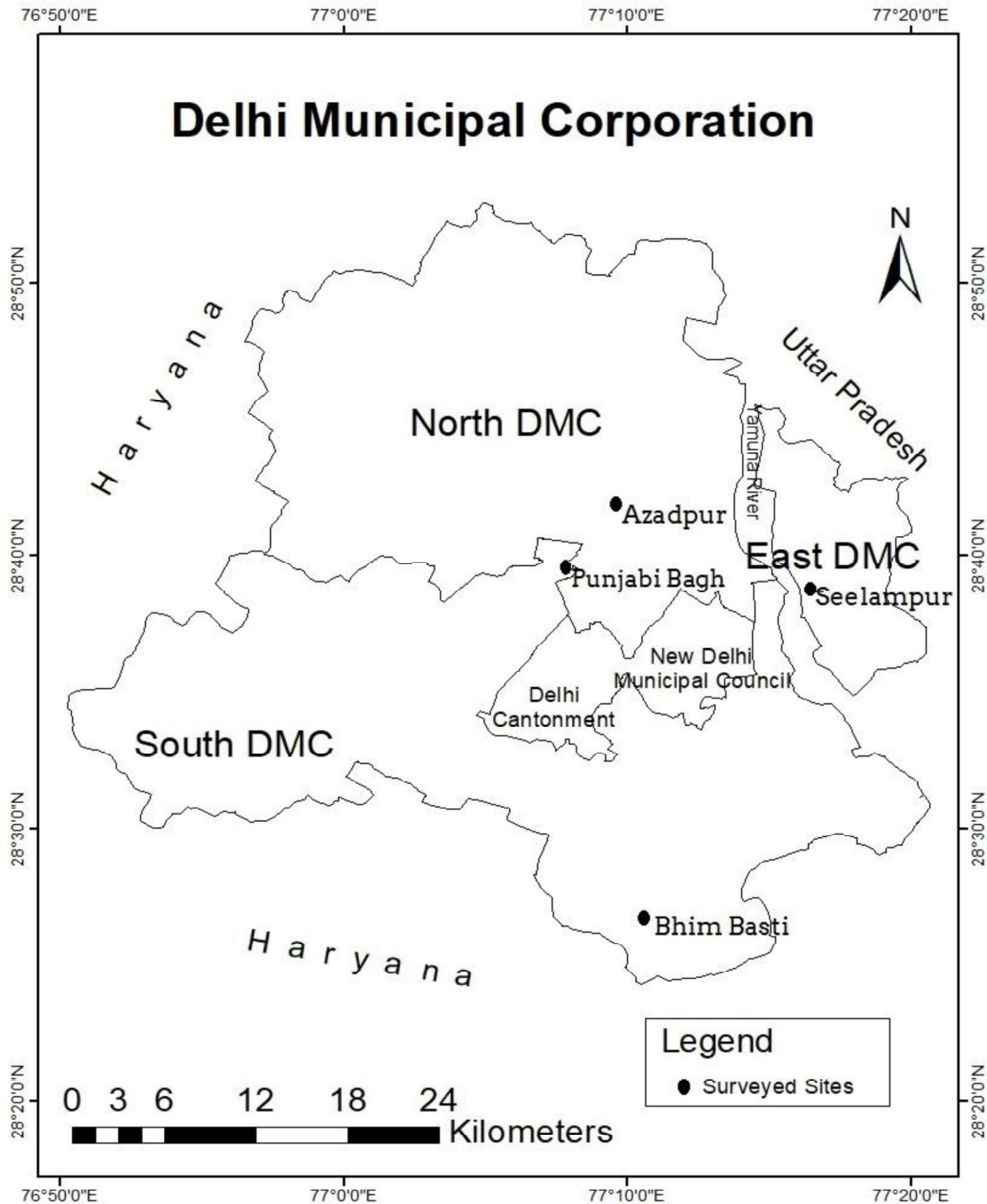
The field impression of the study areas at a glance looks very dirty and unclean. While entering Azadpur, which lies beside the railway tracks and open drain, the area emanates a foul stinky smell, making it impossible to breathe at times. As mentioned earlier, three settlements have been surveyed for the study from three different MCD. The three settlements are Azadpur Jailor Wala Bagh Slum (henceforth, Azadpur) located in Azadpur and Wazirpur Industrial Area, in North DMC, Ajit Nagar and Kailash Nagar slum near Seelampur Metro Station (henceforth, Seelampur) in East Delhi DMC and Bhim Basti located in Jonapur (henceforth, Bhim Basti) in South DMC.

⁵⁶ 1470 households in Wazirpur Industrial Area and 1575 households in Jailorwala Bagh slum of Ashok Vihar constituency.

⁵⁷ 929 households in Kailash Nagar slum and 604 households in Ajit Nagar slum, under Dharampura constituency.

⁵⁸ 145 households in Rajiv Camp and 573 households in Mahatma Gandhi Camp, under Madipur-A constituency.

⁵⁹ DUSIB, Govt. of NCT of Delhi. http://delhishelterboard.in/main/wp-content/uploads/2017/01/jjc_list_for_website.pdf



Map 1.1: Map of Delhi Municipal Corporation showing locations of surveyed sites.
 Note: DMC is Delhi Municipal Corporation. Delhi Cantonment and New Delhi Municipal Council is not a part of Delhi National Capital Territory by law.⁶⁰

⁶⁰ Verma, R. S. (1998). The Delhi Municipal Corporation Act, 1957. Act 2(10). *Allied Book Company, Delhi*. pp.19.

Azadpur slum areas have migrant households residing there from late 1970s. Most of the migrant families came from Uttar Pradesh. Majority are from Hindu religion and have significant population of Scheduled Castes (SC) and Other Backward Castes and few number of Brahmin families. Major occupations of this settlement are daily wage labor in the wholesale market of Azadpur Mandi and it has small shopkeepers selling their commodities and items across the rail line. The settlement is full of flies, mosquitos and bad smell all around and everywhere there is the dumping of wastes and children playing over the waste dumped areas.

Seelampur slum area has developed along the railway tracks connecting Old Delhi and Ghaziabad, most of the families have settled here in early 1980s. Majority of them belong to Hindu religion and SCs and have migrated from Uttar Pradesh. Over two-fifth of the total population living in Seelampur slum are illiterate and almost one-tenth of the total workers engaged in economic activities are sanitation workers.

Bhim Basti slum area developed as an unauthorized colony by immigrants, where most of the immigrants have been living there from 1960s whereas some of the families came here just four-five odd years ago. Most of the migrants are from Rajasthan, majority belongs to SC community of Hindu religion. Occupationally most of them are engaged in Daily wage labor and construction labor nearer to the settlement inside Delhi. The settlement has a problem of shortage in water supply and has bad sanitary condition but has a better house spacing when compared with other settlements.

Across all the three Municipal Corporation of Delhi (MCD), the survey is done over 112 households. Survey has been done through well-structured questionnaire and queries were related to toilet availability and its uses, demographic and socio-economic conditions of the household, about their migration, basic urban services etc.

Chapter 2

LITERATURE REVIEW

A careful reading of the literature on sanitation focused primarily on open defecation essentially brought out four recurring themes of research on this topic which have been chosen as the broad themes that shall be taken up for further discussion. These four broad themes are historical; socio-cultural and economic issues; policies and programmes aspect; and lastly the health factor.

2.1 History of Sanitation

Firstly, to have an understanding of the issues related to sanitation in general it is not only important to look at the present situation but to go back further in time to look into the history of the processes that have caused the present situation to occur and to realize the importance of sanitation for the progress and development of human civilization.

History of sanitation can be traced right from the Harappan Civilization in 2500 BC, which had its location in the present day western India and eastern Pakistan that included highly developed underground drainage system for waste water and toilets (sitting toilets).⁶¹ The major development of sanitation with toilet facility during the ancient times can be traced from the Roman Empire in between Third and First BC, who developed their own water supply system, and also built public toilets, bathrooms, sewage system, hot springs and fountains.⁶² In ancient Greece, the practice of burning and keeping away of feces existed⁶³ in order to avoid diseases and for healthy life. All these show that there was importance paid to keep human excreta away from human contact for better and healthy life in the past and to segregate waste from direct human interaction.

⁶¹ Pathak, Bindeshwar. Toilet History. Sulabh International. Accessed on March 31st, 2017. <http://www.sulabhtoiletmuseum.org/history-of-toilets/>

⁶² Dembskey, E. J. (2009). The aqueducts of ancient Rome. *Master of Arts, University of South Africa*.

⁶³ AEGEA, Sanitation provider in South America. Accessed on March 30th, 2017. <http://www.aegea.com.br/en/portfolios/a-historia-do-saneamento-basico-na-idade-antiga/>

In India, right from the Harappan Civilization to the end of Mughal Empire there was not much literature on sanitation practices. Covering the feces with earth⁶⁴ and throwing off the night soil at distant places⁶⁵ was practiced until the Mughal period, during the same time Mughals also built luxury bathrooms which are still prominent in present day Agra, Fatehpur Sikri and Delhi forts, but bathrooms were present only for the royal family whereas the common poor people had to live in insanitary conditions.

Next, the British came to India and started to settle down in the port cities of Calcutta (then British India's capital), Bombay and Madras. With the coming up of offices and bungalows it attracted the surrounding people to come for new jobs. India experienced a surge of migration from rural areas to urban areas with the development of jute and cotton mills in the eastern and western urban areas respectively. This was also due to the prevalence of agrarian distress at that time and the simultaneous coming up of new urban jobs in various sectors of mills and construction of buildings. The unhygienic condition of the urban surroundings mainly because of untreated wastes many times resulted into the outbreak of epidemic diseases and repeated outbreak of epidemic diseases resulted into higher mortality of the British militaries and severe impact on their health put questions on the authorities about the system.⁶⁶

In between, during the third cholera outbreak in London in 1853-4, an epidemiologist John Snow, also called as the *Father of Modern Epidemiology* discovered that majority of the casualties were reported from around the Broad Street Pump and the magnitude of the disease and mortality of people became a big challenge with time. He mentioned in his famous book *On the Mode of Cholera*.⁶⁷

Unlike others during the nineteenth century, Snow did not believe in "*miasma*" (particle theory) or foul air that caused cholera and he acknowledged that the cholera is a contagion which entered the victim through the mouth rather than being brought by.⁶⁸ He

⁶⁴ Pathak, Bindeshwar. Toilet History. Sulabh International. Accessed on March 31st, 2017. <http://www.sulabhtoiletmuseum.org/history-of-toilets/>

⁶⁵ India's Toilet Tradition; Sanitation in Ancient ages. *Urban Water & Excreta Management in Indian Cities*. Accessed on March 28th, 2017. <https://sites.google.com/site/waterexcreta/home/groundwater>

⁶⁶ Harrison, M. (1994). *Public Health in British India: Anglo-Indian Preventive Medicine 1859-1914*. Cambridge University Press.

⁶⁷ Snow, J. (1855). *On the mode of communication of cholera*. pp.23

⁶⁸ WMD. Cholera; Weapons of Mass destruction (WMD). Accessed on March 28th, 2017.

also noticed that there were a character of contaminating water with sewage and there were bad smell from the pump water and it looked ‘offensive’ after keeping the water for two more days and with his detailed study over causalities he found that out of initial eighty-three deaths only ten were not from nearer the Broad Street pump and he enquired in detailed found that among those ten deaths eight were habituated to drunk water from Broad Street Pump.

Such a detailed and minute study led to discover that contamination of drinking water by ‘*human waste*’ resulted into outbreaks of cholera disease and whoever drank water from the Broad Street pump at that time was attacked by Cholera. Snow, after his analysis over the cause of cholera as contamination of water, *removed the handle of the pump* and his brave work can be taken to be a symbol for ‘*Public health*’. In case of ‘*Yellow Fever*’, it was caused due to mosquito bites and the main reason for it was none other than ‘water logging / stagnation’ around or nearby settlements.

To separate human waste, needs proper collection and disposal of waste and better execution of drainage and sewage system which has to be treated before its disposal into open. This resulted into *The Great Stink* of 1858 in the summer, when the stink from the Thames was unbearable which previously many times resulted into uncountable outbreak of Plague and Cholera epidemics. For the solution, there were many reformers who were determined for the improvement in the conditions. It was not until 1856 when Joseph Bazalgette executed his 82 miles long intercepting brick-made sewers under the streets of London, with the mechanism of waste flow and the help of gravity, placed adjacent to the river. The waste would be released only when high tides occurred.⁶⁹ Together with sewage system and other measures taken concerning the supply of clean water opened the door for good sanitation from there on, for London. After the Crossness Pumping Station (sewage system) started working in 1865, there was only one Cholera outbreak in the city in 1866,⁷⁰ just after one year of installation and thereafter there were no such major threats. From this, the importance of sewage system in urban areas for better handling of human excreta and wastes can be easily understood. It also shows how quickly in a short

http://www.globalsecurity.org/wmd/intro/bio_cholera.htm

⁶⁹ London’s sanitation. *The Crossness Pumping Station; A Cathedral on the Marsh*. <http://www.crossness.org.uk/history/londons-sanitation.html> Accessed on April 7th, 2017.

⁷⁰ *Ibid.*

time implementation and workout of plans can wipe out deadly diseases and this is how the planning of the cities came into existence.

As from the epidemics and pandemics, the people who suffered most were the urbanites. This was due to filthy open drains which ran through the cities and polluted drinking water across cities, the likes of Cholera outbreaks in the 19th century in Calcutta, London, Paris, New York and many more big cities many times took millions of lives. To check the diseases or for the solutions of the problem many governments took many initiatives like formation of Municipal bodies, framing policies and programmes for better sanitation facilities and for the betterment of health; this is how the policies regarding sanitation and execution of city planning came into existence.

2.2 Implementation of Policies and Programmes

The issue of policy making which needs to focus on better execution of people's health because in a way the policies that are made fall into a structure, a hierarchy of sorts largely initiated by governments and NGOs that are operationalized through local bodies. In this section the emphasis has been given on India only.

The unhealthy and unhygienic condition of the urban places many times resulted into the outbreak of epidemic diseases and frequent outbreak of diseases resulted into higher mortality of the British militaries and severe impact on their health put questions on the authorities about the system.⁷¹ Sanitation emerged as a very important issue in that context because it was directly related to health conditions of the British army and British officials. There were not much concern on the native residents and this can be seen from reports published by British India Government during colonial time. There were “*polarized landscape*” in the cities with spacious residents, modern infrastructure and better sanitation facilities for Britishers and elite Indians and for “*native*” there were no interventions put to develop the situation.⁷² Indian elites at that time were a part of local government and also failed to provide sanitation facilities to the entire urban areas.⁷³ In

⁷¹ Harrison, M. (1994). *Public Health in British India: Anglo-Indian Preventive Medicine 1859-1914*. Cambridge University Press.

⁷² Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.102.

⁷³ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.102.

1863, in a Report of the Commissioners given by the Royal Commission on the Sanitary state of the Army in India to Queen Victoria of Great Britain and Iceland, it was proposed to form a municipal body⁷⁴ to operate sanitation facilities and it finally gave power to the municipal authorities to collect taxes for sanitation services and public work in 1870s.⁷⁵ Although the information regarding municipalities says, municipalities previously existed from 1688 in Madras,⁷⁶ 1726 in Calcutta and Bombay, 1858 in Ahmedabad and 1863 in Delhi.⁷⁷ As sanitation facilities were improper, it had adverse health impacts on the British army. So, to deliver sanitation services British India government formed sanitary board under Military Cantonments Act of 1864, and later to improve civil sanitary condition, sanitary boards were developed in each province. Sanitary Commissioner replaced these boards; that were actually the advisors to the government and did not have executive powers. Thereafter also the municipalities and the colonial government failed to provide sanitation services to all with continuously increasing urban population. This resulted into insanitary conditions and the outbreak of plague epidemic with greater magnitude in Bombay and Calcutta in 1896 which was due to unclean and filthy drains for a long time in the slum areas and across streets. Because of plague an estimated ten million population died within a span of around twenty five years which forced the municipal authorities to invest for better sanitary conditions.⁷⁸

During the entire colonial period the British government only worked or tried to improve the sanitary conditions of the officials and the military troops and never paid serious attention to the natives. This can be seen from the reports published by the Military Department on Sanitary conditions during British rule in Indian sub-continent.⁷⁹ Due to shortage of resources and also the unwillingness of colonial government, they did not take any major steps for the improvement of sanitation services. What they had done was

⁷⁴ Royal Commission on the Sanitary state of the Army in India, (1863). Reports of the Commissioners, Vol. 1, London. pp.295

⁷⁵ Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan.

⁷⁶ Official site of Chennai Municipal Corporation. <http://www.chennaicorporation.gov.in/about-chennai-corporation/aboutCOC.html> Accessed on March 31st, 2017.

⁷⁷ Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan.

⁷⁸ *Ibid.*

⁷⁹ Several reports on Sanitation named as - *the extent and nature of the sanitary establishment for European troops from mid-nineteenth century to early twentieth century*, published by Military Department Press, British India, Calcutta.

to direct intervention of colonial government to build separate residential complexes for the British troops as cantonments. The same thing was executed for government offices and bungalows that were surrounded by walls and did not allow the native people around for five hundred yards. The walled areas were installed with sewers and proper water supply with sufficient gaps between houses.⁸⁰ When the colonial government and the municipal bodies repeatedly failed to improve sanitary conditions they started to evacuate and demolish the slum areas and again those slum populations settled into the outskirts of the city with very high density and improper sanitary condition.

After the independence of India, government of India paid its attention for sanitation from the very first Five Year Plans (FYP). Water supply and sanitation were included into the national need in the first FYP (1951-56). Policies and programmes on sanitation in India by and large controlled and implemented by the central government and through the central government, the state and the local governments received funding mainly during FYPs, where, union government ensures the maximum amount to expend on sanitation.⁸¹

Environmental Improvement in Urban Slums (EIUS) was introduced in the Fourth FYP (1969-74) and it was identified as a basic need of the poor in the Fifth FYP (1974-79). The scheme visualized about the provision of seven basic amenities, which includes water supply, community baths and latrines to slum dwellers.⁸² In the first five FYPs the investment for sanitation was very negligible and for the first time the issues of sanitation was taken seriously from Sixth FYP (1980-85) onwards.⁸³ In Sixth FYP (1980-85) *Integrated Low Cost Sanitation* (ILCS) scheme was launched to convert the existing dry latrines for stopping scavenger occupation, like pour flush and to construct new low cost latrines for economically weaker sections.⁸⁴ In 1986, central government introduced *Central Rural sanitation programme* (CRSP) with a primary aim of improving sanitation

⁸⁰ Arnold, D. (1993). *Colonizing the body: State medicine and epidemic disease in nineteenth-century India*. University of California Press

⁸¹ India: Assessment. (2002). Water supply and sanitation. *A WHO-UNICEF Sponsored Study, Planning Commission, Government India*. pp.8

⁸² Annual Report 2000-01. Ministry of Urban Development and Poverty Alleviation. 20 Point Programme & National Slum Development Programme, Chapter 17. Government of India. www.urbanindia.nic.in

⁸³ Ministry of Drinking Water and Sanitation (2008). *Sustaining the Sanitation Revolution: India Country Paper*. New Delhi. pp.4

⁸⁴ MoH&UPA. (2008). *Revised Guidelines.Integrated Low Cost Sanitation Scheme*. Ministry of Housing & Urban Poverty Alleviation. pp.1

in rural India with special attention towards women's privacy and dignity.⁸⁵ CRSP was the first nationwide programme on sanitation which targeted on construction of individual toilets. By the Seventh FYP, the Planning Commission for the first time set a goal to provide one-fourth of the total rural household with individual household latrines, but it completely failed to provide so. The figures stood at 9 per cent in 1991 compared to what it was in 1981 at 1 per cent, both of which were much less than the target. The Eighth FYP (1992-97) introduced *Accelerated Urban Water Supply Programme* (AUWSP) which put emphasis on providing safe drinking water and basic sanitation.⁸⁶ In 1999, CRSP was renamed into *Total Sanitation Campaign* (TSC) with adoption of "demand driven" approach, paying greater importance to the health of an individual and home sanitation rather than community, and the objective of the programme was to eradicate Open Defecation by 2012, three years before the target of *Millennium Development Goals* (MDGs) and to fasten the movement of TSC, Government launched the *Nirmal Gram Puraskar* (NGP) in 2003 to recognize the achievements in ensuring full coverage of sanitation, and later TSC was renamed⁸⁷ as *Nirmal Bharat Abhiyan* (NBA)⁸⁷ with little change or similar approach and targets. The TSC and NGP also failed like other programmes, as it was thought that the prize money for clean villages or the Gram Panchayats will boost the completion among states and would result into increasing sanitation coverage but it did not really happen in that way. In reality, the picture of *Open Defecation Free* (henceforth, ODF) villages were altogether different and there were only 4 per cent of the Gram Panchayats which were actually free of open defecation and overall 63 per cent were actually using the latrines, reported from a survey conducted by UNICEF and The Action Resource Unit (TARU) in 2008.⁸⁸ In the urban areas, the Government launched the *Jawaharlal Nehru National Urban Renewal Mission* (JNNURM) in 2005 for providing housing and basic services to urban poor and slum dwellers in selected 65 cities of India and to assist State Governments under one of the

⁸⁵ MoDW&S. Swachh Bharat Mission – Gramin, Ministry of Drinking water and sanitation, Government of India. <http://tsc.gov.in/TSC/NBA/AboutNBA.aspx> Accessed on April 4th, 2017.

⁸⁶ MoUD. Accelerated Urban water Supply Programme (1994). Ministry of Urban Development. Government of India, New Delhi.

⁸⁷ MoDw&S. Swachh Bharat Mission – Gramin. *Ministry of Drinking Water and Sanitation*, Government of India. <http://tsc.gov.in/TSC/NBA/AboutNBA.aspx> Accessed on April 4th, 2017.

⁸⁸ Coleman, R. M. (2011). The Human Rights of Sanitation for All: A Study of India. *Pacific McGeorge Global Business & Development Law Journal*, Vol. 24. pp.291

major objective of *Basic Services to the Urban Poor* (BSUP) which includes improved water supply and sanitation and the *Integrated Housing and Slum Development Programme* (IHSDP) for other cities and towns. Duration of the programme was 7 years from 2005-06 which has been extended up to 31st March, 2017 for completion of ongoing work.⁸⁹

The Dublin International Conference on Water and Sustainable Development in January 1992 for the first time recognized “*the basic right of all human beings to have access to clean water and sanitation at an affordable price*”.⁹⁰ It is stated that, “*at an affordable price*” one has the right to have access to sanitation, and then think about the people belongs to Below Poverty Line (BPL) section, who can’t afford the price. So, basically the right is not to all human beings as stated. The commission of Human Rights on their 57th session in 2005 mentioned that the guidelines of *the right to drinking water and sanitation*” do not legally define the right and rather it provides guidance for its implementation through states and NGOs.⁹¹ And finally in September 2010, UN General Assembly legally confirms that the *rights to water and sanitation* are part of international laws and states are legally binding up on these.⁹² The *Millennium Development Goals* (MDGs) in 2000 was directed upon the signatory nations of United Nations (UN) to extend access to improved sanitation by 2015 to at least half of the urban population and to provide 100 per cent access by 2025 to all the developing and developed nations. These initiatives were taken to make cities open defecation free.⁹³ In the MDGs, there were eight Goals to be completed by 2015 with 18 Targets with the help of 48 indicators. Among these 18 targets, many of these are directly or indirectly related to check open defecation, like, target 5 under goal 4: to reduce two third of under-five mortality rate which is caused by second most reason of diarrhea among children due to open disposal

⁸⁹ Annual Report, (2016-17). Ministry of Housing & Urban Poverty Alleviation. Government of India.

⁹⁰ World Meteorological Organization (2011). The Dublin Statement on Water and Sustainable Development. *United Nations*. Accessed on May 21st, 2017. <http://www.wmo.int/pages/prog/hwrp/documents/english/icwedece.html>

⁹¹ Commission on Human Rights (2005). Realization of the right to drinking water and sanitation. Report of the Special Rapporteur, El Hadji Guisse. *Economic and Social Council, UN*.

⁹² Human Rights Council (2010). Human rights and access to safe drinking water and sanitation. *General Assembly, United Nations*.

<https://documents-dds-ny.un.org/doc/UNDOC/GEN/G10/166/33/PDF/G1016633.pdf?OpenElement>

⁹³ MoUD. (2008). National Urban Sanitation Policy (NUSP). Ministry of Urban Development, Government of India. pp.6

of human waste (13th indicator). Under goal 7, target 10 and indicator 31, for the improvements in rural and urban sanitation.^{94,95} After the deadline of MDGs in 2015, the United Nations Development Programme (UNDP) launched *Sustainable Development Goals* (SDGs) to complete the incomplete goals of MDGs with some new set of 17 goals and to wipe out the social inequalities by 2030 all over the world.⁹⁶ It is observed that the policies and programmes on health and sanitation in India are largely influenced by international ones, especially of UN policies and programmes as funding for health and sanitation are also received from UNDP, USAID, UKAID and many Government and Non-Governmental Organizations (NGOs).

India in 2008 adopted *National Urban sanitation Plan* (NUSP) which was adopted entirely for all cities and towns of the country in which *City Sanitation Plan* (CSP) of each individual city and towns marked a key planning tool and baseline document for Urban Local Body (ULB) to achieve the goal of 100 per cent sanitation and become open defecation free by 2011.⁹⁷ And the most recent programme on sanitation is *Swachh Bharat Mission* (SBM), launched on 2nd October, 2014, 145th birth anniversary of Mahatma Gandhi. SBM was implemented by the *Ministry of Urban Development* (MoUD) for urban areas and by the *Ministry of Drinking Water and Sanitation* (MoDWS) for rural areas. Targets of the SBM are to be achieved by 2nd October 2019, and the targets are to eliminate open defecation, to effect behavioral changes regarding practices of healthy sanitation are the major objectives and to provide toilet for every family. In case of urban, modern and scientific municipal solid waste management, capacity augmentation for ULBs and to create an enabling environment for private sector participation in capital expenditure and operation and maintenance are the others.⁹⁸ For the follow up of SBM there are many sub-programmes and awareness programmes

⁹⁴ Human Development Report. (2003). Millennium Development Goals: A compact along nations to end human poverty. *United Nations Development Programme*. New York. Oxford University Press.

⁹⁵ United Nations. Goal, targets and indicators, UN Millennium Project.

<http://www.unmillenniumproject.org/goals/gti.htm#c> Accessed on April 1st, 2017

⁹⁶ Sustainable Development Goals (2015). *United Nations Development Programme*. <http://www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/> Accessed April on 1st, 2017.

⁹⁷ MoUD. (2008). National Urban Sanitation Policy (NUSP). Ministry of Urban Development, Government of India. pp.16

⁹⁸ Guidelines for Swachh Bharat Mission (SBM) (2014). Ministry of Urban Development. Government of India.

carried out like *Swachh Shakti 2017*, *Lok Swachhata Jombesh Saptah* and many others to boost the programme activities. In many urban as well as rural areas, the imposition of fine⁹⁹ for defecating in the open is also established by the local government to ensure safe and complete sanitation.

In India, major nationwide sanitation drive which emphasized much on toilet facilities have mostly looked after rural areas, right from CRSP, ILCS, TSC, NGP and NBA. It is observed that the policies and programmes on sanitation with special attention paid to open defecation and toilet facility never succeeded because the government never takes the matter seriously unless and until there is a serious issue. This had been in practice right from the colonial time. Only when there is risk to the public health due to spread of epidemics or any deadly disease then only government interferes to control the situation¹⁰⁰ and also at the time of cholera and plague outbreaks during British India rule. Chaplin in his work mentioned three factors which can improve and bring about the political change to implement sanitary reform and those were “*the campaigns by medical practitioners along with reform of local government, advances in science and engineering and the presence of a ‘threat from below’ in terms of diseases and organized labor.*”¹⁰¹ No doubt about the importance of these three factors but the question remains with the implementation of the plans and campaigns. Most of the programmes saw failures and hardly paid attention for campaigns on behavior change. Following Mahatma Gandhi’s vision on sanitation, the Government of India launched SBM to promote better health and hygiene of the people but in reality the overall funding for health is decreasing and promoting *Public Private Partnership* (PPP) instead of delivering free healthcare services to the people of the country.¹⁰² Similarly, the government adopted policies are more or less same in case of all the sanitation policies and programmes with very little or no change in approaches of the consecutive initiatives which cause repeated failures.

In India, the legacy of the unaccountability, corruption and ineffectiveness of state governments and also the central government shows the present low quality sanitary

⁹⁹ PTI. (16th June, 2017). 13 families in Madhya Pradesh village fined Rs 4 lakh for open defecation. *Times of India* (Raisen, MP). Accessed on June 16th, 2017.

¹⁰⁰ Chaplin, S. E. (1999). Cities, sewers and poverty: India's politics of sanitation. *Environment and Urbanization*, Vol. 11(1), pp.145

¹⁰¹ *Ibid.* pp.146

¹⁰² Sharma, N. C. (2016, March 2). India’s health woes: Budget for the National Health Mission remains stagnated at Rs 19,000 crore. www.indiatoday.in Accessed on April 4th, 2017.

condition all over the country which is home to the largest number of people who defecates in the open.¹⁰³ Although in recent times, many rural areas and urban areas are declaring themselves as *Open Defecation Free (ODF)* especially after the launch of SBM. But in reality it is also observed that after declaring an area as ODF, people still go out for nature's call.¹⁰⁴ In some cases from SBM they just constructed the toilet block and did not provide the septic tank materials and eventually those toilet blocks were converted for some other uses of the household, like, kitchen and grocery shop.¹⁰⁵ In a study by O'Reilly *et al.*, it was found that an NGO convinced some of the villagers in Uttarakhand to build latrines and after the completion the NGO would pay them the money, but after the completion of the latrines they never returned back to that village to finance them which resulted in poor construction of latrines or incomplete building.¹⁰⁶ So, there are many hidden problems which surface even after providing toilets to a household, so to provide other necessary things to use that toilet is more important. A successful sanitation depends not only on availability of toilets but also its use. It is some centuries since the toilet was nicknamed 'the necessary' and it is time for public health to make a stronger case for this all too necessary facility.¹⁰⁷

2.3 Socio-cultural Processes

In the Indian context this historical process becomes important because of the socio-cultural dynamics of the sub-continent, whereby the interplay of the caste-hierarchy along with the societal structure is so deeply embedded within the system that it makes matters more complex. The issue becomes of utmost importance more so because people at the lower end of the social spectrum in the Indian context are more susceptible to the ill effects of poor sanitation. Added to this factor is the gendered nature of the problem

¹⁰³ WHO & UNICEF (2014). Progress on Drinking Water and Sanitation – 2014 Update. *WHO Press*, Switzerland. pp.21-22

¹⁰⁴ Faujdar, S. (February 23, 2017). In ODF villages, locals still defecate in open. *Hindustan Times* (Jaipur). Accessed March 14, 2017.

¹⁰⁵ Santoshi, N. and Pateriya, A. (February 19, 2017). Toilet turned into kitchen, grocery shop: Swachhta Abhiyan claims fall short in this MP village. *Hindustan Times* (Bhopal). Accessed on February 19th, 2017.

¹⁰⁶ O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring "The Remote" and "The Rural": Open Defecation and Latrine Use in Uttarakhand, India. *World Development*. pp.8.

¹⁰⁷ Stanwell-Smith, R. (2010). Public toilets down the drain? Why privies are a public health concern. *Public health*, Vol. 124(11), pp.616

whereby women are more disadvantaged than men when it comes to use of the public space.

Literature holds both the following cases as true, that education helps in rising standard of sanitation practice¹⁰⁸ and education of an individual have very little or no control¹⁰⁹ over his or her sanitation practices. The practice of open defecation is now a humiliating practice and it has a historical construct of the notion. Srinivas writes about the practice of bathing and defecating in open spaces as common in rural parts of India until 1940s and it was socially acceptable and was sociable to know each other during and on the way of defecation.¹¹⁰ It was until people started to build toilets at the backyard of their home and the very “*communal bond of defecation*” started to break.¹¹¹ The Indian society is largely characterized by the social division and hierarchy. Social inequality in India is by and large controlled by the caste system and it is strongly embedded in the social forms especially among the Hindus. The “*Jati / Caste*” is carried from one’s birth and it is inherited, thus cannot be changed throughout life. The name or caste in most of the cases is associated with a specific caste-based occupation. Sometimes, the linkages between caste and occupation can be traced from both urban and rural, in both the areas most of lower caste population is engaged in sanitation work of cleaning toilets, removal of garbage, cleaning of sewers, manual scavenging and sweeping streets¹¹² than general population as the ideas of occupation and caste are based on the purity-pollution of the hierarchy in caste structure.¹¹³ One’s caste and occupation is so linked that even the majority of the agricultural laborers and the daily wage laborers are from the lower ranked castes or Scheduled Castes.¹¹⁴

People are not much comfortable to build latrine near home where they reside due to cultural factors. Cultural practices suggest that there should be maximum distance

¹⁰⁸ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic & Political Weekly*, 49(49), pp.77.

¹⁰⁹ Tarraf, A. (2017). Social & Behaviour Change Communication, Insights and Strategy Case Study: Open Defecation in India. *The Government & Public Sector Practice*. In a collaboration with WPP plc. and University of Oxford, pp.9.

¹¹⁰ Srinivas, T. (2002). Flush with Success Bathing, Defecation, Worship, and Social Change in South India. *Space and Culture*, 5(4), pp.370.

¹¹¹ *Ibid.* pp.371.

¹¹² Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.160

¹¹³ Singh, R. (2012). *Spatial Inequalities in the Workforce Structure among Scheduled Caste and Non-Scheduled Population*. Unpublished M.Phil Dissertation submitted to Jawaharlal Nehru University. pp4

¹¹⁴ Registrar General of India, PCA Census of India, (2011). Government of India.

between excreta and living space. A study by Dhaktode in a Maharashtra's Sarola village found an old man saying "Where one eats, how can one defecate? I cannot do this! There should be a distance between the food and toilet."¹¹⁵ Mostly the open spaces used for the purpose of open defecation in the rural areas, especially agricultural lands and in the urban areas people mostly used secluded areas, railway lines and drains side are used.¹¹⁶ And for the cleaning after defecation people use agricultural pump water in rural areas and also carry water both in rural and urban areas from their own house.¹¹⁷ There is no stigma or restrictions among the common people whoever practices open defecation as it counts as a part of the culture and a long standing habit,¹¹⁸ it is not unacceptable to not have toilets at house¹¹⁹ both among rich and poor people.¹²⁰

The Indian society has a typical legacy of gender biasness or gender stereotypes. In Indian tradition, a housewife needs to cover her face in front of elder family members and obviously from the outsiders both within and outside home. On the other hand, due to the absence of toilet in the home elders tell them to defecate in the open which will require them to lift their saris in the open, such is the irony. Households without toilets face many problems and incase of women it is all the more uncountable, due to the norms of patriarchal society. In a society where women are not safe and can be harassed or beaten openly in front of public at day time due to family and any other issues like dowry, then one can imagine of magnitude of vulnerability to them when they go out for nature's call.

¹¹⁵ Dhaktode, N. (2014). Freedom from Open Defecation: Role of the Community. *Economic & Political Weekly*, 49(20), pp.30.

¹¹⁶ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), pp.1127

¹¹⁷ *Ibid.*

¹¹⁸ For example,

UNICEF. Eliminate Open Defecation. *UNICEF India*. <http://unicef.in/Whatwedo/11/Eliminate%ADOpen%ADDefecation> Accessed on April27th, 2017.

Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2015). Sanitation-related psychosocial stress: a grounded theory study of women across the life-course in Odisha, India. *Social Science & Medicine*, 139, pp.81.

Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2014). Revealed preference for open defecation. *Economic & Political Weekly*, 49(38), 43.

¹¹⁹ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), 1124-1130.

¹²⁰ Hussain, R., & Mangla, B. (2014). Toilet as an asset: Necessity versus luxury. *Developing Country Studies*, 4(9), pp.112.

For adolescent girls and married women the need for menstrual hygiene is also hampered due to unavailability of toilet at home. Unavailability of toilets is also one of the main reasons behind many adolescent girls to leave school because of problems faced during menstruation¹²¹ which hampers their 'Right to Education'. A greater health risk to those women, especially pregnant women who restricts themselves and eat less food during day time to avoid going out for nature's call causes both expectant mother and baby vulnerable to ill health impacts. And even in case of inadequate drinking water supply it is again women who have to travel long distance to collect it.¹²² Even older people are vulnerable to go out at night as there are risks of physical injuries. Even if we look at the availability of public toilets for women overall are not even one-tenth of the number of men's toilet in the capital city of India, and the significant number of available toilet blocks are not functioning mostly because of lack of maintenance. This again forces women to go into the open. Most of the public toilets in Delhi are pay-per-use which needs money to use be it maintained by DUSIB or Sulabh.¹²³ Every time paying money to use toilets are no possible who belongs to economically poor section of the society.

There are many instances of relating harassment and rape to the practice of open defecation like the worst incidence of rape of two minor girls aged seven and four were reported in Delhi's Rohini in the month of February this year as these two girls went out of the home in the afternoon to respond to nature's call because they did not have toilets at their home as reported by many national newspapers.¹²⁴ A study by the UNICEF estimated that the 50% of rape happened when women go out to defecate or urinate.¹²⁵ Another study conducted by Michigan University on risk of women states that women who went out for nature's call are twice as vulnerable to be raped than who are not, from about a sample of 75,000 women in India.¹²⁶ Citing the example of this UNICEF and

¹²¹ Sunday Magazine, (January 22nd, 2012). We should be ashamed. *The Hindu* (Visakhapatnam). Accessed on October 24th, 2016.

¹²² Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.135

¹²³ DUSIB and Sulabh is the two major provider of toilet facility in the capital city of India.

¹²⁴ Singh, A. (February 22, 2017). Both minors in hospital: 'No usable toilet in the area, that's why 2 girls were raped in Delhi's Rohini. *The Indian Express* (Delhi). Accessed on February 23rd, 2017.

¹²⁵ Tiwari, S. (March 11th, 2017). Lack of women's toilets in Delhi a matter of concern. *Sunday Guardian* (New Delhi). Accessed on March 14th, 2017.

¹²⁶ UNICEF. Eliminate Open Defecation. *UNICEF India*. <http://unicef.in/Whatwedo/11/Eliminate%ADOpen%ADDefecation> Accessed on April 27th, 2017.

there are also many national reports, NGO reports, national newspapers and countless research papers indicates that the chances of rape and harassment are more when ‘women and girls’ go out to defecate, this dissertation challenges their opinion over these violent act of shame. The incidents of rapes and harassments are noticed not only from defecation sites, this shameful act also happens in public places; right from the public transportation, working places, schools, road sides and there on. The reason behind the incidence of rape and harassments can be linked to the form of patriarchal society,¹²⁷ it is not that when women are going out for defecation that the incidence of rape and harassments take place. The UN reports, national reports and countless research papers that have talked about avoiding open defecation to stop rape and harassment incidence are the first category of so called ‘uneducated literate’. The question remains here are the rapes are only taking place because of not having toilet or due to patriarchal structure and mind setup of the society? It is not that if women stops going out for open defecation the rape and harassment incident would be stopped, what is needed to be changed is the mind setup. The act of going out must be seen as a “*social outing*”^{128,129} to interact with other in the villages during defecation and to escape from “*gender-related power differential*”.¹³⁰ The situation for the transgender is no more different from the women and even it is worse than women in case of sanitation facilities in the national capital of the country that does not even have a single public toilet block for transgender in the city¹³¹ even after three years of recognition of ‘*third gender*’ from the apex court. Parts of population who are more vulnerable to inadequate sanitation are the lower caste population in India¹³² and those who are economically poor. The condition of urban poor in the slum areas are not only bad in terms of sanitation but also had acute shortage of housing and fulfilling basic needs. The availability of toilets, garbage collection and

¹²⁷ Wasti, S. A., Bergman, M. E., Glomb, T. M., & Drasgow, F. (2000). Test of the cross-cultural generalizability of a model of sexual harassment. *Journal of Applied Psychology*, 85(5), pp.776.

¹²⁸ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), pp.1127.

¹²⁹ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic & Political Weekly*, 49(49), pp.76.

¹³⁰ Menon, S. A., & Kanekar, S. (1992). Attitudes Toward Sexual Harassment of Women in India. *Journal of Applied Social Psychology*, 22(24), pp.1942.

¹³¹ Agarwal, S. (April 16th, 2017). Delhi: Access to washrooms, toilets still a problem for transgenders in city. *Mail Today* (New Delhi). Accessed on April 16th, 2017.

¹³² Registrar General of India, Table HH:06, HH:08 and HH:11. Census of India, 2011. Government of India

supply of drinking water are very less in the slum areas as most of the slum dwellers lack property rights. These altogether leads to unhygienic living conditions of the slum-dwellers, especially for the women. Unhygienic conditions due to lack of toilet facility at home, lack of waste collection process and random dumping waste causes contamination of drinking water with wastes and feces, which further leads to outbreak of frequent epidemics like; diarrhea, jaundice and cholera.¹³³ The caste system is so rigid that even today many areas have water connection from the government services but don't have any inter connections in the distribution between Dalits and higher caste people and lack of water plays as important role in good sanitation practices.¹³⁴ The caste segregation over the use of water is seen all over the country. A study conducted by Sahoo *et al.* found that Dalits are not allowed to take bath with upper castes in ponds or rivers.¹³⁵ There are many government initiated policies and programmes at the present and recent past, none of them have covered or included in the development process those workers who work as sanitation workers. In India, among the Hindus, many are still engaged in their caste based traditional occupation. Still in most parts in India it is believed that it is a duty of lowest ranked caste of Hindu religion to clean their upper caste's excreta by bare hands. The caste structure and its linkage with occupation are so strong that manual scavenging is still very much in practice among lowest stratum of the caste system. According to nationwide survey conducted by Safai Karmachari Andolan (SKA), still there are more than two lakhs of people engaged in this inhuman occupation¹³⁶ and they are mostly women who clean dry latrines and night soils from Open Defecation sites.¹³⁷ By law of the constitution, it is illegal in India to employ or to force people into manual scavenging, but in reality, it is very much in practice across the country even after the 1993 Act passed by the Lok Sabha to prohibit construction of dry latrines and to employ

¹³³ Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.136

¹³⁴ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), pp.1128.

¹³⁵ Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2015). Sanitation-related psychosocial stress: a grounded theory study of women across the life-course in Odisha, India. *Social Science & Medicine*, 139, pp.85.

¹³⁶ Venkat, V. (July 26, 2016). For him, the battle continues. Accessed March 22, 2017. *The Hindu*

¹³⁷ Human Rights Watch Report (2014). Cleaning Human Waste: "Manual Scavenging," Caste, and Discrimination in India. HRW - United States of America. pp.1

scavengers.¹³⁸ Even after repeated attempts from central government, ban on manual scavenging did not work, due to lack of support from state government¹³⁹ and opposition from local bodies and upper caste people. A report on manual scavenging published by Human Rights Watch (HRW), an US based NGO, with the help of interview and field survey in different districts of six north and western states of India revealed that many scavengers who do not want to continue their filthy occupation are forced to do so by the upper caste people with backing from local political leaders and even Police officials, who do not register cases regarding this issue.¹⁴⁰ The HRW surveyed in 2014 found that even the government sanitation worker in Bharatpur Municipal Corporation cleans open drains of human excrement without the use of gloves, mask and shoes, as they don't get kits from the governments.¹⁴¹ To eradicate manual scavenging one of the major movement is carried out by SKA and they claimed that they liberated over three lakhs of people from this occupation and are still fighting for the rest, said the national convener of SKA, Bezwada Wilson.¹⁴² In 2013, there was an act of "*Prohibition of Employment as Manual Scavengers and their Rehabilitation Act*", passed by the apex court on manual scavenging to prohibit this occupation and those who are engaged at present are to be rehabilitated but the initiative failed again like of 1993 initiative and the truth of manual scavenging is that it is still widely practiced among the lower stratum of the caste. A documentary film in this direction is *Kakkoos*, which was filmed on two districts of Tamil Nadu by Divya Bharati, a social activist, and shows the sad plight of the workers. A good step initiated by India's largest providers of government job, Indian Railways by installing closed toilet which reduces manual scavenging for more than 50,000 dalits.¹⁴³

¹³⁸ Khurana, I. & Ojha, T. (2009). Burden of Inheritance. WaterAid Report. New Delhi. pp.2

¹³⁹ Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.161-162

¹⁴⁰ Human Rights Watch Report (2014). Cleaning Human Waste: "Manual Scavenging," Caste, and Discrimination in India. HRW - United States of America.

¹⁴¹ *Ibid.* pp.54

¹⁴² Venkat, V. (July 26th, 2016). For him, the battle continues. Accessed on March 22nd, 2017. *The Hindu*

¹⁴³ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic & Political Weekly*, 49(49), pp.77.

2.4 Health Issues

“Open defecation is a major health hazard and causes enormous hardship.”¹⁴⁴

According to a report published by *Water Aid*, it stated that around 80 per cent of the diseases in the developing countries are caused due to poor sanitation.¹⁴⁵ The practice of open defecation especially in densely populated areas is very risky because of the possibility of fast spreading of germs and their transmission into the environment and human body.¹⁴⁶ The sufferers from these diseases are mostly the poor section of the society and the slum dwellers with low living space, high densities and with no basic urban facilities. Right from the time of British India, human civilization faced many epidemics of plague and cholera regularly due to insanitary conditions mostly related to unsafe disposal of wastes and human feces. All of it resulted into outbreaks of diseases which started and spread from Calcutta, the Ganges delta was hailed to be “*homeland of Cholera*”¹⁴⁷ due to repeated occurrence which killed over millions. Apart from pandemics and epidemics there were many local health issues that emerged many times due to lack of toilet facility at home, lack of waste collection process and random dumping of waste causing contamination of drinking water with wastes and feces, which further led to outbreak of frequent epidemics like; diarrhea, jaundice and cholera.¹⁴⁸ Diarrhea is one of the leading causes of under-five mortality in the developing countries.¹⁴⁹ Still in India, there are at least 300,000 under-five years of children dying because of diarrheal diseases.¹⁵⁰ The practice of open defecation leads to diarrheal diseases from fecal oral route, further open chances of polio transmission and even the

¹⁴⁴ Dhaktode, N. (2014). Freedom from Open Defecation: Role of the Community. *Economic & Political Weekly*, 49(20), pp.28.

¹⁴⁵ WaterAid (200?) The Human Waste: A call for urgent action to combat the millions of deaths caused by poor sanitation. *WaterAid & Tearfund*. pp.2.

¹⁴⁶ Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2014). Revealed preference for open defecation. *Economic & Political Weekly*, 49(38), pp.54.

¹⁴⁷ Mandal, Shyamapada (2011). Cholera Epidemic in and Around Kolkata, India: Endemicity and Management. *Oman Medical Journal* (2011) Vol. 26, No. 4: 288-289

¹⁴⁸ Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.136

¹⁴⁹ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), pp.1124.

¹⁵⁰ Nandi, A., Megiddo, I., Ashok, A., Verma, A., & Laxminarayan, R. (2017). Reduced burden of childhood diarrheal diseases through increased access to water and sanitation in India: A modeling analysis. *Social Science & Medicine*, 180, pp.181.

severe diseases like cholera and Hepatitis A.¹⁵¹ Poor sanitation also causes stunning among children.¹⁵² Lack of proper drinking water and sanitation facilities increases the chances of contracting with diseases and causes inadequate hygiene and on the other hand the better facilities have an impact on saving money from healthcare and increases productivity.¹⁵³ In between sanitation, it is safer disposal of excreta and good hygiene having bigger positive impact on health than drinking water facilities.¹⁵⁴ This shows the importance of presence of toilets and its proper usage and disposal. In deprived rural and urban India, it is common cultural practice for both men and women to defecate in open air, and more common among children to defecate in public spaces. The children's excreta is considered as harmless but in terms of health consequences it is loaded with germs¹⁵⁵ and dumping or throwing it in the open fields or drains does have severe health consequences. Fecal material attracts flies, can pass germs through food, further it can contaminate shallow groundwater aquifers used for drinking by mixing with untreated solid waste.¹⁵⁶ There are over flows of the excreta during the rainy season where children generally play freely in the open spaces. In a way it can harm children's health badly. These health issues can create serious health risks in the neighborhood. In these cases the significant share of sanitary facilities are "unimproved",¹⁵⁷ and eventually the important part of the shared burden is usually the local people, especially the poor and the children. Though much literature tried to establish relationship between practice of open

¹⁵¹ Tarraf, A. (2017). Social & Behaviour Change Communication, Insights and Strategy Case Study: Open Defecation in India. *The Government & Public Sector Practice*. In a collaboration with WPP plc and University of Oxford. pp.6.

¹⁵² Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2014). Revealed preference for open defecation. *Economic & Political Weekly*, 49(38), pp.54.

¹⁵³ For example,

Nandi, A., Megiddo, I., Ashok, A., Verma, A., & Laxminarayan, R. (2017). Reduced burden of childhood diarrheal diseases through increased access to water and sanitation in India: A modeling analysis. *Social Science & Medicine*, 180, 181-192.

Ortiz-Correa, J. S., ResendeFilho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.32.

¹⁵⁴ Ortiz-Correa, J. S., ResendeFilho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.33.

¹⁵⁵ Visaria, L. (2015). *Sanitation in India with Focus on Toilets and Disposal of Human Excreta*. Gyan Publishing House. New Delhi.

¹⁵⁶ Patil, S. R., Arnold, B. F., Salvatore, A. L., Briceno, B., Ganguly, S., Colford Jr, J. M., & Gertler, P. J. (2014). The effect of India's total sanitation campaign on defecation behaviors and child health in rural Madhya Pradesh: a cluster randomized controlled trial. *PLoS Med*, 11(8), e1001709. pp.2.

¹⁵⁷ An "unimproved" sanitation facility is defined as one which does not hygienically separate human excreta from human contact, according to WHO-UNICEF, Joint Monitoring Programme (JMP).

defecation and child mortality there are also literature which challenges this concept. The counterpart says that the infant and child mortality due to practice of open defecation is misleading, because open defecation is not the only reason for contamination of water¹⁵⁸ and there are many other reason behind it. It is very important to separate waste and excreta from human contact for better health and to avoid diseases. To separate human waste, needs proper collection and disposal of waste and better execution of drainage and sewage system which has to be treated before its disposal into open. From most of the study it is observed that people remains healthy when they receives improved sanitation facilities and further can be connected to working days of the adults and children's performance in schools are better than who do not receive improved sanitation facilities.¹⁵⁹

Nationwide practice of open defecation sometimes results into a threat to the public health like a recent study on drinking water in urban India found that 55 per cent of their drinking water is contaminated with fecal bacteria and it is only among those who use at least one method of purification.¹⁶⁰ This shows there is a need to check open defecation. The need for improving sanitation requires multi-faced reason for betterment of health, WHO estimated that an investment of \$1 in the field of water and sanitation can return \$4 to \$12¹⁶¹ and sometimes the return is five-fold.¹⁶² In terms of economic loss, \$13 billion or 1.5 per cent of India's Gross Domestic Product (GDP) losses each year due to diarrheal diseases among children.¹⁶³

To stop the practice of open defecation there is a need to build toilets and to make use of it. And there is need to change behaviors of the defecators to use toilets and to make sure government needs to put more emphasis on campaigns on behavior change of those who

¹⁵⁸ Das, S. K. (2015). On Open Defecation. *Economic & Political Weekly*, 50(15), pp.4.

¹⁵⁹ Ortiz-Correa, J. S., ResendeFilho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.33.

¹⁶⁰ Mentioned by Nandi, A., Megiddo, I., Ashok, A., Verma, A., & Laxminarayan, R. (2017). Reduced burden of childhood diarrheal diseases through increased access to water and sanitation in India: A modeling analysis. *Social Science & Medicine*, 180, pp.182, see also Jalan and Somanathan 2008.

¹⁶¹ Ortiz-Correa, J. S., ResendeFilho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.31.

¹⁶² Hussain, R., & Mangla, B. (2014). Toilet as an asset: Necessity versus luxury. *Developing Country Studies*, 4(9), pp.110.

¹⁶³ Nandi, A., Megiddo, I., Ashok, A., Verma, A., & Laxminarayan, R. (2017). Reduced burden of childhood diarrheal diseases through increased access to water and sanitation in India: A modeling analysis. *Social Science & Medicine*, 180, pp.181.

practices open defecation. As long as it is not understood by people that practice of open defecation transmits diseases through feces, it would only remain as digging of toilet and practice of open defecation will continue.¹⁶⁴

To conclude, it might be said that the challenges of urban sanitation with special reference to practice of open defecation are many and the issues show that this field needs more research in different directions as it has mostly been a neglected affair with the governments. It also needs to be seen than though making more toilets is the need, but also that their effective management is counted for, otherwise plans will fall short of execution. The major research gap in this field is most of the research has done on particular programmes and policies and not dealing with single issue. This dissertation focuses on particular side of sanitation, i.e., open defecation.

¹⁶⁴ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic & Political Weekly*, 49(49), pp.75.

OPEN DEFECATION IN DELHI

3.1 World, South Asia and India

Open defecation is said to be a major global health problem.¹⁶⁵ In between 1990 and 2015 the total population of the globe rose from 5.3 to 7.3 billion. Consequently, pressure on access to basic services greatly increased world-wide over the same period. In this span of twenty-five years 2.1 billion population gained access to improved sanitation which lowered down the practice of open defecation by half.¹⁶⁶ Open defecation being one of the main reasons for the spread of diarrhea (which is again a major cause of under-five mortality), the access to improved sanitation also brought down the global under-five mortality by half in the same time period.¹⁶⁷ Diarrhea is caused due to contamination of ground water used for drinking purpose. A WHO study confirmed that about 88 per cent of the diarrheal diseases are linked to poor sanitation and unsafe drinking water. Improved water use can condemn morbidity by 6 to 25 per cent.¹⁶⁸ Even after completion of 15 years of initiating MDGs, there are still 2.5 billion populations that lack improved sanitation facility and 946 million was still practicing Open Defecation by 2015 around the world, 10 per cent of which are from urban areas.¹⁶⁹

Basic sanitation has been recognized as a human right.¹⁷⁰ Its universal access is being proposed as a global target for 2030 under Sustainable Development Goals (SDGs).¹⁷¹ Lack of improved sanitation has different scenario in rural and urban areas, where half of

¹⁶⁵ O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring “The Remote” and “The Rural”: Open Defecation and Latrine Use in Uttarakhand, India. *World Development*.

¹⁶⁶ UNDP Report (2016). Human Development Report 2016; Human Development for Everyone. UNDP, New York. pp.27-28.

¹⁶⁷ *Ibid.* pp.3

¹⁶⁸ Water, S., & World Health Organization. (2004). Water, sanitation and hygiene links to health: facts and figures.

¹⁶⁹ UNDP Report (2016). Human Development Report 2016; Human Development for Everyone. UNDP, New York. pp.30

¹⁷⁰ World Meteorological Organization (2011). The Dublin Statement on Water and Sustainable Development. *United Nations*. Accessed on May21st, 2017.

¹⁷¹ United Nations (2012). The Millennium Development Goals Report 2012. New York: United Nations

rural population lives without it. In urban counterpart which stand at one-sixth.¹⁷² In denial of it, 880 million people all over the globe lived in slums and 40 percent of which were in developing countries in 2015. Out of 800 million slum dwellers, 700 million slum dwellers lack improved sanitation facilities,¹⁷³ which is almost 80 per cent of the total slum dwellers. Unsanitary conditions of these people affect their own health, working days, education and country's economy.¹⁷⁴

Country Name	Urban				Total			
	1991	2001	2011	2015	1991	2001	2011	2015
Afghanistan	16	9.9	0	0	34	26.6	14.7	12.7
Bangladesh	9.9	5.2	0.6	0	32.4	17.7	3.7	1.2
Bhutan	5.3	5.3	0	0	11.2	10.5	3	2.4
India	28.9	20.6	12.3	9.8	75	62	48.6	44.4
Nepal	32.4	21.2	10.1	5.6	85.5	62	40.1	31.6
Maldives	0	0	0	0	22.6	12.3	0	0
Pakistan	8.3	5.5	2	0.6	49	35.5	19.5	13.3
Sri Lanka	4	2.6	1.1	1	12.8	6.7	0.6	0.2
South Asia	24.7	17.2	9.7	7.4	67.3	53.9	40	35.7
World	6.5	5	2.9	2.5	26.2	20.8	15.6	13.3

Source: WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation <http://www.wssinfo.org>

In table 3.1, it is observed that open defecation rates declined globally from 26.2 per cent in 1991 to 13.3 per cent in 2015. In absolute numbers, this signifies a drop of 254 million people to 1.03 billion in 2015. However the change in decline of practice of open defecation over all regions is not same. All over the world, the practice of open defecation is decreasing other than Sub-Saharan nations.¹⁷⁵

¹⁷² UNDP Report (2016). Human Development Report 2016; Human Development for Everyone. UNDP, New York. pp.55

¹⁷³ *Ibid.* pp.32

¹⁷⁴ *Ibid.*

¹⁷⁵ UN Department of Economic and Social Affairs (UNDESA), Water for Life Decade 2005-2015, Access to Sanitation. <http://www.un.org/waterforlifedecade/sanitation.shtml> Accessed on May 17th, 2017.

There are increases in practices of open defecation among 26 Sub-Saharan countries in between 1990 to 2012 from 23 million to over 39 million.¹⁷⁶ The availability of toilets is less and consequently people practice “flying toilets”.¹⁷⁷ These are the plastic bags people use to defecate in and throw away from the house, mainly in practice in the Sub-Saharan nations. It further attracts flies and also clogs drains posing risk to the public health.

It is very clear from the *table 3.1*, that India is progressing very slow and lags behind its neighboring countries; Bangladesh and Pakistan, which are also among the most populated countries and economically weak. In fact, India stood at the bottom in rural and urban areas in terms of practicing open defecation. Due to India’s large population base, it influences the proportion of open defecation in both South Asia and the World. India accounts 60 per cent of the total global practice of open defecation.¹⁷⁸ According to *Joint Monitoring Programme (JMP)* of WHO and UNICEF, half of India’s population practice open defecation that alone represents 60 per cent of the global¹⁷⁹ and 90 per cent of the South Asian defecators.¹⁸⁰ Every year there are changes in share of open defecators to the total, but India’s contribution has always remained high even after decades of sanitation programme since 1984.¹⁸¹ The progress of eliminating open defecation in India is one of the slowest among all the countries.¹⁸² Among South Asian nations, the population practicing open defecation peaked around 1995 and after that it declined.¹⁸³

The practice of open defecation and poor arrangement of disposal of human excreta often leads to contamination of ground water. Due to the poor disposal there is threat to the access to safe drinking water. In case of access to safe drinking water, it is still a dream

¹⁷⁶ Tarraf, A. (2017). Social & Behaviour Change Communication, Insights and Strategy Case Study: Open Defecation in India. *The Government & Public Sector Practice*. In a collaboration with WPP plc. & University of Oxford. pp.5.

¹⁷⁷ Mulama, J. (2006). Development-Kenya: Flying Toilets Still Airborne. *Inter Press Service News Agency*. Nairobi.

¹⁷⁸ WHO/UNICEF Joint Monitoring Programme. (2014). Progress on drinking water and sanitation: 2014 update. *World Health Organization*. pp.22.

¹⁷⁹ *Ibid*.

¹⁸⁰ UNICEF. Eliminate Open Defecation. *UNICEF India*.

<http://unicef.in/Whatwedo/11/Eliminate%ADOpen%ADDefecation> Accessed on April 27th, 2017.

¹⁸¹ MoDW&S. Swachh Bharat Mission – Gramin, Ministry of Drinking water and sanitation, Government of India. <http://tsc.gov.in/TSC/NBA/AboutNBA.aspx> Accessed on April 4th, 2017.

¹⁸² Shukla, V. (2016). Assessing India’s Progress towards an Open Defecation Free Nation. *Journal of Infrastructure Development*, Vol.8 (1) pp.88.

¹⁸³ WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation <http://www.wssinfo.org>

for 748 million people around the world and there are 1.8 billion people still in a risk of using faecally contaminated drinking water.¹⁸⁴ Lack of proper drinking water and sanitation facilities increases the chances of contracting with diseases and causes inadequate hygiene. On the other hand the better facilities have impact on saving money especially from healthcare and increases productivity,¹⁸⁵ which would further lead to growth of GDP.

In case of total population who practices open defecation, there was a drop from 75 per cent to 44.4 per cent and in urban areas this drop was just 19.1 per cent in a span of 24 years. In urban areas it is not even 1 per cent decrease per year and the rate of decrease in total is below 2 per cent. The progress is slowest among all South Asian nations.

Compare to rural, urban areas are unsatisfactory. Among all the South Asian nations the practice of open defecation in urban area is 7.4 per cent. India has 9.8 per cent urban open defecators. Ranked second with 5.6 per cent open defecators and none of the countries other than these two has more than 1 per cent open defecators.

In India, at least 300,000 children under-five years of age die because of diarrheal diseases. India accounts for 20 percent of global under-five deaths.¹⁸⁶ In terms of economic loss, \$13 billion or 1.5 per cent of India's Gross Domestic Product (GDP) is lost each year due to diarrheal diseases among children.¹⁸⁷ WHO estimated that an investment of \$1 in the field of water and sanitation can return \$4 to \$12.¹⁸⁸

3.2 India, Urban Areas and Metropolitan Cities

The practice of open defecation is largely dependent on the availability of latrine facilities. According to 2011 census of India, there are more than 69 per cent of

¹⁸⁴ Ortiz-Correa, J. S., ResendeFilho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.31.

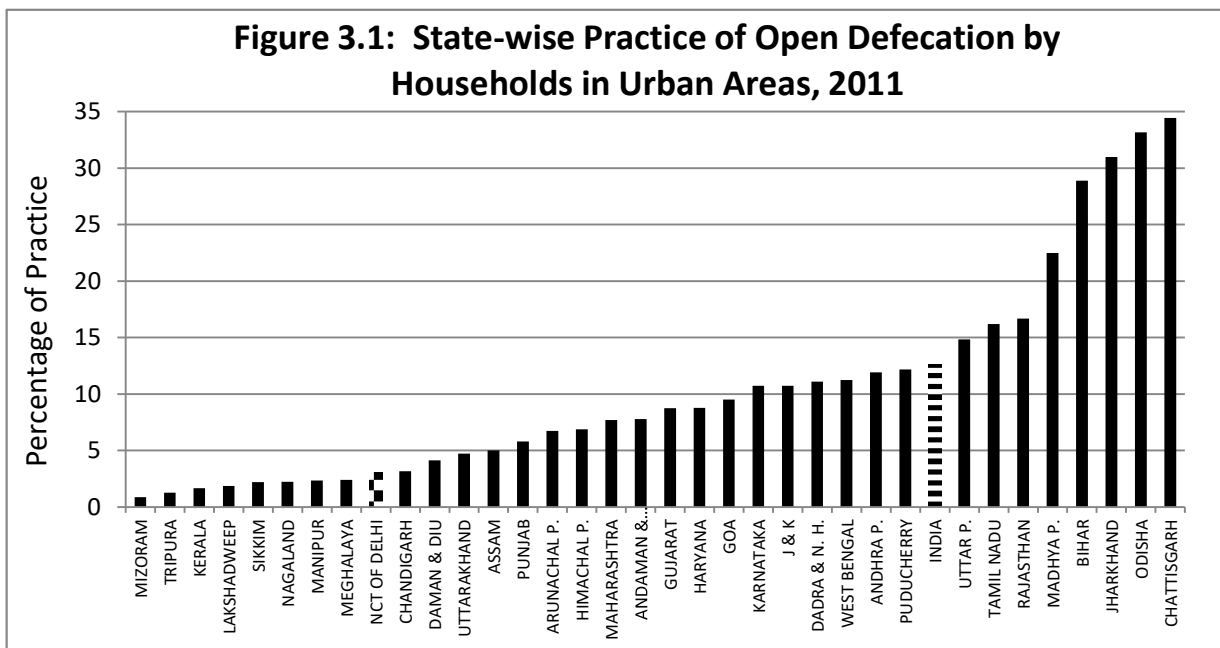
¹⁸⁵ *Ibid.* pp.32.

¹⁸⁶ Nandi, A., Megiddo, I., Ashok, A., Verma, A., & Laxminarayan, R. (2017). Reduced burden of childhood diarrheal diseases through increased access to water and sanitation in India: A modeling analysis. *Social Science & Medicine*, 180, pp.181.

¹⁸⁷ *Ibid*

¹⁸⁸ Ortiz-Correa, J. S., ResendeFilho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.31.

households in rural areas that lacks latrine facility and around 19 per cent in urban areas. The lack of latrine facility leads to 67.3 per cent of households practice open defecation in rural India compared to 12.63 per cent in urban. The practice is rampant in north Indian urban areas. The open defecation is more prominent in the EAG states (other than Uttarakhand)¹⁸⁹ and Tamil Nadu. The worst performing states are Chhattisgarh (34.44 per cent) and Odisha (33.17 per cent). The best performing states are smaller states and union territories, lowest prevalence of open defecation are in Mizoram (0.88 per cent) and Tripura (1.27 per cent).



Source: Census of India, 2011. Table HH-08.

Latrine coverage is miserable for the poor states where it accounts for more than 30 per cent of household in urban areas that has no latrine facilities like that of Chhattisgarh, Odisha, Bihar and Jharkhand. The progress of different states and urban areas in sanitation facilities can be said to be one that is non-inclusive.¹⁹⁰ The status of the households without latrine facility, across urban areas of different states, changed from 2001 to 2011 census, mostly showing an improvement with a decreasing percentage of households without latrine facility. In 2001, the percentage of households without latrine

¹⁸⁹ Empowered Action Group (EAG) states are the eight socioeconomically backward states of Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Orissa, Rajasthan, Uttar Pradesh and Uttarakhand.

¹⁹⁰ Shukla, V. (2016). Assessing India's Progress towards an Open Defecation Free Nation. *Journal of Infrastructure Development*, Vol.8 (1) pp.88.

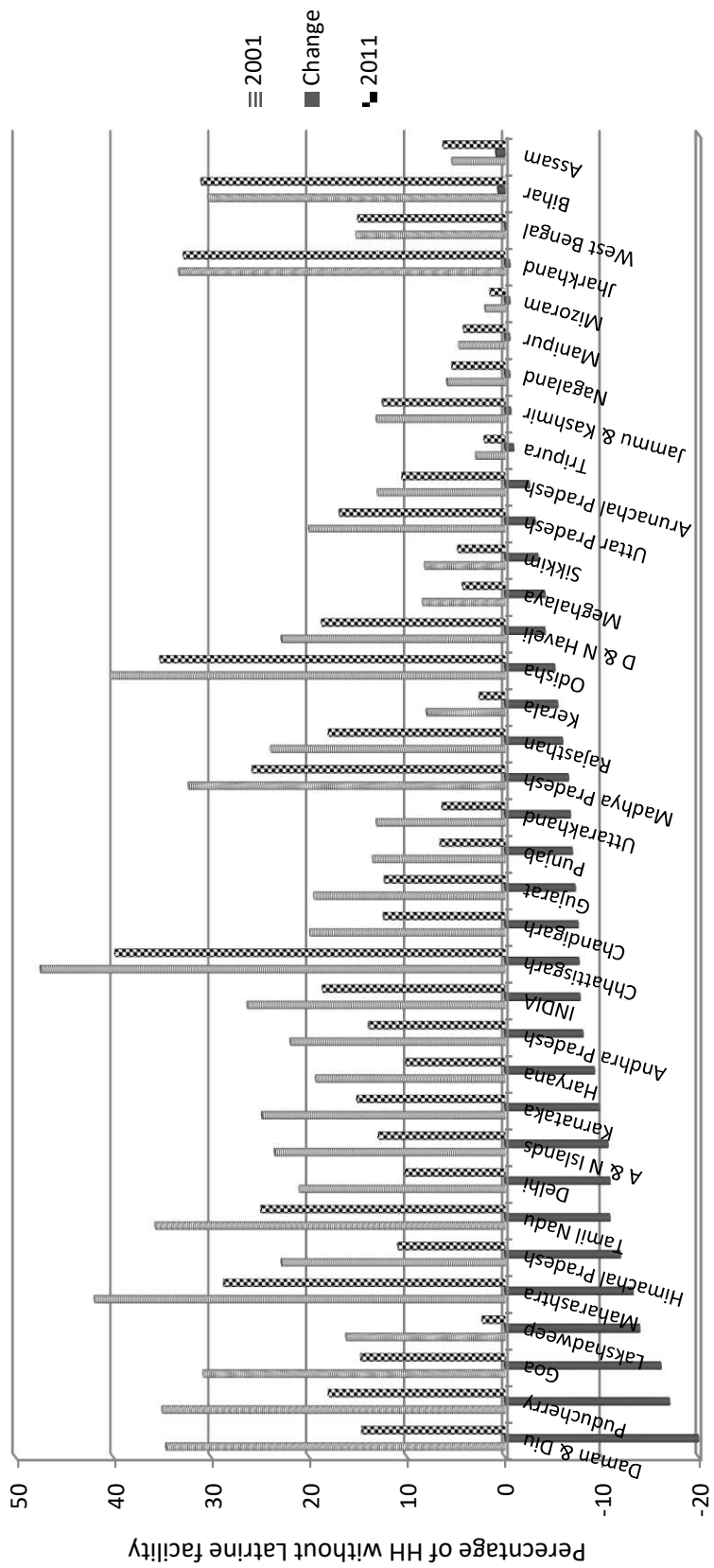
facility was highest among the states of Chhattisgarh (47.4 per cent), Maharashtra (41.9 per cent) and Odisha (40.3 per cent); and lowest among the states of Mizoram (2 per cent), Tripura (3 per cent) and Kerala (8 per cent).

After ten years the situation has changed a lot but for the poor states it remained almost the same with little change. In Assam and Bihar, household without latrine coverage even increased from the previous census with almost one percentage. Major improvements took place in UTs and smaller states like Daman and Diu (-20 per cent), Pondicherry (-17 per cent) and Goa (-16.1 per cent). Latrine coverage increased the most in bigger states with large urban population like Maharashtra (-13.2 per cent), Tamil Nadu (-10.8 per cent) and *NCT of Delhi* (10.8 per cent) improved most with decreasing in percentage of households without latrine coverage. In India, entire urban area has improved with an increase in latrine coverage, the household without latrine coverage fell from 26.3 per cent to 18.6 per cent; and in *NCT of Delhi* it fell from 21 per cent to 10.2 per cent in between 2001 and 2011. Still there are four states which do not have latrine facility in more than 30 per cent of their urban households and all of them are socioeconomically backward states and also EAG states.

To reduce the practice of open defecation, the need is an increase in household latrine facility. There is a clear cut positive relationship between household without latrine facility and practice of open defecation.

The relation can be understood from the fig 3.1 and 3.2 together, that the percentage of households without latrine facility is highest in Chhattisgarh, Odisha, Jharkhand, Bihar and Madhya Pradesh as the worst five among all urban areas of the states. In the practice of open defecation in urban areas, the top five states are Chhattisgarh, Odisha, Jharkhand, Bihar and Maharashtra. The only state not included here is Madhya Pradesh which ranked sixth. On the other hand the states with lower practice of open defecation in the urban areas also have lower percentage of households without latrine facility, which are Mizoram, Tripura and Kerala in common.

Figure 3.2: Change in Percentage of Household Without Latrine Facility in Urban India



Source: Census of India, 2001 and 2011. Table HH-08.

Urbanization in India is uneven. Top six metropolitan cities account for almost 20 per cent of the country's total urban population in India.¹⁹¹ Similarly the distribution of assets and amenities is also uneven across urban areas. The access to basic amenities varies in accordance with level of urbanization and the size class of cities and towns, big cities show better availability of basic services compared to small urban centers.^{192,193} According to IHDS-II, among basic services if toilet facility is looked at, of the top six metropolitan cities of the country, there is found 15.9 per cent of households which do not have any facility or prefer to go for open defecation. In case of cities it is much lower than the big six metro cities and is 8.6 per cent of the household without toilet facility or go for open defecation, the same is 19.1 per cent in urban areas other than metro cities and 16.8 per cent as a whole in total urban areas in 2011-12.

Among the top six metropolitan cities in India the household toilet facilities showing that semi flush and flush toilet are most common, accounting just over 65 per cent of the total toilet facilities. Lack of individual household latrine (IHHL) is at its worse in Hyderabad compared to other five metropolitan cities. Even in posh areas of the city of Hyderabad the practice of open defecation is at its peak in 35 of the 40 wards which are located in the heart of the city even after two and half years of the launching of Swachh Bharat Mission in urban areas (SBM-Urban).¹⁹⁴ It is because of the fact that the Greater Hyderabad Municipal Corporation (GHMC) has failed to provide IHHL to the poorer sections of the society. After Hyderabad, households without toilet facility are highest in Chennai, Delhi and Mumbai. Households without toilet facility are lowest in Bangalore and Kolkata with both coming under 10 per cent.

¹⁹¹ India's total urban population is 37.7 crore and top six metropolitan cities population is 7.38 crore in 2011 Census of India.

¹⁹² Bhagat, R. B. (2011). Urbanisation and access to basic amenities in India. *Urban India*, Vol. 31(1), pp.12

¹⁹³ Kundu, A., Bagchi, S., & Kundu, D. (1999). Regional distribution of infrastructure and basic amenities in urban India: issues concerning empowerment of local bodies. *Economic and Political Weekly*, Vol. 34 (28), pp.1895

¹⁹⁴ Express News Service (February 26th, 2017). Open defecation status of wards raises stink. *Indian Express* (Hyderabad). Accessed on June 13th, 2017.

Table 3.2: Availability of Household Toilet					
	No facility or Open defecation	Traditional pit	Semi-flush (Septic tank)	Flush toilet	Total
Mumbai	12.9	12.1	44.0	31.1	521
Delhi	16.5	8.8	38.1	36.5	1243
Kolkata	8.9	37.6	35.3	18.3	1078
Chennai	21.6	13.9	52.9	11.6	259
Bangalore	5.7	17.7	50.9	25.7	350
Hyderabad	39.7	14.1	46.0	0.2	433
Percentage	15.9	19.0	41.1	24.0	100
Total	616	737	1597	934	3884

Source: IHDS-2, 2011-12.

With the advent of India's biggest sanitation drive SBM-Urban, the latrine coverage is expected to increase. The most important element needed to eliminate the practice of open defecation is to increase the coverage of household latrine facilities, like what is seen in case of urban areas in states where there exists high percentage of households without latrine coverage having the higher prevalence of open defecation than vice-versa.

3.3 Open Defecation in Delhi

NCR Delhi has 3.03 per cent of households that practice open defecation according to census 2011 which is lower than national urban average (12.63 per cent). In spite of being the national capital of the country the progress on provision of latrine facility is still a big challenge to the policy makers, ULBs and for both the state and the central governments. IHDS data shows almost 17 per cent of the households do not have toilet facility at house and/or practices open defecation. IHDS data did not considered public toilet data.

Even though the urban areas have a significant percentage of households without latrine facility in Delhi, the practice of open defecation is low because of availability of public toilets and/or unreliability of data as people also go for open defecation in spite of having latrine facility in their home due to shortage of water.

Two things which challenge data on open defecation published by the Census of India are- firstly, that people who don't have latrine facility at home and opt to use public toilet

facility are mostly forced to go out whenever public service remain closed at night and due to under-maintenance. Secondly, that the households which have latrine facility at their home also go out for defecation mostly due to shortage of water and also because they have become habituated to do so. Census puts open defecation only under the households that do not have latrine in their homes.

IHDS data is showing slightly higher percentage of practice of open defecation than that of the census. This is because IHDS data do not considered availability of public toilet facility. Both IHDS and Census data failed to recognize the fact that households with toilet facility also go out for open defecation.

3.4 Demographic composition and socio-economic profile of the study area

The field impression of the study areas at a glance looks very dirty and unclean. While entering Azadpur, which lies beside the railway tracks and open drain, the area emanates a foul stinky smell, making it impossible to breathe at times. As mentioned earlier, three settlements have been surveyed for the study from three different MCD. The three settlements are Azadpur in North DMC, Seelampur in East Delhi DMC and Bhim Basti in South DMC.

3.4.1 Migration

In the 112 household which were surveyed, over 96 per cent of households it was found that they have migrated from other states and less than 4 households are originally from Delhi itself. The leading state with largest number of in-migrants is Uttar Pradesh, which constitutes just above 60 percent of the total migrant households, followed by Bihar and Rajasthan. Top three states constitute almost 97 per cent of the total migrant families.

In Azadpur, most of the families started to live here either from late 1970s or have come during 1985-90. Migrants are mostly from Uttar Pradesh and Bihar. Going into the details, almost 50 per cent of the households are from Azamgarh and Gorakhpur district (n=17) in Azadpur slum. In Seelampur, majority of the families settled there in early

1980s. Almost every family in the slum immigrated from Uttar Pradesh among which 40 per cent are from Meerut (n=14) alone.¹⁹⁵

Slum Name	Uttar Pradesh	Bihar	Rajasthan	Haryana	Odisha	Total
Azadpur	65.7	34.3				35
Seelampur	94.3	5.7				35
Bhim Basti	23.7	26.3	42.1	5.3	2.6	38
Percentage	60.2	22.2	14.8	1.9	0.9	100
Total	65	24	16	2	1	108

Source: Primary Survey, November-December 2016.

In terms of inter-state migration, in Bhim Basti there is more heterogeneous group of immigrants that have come from different states. In this settlement, over 40 per cent of households have come from Rajasthan and about one-fourth from each Uttar Pradesh and Bihar. More than one-third of the households migrated from Bharatpur and Shri Ganganagar district (n=13) of Rajasthan. Families settled in Bhim Basti have mostly come up in early 1980s and in between 1990-95. New families are still coming in and starting to settle there, with more than 50 per cent of the families having settled after 2000. Millions of migrants came to Delhi from other states in 1980s at the time of construction of “new flyovers, sport facilities and luxury apartments.”¹⁹⁶ The surge of immigrants again peaked during 1990-1995 as there was regularization of new colonies in 1993 Municipal Corporation Act.¹⁹⁷

3.4.2 Religion & Caste Distribution

In all the three settlements which were surveyed, it was found that the Hindus are in majority and the only other religion noticed is that of Muslims. Muslims are present in all

¹⁹⁵ In Seelampur, there are four families originally belonging to Delhi and only inter-state migration has been mentioned in this table.

¹⁹⁶ Baviskar, A. (2011). What the eye does not see: The Yamuna in the imagination of Delhi. *Economic and Political Weekly*, Vol. 46 (50). pp.48

¹⁹⁷ The Delhi Municipal Corporation (Amendment) Bill, 1993. As Passed by Lok Sabha On August 4th, 1993 Bill No.66-C of 1993 <http://parliamentofindia.nic.in/ls/bills/1993/1993-01.htm>

the three settlements with small numbers only. Total number of Muslim families found in the study are only 4.5 percent (n=5).

Slum Name	Hindu SC	Hindu OBC	Hindu General	Muslim	Total
Azadpur	45.7	31.4	20	2.9	35
Seelampur	76.9	2.6	12.8	7.7	39
Bhim Basti	73.7	5.3	18.4	2.6	38
Percentage	66.1	12.5	17	4.5	100
Total	74	14	19	5	112

Source: Primary Survey, November-December 2016.

It is very important to know the caste composition of the settlement from which majority of the castes is residing in the slum areas. It is found that overall one-third of the total households belong to the Scheduled Castes followed by almost one-fourth of General castes of the Muslims (n=5) and the Hindus including Brahmins and Non-Brahmins (n=17). The least seem to be from Other Backward Class, accounting one-eighth of the total households. Within the settlements, SC accounts for about three-fourth of the total households in Seelampur and Bhim Basti. Azadpur has the most homogeneous distribution of caste among all the three settlements with 46 per cent of SC households, 31 per cent of OBC and 23 per cent of General caste households.

3.4.3 Age distribution

Distribution of age-group shows more than 45 per cent of total population aged below 20 years of age. The percentage of male and female share to the total population is 54.9 and 45.1 respectively. Females are outnumbered by male in all the three settlements with overall sex ratio of 823 females per 1000 males.

In all the settlement age-group of 10-19 has highest percentage share to the total population, followed by 0-9 age-group in Seelampur and Bhim Basti and 20-29 age-group in Azadpur. As the share of child population is high, there are possibilities that

overall open defecation would be high because in India children's excreta is considered as harmless and disposed openly into the open spaces.¹⁹⁸

Table 3.5: Age-group Distribution (%)								
	0-9	10-19	20-29	30-39	40-49	50-59	60+	Total
Azadpur	16.9	23.5	20.2	14.2	9.8	6	9.3	183
Seelampur	20	25.2	18.7	15.2	11.3	3.5	6.1	230
Bhim Basti	22.7	27.7	16.8	13.7	8.2	5.1	5.9	256
Male	10.2	14.6	9.9	7.9	5.5	3.1	3.6	669*
Female	10	11.1	8.5	6.4	4.2	1.6	3.3	
*367 Male and 302 Female								
Percentage	20.2	25.7	18.4	14.3	9.7	4.8	6.9	100
Total	135	172	123	96	65	32	46	669

Source: Primary Survey, November-December 2016.

Males in every age-group outnumbered female population share. The sex-wise age-group share also shows higher concentration in the age group of 10-19 and followed by 0-9 and 20-29 both for male and female. The overall sex ratio is 823 females per 1000 males. Sex ratio in Azadpur is the worse among all and is 710 followed by 855 in Seelampur and 882 in Bhim Basti.

3.4.4 Literacy and Educational Qualification

Table 3.6: Literacy Rates		
	Literate	Total
Azadpur	73.8	160
Seelampur	58.4	197
Bhim Basti	76.2	214
Male	76.7	317
Female	60.2	254
Percentage	69.4	100
Total	396	571

Source: Primary Survey, November-December 2016.

¹⁹⁸ Visaria, L. (2015). *Sanitation in India with Focus on Toilets and Disposal of Human Excreta*. Gyan Publishing House. New Delhi.

Overall literacy rate among all the three settlements is 69.4 per cent. For literacy rate person aged below 7 are not counted. It is noticed that literacy rate in Seelampur is lowest among all the three settlements with only 58.4 per cent followed by 73.8 per cent in Azadpur and 76.2 per cent in Bhim Basti. The difference between the male and female literacy rate is 16.5 per cent which is quite large. The difference is because of the priority of boys' education over girls.

Level of education shows there is about one-third population which is illiterate. Among those who are educated, have only studied till or are appearing up to upper primary, which is up to class 8. Overall, 72.3 per cent of total population is below the standard of secondary education. When this equation applies to male and female separately it shows that 80.7 per cent of females failed to receive up to secondary level of education.

Table 3.7: Level of Education (Passed / Appearing)							
	Illiterate	Primary	Upper Primary	Secondary	Higher Secondary	Graduation	Total
Azadpur	26.3	5.6	33.1	16.3	11.9	6.9	160
Seelampur	41.6	11.7	25.9	12.2	6.6	2.0	197
Bhim Basti	22.9	10.7	37.9	20.6	4.2	3.7	214
Male	22.7	9.5	33.4	20.2	9.5	4.7	317
Female	39.8	9.8	31.1	11.8	4.3	3.1	254
Percentage	30.3	9.6	32.4	16.5	7.2	4.0	100
Total	173	55	185	94	41	23	571

Source: Primary Survey, November-December 2016.

There are very few who opted for higher education and passed after completing their higher secondary level education. A total of only 4 per cent of population received graduation level education. Among children, dropping from school is quite common across all three settlements after 15 years of age; especially after class 7 and 8 due to economic reasons where the family could not afford the educational expenses. Latrines are also important in school premises for children's health as well as good academic performance.¹⁹⁹ It is found that in Bhim Basti almost all the students go to Jonapur High School to study from fifth standard to higher secondary level. The school has toilets but

¹⁹⁹ Ortiz-Correa, J. S., ResendeFilho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.38.

teachers do not allow students to use those but they themselves make use of the toilets and keep it locked the rest of the time. It forces both girls and boys to use the backside of the school whenever they have to respond to the nature's call. Further it forces girls to avoid school days during menstruation.

3.4.5 Economic Activities

People engaged in economic activities are mostly as *daily wage labor and construction worker* (13.1 per cent) and this is highest in all the settlements. Major economic activities after *daily wage labor and construction worker* are followed by *private company job* (4.2 per cent), *taylor, shopkeeper* and *sanitation workers* (3.9 per cent each).

Table 3.8: Occupational Distribution (%)											
	1	2	3	4	5	6	7	8	9	10	Total
Azadpur	1.3	2.5	2.5	6.3	13.1	1.9	9.4	23.1	30.6	9.4	160
Seelampur	1.5	6.1	6.6	3.6	9.6	8.6	3.5	23.4	25.4	11.7	197
Bhim Basti	0.9	3.7	2.3	2.3	16.4	0.9	7.9	23.8	35	6.5	214
Male	1.9	7.3	5.4	5.7	22.1	4.7	11.7	0.3	30.3	10.7	317
Female	0.4	0.4	2	1.6	2	2.8	0.8	52.4	30.7	7.1	254
Percentage	1.2	4.2	3.9	3.9	13.1	3.9	6.9	23.5	30.5	9.1	100
Total	7	24	22	22	75	22	39	134	174	52	571
Note: 1.Government Job and Retired Employees, 2.Private Company Job, 3.Taylor, 4.Shopkeeper, 5.Daily wage labor and Construction worker, 6.Sanitation Workers, 7.Other than 1-6, 8.House Wife / Husband, 9.Student and 10.Not Working											

Source: Primary Survey, November-December 2016.

People engaged in *government job* or *retired form government job* are only 1.2 per cent of the total population and it is found that people who are engaged in this section are all working as *government sanitation workers*. It is noticed that head of the household engaged in economic work of sanitation worker belong to the *Balmiki caste*, the occupation historically assigned to this caste. This shows the practice of caste based occupation which is still in practice in urban areas also.

People engaged in economic activities as *daily wage labor and construction worker* mostly do not get work on a daily basis. As for regularity of job or working days it is not

possible for the poor people to travel long distances across cities for new work. Instead they prefer to go for work at a walking distance or stay at home without any work. It is important to capture the occupational structure and place of work to know about whether the workers are getting toilet facilities at the place of work or not and if they are not getting where they are going for the same.

It is important to know *dependency ratio* of a particular area's population. Dependency ratio indicates economic and social support to the section of population who are either too young or too old compared to the working age-group. Mostly the dependency ratio is calculated in percentage by adding aged 0-14 as young population and elderly population of above 60 and divided by the working age group of 15-59. But the procedure lacks the counting of population that is aged 15-59 but are still unemployed and also those above 60 years of age but still working. So, purely based on "*economic status*"²⁰⁰ this can be better understood about the *dependents*. This shows that lower the percentage of *self-supporting* population, higher is the need to invest on schooling, child care and also on old age care which further hinders economic and social boost.

There is just above one-fourth of the total population who are economically *self-supporting* across all the three settlements. Share of the *earning dependent* is very low and that of *non-earning dependent* is very high across all the three settlements. Here, self-supporting person are those whose income is sufficient for his/her own survival. Most of the self-supporting person is head and senior male members of the households. Earning dependents are those who earn money but not enough to sustain. Most of the earning dependents are belong to housewives among female and late teenage and early 20s among male. Non-earning dependents are highest among infants and school going children, followed by housewives and old age person. Females have very high percentage of non-earning dependent because of the existing patriarchal for of society which not allows them to work outside house.

²⁰⁰ Census of India. Implication of Terms Used in Indian Censuses. Accessed on June 15th, 2017. http://censusindia.gov.in/Data_Products/Library/Indian_perceptive_link/Census_Terms_link/censustermsh.html

Table 3.9: Economic Status of the Person				
	Self-Supporting	Earning Dependent	Non-earning Dependent	Total
Azadpur	26.2	6.6	67.2	183
Seelampur	28.7	5.7	65.7	230
Bhim Basti	26.2	2.7	71.1	256
Male	46.3	5.4	48.2	367
Female	3.6	4.0	92.4	302
Percentage	27.1	4.8	68.2	100
Total	181	32	456	669

Source: Primary Survey, November-December 2016.

Comparing economic status of male and female separately shows that there is a very high difference between two sexes, in the group of self-supporting almost half of the males are in this category and for females it is miserably low at below 4 per cent. And in the case of earning dependent it is almost same for both male and female where one person is earning but that is not sufficient for his or her family. Non-earning dependents show there is almost half of the male population that comes under this category while more than nine out of ten females fall under this category. There are high percentages of non-earning dependent because of the fact that females are not allowed to work outside home due to social restrictions and sex-segregated differences.

Type of house and number of rooms in dwelling also reflects one part of the economic condition of the household. Three type of houses found in the study areas considered as materials of the roof, wall and floor as *Pakka* (fully bricked and cemented), *Kutcha* (made up of mud, thatch or any other low-quality materials) and *Semi-Pakka* (have both characteristics of Kutcha and Pakka). Maximum type of house is found as Pakka (56.3 per cent) and Semi-Pakka (40.2 per cent). Kutcha houses are only noticed in Seelampur (n=4) slum with just over three percent of the total. Number of dwelling rooms per household shows there are more about three fourth of the total households have only one or two rooms. Less than 10 per cent of the households have more than three dwelling rooms. Seelampur has more than half of the households with only one room where as Azadpur has mostly with two rooms and almost equal distribution for Bhim Basti between one room to more than three rooms per household. Azadpur has maximum

households with two rooms due to vertical expansion of the building. For Bhim Basti it is because of the availability of space in comparison to other two settlements.

This gives an indication of space as to whether one has space near their house for construction of latrines or not. It is very clear from the available number of dwelling rooms that space is one of the major problems to build anything. Although Bhim Basti has space but due to its location on a hilly area it is very difficult to dig which requires relatively huge sum of money.

Ration card often acts as an income proof of any households. Public Distribution System (PDS) is maintained by both the central and the state government to distribute food grains to the section that are economically backward or poor. The ration cards are issued by respective state governments. Distribution of type of ration card shows that about one-third of the total households are categorized under Public Distribution System (PDS), more than one-third under BPL and only eight per cent under Antodaya (AAY) which is the poorest among all. It is also found that almost one-fourth of the total households *do not have* ration card. This is mainly because of the fact that they came to Delhi only few years ago and households are residing in rented accommodation.

3.4.6 Income and Expenditure

Income of a household indirectly or directly determines its expenditure. Income of a household do not shows a real picture due to differences in the size of the household. So, it is better to count *per capita income* and *per capita expenditure*.

It is noticed that just over one-fifth of the total households has less than 1500 INR monthly per capita income, highest is in Seelampur with just over one-fourth and lowest is in Bhim Basti with less than one-sixth of the total households. Almost three-fourth of the total households has less than 3000 INR monthly per capita income and that is almost same among all the settlements.

Table 3.10: Type of house, Number of Dwelling Rooms and Ration Card type													
	Type of house			Number of Dwelling Rooms					Ration Card type				Total
	Kutcha	Pakka	Semi Pakka	One Room	Two Rooms	Three Rooms	> 3 Rooms	APL	BPL	Antodaya	Do Not Have		
Azadpur		31.4	68.6	31.4	45.7	17.1	5.7	25.7	60	8.6	5.7	35	
Seelampur	10.3	61.5	28.2	53.8	33.3	12.8		20.5	35.9	7.7	35.9	39	
Bhim Basti		73.7	26.3	36.8	21.1	23.7	18.4	52.6	15.8	7.9	23.7	38	
Percentage	3.6	56.3	40.2	41.1	33	17.9	8	33	36.6	8	22.3	100	
Total	4	63	45	46	37	20	9	37	41	9	25	112	

Source: Primary Survey, November-December 2016.

Table 3.11: Per Capita Monthly Income and Expenditure									
	Per Capita Monthly Income (in INR)			Per Capita Monthly Expenditure (in INR)				Total	
	Below 1500	1501-3000	3001-4500	Above 4500	Below 1500	1501-3000	3001-4500		Above 4500
Azadpur	20	51.4	22.9	5.7	48.6	48.6	2.9		35
Seelampur	25.6	46.2	17.9	10.3	43.6	48.7	7.7		39
Bhim Basti	15.8	63.2	15.8	5.3	47.4	47.4	2.6	2.6	38
Percentage	20.5	53.6	18.8	7.1	46.4	48.2	4.5	0.9	100
Total	23	60	21	8	52	54	5	1	112

Source: Primary Survey, November-December 2016.

Just over 7 per cent of the households have more than 4500 INR monthly per capita income. Among the three settlements, it is highest in Seelampur where 10 per cent of the households have per capita income higher than 4500 INR.

In case of per capita expenditure it shows almost half of the households have less than 1500 INR monthly per capita expenditure among all the three settlements and overall more than 95 per cent has less than 3000 INR monthly per capita expenditure with little variation across settlements.

3.4.7 Ownership of House

All the surveyed settlements were evolved over public land, like those lands under that of railways or forest department. The ownership of the houses is only hypothetical especially in the slum areas because of absence of legal ownership document of the land. More than 90 per cent of the total households own their houses in Azadpur and Seelampur; and just below three-fourth in Bhim Basti. A total of 14.3 per cent of the households reported live in rent accommodation and highest is in Bhim Basti with just over 29 per cent of the total households.

Data related to identification was collected to me on whether they got domicile of Delhi or not. Only 82 per cent of the household has *Voter Identity Card*, in Azadpur highest with 94 percent and in Seelampur with 69 per cent was lowest. 93 per cent of the households have *Aadhar Card* which is higher than owning voter identity card because of the pressure and linking facilities i.e. right from getting ration to medical treatment with Aadhar. This is almost same among the three settlements and only one-third of the households have *Pan Card*.

The study reveals that there are not even one-fourth of the households which have a separate kitchen. Kitchen facility is available only 8 per cent in Seelampur, 17 per cent in Azadpur and 45 per cent in Bhim Basti. It is because of the available space surrounding the dwelling in Bhim Basti that gives almost half of the households the availability of a separate kitchen. Almost all the households have electricity except one in Seelampur because of its extremely bad economic condition. Three-fourth of the households has

Bank Account and most of them are under *Jan Dhan Yojna* initiated by the central government of India which is a zero balance account as reported by a respondent.²⁰¹

3.4.8 Availability of Amenities

Assets and amenities are of the most important indicators of socio-economic status and lifestyle. In looking at the distribution of assets and amenities, it was found that only 30 per cent of the households have latrine facility in their home, which stands at 40 and 41 per cent in Bhim Basti and Seelampur and only 9 per cent in Azadpur. Urination is mostly done nearer to the house on the roadside, railway tracks or open spaces across settlements and these areas are mostly frequented by men. People who go for open defecation do not have latrine facility in their homes and the same is also practiced by households that have such a facility are because of shortage of water for daily use.

Even the proper availability of drinking water is restricted to 44 per cent overall in the households. Similar is the case in Seelampur as well, it is just over one-third of the total in Azadpur and 53 per cent in Bhim Basti. Drinking water facilities in slum areas are unsatisfactory which might be because of “*Remoteness*”; it is also considered for inadequate level of latrine and poor services of basic needs, due to a distant relationship with the government and the remote places.²⁰² In Seelampur, just over 56 per cent of the households buy drinking water; the same is for Bhim Basti is 42 per cent and 3 per cent in Azadpur. Purchased drinking water is priced between 20 to 30 rupees for 20 litter of water in among all the settlements.

Facility of the drinking water in all the surveyed slums is inadequate. As they reported, the shortage and irregularity of providing drinking water persists throughout the year, especially in summer days.

²⁰¹ A 40 year male, economically engaged as daily wage labor, lives in Seelampur slum.

²⁰² O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring “The Remote” and “The Rural”: Open Defecation and Latrine Use in Uttarakhand, India. *World Development*.pp.3.

Table 3.12: Ownership of Identity Cards and Availability of Amenities													
	Ownership of					Availability of Amenities							Total
	House	Voter ID	Aadhar ID	PAN Card	Separate Kitchen	Electricity	Bank Account	Latrine Facility	Drinking Water	Dumping Facility			
Azadpur	94.3	94.3	97.1	34.3	17.1	100	88.6	8.6	34.3	0	35		
Seelampur	92.3	69.2	89.7	23.1	7.7	97.4	53.8	41	43.6	0	39		
Bhim Basti	71.1	84.2	92.1	42.1	44.7	100	84.2	39.5	52.6	0	38		
Percentage	85.7	82.1	92.9	33	23.2	99.1	75	30.4	43.8	0	100		
Total	96	92	104	37	26	111	84	34	49	112	112		

Source: Primary Survey, November-December 2016.

Table 3.13: Availability of Assets												
	Water Pump	Cycle	Two Wheeler	Three Wheeler	Rickshaw	Four Wheeler	Mobile	TV	Computer	Refrigerator	Washing Machine	Total
Seelampur	38.3	25.6	15.4	2.6	5.1	2.6	87.2	64.1		33.3	7.7	39
Bhim Basti	7.9	31.6	34.2		2.6		92.1	84.2		52.6	10.5	38
Percentage	37.5	25.0	19.6	4.5	2.7	1.8	91.1	77.7	0.9	38.4	9.8	100
Total	42	28	22	5	3	2	102	87	1	43	11	112

Source: Primary Survey, November-December 2016.

This unequal distribution of water resources easily relates with the hierarchical power structure, where the one who has power has everything like what used to happen in the past between Harijans and the upper castes.²⁰³ The same relation also exists among castes in their usage of water throughout the country²⁰⁴ and is valid even till date. Water received from the tanker for drinking are filtered by placing a cloth at the mouth of the extended pipe to avoid dead insects inside the water, as reported by a resident of Jailorwala Bagh, Azadpur.

None of the households have proper dumping facility and the option of door to door waste collection. Majority of the respondents in the study reported that the municipal authorities were unable to provide garbage collection service. Moreover they were not bothered about cleaning the garbage regularly as it seemed to be nobody's concern. Household wastes are generally dumped away from the residing area and preferably in the low lying areas due to which it results into water pollution and drying up of smaller water bodies all across the national capital.²⁰⁵

3.4.9 Availability of Assets

Water pumps (Hand pumps or Motor pumps) are used to pull water for household use. Just over one-third of the households have water pumps and all are illegal. Water pumps are present in 98 per cent of the total households in Azadpur, 38 per cent in Seelampur and only 8 per cent in Bhim Basti because of the underlying rocks. One-fourth of the total households possess *Cycle* mainly used by daily wage labor for traveling during work for short distances. 20 per cent of the households possess *Two Wheeler* with over one-third in Bhim Basti, 15 per cent in Seelampur and only 9 per cent in Azadpur. Possession of

²⁰³ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), pp.1124.

²⁰⁴ Mentioned by O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring "The Remote" and "The Rural": Open Defecation and Latrine Use in Uttarakhand, India. *World Development*.pp.10. See Routrayet *al.*, 2015.

²⁰⁵ Thakur, J. (June 19, 2017). Half of Delhi's 1,000 water bodies vanished due to garbage dumping, encroachments. *Hindustan Times* (New Delhi). Accessed 20th June, 2017.

Three Wheeler, Rickshaw and *Four Wheeler* is very low across settlements with 5, 3 and 2 per cent respectively.

On an average 91 per cent of the households possess *mobile phones* with little difference across settlements. Just over three-fourth of the households possess *Television*, with almost two-third in Bhim Basti and around 85 per cent in other two settlements. Only one household possesses *computer* when seen across the three settlements and that is in Azadpur. In India, *refrigerator* and *washing machine* often counts as costly assets. It is found that over half of the households possess refrigerator in Bhim Basti, one-third in Seelampur and 29 per cent in Azadpur. Washing mashing is possessed by only 11 per cent of the households with little difference across settlement.

3.5 Conclusions

- India accounts more than half of the global practice of open defecation and progress towards eliminating the practice is slowest among neighboring countries.
- The practice of open defecation is higher in socio-economically poor states.
- The percentage of households without latrine facility in urban areas decreased between last two census years. Only exceptions were Assam and Bihar. Among the bigger urban state's areas it increased most in Maharashtra, Tamil Nadu and Delhi.
- Among the top six metro cities, practice of open defecation is highest in Hyderabad.
- Majority of the households are migrated from Uttar Pradesh, Bihar and Rajasthan. Mostly come up in early 1980s and in between 1990 to 1995.
- Settlements are numerically dominated by the Hindu religion and scheduled caste population.
- Family size is big in all the surveyed settlements. Almost two-third of the population aged below 30 years of age and one-third under aged 15.
- Residents of Bhim Basti and Azadpur are more educated than Seelampur, which far below than two-third of the total population aged 7 and above. Across all the

three settlements there are almost one-third of the total population who are illiterate, highest is in Seelampur. Higher education including Graduation and above is less across settlements.

- People are engaged in economic activities mostly as daily wage labors, private company jobs and sanitation workers. People engaged in Government jobs or Government retired employees are all working/worked as sanitation workers across all the three settlements.
- Dependency ratio is high across the three settlements and are more than two-third of the total population. Economic dependents are more among female.
- Almost all the houses are Pakka and semi-Pakka. Only Seelampur has small number of Kutchha houses. Most of the households have one or two rooms in dwelling. Bhim Basti has maximum percentage of households with more than two rooms in dwelling. This is lowest in case of Seelampur.
- Type of ration cards and monthly per capita income shows Bhim Basti has better economic condition among three surveyed settlements. Seelampur is the poorest settlements among all.
- Ownership of Houses is highest in Azadpur and Seelampur while live in rented accommodation is highest in Bhim Basti.
- Amenities at settlement level, Seelampur has the worst amenities among all the surveyed settlements in terms of electricity, bank account and space for separate kitchen. Bhim Basti has best amenities with electricity, bank account, space for kitchen, latrine facility and drinking water facility than other two settlements. Azadpur has good amenities like public toilet and bank account. All the three settlements lack proper dumping facilities.
- Amenities at household level, amenities like electricity service are almost universal. Three-fourth of the households has bank account facilities. Separate kitchen, household latrine and drinking water facility is available in way less than half of the households.
- Availability of mobile phones and television are most among all the households surveyed, followed by refrigerator, water pump and cycle. Valuable assets like four-wheeler and three-wheeler are quite low.

PRACTICE OF OPEN DEFECATION AND ITS SOCIO-ECONOMIC CO-RELATES

This chapter tries to capture the practice and believes associated with open defecation. There are three major defecation sites found in the study areas that includes urination and defecation both: *private facilities, public facilities and open defecation sites*. Households without toilet are mostly because of '*lack of economic resources*'. Majority of the households without a latrine perceives it as an expensive asset that not only requires initial investment costs but also recurring maintenance costs.

4.1 Factors associated with Open Defecation

*“Open defecation is a major health hazard and causes enormous hardship.”*²⁰⁶ According to a report published by *Water Aid*, around 80 per cent of the diseases in the developing countries are caused due to poor sanitation.²⁰⁷ To check the practice of open defecation it is very important to know about the factors that might be responsible for such practices.

In the study area, there are 67.8 per cent of households who do not own latrine facility at home, but there are 85.7 per cent of household who practices open defecation. Higher percentage means that households which have latrine facility also go outside to defecate. Nearly 56 per cent of the households have at least one person in the family who practice open defecation daily or occasionally among households have latrine facility. The major reason for that is shortage of water availability for latrine use.

Among three surveyed settlements, households that practice open defecation is highest in Azadpur. Only 8.6 per cent of the slum household has latrine facility in their house. The

²⁰⁶ Dhaktode, N. (2014). Freedom from Open Defecation: Role of the Community. *Economic & Political Weekly*, 49(20), pp.28.

²⁰⁷ WaterAid (200?) The Human Waste: A call for urgent action to combat the millions of deaths caused by poor sanitation. *WaterAid & Tearfund*. pp.2.

availability of pay-per-use latrine seats is very low as compared to the total population of the slum.²⁰⁸ Availability of vast open spaces around the slum is owned by Wazirpur Industrial Area and Indian Railways. An article by Kattakayam in *The Hindu* (October 1st, 2012) captured some of the factors of practicing open defecation. Bipin, a resident of the Jailorwala Bagh slum of Azadpur said:

*“People are forced to defecate in the open areas around the slum without adequate toilets. They cannot be blamed for the unhygienic conditions.”*²⁰⁹

The residents in the slum think that the re-development plans of the slum by Delhi Development Authority (DDA) is delayed because the development in and around the slum can trigger greater influx of migrants to the slum.²¹⁰ The slum now has only two pay-per-use toilet blocks run by Delhi Urban Shelter Improvement Board (DUSIB) with a seat of 20 each for both men and women. These pay-per-use facilities are mostly restricted to “*notified slums*” only²¹¹ and the conditions of the *non-notified* slums are even poor. This is because of the location of the non-notified slums that are come up over public land

The other two slum areas, Seelampur and Bhim Basti also have high percentages of households practicing open defecation with 74.4 and 86.6 per cent respectively. These two settlements have 41 and 40 per cent of households with latrine facility respectively. Though percentage is higher than Azadpur to use toilet but practices open defecation due to serious shortages of water. People having toilet at home use latrines at the time of illness, bad weather or in case of emergency. One respondent from Bhim Basti said in response to practicing open defecation even after having latrine facility at home. A woman said: “*as there is shortage of water, toilet used only when any one falls sick. And the toilet is built to use it in difficult times.*”²¹² Practicing defecation in toilet requires more water to clean than practicing open defecation which only requires water for

²⁰⁸ As per the guidelines of the SBM-Urban (2014), in a community toilet, there must be at least “*one seat for 35 men*” and “*one seat for 25 women*”. pp.36.

²⁰⁹ Kattakayam, J. (October 01, 2012). DDA to redevelop Jailorwala Bagh slum project itself. *The Hindu*. Delhi. Updated on October 18th, 2016. Accessed on February 21st, 2017.

²¹⁰ *Ibid.*

²¹¹ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.100.

²¹² Woman, aged 40, living in Bhim Basti slum, her family hails from Alwar district of Rajasthan.

cleaning the self. In all three settlements, lower latrine facility at home, fewer seats in public toilets, shortage of water and available public space around the slum associated with higher practice of open defecation. Households without latrine facility practices open defecation throughout the year. Households practice open defecation even after they have latrines and most justifications are cited as '*shortage of water*' and '*old habits*', '*to avoid foul smell*' all around the house. To urinate people mostly chose places close to their house or on roadside, railways side or other open spaces.



Figure 4.1: A man urinating beside railway track in the (left side) picture and another man in the (right side) picture urinating near garbage area and open drain, both picture are taken in Azadpur. Photo captured by the researcher.

Dignity and safety of women are the main reasons for construction of toilets. A woman, resident of Azadpur slum said that “*my husband built latrines inside the dwelling room for the security purpose of women, as women are not secure outside now days.*”²¹³ Her husband build latrine 6 years ago. In her family men go out to defecate in the open because of shortage of water and as defecating in latrine needs more water to clean.

Space constrains in slum areas are very common all around the globe. This problem of space has direct relationship with average number of rooms available per household. It is noted that 89 per cent of the households practice open defecation who has only one

²¹³ Aged 24 years, mother of three children, hailed from Gorakhpur and presently residing at Jailorwala Bag slum of Azadpur. Primary Survey, November-December 2016.

dwelling room against 78 per cent of the households that has more than three dwelling rooms. The percentage of practicing open defecation has a decreasing trend with increasing number of dwelling rooms.

According to the data published by the Census of India which shows people belonging to lower caste households of SCs and STs has lower percentage of adequate sanitary facilities compared to households of non-scheduled caste.²¹⁴ The result also portrayed similar picture. SC households have the highest percentage of open defecation with 91 per cent followed by OBC with 87 and General caste households with 70 per cent. In case of religion based practice it is 87 per cent for the Hindu households and 60 per cent for Muslim households. Here, the percentage of open defecation for Muslims household is much lower in comparison to Hindu. Not valid enough with small (n=5) samples for Muslims while the chances of opposite is more.

Table 4.1: Practice Open Defecation by Households					
		<i>HH %</i>	<i>Total</i>	<i>Pearson's Chi-Square</i>	<i>Pearson's Correlation</i>
Settlement	Azadpur	97.1	35	0.019	0.113
	Seelampur	74.4	39		
	Bhim Basti	86.8	38		
Toilet	Have Toilet	55.6	36	0.000	-0.491
	Don't Have Toilet	100	76		
Number of Rooms	One Room	89.1	46	0.760	0.031
	Two Rooms	81.1	37		
	Three Rooms	85	20		
	> 3 Three Rooms	77.8	9		
Religion	Hindu	87	107	0.093	0.159
	Muslim	60	5		
Caste	SC	90.5	74	0.042	0.229
	OBC	86.7	15		
	GENERAL	69.6	23		
Ration Cards	Do Not Have	80	25	0.320	-0.165
	APL	81.1	37		
	BPL	90.2	41		
	Antyodaya	100	9		
Housing Materials	Kachcha	75	4	0.011	-0.271
	Pakka	77.8	63		

²¹⁴ Registrar General of India, Table HH:06, HH:08 and HH:11. Census of India, 2011. Government of India.

	Semi Pakka	97.8	45		
Ownership of House	Own	86.5	96	0.581	0.052
	Rent	81.3	16		
Head: Education	Illiterate	87.8	49	0.927	0.054
	1 to 4	75	4		
	5 to 8	87.1	31		
	9 to 10	82.4	17		
	11 to 12	81.8	11		
Occupation	Government Job and Retired Employees	66.7	6	0.074	-0.268
	Private Company Job	71.4	14		
	Utility Services	69.2	13		
	Petty Business	90.9	11		
	Daily wage & Construction workers	93.2	59		
	Sanitation Workers	88.9	9		
Drinking Water	Yes	79.6	59	0.102	-0.154
	No	90.5	63		
Per Capita Income	Below 1500	95.7	23	0.389	0.157
	1501-3000	85	60		
	3001-4500	81	21		
	Above 4500	75	8		
Per Capita Expenditure	Below 1500	94.2	52	0.005	0.224
	1501-3000	77.8	54		
	3001-4500	100	5		
	Above 4500	0	1		
<i>Percentage</i>		85.7	100		
<i>Total</i>		96	112		

Source: Primary Survey, November-December 2016.

Ration card often indicates income proof and poverty level of any household. Three types of ration cards are reported in the study areas: - Antyodaya, BPL and APL, there are also households who do not have a ration card marked here are as fourth category. Here, among the three types of ration cards, Antyodaya card holders are the poorest and APL cards holders are the households with relatively higher monthly income. In case of practice of open defecation by households, it shows there is a decreasing trend of practice with economically higher ration card status. Households with Antyodaya, BPL and APL card holders have 100, 90 and 81 per cent of them practice open defecation and in case of households that do not have ration cards are with 80 per cent. So, a relation between type

of ration cards and the practice of open defecation can be established as poorest are the one with higher practice of open defecation.

In a way, type of house also shows socio-economic condition of a household. Three-fourth of households lives in Kutcha house practices open defecation. Households with Semi-Pakka house type practice open defecation is 98 per cent and in case of Pakka house type it is 78 per cent. The Kutcha houses show lower practice of open defecation in comparison to the two. Although the sample for Kutch house type is small (n=4) and the chances of opposite is more. By not considering Kutcha house type due to small sample size it can be said that with people with higher economic affordability (ability to build latrines) has less percentage of practice of open defecation. In case of ownership of house, houses owned by the residents and on rental basis practices open defecation is 87 and 81 per cent respectively.

Education is considered as a strong factor for bringing positive change in upbringing. By educational qualification of the head of the households it is observed that 88 per cent of the households who have illiterate heads practices open defecation. The same is for primary and upper primary education is 75 and 87 and for secondary and higher secondary education 82 per cent of the households practices open defecation. The change in practice of open defecation is not prominent and has almost same across category of educational qualification. So, education is not found to be associated with practice of open defecation. Similar argument was made by Doron and Jeffrey while discussing on open defecation in India.²¹⁵

The practice of open defecation by occupation of the head is showing two-third of the households with government job or retired from government job practices open defecation. The same is for different occupation with decreasing trend of income stability like for private company job, utility services, petty business, sanitation workers and daily wage & construction workers are with increasing trend of practicing open defecation. So, households with stability in occupation and income improve socio-economic condition and go less for open defecation and vise-versa.

²¹⁵ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic and Political Weekly*, 49(49), pp.72-8.

Often it is observed that the availability of water is the most important factor of decision making to practice open defecation. Households with latrine facility go out for open defecation because of shortage of water in house. In total, 61 per cent of the households have only one source of water that is municipal tank; it includes water for drinking purposes, households use and many more. In the study area, almost 80 per cent of households practice open defecation among those who receives sufficient drinking water and 91 per cent among who do not receives drinking water sufficiently.

Per capita income and expenditure shows the economic condition of the household. The data for income of the households showing almost all the households practices open defecation with per capita income below 1500 INR and the practice decreases with increasing per capita income. This follows like, 85 per cent for 1501-3000, 81 per cent for 3001-4500 and 75 per cent for the household's per capita income of above 4500 INR. This shows there is a relationship between households' per capita income and practice of open defecation, i.e., lower the per capita income higher would be such practice and vice-versa.

The picture for per capita expenditure of the households shows that the same trend that of the income with little variation. Households with lower per capita expenditure of below 1500 INR have 94 per cent of the households practice open defecation. This is 78 per cent for 1501-3000, 100 per cent for 3001-4500 and 0 per cent for the households per capita of above 4500 INR. The percentage value for 3001-4500 (n=5) and above 4500 (n=1) is so extreme may because of its small sample size. Even in higher per capita expenditure group the practice of open defecation in slum areas are expected to be higher given the fact of shortage of water supply and insufficient facilities of public toilets.

In case of individuals, the practice of open defecation is 81.5 per cent, which is 4.1 per cent lower than that of the household level practice of open defecation. Settlement wise it is 94.5 per cent in Azadpur, 63.5 per cent in Seelampur and 88.3 per cent in Bhim Basti. The reason behind slightly lower practice of open defecation by individuals than households is not because of the difference in households' size. This is mostly because of the households with latrine facility at home, in this case females are more likely to use latrine facility at home than males. It is noted that 86.1 per cent of men practices open

defecation against 75.8 per cent of women. One of the main reasons behind higher usage of latrine facility among women is *safety* and *dignity*.

Age-group wise practice of open defecation shows that the practice is almost uniform across all age groups. The practice is highest among 0-9 years of age group with 87.4 per cent is because of the fact that it is not possible for children to sit on toilet for children below 4 years of age all practices open defecation or their feces are disposed without burning it or not disposing in latrine. The prevalence of practice diminishes in age-group of 20-29 and followed by 30-39 years of age as 80.5 and 76 per cent respectively go for open defecation. This is because of restrictions to go out for defecation for the grown up girls and newly married wives among the households who have latrine facility. The practice is lowest among the age group of 70 and above, i.e., the old age group as 71.4 per cent and it is because of lack of physical strength they prefer to use latrine facility at home among households with latrine facility.

Household members who have latrine facility at home still have more than half of the members go out for defecation. People in these cases use latrines at the time of illness, bad weather and in case of emergency. Practicing defecation in toilet requires more water to clean than practicing open defecation. In all the settlements, the lower latrine facility at home, shortage of water and available public space around the slum leads to higher practice of open defecation. Household member's lives without latrine facility almost all practices open defecation in all the surveyed settlements throughout the year. There is only one woman lives in Azadpur who never go for open defecation after her marriage. She always manages to go to pay-per-use toilet block. The availability of toilet at home shows there are high possibilities that people with latrine facility at home would have lesser chance of going out for defecation than who do not have.

Table 4.2: Practice of Open Defecation by Individual					
		<i>Individual (%)</i>	<i>Total</i>	<i>Pearson's Chi-Square</i>	<i>Pearson's Correlation</i>
Slum Name	Azadpur	94.5	183	0.000	0.031
	Seelampur	63.5	230		
	Bhim Basti	88.3	256		
Sex	Male	86.1	367	0.001	0.132

	Female	75.8	302		
Age Group	0 - 9	87.4	135	0.535	0.060
	10 -19	81.4	172		
	20 - 29	80.5	123		
	30 - 39	76.0	96		
	40 - 49	81.5	65		
	50 - 59	81.3	32		
	60 -69	81.3	32		
	70 and Above	71.4	14		
Toilet at Home	Yes	52.7	260	0.000	-0.590
	No	99.8	409		
Literate	Yes	80.8	396	0.316	0.042
	No	77.1	175		
Level of Education	Illiterate	77.1	175	0.617	-0.019
	Primary	80.0	55		
	Upper Primary	83.8	185		
	Secondary	77.7	94		
	Higher Secondary	75.6	41		
	Graduation	82.6	23		
Occupation	Govt. Job & Retired Employees	71.4	7	0.001	-0.026
	Private Company Job	78.1	32		
	Utility Services	73.7	38		
	Petty Business	65.2	23		
	Daily wage & Construction worker	93.2	88		
	Sanitation Workers	87.0	23		
	Housewife	69.4	134		
	Student	80.3	173		
	Not Working	90.6	53		
Economic Status	Earning Population	82.6	213	0.669	0.020
	Dependent Population	80.9	456		
Percentage		81.5	100.0		
Total		545	669		

Source: Primary Survey, November-December 2016.

A study by Doron and Jeffrey mentioned that education is considered as one of the most important factor behind behavioral change to adopt latrine use instead of going out for defecation.²¹⁶ However the present study result shows there is no relation between

²¹⁶ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic & Political Weekly*, 49(49), pp.77.

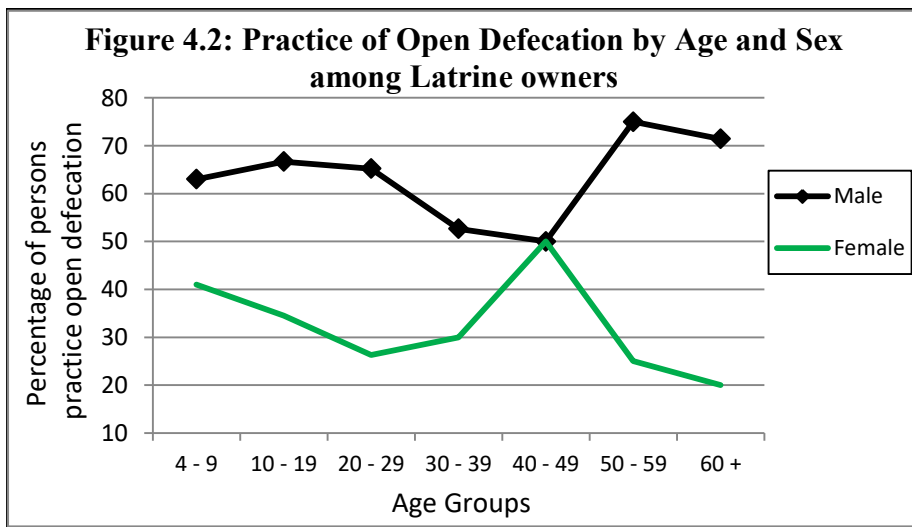
education and practice of open defecation. The present study result shows people who are literate 80.8 per cent of them practices open defecation whereas people who are illiterate practice open defecation less than literates, i.e., 77.1 per cent. In case of level of educational attainment shows there are no uniform change in practice with increasing or decreasing educational attainment. A person with educational attainment of primary education has 80 per cent population practices open defecation. It is 83.7 per cent for upper primary, 77.7 per cent for secondary, 75.6 per cent for higher secondary and for graduation it is 82.6 per cent. This shows education has no influence or little influence over the practice of open defecation. Similar argument was made by Tarraf while discussing about the behavioral change in practicing open defecation in India.²¹⁷

Occupation of an individual shows his or her source of income and economic condition. Higher the income of an individual could be linked to affordability of latrine facility at home or to avail pay-per-use facilities. Occupation of an individual shows that there are relation between occupation and practice of open defecation. People engaged in Government job or Government retired employees with 71.4 per cent, private company job with 78.1 per cent, utility service job²¹⁸ with 73.7 per cent and petty business 65.2 per cent has lower practice of open defecation against people who are engaged in low wage economic activities like daily wage labor, sanitation worker and ‘not working’ population as 93.2, 87 and 90.6 per cent respectively. This clearly shows the association between higher wage employment and lower percentage of practice of open defecation and vice-versa. In case of housewife the practice is comparatively low because of the restrictions, security and dignity of housewife to not to go for open defecation among households who has latrine facility at home. Earning population practices open defecation slightly more than who are dependents i.e., 82.6 per cent against 80.9 per cent. Dependent population has slightly lower practice of open defecation. The large share of female population is noted as dependent population, occupation reported as housewives and significant portion of non-working population. The other reason for lower practice of open defecation is older people with latrine facility at home prefers not to go out because of health concern.

²¹⁷ Tarraf, A. (2017). Social & Behaviour Change Communication, Insights and Strategy Case Study: Open Defecation in India. *The Government & Public Sector Practice*. In a collaboration with WPP plc. & University of Oxford.pp.9.

²¹⁸ Utility service job includes tailors, electricians and carpenters.

It has been reported that the households without latrine facility at their home use open defecation, even if they use pay-per-use (Azadpur) toilet facilities. They go out for defecation at night time and to avoid long queues to use toilet facility. But the case for the households with latrine facility is different. In condition of presence of latrine at home, only 55.6 per cent of household practices open defecation. Age and sex wise only in the age-group of 40-49 years where females practice open defecation at par with males (50 per cent). Initially there is a high prevalence of practices of open defecation among 4-9 years of age mainly because of children preferably defecate outside as children's feces are considered as harmless. With increase in age trend of practice of open defecation decreased especially among young girls and newly married women due to their security and dignity. There is an increase in open defecation for women at 40-49 age group may because of their habit and freedom within the household go access outside space. Women aged 40-49 faces less or no restriction to go out anytime for defecation as compared to women and girls who are unmarried and newly married in the household. With increase in age or at old age the physical strength of women and men restricts them to go out for defecation resulting into decreasing trend.



Source: Primary Survey, November-December 2016.

In a country like India, social relation plays an important role over the site of defecation, determined by caste, class and gender. Women face isolation and seclusion with increase

in number of latrines at home²¹⁹ especially in a patriarchal society. This shows that the households with latrine facility has higher percentage of male population practices open defecation than female, i.e., almost two third for males and one-third for females. Coffey *et al.* in their study over north Indian states found that “*In every state, men living in households with latrines are more likely to defecate in the open than women living in households with latrines.*”²²⁰ Irrespective of households with or without latrine facility and age of persons across three settlements males (86.6 per cent) using open defecation is higher than females (per cent 75.8).

4.2 Stated Reasons behind the Practice

There are many reasons behind practice of open defecation. To capture the responses of the household members who practices open defecation in the study, they were asked to answer ‘*why do you practice open defecation?*’ and only one reason considered which has the supreme influence over all other. They answered ‘*Don’t have any Other Option*’, i.e., helplessness due to lack of latrine facility at home and it contributes almost three-fourth of the total households practice open defecation. The lack of latrine facility at home has many reasons and this could be due to poor financial condition. Centuries old ‘*cultural practice*’ leads to 11.5 per cent of the households practice open defecation. This cultural practice cited here as ‘*old habit*’. There is no stigma or restrictions among the common people whoever practices open defecation as it counts as a part of the culture and a long standing habit. The similar argument of ‘old habit’ is mentioned in many literatures.²²¹ In these surveyed slum areas it is not unacceptable to not have toilets at

²¹⁹ O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring “The Remote” and “The Rural”: Open Defecation and Latrine Use in Uttarakhand, India. *World Development*. pp.2.

²²⁰ Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2014). Revealed preference for open defecation. *Economic & Political Weekly*, 49(38), pp.50.

²²¹ For example,

UNICEF. Eliminate Open Defecation. *UNICEF India*. <http://unicef.in/Whatwedo/11/Eliminate%ADOpen%ADDefecation> Accessed on April 27th, 2017.

Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2015). Sanitation-related psychosocial stress: a grounded theory study of women across the life-course in Odisha, India. *Social Science & Medicine*, 139, pp.81.

Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2014). Revealed preference for open defecation. *Economic & Political Weekly*, 49(38), 43.

house. The situation is almost same in many other parts of the country²²² both among rich and poor people.²²³

Breaking the data into households with and without toilet facility, 'water shortage at home' is the dominant reason of practice of open defecation for 58 per cent of the households with toilet facility at home. The magnitude of influence of 'water shortage at home' is even bigger than the data showing the results. A man from Seelampur stated 'old habit' as the reason of practice of open defecation. But the real scenario is somehow different from his reason for practice of open defecation. He said that "I prefer to go out for defecation even after having toilet at home is just because I am doing it from my childhood. I wish I could stop going outside for defecation because it is not good for health and have risk of life (due to rail accident). I failed to do so. Shortage of water at home forces me to go outside for defecation."²²⁴

Table 4.3: Reason behind Practice of Open Defecation (%)					
	Don't Have any Other Option	Old Habit	Water Shortage at Home	When Pay Use Close	Total
Azadpur	79.4	11.8		8.8	34
Seelampur	72.4	13.8	13.8		29
Bhim Basti	69.7	9.1	21.2		33
Percentage	74.0	11.5	11.5	3.1	100.0
Total	71	11	11	3	96

Source: Primary Survey, November-December 2016.

People in the slum areas carry water by hands for the latrine purpose, as the area lacks piped water connection as well as has poor water supply. The availability of water determines the option between using latrine and open defecation. It is found that the households reported that they face shortage of water, prefer to go out for defecation among households who have latrines at their home. Households has latrine facility and

²²² Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), 1124-1130.

²²³ Hussain, R., & Mangla, B. (2014). Toilet as an asset: Necessity versus luxury. *Developing Country Studies*, 4(9), pp.112.

²²⁴ A Man aged 50, engaged in private company job. Living in Seelampur for more than 25 years, came from Baghpat district of Uttar Pradesh.

shortage of water at home faces bad smell all around the house and are forced to go out for open defecation. Many household inform that they are not building latrines as there is shortage of water.

As 62.5 per cent of the total households don't have hand pump or motor pump to get water for household use and rely on municipal source of water it is very difficult for them to use more water for defecation purpose as they also have use it for drinking purpose and other household activities. The severe condition of the water supply to the slums is also hit by the loss of 40 *per cent* of total water supply in the process of distribution which is significantly high.²²⁵ This high percentage of water loss is one of the forms of corrupted government bodies, who distribute it to the tanker (water) mafias. Delhi water minister said in media before MCD election in 2017 that Delhi have sufficient water resources and just need to manage it to cope up with the problem.

"We have sufficient water. There is no crisis in terms of availability of water in Delhi. The crisis is of water management and distribution; this will be done away with the piped water supply network. Our aim is universal access to safe drinking water to each household in Delhi by 2017,.....We are eyeing to provide piped water supply in all the colonies of the national capital, including slums and JJ clusters, by December 2017," said by Mishra, then Water Minister and Chairman of DJB.²²⁶

Households do not have proper access to water have to put their leisure and other working time for its collection; mainly the housewives and the children's responsibility to collect water and can hamper the educational attainment of the children. A similar finding was also mentioned by Ortiz-correa *et al.* in their study on impact of water and sanitation on education of children.²²⁷

²²⁵ ICED (2007-08). PA on water Management System in Delhi. *International Centre for Environment Audit and Sustainable Development*. Jaipur.

²²⁶ INAS (April 9, 2017). No water crisis in Delhi water harvesting to be made mandatory Delhi water minister Kapil Mishra says. *Times of India*. New Delhi. Accessed on 21st May, 2017.

²²⁷ Ortiz-Correa, J. S., Resende Filho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp.31.



Figure 4.3: Housewives and children are collecting water from a water tanker of Delhi Jal Board (DJB) in Azadpur slum. The area was full of muddy-water in and around the water tanker (left side). Right side picture showing water drums and barrels are placed at roadside and in front of residences in Bhim Basti. Water pipe putted inside a drum and waiting for water to come as the supply is irregular. Households charged 50-80 rupees per month. Photo captured by the researcher.

Household members also practices open defecation due to inability of pay-per-use toilet facility to provide 24*7 services. Both the pay-per-use public toilet provide services only for 18 hours a day and if in between off six hours any one get nature's call, they have no other option but to go to nature only. In these cases people have no other way than to go for open defecation. Even if the pay-per-use is open, it charges money, and for poor it is quite a sum. Secondly the toilet-people ration in the area is very low. The pay-use toilet blocks in Azadpur and Bhim Basti (yet to start) are like a drop in the ocean as compared ratio of population to the number of seats. At morning time due to long queues in front of pay-per-use toilet block many people defecates in the open. It is also not possible for anyone to stand in a long queue for around one hour at the time of nature's call. Combining all, people are practicing open defecation are mostly because of lack of toilet facilities, followed by shortage of water and old habits (table 4.3). Pay-per-use public toilets are also failing to provide facilities due to the system of paying every time when one uses it.

As the three-fourth of the total households who do not have latrine facility at house practices open defecation, it is also important to know the reasons behind not having

latrine facility at home. A study by Patil *et al.* in rural Madhya Pradesh found that to eradicate open defecation it is very much needed to put more emphasize on social mobilization, behavior change and construction of individual household latrines where the toilet coverage is low.²²⁸



Figure 4.4: Pay-per-use public toilet installments built in Bhim Basti but it yet to start its service and households without latrine facility are forced to go out for defecation. Photo captured by the Researcher.

Here, in the study area, more than three-fourth of the total household's respondent replied they do not have required financial means to construct toilets at home, 43.4 per cent says space as the most important reason why they don't have toilets at home. 12 per cent of the total households don not want to build toilet at home mainly because of shortage of water and the family living in rent house.

In a society with unequal distribution of resources, social power and wealth it is very difficult for poor people or the weaker section of the society to maintain a latrine, these

²²⁸ Patil, S. R., Arnold, B. F., Salvatore, A. L., Briceno, B., Ganguly, S., Colford Jr, J. M., & Gertler, P. J. (2014). The effect of India's total sanitation campaign on defecation behaviors and child health in rural Madhya Pradesh: a cluster randomized controlled trial. *PLoS Medicine*, 11(8), e1001709. pp.13.

are often ignored by the mainstream of the study and these are very important factor for increasing latrine usage.²²⁹

The mainstream studies also ignore the process of exclusion of poorest section of the society from using modern infrastructure, political participation and accessing information in defining sanitation poverty.²³⁰ There is a notion among higher and middle class people in India hat poor people in India do not use latrines even if they have and poverty is not an important reason behind not building a latrine, such beliefs hides the inbuilt structural inequalities²³¹ and institutional inability to provide latrine facilities to the poor and faulty implementation of existing policies.

	Do Not Want To Build / Rented	Money Problem	Space Problem	Government is Not Providing	Total Observed
Azadpur	9.4	65.6	81.3	9.4	32
Seelampur		100	23.8	19.0	21
Bhim Basti	26.1	73.9	8.7	8.7	23
Total Percentage	11.8	77.6	43.4	11.8	100
Total Observed	9	59	33	9	76

Source: Primary Survey, November-December 2016.

The social and political remoteness of slum population makes open defecation more preferable over the use of latrines due to the problems related to poor availability of water, fear of pit filling,²³² poor construction of latrines and foul smell around the house. Problem of pit clearing is one of the major concerns in Bhim Basti among household who have latrines at house. This problem of filling pit is restricted people who use latrines and to go out for defecation, and restricted to emergency use during rain and night times. In Bhim Basti, it requires more money and labor to construct latrines because of the underlying hard rocks for construction of pits. In a response of a question asked whether they have any plan to construct latrine one resident of Seelampur slum *a man* replied “I

²²⁹ O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring “The Remote” and “The Rural”: Open Defecation and Latrine Use in Uttarakhand, India. *World Development*. pp.3.

²³⁰ *Ibid.*

²³¹ *Ibid.*

²³² *Ibid.*

personally stopped dreaming to build a toilet for my own family as it will cost big money.”²³³ This clearly shows there is willingness of families to have latrine facility of their own but are failing to do so because of their poor economic condition and gradually giving up hope.

Asking about political interference to provide toilet facilities, across all the surveyed settlements people said there are only ‘corruption’ and ‘unfulfilled promises’ received from the Government and ULBs in the name of development of the slums. People are not happy with the Government and ULBs regarding sanitation issues and other basic facilities for development of the slum areas. Households with latrine facility are all built by the owners and never received any kind of incentives from the government. Asking about municipal interference to provide toilet facilities they said, councilor never visited their settlements. It can be said that the existing inequalities of sanitation facilities within the city produced the practices of open defecation as in one hand poor section of the society lacks basic facilities and posh areas of the city receiving un-interrupted water and electricity supply. To reduce the number of open defecators there are two major changes that are needed, one is to increase in number of households with public latrine facility; and increase in usage of latrines by household members.²³⁴

4.3 Open Defecation, Assets and Economic Status

Assets and amenities are one of the most important indicators of socio-economic status and lifestyle. Availability of any assets requires space and in case of slum areas it is too problematic to adjust. It is assumed that available assets and amenities have a control over practice of open defecation.

In case of households have facility of separate kitchen outside their dwelling rooms shows there are spaces which they can utilize, and it applies to most of the assets and amenities to possess within in and around of the house premises. Households with separate kitchen facilities practices open defecation (81 per cent) is less than the

²³³ A resident of Seelampur slum. Aged 28, engaged in economic activities as ‘daily wage worker’.

²³⁴ O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring “The Remote” and “The Rural”: Open Defecation and Latrine Use in Uttarakhand, India. *World Development*.

households without separate kitchen facilities (87 per cent). Households with electricity facility have lower practice of open defecation than households without the facility i.e., 86 and 100 per cent respectively. The households without electricity facility is only one household and that leads to cent per cent, this could have shown better image if there were comparatively large sample size for the households without electricity facility. Having bank account in Indian context shows economic as well as social development for a household living in slum areas and rural areas but in case of its relation to practice of open defecation it shows there are no change in this. 85.7 per cent of households with and without bank account facilities practice open defecation (table 4.5).

Bank account facilities has no impact on practice of open defecation may because of the fact that households have bank accounts are not from demand driven rather they have open bank account due to governments initiate of *Jan Dhan Yojana*.²³⁵ This scheme of the government is to provide bank services to poor people with 'zero rupees balance' which leads to increasing number of households with bank account but no balance leaving them still economically disadvantaged.

When it comes to possessing household assets, it shows there is an association between possessing assets of higher value and avoiding practice of open defecation in the study area. Households with assets like hand or motor pump, cycle, mobile and TV has four to eight per cent less prevalence of practice of open defecation compared to those do not have. There is an issue, often compare access to mobile and latrine facility found in many reports and research papers that households with mobile phones are higher than households with toilet.²³⁶ It is not at all a valid comparison; the reports and research papers must not forget that mobile need not require a special arrangement to keep it in house or requires an empty space, proper sewage system, water supply and regular maintenance and cleaning, but a toilet facility demands that. This is the reason behind households with mobile phones are higher than with toilet facility. All the households

²³⁵ A male resident of Seelampur slums informed that more than half of the bank account holders of his neighbor has '*Jan Dhan Account*'.

²³⁶ For example, Hussain, R., & Mangla, B. (2014). Toilet as an asset: Necessity versus luxury. *Developing Country Studies*, 4(9), pp.110.

with ‘pulling-rickshaw’, all practices open defecation although only three households found with this asset.

Table 4.5: Practice Open Defecation by Amenities and Assets					
		HH %	Total Observed	Pearson's Chi-Square	Pearson's Correlation
Separate Kitchen	Yes	80.8	26	0.411	-0.078
	No	87.2	86		
Electricity	Yes	85.6	111	0.682	-0.039
	No	100	1		
Bank Account	Yes	85.7	84	1.000	0.000
	No	85.7	28		
Hand/Motor Pump	Yes	83.3	42	0.577	-0.053
	No	87.1	70		
Cycle	Yes	82.1	28	0.533	-0.059
	No	86.9	84		
Two Wheeler	Yes	81.8	22	0.560	-0.055
	No	86.7	90		
Three Wheeler	Yes	80	5	0.709	-0.035
	No	86	107		
Pulling-Rickshaw	Yes	100	3	0.474	0.068
	No	85.3	109		
Four Wheeler	Yes	100	2	0.560	0.055
	No	85.5	110		
Mobile	Yes	85.3	102	0.685	-0.038
	No	90	10		
TV	Yes	83.9	87	0.308	-0.096
	No	92	25		
Computer	Yes	100	1	0.682	0.039
	No	85.6	111		
Refrigerator	Yes	76.7	43	0.032	-0.202
	No	91.3	69		
Washing Machine	Yes	63.6	11	0.028	-0.208
	No	88.1	101		
Total Percentage		85.7	100		
Total Observed		96	112		

Source: Primary Survey, November-December 2016.

In case of households with luxury assets like two & three wheeler, refrigerator and washing machine has 5 per cent to 25 per cent less practice of open defecation.

Households with luxury assets like four wheeler and computer has higher practice of open defecation than households don't have. Although there are very small number of households has four wheeler (n=2) and computer (n=1) shows not a good sample to put comment. Hussain and Mangla in their study argued that a household who have luxury and mediocre assets had failed to build a latrine at their home and are not the case of *affordability*, but about not considering latrine as a necessity.²³⁷ But the case in the study areas is somehow different from the argument of Hussain and Mangala. From the field survey it has observed that there are small numbers of households who have luxury assets as refrigerator, washing machine and car but do not have latrine facility at their home. Even in case of practicing open defecation it shows the prevalence is lower than other households who do not have luxury assets. This shows a *negative relationship* between households with luxury assets and practice of open defecation. Refrigerator and washing machine are the two most common luxury assets reported from the field survey and have almost 77 and 64 per cent of households respectively practice open defecation. However practice of open defecation overall in the study area is almost 86 per cent. In response to the argument of Hussain and Mangala, the major reason behind households having luxury assets and not having latrine facility at home or practicing open defecation is not the case of *affordability* but the presence of countless problems related to the functioning and construction of the facility, like the lack of sewage system that not allows them to build a latrine at their house and is common all across settlements, and in case of Bhim Basti it was inability to dig deeper due to rocky underlying structure. There are many problems to construct latrine at home, a 16 year old boy, living in Seelampur slum recalled that “*whenever there are any kind of construction takes place, police came to take money as bribe*”²³⁸ as the land belongs to the Indian Railways. Wherever the situation like this exists, where the government and police are corrupted and have poor quality or no infrastructure exists it is not possible even for well off family to build a latrine, especially the areas with non-existent sewage area and paying government officials for building latrines at their own home. In addition to all these, the land tenure puts a major hindrance

²³⁷ Hussain, R., & Mangla, B. (2014). Toilet as an asset: Necessity versus luxury. *Developing Country Studies*, 4(9), pp.106.

²³⁸ A boy aged 16, class 9th standard student, his family hailed from Meerut to Seelampur around 30 years ago.

as the land does not belong to the families residing there. Seelampur slum developed over the land of Railways; Azadpur slum developed over the land of Railways and Industrial area; and Bhim Basti developed over the land of Forest Department, all of which restricts legal construction over the areas. All these makes almost impossible to construct latrines at home.

4.4 Open Defecation at School, Place of Work and Last Residence

Other than households, toilet facilities are also needed at schools and at work places because people also stay there for a significant portion of time. From the field survey, the information on practice of open defecation at school shows that out of the three settlements students studying in schools surrounding in Seelampur and Azadpur are all have school toilet facilities and none defecate in open. The case is very disappointing for Bhim Basti. Here, children's school have toilets but are not in function for them, students reported that only their teacher use those toilets and at the time of inspection students are advised to use that, remaining time it remained locked due to shortage of water. 93 per cent of the student in Bhim Basti defecates in open when they are at school²³⁹ for both boys and girls students. Only 9 per cent of student avail toilet facilities at school because they studies at private schools nearby. The way of forcing students to go out for defecation demoralizes them to use latrines and learns cultural old practice of open defecation.

People spent their major day time at work place, and it is very important to have toilet facility at place of work. From the primary survey it is observed that almost one-third workers defecate in open due to lack of toilet facilities at the place of work. Out of 109 household whose members go outside for work, 50 households reported there are no toilet facilities i.e., 46 per cent. Among the workers who don't have toilet facilities at place of work 68 per cent reported they go for open defecation, which is 31 per cent to the total workers. 14 per cent of the workers use pay-per-use toilet facility at place of work. Even among the workers who has toilet facilities at place of work is not as good as it looks. There are also instances where they had to pay for urinal also (n=6).

²³⁹ School name is Neem Karoli Baba High School situated in Jonapur.

	At School	At Work	At Last Residence
Azadpur	0 (28)	12.1 (33)	91.4 (35)
Seelampur	0 (29)	34.2 (38)	82.1 (39)
Bhim Basti	93.1 (29)	44.7 (38)	78.9 (38)
Total Percentage	45.9	31.2	83.9
Total Observed	50 (86)	34 (109)	94 (112)

Source: Primary Survey, November-December 2016.

A man, works as tailor at a house-cum-factory in Gandhinagar (Delhi) has toilet facility at his work place, says; *“there is a toilet facility at place of work which is also the owner’s home, most of the workers go there but some of us are not allowed to use that because of our lower caste status.”*²⁴⁰ So, the situation for the workers who do not have toilet facilities at place of work is not much different from those who have. In case of households who practiced open defecation in their place of last residence, it is observed that 84 per cent of the households and has same scenario from the migrants family who come from rural as well as urban areas.

4.5 Conclusions

- Practice of open defecation by households is highest in Azadpur followed by Bhim Basti and lowest in Seelampur.
- While urinate, people choose places close to their house on roadside, railway side or other open spaces.
- The factors behind the practice of open defecation is mostly associated with the availability of latrine facility at home, availability of sufficient water and space for latrine construction, old cultural habit and lower availability of pay-per-use toilet facilities.

²⁴⁰ A man aged 22, work as tailor in Gandhinagar (Delhi), lives Seelampur and hails from Bhagalpur district of Bihar.

- Shortage of water is the premium reason of practicing open defecation among latrine owners.
- Households do not have toilets at home are mostly because of poor economic condition and shortage of space.
- Households with toilet facility all constructed by the owner. No households ever get any approach from government or non-government organization to build toilet.
- The practice of open defecation is strongly associated with availability of toilet, caste, type of housing material, occupation, household's expenditure and individual's sex.
- The practice of open defecation is more prevalent among Scheduled caste households and household with semi-pakka type house. The practice is also higher among economic activities of lower wage employment.
- There are also associations between household assets and amenities with the practice of open defecation.
- Households poses costly assets like refrigerator and washing machine are has lower percentage of practice of open defecation.
- Education is not found as associated factor with the practice of open defecation.
- To minimize the practice of open defecation there is a need to look after the factors that contributes to the practice of open defecation and needs to be care of that.

SPATIALITY, OPEN DEFECATION AND EXISTING PUBLIC FACILITIES

The practice of open defecation is often linked to availability of sites. Suitable sites includes safety of individual, affordable distance and time to access the location and comfortable to use. There are unsaid social and spatial acceptances of practice of open defecation. But it is not always easy to practice open defecation due to many problems related to defecation sites. Major problems include impacts on health and imposition of laws to stop the practice and social stigmatization of the open defecators. So, it is important to discuss about the spatiality and problems of open defecation in the surveyed area and available facilities that the government has provided to eliminate open defecation i.e., public facilities.

5.1 Spatiality of Open Defecation

The spatiality of open defecation sites shows that in all the settlements households member travels short distance for open defecation. No one reported to travel more than a km for defecation. Shortest distance covered was by the residents of Seelampur i.e., up to 200 meters. On one side of the railway line there is the settlement and on the other side of the railway tracks there is defecation sites, people often prefer to defecate behind bushes and trees that provides some coverage from the public gaze. All the household members of Azadpur and Seelampur settlement defecate within 500 meters of **their** residence. Railway tracks and vacant lawn areas act as most important defecation site. For Azadpur, most defecate within 500 meters. There is open space between the settlement and the intersecting two railway tracts which is used as dumping ground by the locals. There are total of three different sites for defecation in Azadpur including railway tracts along which the settlement has developed, and other is open field nearby and open drains intersecting the settlement and the railway track.



Map 5.1: Google satellite map showing Seelampur surveyed sites. Here, S – stands for Settlement, R – stands for Railways, M – stands for Metro rail. The open defecation site is O. O – stands for Open Space.

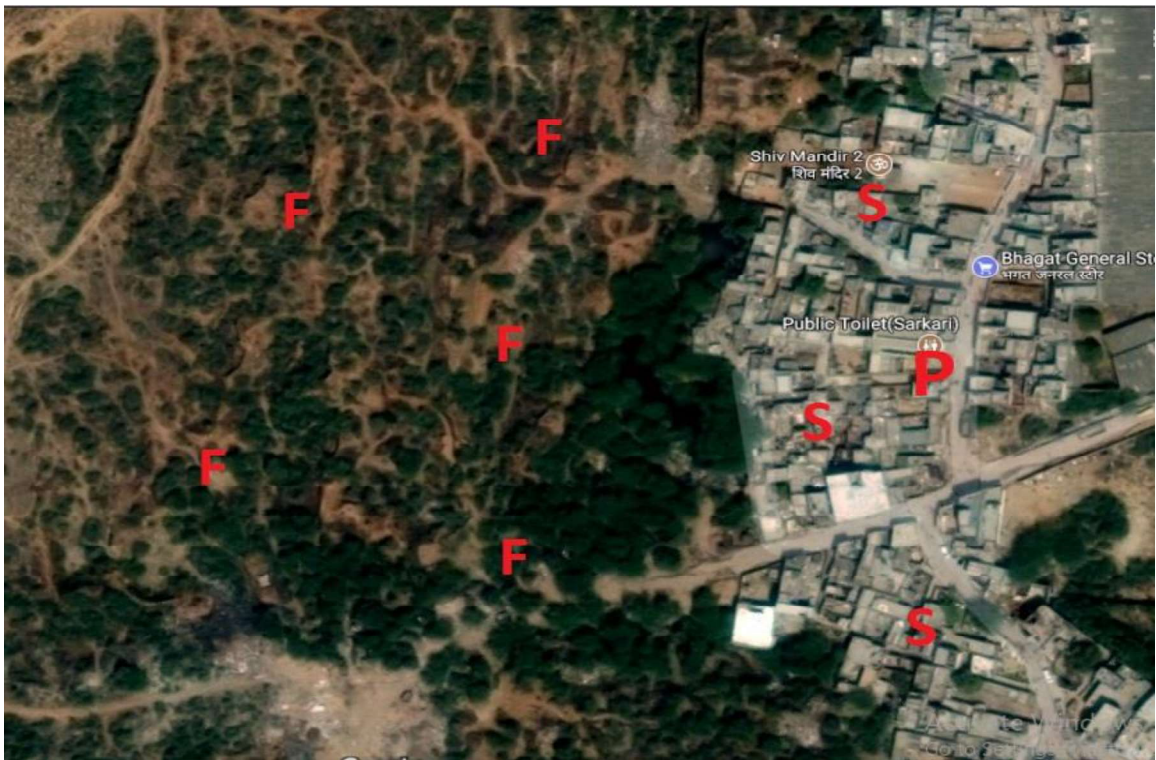


Figure 5.2: Google satellite image showing Bhim Basti surveyed sites. Here, S – stands for Settlement, P – stands for Pay-per-use toilet block. The open defecation site is F – stands for Forest. Pay-per-use toilet is yet to start.



Figure 5.3: Google satellite map showing Azadpur surveyed sites. Here, S – stands for Settlement, P – stands for Pay-per-use toilet block. The open defecation sites are R, O, D and near G. R – stands for Railways, O – stands for Open Space, D – stands for open Drains and G – stands for Garbage dumping area. A household near the Garbage dumping and open drain area is very difficult for them to travel a long distance to avail pay-per-use toilet facility.

Table 5.1: Distance from house to defecation place				
	Up to 200m	201 to 500m	501 to 1000m	Total Observed
Azadpur	8.8	91.2	0	34
Seelampur	89.7	10.3	0	29
Bhim Basti	3	45.5	51.5	33
Percentage	31.3	51	17.7	100
Total	30	49	17	96

Source: Primary Survey, November-December 2016.

In Bhim Basti, people who defecate open go to the jungle nearby, which is just adjacent to the settlement. Here, households member travels some distance within / inside the jungle and defecates away from their settlement. In all cases, women travel less distance and in almost all cases women go for open defecation with someone accompanying her. But men travel longer distance than women and mostly go alone / unescorted. The gendered segregation of open defecation sites is most practiced in Bhim Basti (97 per cent), followed by in Azadpur (35 per cent) and least practiced in Seelampur (14 per cent).

5.2 Problems of Open Defecation

It has been observed that there are existence of cooperation between men and women. But not everyone in the settlement and in every settlement people cooperates. Men prefer to choose isolated place, women prefer to go with someone for security purposes. Men go for open defecation whenever they want; women and girls mostly wait for the darkness. Early morning and evening time became usual favorite time to avoid crowd. A woman, lives in Seelampur said *“It is not that easy to go and sit there to defecate. You have to wait there and find some suitable place to defecate by avoiding other people, especially men.”*²⁴¹ During the pregnancy period, it became even more challenging for women to find a suitable and isolated place for defecation; and carrying water bottle (*Lota*) for long distance to find a place for defecation is also a major problem. Many a times for girls and women, they had to go out for defecation early in the morning even if it is not needed at that time to avoid day time and maintain privacy, which saves them from embarrassment. Whatever the time is, women avoid going alone for defecation, especially young girls and newly married women. Another woman resides in Seelampur described her problems to use open defecation place as: *“If I want to go out to defecate in day time I find it very difficult as men are roaming around there and stare.”*²⁴² There are instances of harassment of women and girls at the defecation sites or on the way to defecation sites. The cases of harassments are mostly from unknown person who do not reside in area.

²⁴¹ A woman aged 38, housewife by occupation; she is the mother of 4 children, lives in Seelampur and hails from Meerut.

²⁴² Another woman, aged 22, mother of three children, housewife by occupation and lives in Seelampur.

There are instances of embarrassments like people stares and glares from train and also pass comments and make noises. Most women and girls prefer to go in a group or in company with someone to avoid assaults. It is not that rapes and harassments of women happen only because they go outside to defecate. These incidences reflect the patriarchal values of the society that undermines women. Similar argument was mentioned by Wasti *et al.* in their study on sexual harassment.²⁴³ Harassments and rapes are not the incidents only linked to the practice of open defecation. The UN reports, national reports and other sources of information talked about avoiding open defecation to stop rape and harassment incidence, this research challenge their opinion. The study finds that it is not a solution and confinement of women and girls cannot be an answer to crime. The act of going out must be seen as a “*social outing*”^{244,245} to interact with other in the neighbors during defecation and to escape from “*gender-related power differential.*”²⁴⁶

In Bhim Basti, people have different sites for males and females, males go deep inside the jungle while females go shorter distance than males and moves to the left side within the jungle. Men do not enter this part. The gendered space of open defecation sites is not imposed by the society. It is self-regulated and follows to maintain harmony between different genders.

While in Seelampur there is no such division of defecation sites by gender and all defecates near railway tracks opposite side of the settlement. The response is mix/assorted in case of Azadpur, there is no site demarcate for men and women. But usually in the defecation sites near railway tracks and open drain but the sites are different in open space areas and are in practice. Beside defecation sites, the time also matters, especially for women. Other than Bhim Basti settlement to defecate in open during day time is very difficult for women due to lack of cover. Table 5.2 shows that

²⁴³ Wasti, S. A., Bergman, M. E., Glomb, T. M., & Drasgow, F. (2000). Test of the cross-cultural generalizability of a model of sexual harassment. *Journal of Applied Psychology*, 85(5), pp.776.

²⁴⁴ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), pp.1127.

²⁴⁵ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic & Political Weekly*, 49(49), pp.76.

²⁴⁶ Menon, S. A., & Kanekar, S. (1992). Attitudes Toward Sexual Harassment of Women in India. *Journal of Applied Social Psychology*, 22(24), pp.1942.

different time for females to defecate in the open is highest in Azadpur. Majority of the women use pay-per-use toilet facility during day time. But at night they go out in open.

	Azadpur	Seelampur	Bhim Basti	Total Percentage	Total
Harassment	52.9	44.8	39.4	45.8	96
Different Place for Females	35.3	13.8	97	50	
Different Time for Females	64.7	44.8	18.2	42.7	
Heard of Accident	14.7	51.7	3	21.9	
Hygienic and Cleanliness	5.9	27.6	6.1	12.5	
Night Time	26.5	24.1	45.5	32.3	
During Rainy Season	88.2	65.5	84.8	80.2	
Total	34	29	33	100.0	96

Source: Primary Survey, November-December 2016.

One-fourth of the total households who practice open defecation faces problem of hygiene and cleanliness in Seelampur and are also noticed in other two settlements. Poor hygiene at the place of defecation is a major public health problem. Lack of hygiene and cleanliness causes diarrhea, cholera, and malnutrition among children.²⁴⁷ This also leads to problems of menstrual hygiene for women. Similar finding was mentioned in a work by Hartmann *et al.* in a study on India's urban sanitation.²⁴⁸

In Seelampur slum, frequent rail accident was reported by 52 per cent respondent (n=15) of the household who practices open defecation. A woman²⁴⁹ of Seelampur slum remembered that last year they built toilet to avoid accidents, as because one has to cross railway line to respond to nature's call. Whenever anyone goes out to defecate, she feels tension because trains run very fast there which took away many lives, although the frequency has reduced now. She also cited the 'women's security' as the reason of construction of latrine at home.

²⁴⁷ Worley, H. (2014). Water, Sanitation, Hygiene, and Malnutrition in India. *Population Reference Bureau*. <http://www.prb.org/Publications/Articles/2014/india-sanitation-malnutrition.aspx> Accessed 24th April, 2017.

²⁴⁸ Hartmann, M., Krishnan, S., Rowe, B., Hossain, A., & Elledge, M. (2015). Gender-Responsive Sanitation Solutions in Urban India. *RTI International*, Research Brief. RTI Press. pp.1

²⁴⁹ Jyoti Devi is 34, housewife, hailed from Meerut, Uttar Pradesh 30 year's old resident of Seelampur slum. Primary Survey, November-December 2016.



Figure 5.4: Railways tracks are right behind the wall of the houses. People have to cross the railways tracks to defecate in open in Seelampur, this rail route connects busy route of Old Delhi with Ghaziabad. Right hand side photo shows a child returning from defecation with green water bottle (*lota*) accompanied by a senior female. Photo captured by the Researcher.

There are instances also where people suffered from the accidents during defecation. In Seelampur, a man narrated that once he saw an accident hardly two months before the survey conducted. He further narrated that at evening time he was returning to home after performing body ritual and saw a man lying away from railway track after accident. That man who suffered fractured in his whole body was returning from open defecation site and during crossing the track suffered accident. In Bhim Basti, one boy aged 5 suffered from unknown insect bite, when he went out to defecate in the jungle and caused serious infection in his leg and suffered for around 5 months. The incidences of accidents are more common with the running trains at the place of defecation than combining all other sorts of accidents including insect bite and fracture due to slipper during rainy season.

People practices open defecation faces problem during rainy season. Mosquitoes bite is reported from all the three settlements during. During monsoon it becomes very hard to find a suitable place for defecation as there were mud and foul smell all around the sites. During monsoon season the problems faced by the residents be guessed from the narration of a woman, resident of Bhim Basti, who said “*Water stagnation is a major*

problem during rainy season and when there is a stagnation of water, it remains for at least two to three days. It makes very difficult to find suitable place for defecation.”²⁵⁰

There are many other problem associated with the sites are captured from respondent’s narration. are like kinds of discomforts at the site like; bypassing of person during defecation, sometimes it is very difficult to face dogs and pigs at the defecation sites and to defecate open at night. The fear of ghosts at night is quite common among the people who practices open defecation at night. One boy of aged 18 said that: *“Two years ago there was one incidence of murder in the jungle at night time. Although it is not clear, that the person who murdered in the jungle went for nature’s call or not. People still fear to go deep inside the jungle for defecation, especially at night time.”*²⁵¹ He further explained that during night under darkness many times the situation worsen like nothing could be bad than this. He said *“Sometimes at night it is very common to step over excreta at defecation site due to darkness, and requires more water to clean further.”*



Figure 5.2: Left hand side photo shows a piped discharge in open drain. Right hand side shows excreta are floating in open drain. As drains are open, during monsoon due to water stagnation

²⁵⁰ A woman aged 26, housewife by occupation, mother of 3 children and her family hailed from Bharatpur district of Rajasthan.

²⁵¹ A boy aged 18, student, studying in class 8, hailed from Lakhisarai, Bihar eight years ago. Staying in a rent house. Primary Survey, November-December 2016.

water logged in street for hours and people bypassing contacts with excreta. Photo captured by the Researcher.

It is observed that the time for livelihood increases with presence of toilet and availability of drinking water at home and these two facilities decreases the incidence of diarrhea and dysentery. Similar outcome was mentioned by Ortiz-Correa *et al.* in their case study in Brazil.²⁵² During rainy season, many times the nearby drain overflows and as all the household toilets are connected to open drains it poses serious health issues to the locals.

Table: 5.3: Distribution of Diseases Among Households (%)			
	Practice OD	Do Not Practice OD	Total
Dysentery	100		1
Diarrhea	100		8
Vector borne	92.2	7.8	51
UTI	100		1
Other	66.7	33.3	6
Percentage	91.0	9.0	100
Total	61	6	67
Absent	-	-	47
Total	61	6	112

Source: Primary Survey, November-December 2016.

Household members suffering from diseases in between who practices open defecation and who are not shows there is high prevalence of diseases among the households who defecates in open.²⁵³ Data collected on five categories of diseases and fifth category mentioned as ‘other’ includes all diseases other than mentioned four diseases. It is observed that household members who are suffering from diseases are majority from the households who practices open defecation. There are households found whose member(s) suffered from diarrhea and dysentery in last one year and 100 per cent (n=9) of the households belongs to the group practicing open defecation. One household reported Urine Tract Infection (UTI) of a woman is also from the same category as practicing

²⁵² Ortiz-Correa, J. S., Resende Filho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp. 32.

²⁵³ Tarraf, A. (2017). Social & Behaviour Change Communication, Insights and Strategy Case Study: Open Defecation in India. *The Government & Public Sector Practice*. In a collaboration with WPP plc and University of Oxford. pp.5.

open defecation. Other than these three diseases also the prevalence of vector borne diseases ‘other’ diseases are also more prevalent among the households who practices open defecation. Household members suffered from vector borne diseases and ‘other’ diseases are also high among those who practices open defecation. Even in case of total number persons suffered from any kind of diseases in the last year is also very high in case of households members who defecates in open (n=101) than who do not (n=7), including all kind of diseases mentioned in the table above.

There are other negative effects on health together with the diseases discussed. A study by Srivastava *et al.* found that open defecation is also one of the major reasons of air pollution in some of the particular areas in Delhi. It is a public concern because of environmental problem, which is injurious to human health and vegetation.²⁵⁴



Figure 5.6: Children playing at playground and along railway tracks are use as defecation site at night. The area also used for dumping purpose by the locals. Photo captured by the Researcher.

²⁵⁴ Srivastava, A., Joseph, A. E., Patil, S., More, A., Dixit, R. C., & Prakash, M. (2005). Air toxics in ambient air of Delhi. *Atmospheric Environment*, 39(1), pp.59

Other than diseases on which information is collected there are many instances which can pose a serious threat to the public health and especially to the children. On defecation sites where majority of the people defecates at night which is nearer and adjacent to the settlement, an open space also use as playground by children, there are chances of contact with feces and may suffer from diseases.

5.3 Open Defecation and Open Drain Latrine

A study on drinking water in urban India found that 55 per cent of drinking water is contaminated with fecal bacteria and it is only among those who use at least one method of purification.²⁵⁵ One can easily imagine how contaminated the water from these slums would be when purification methods are rarely used in such deprived households.

The recent sanitation campaigns²⁵⁶ are mainly focused on the coverage of household level toilets. Nevertheless policy and programme on sewerage treatment system is needed. Especially the slum areas surveyed are mostly practicing open defecation and the major side effect of this activity is contamination of ground water, spreading of diseases and public health concern. In Bhim Basti Gali No. 5, water samples collected by National Rural Health Mission (NRHM) found and tested contaminated drinking water and have 15 members of *Acute Diarrheal Disease*.²⁵⁷ On the other hand, household with toilets at home rarely use pit latrines in the capital territory and almost all using open drain latrines, especially in the slums. These are even more dangerous to the public health than practicing open defecation. During monsoon season when the drains filled up with water excreta starts floating and everywhere there were foul smell that time and is no less dangerous to the public health. Basically in this case open defecation keeps excreta at least remains away from their home and not penetrating inside their house during monsoon. Drains and manholes are open in the small streets within the slum and are

²⁵⁵ Mentioned by Nandi, A., Megiddo, I., Ashok, A., Verma, A., & Laxminarayan, R. (2017). Reduced burden of childhood diarrheal diseases through increased access to water and sanitation in India: A modeling analysis. *Social Science & Medicine*, 180, pp.182, see also Jalan and Somanathan 2008.

²⁵⁶ Jawaharlal Nehru National Urban Renewal Mission (JnNURM) in 2005, National Urban Sanitation (NUSP) in 2008 and Swachh Bharat Mission (SBM) – Urban in 2014.

²⁵⁷ NRHM. (2015). Disease Alerts/Outbreaks Reported and Responded To By States/UTs Through Integrated Disease Surveillance Programme (IDSP). National Rural Health Mission. pp.7.

emanating bad smell all around. Even if the sewerage system is good and not overflowing during monsoon the question remains is, are the sewage treated and decomposed before disposed?

There are two separate bodies in Delhi who deals with sewage management, the Delhi Jal Board (DJB) for treatment of domestic sewage and Delhi State Industrial Infrastructure Development Corporation (DSIIDC) for industrial sewage treatment. A report published by International Centre for Environment Audit and Sustainable Development (ICED) in 2012-13 mentioned that DJB had not prepared any plan for 11th FYP and 15 of 32 Sewage Treatment Plants (STPs) were working below the capacity of those plant and only managed to treat 54 per cent of the total waste generated in Delhi and rest are disposed in to the Yamuna river untreated.²⁵⁸ Untreated disposal of sewage in the Yamuna River obviously lead to contamination of ground water in the catchment areas²⁵⁹ and has mass public health concern than defecating in open place. People defecate away from the house which gets dried up during summer and mostly cleaned by animals throughout the year. Because of that there may be health concern of for the population living nearby. But when feces of entire city population dispose untreated into the Yamuna River, it has mass public health concern than for concern about single settlement.

5.4 Pay-use Facility

There are pay-per-use toilets in surveyed settlements of Bhim Basti and Azadpur. The toilet block in Bhim Basti is yet to start and in Azadpur there are two toilet blocks 20 seats each for men and women in both the blocks started its services from 1995 and the newer one from 2nd October of 2016. There are 80 seats for the entire population lived there. There is a very low ratio of toilet to the population in 2012, when only one public toilet block was there.²⁶⁰ Now, both the pay-use public toilets charge 1 rupee for female and children and 2 rupees for adult males. These are pay per single use, and there are no

²⁵⁸ ICED (2012-13). Audit Report on Sewage Treatment and Waste Management- Delhi. *International Centre for Environment Audit and Sustainable Development*. Jaipur.

²⁵⁹ CLRA. (2013). Open Defecation: This is also your business!. *Centre For Legislative Research and Advocacy*. Policy brief series: No. 20.

²⁶⁰ Kattakayam, J. (October 1st, 2012). DDA to redevelop Jailorwala Bagh slum project itself. *The Hindu*. Delhi. updated October 18, 2016. Accessed on February 21st, 2017.

facilities of fees on household basis or weekly basis or monthly basis. Charges for urinals are prohibited. People do not use urinals there, especially the men.

Both the pay-per-use toilet has limited hours (5am to 11pm) of operation people are forced to go to open defecation during night. Sometimes the cleaning of the latrines is so poor that people are forced to go out than to pay-use facility. Due to inadequate latrine seats, people of the slum who use pay-use toilets are mostly informed that the long queues in front of toilets sometimes which force them to go out for defecation in open. The cases of inadequate facilities are common among the slums all across the country. A research on Mumbai slums discussed the same problems of inadequate public toilet seats and people forced to go out for defecation in the open.²⁶¹ Jailorwala Bagh slum of Azadpur developed over the land of DDA. DUSIB published details on JJ cluster of NCT of Delhi, total number of households in the slum is 3045²⁶² and average member of household size is 5.²⁶³ As per the guidelines of the SBM-Urban, in a community toilet, there must be at least “one seat for 35 men” and “one seat for 25 women”²⁶⁴ but in reality there is one toilet seat per at least 190 persons.²⁶⁵ This clearly shows that the practice of open defecation will continue till the infrastructure on sanitation improves. As the settlement is developed along the railway tracks and the pay-per-use public toilet block located at one end of the settlement it is very difficult to access for the people reside at the other end of the settlement or far from the toilet blocks. And it is very difficult for those live at distance from the pay-use blocks.²⁶⁶ One of the major problems of the pay-per-use toilet blocks from the side of economically poor households is that they have to pay every time they use it. It is very difficult for poor family to pay and this

²⁶¹ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.100.

²⁶² DUSIB, Govt. of NCT of Delhi. http://delhishelterboard.in/main/wp-content/uploads/2017/01/jjc_list_for_website.pdf

²⁶³ Primary Survey, November-December 2016.

²⁶⁴ MoUD (2014). Guidelines for Swachh Bharat Mission. *Ministry of Urban Development*. Government of India. pp.36.

²⁶⁵ The data is calculated from the average number of persons in household (primary survey) and total number of households from list of JJ Colony provided by DUSIB.

DUSIB, Govt. of NCT of Delhi. http://delhishelterboard.in/main/wp-content/uploads/2017/01/jjc_list_for_website.pdf

²⁶⁶ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.107.

leads to open defecation. Many times for a poor family it is an “*unwanted expense*”²⁶⁷ to pay for defecation inside pay-use-toilet blocks.

It is observed that around 84 per cent of the households go for pay-per-use toilets. During the pick hour, in the morning many men and women come to access toilet at pay-use blocks and due to long queues they are forced to defecate in open. This is not only because they can’t wait in the queues but it is mostly because of their compulsion for work. Many men go to work at Sabzi Mandi in the early morning and can’t afford the time to wait for their turn, which sometime takes even more than 45 minutes.

Table: 5.4 HH Without Toilet Facility Avail Public Pay-Per-Use Facilities

	HH %	Total observed
Azadpur	84.4	32
Seelampur	-	21
Bhim Basti	-	23
Total Percentage	35.5	100
Total Observed	27	76

Source: Primary Survey, November-December 2016.

A woman, resident of Azadpur slum said: “*many do not use pay use toilet to avoid long queues and to save time they defecates in the open as it is not easy to stand in queue at the time of nature’s call.*”²⁶⁸ Number of such users though could not be anticipated. The newly started pay-use toilet blocks built with the fabricated structures (figure 5.4) which are poorly ventilated, people feels suffocation which further leads to practice of open defecation in open spaces and that is the reason behind many who feels better to defecate in open.

Every time it is not possible to pay for the use especially for the members from economically poor household. *Krishna Devi (66)*²⁶⁹ is the only member in the family

²⁶⁷ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic & Political Weekly*, 49(49), pp.73.
²⁶⁸ Rina Devi aged 25, housewife by occupation, mother of 3 children, hailed from Ara district of Bihar presently living in Azadpur slum.
²⁶⁹ Krishna Devi, 66, hailed from Gorakhpur district in Uttar Pradesh, living in Azadpur slum from 1979. She is the member in her family. Her only son resides there but does not care her and avoiding her after his marriage. She is 66, not even getting pension, she applied for old age pension and that is not approved by the officials.

lives in Azadpur slum, she suffers from night blindness but still practice open defecation and never went to pay use toilet, as she has to pay for that. She lives her life in a very bad condition and not even able to eat two times a day. She is 66, not even getting pension as not approved by the officials. This again justifies that paying money every time to use toilet is not always possible for everyone and are forced to defecate in open.



Figure 5.7: Newly constructed pay-per-use fabricated structured toilet blocks in Jailorwala Bagh slum, Azadpur. Photo captured by the Researcher.

Uniformly the pay-per-use toilet blocks in Azadpur and Bhim Basti (yet to start) are like a drop in the ocean as compared to the covered population to the number of seats. Asking *Ex-Pradhan, of Jailorwala Bagh slum* about why she and her family members defecate in open instead of availability of pay-per-use toilet facility in her locality, she replied: *“Other than night when pay-per-use facility remains close, in case of emergency only we practice open defecation. Because it is very much time consuming to go to pay-per-use toilet and wait there for at least 20 minutes. At office / school time it sometimes takes more than 45 minutes to 1 hour.”*²⁷⁰ This awkward situation leaves them with no option than defecating in the open, especially during emergency situation. Also it is not possible for anyone to stand in a queue for around one hour at the time of nature’s call.

²⁷⁰ Woman aged 40, housewife by occupation, mother 4 children, hails from Rohtas district of Bihar, lives in Azadpur slum; she was Ex- Pradhan of Jailorwala Bagh.

5.5 Latrine Facility and Pay-per-use Facilities

It is noted from the survey that the average money spend for constructing a latrine ranged between four and eight thousand rupees. Household belonging to BPL and Antodaya section who merely earned around 5000 per month considered the amount very high. It is understood as they have less than 5000 INR income and no savings. Now the question arises: who is paying more? The households who constructed latrines by spending a sum of four to eight thousand rupees or who do not have latrines and are using pay-per-use latrines spend money. The answer to this question can be derived from a small calculation. Expense spend for construction of latrines by household were 8000 INR, which is upper band of the expense and are still in use after four years of its construction. Open drain toilets usually not required to invest money for maintaining it. The families who do not have latrine facilities at their home and are going for pay-use facilities are thought to be spending very little money as compared to their counterpart. The reality is somehow different from that of the perceived notion. In the surveyed settlement, for example in Azadpur where the pay-use facilities are continuously in use, here, male members are required to pay a sum of two rupees and females are required to pay rupee one. The average size of the household in a family is 5.22, as 5 person per family and a sex ration of 710 female per 1000 male can be considered as each family has average of 2 female and 3 male members in the family. Average use per day was reported as twice a day. On an average if five members of the family visit pay-per-use 10 times a day to avail pay-per-use services have to pay a sum of 16 rupees (3 male, 6 times (12 rupees) and 2 for female, 4 times (4 rupees)) per day. Now the equation shows that the families use pay-per-use latrines are paying a sum of 5840 INR per year (16 rupees * 365days). This simple equation shows that the money paid by the household in a single year is sufficient to construct a latrine. It clearly shows that the households using pay-per-use toilet are paying more than households with latrine facility. The poor pays more to use latrines. Why this happen? This is because they do not have sum of 4000 INR at one point of time.

5.6 Consequences of Open Defecation

This section analyses household's (as responded by the respondent of the respective household) response about advantages and disadvantages of open defecation practice, knowledge about sanitation practices, their view on building latrines and government responses. Information mostly focused on households who do not own latrine facilities and eventually defecates in open. Households planned about building latrine at their home are varied across settlements and are only 38 per cent in Azadpur and quite significant for other two settlements i.e., 74 per cent in Bhim Basti and 86 per cent in Seelampur. It differs because of various reasons like space shortage, water shortage and monetary problem among the premium reason to not construct toilet facility. Respondent from the three settlements reported that they kept and use separate water for drinking and defecation purposes. One-third households told that they are ready to take loan from banks for latrines at home. Two-third of the households doesn't want to take loan to construct latrine. They fear that would not be able to repay the loan. It is disappointing to note that none of the households ever get approached by any governmental or non-governmental organization for building latrine. Overall 68 per cent of the households would build latrine if any NGO or government wants to share expenses across settlements. More than three-fourth of the total households who do not have latrines, reported that they articulated their problem at the time of election but none get response after election. Only one respondent from Azadpur said government officials visits settlement to look after sanitary condition. About one-fourth of the households do not articulate their problems during election because of the fact that either they do not have voting right in that area or they are living in rented property. If government or NGO provides latrine for free 93 per cent of the households would construct. The remaining 7 per cent of the households pointed out the problem of water supply (n=2) and inability to use and maintain the toilet. People living in rented accommodation remained unintended in having toilet facility.

More than three-fourth of the households said they know about health advantage of having toilet facility at home. The scenario of individual settlement is almost 89 per cent in Azadpur, 77 per cent in Seelampur and almost 66 per cent in Bhim Basti. After 15 per

cent of the respondent said they don't know whether there are any advantage of toilet or not and only 9 per cent of the respondents said there are no advantages of having an own toilet facility at home.

	Yes	No	Don't Know	Total
Azadpur	88.6	5.7	5.7	35
Seelampur	76.9	7.7	15.4	39
Bhim Basti	65.8	10.5	23.7	38
Percentage	76.8	8	15.2	100
Total	86	9	17	112

Source: Primary Survey, November-December 2016.

One woman respondent from Bhim Basti said there is a disadvantage of owning a toilet, like it is not possible and as well as not looks good to go for defecation in front of senior male member of the family when there is a toilet at home. There are total of six households among the owners of latrine facility at home said '*foul smell*' is a major problem of having a latrine facility at home.

	Yes	No	Don't Know	Total
Azadpur	82.9	14.3	2.9	35
Seelampur	71.8	10.3	17.9	39
Bhim Basti	63.2	10.5	26.3	38
Percentage	72.3	11.6	16.1	100
Total	81	13	18	112

Source: Primary Survey, November-December 2016.

More than three-fourth of the respondent said they know about advantage of having a toilet facility at home. It is also important to know the awareness about the health impact for practicing open defecation as it is practiced by both type of households with and without latrine facilities. It is found that awareness is highest in Azadpur with 83 per cent and followed by Seelampur and Bhim Basti with 72 and 63 per cent respectively.

It is from the field survey that majority of the people are aware of the consequences of the problems related to open defecation but don't have any other option to stop it. Among

households which practice open defecation, 58 per cent reported awareness about diseases caused by practice of open defecation.

Ninety-three per cent of the households members wash their hands by soap after defecation and the same is for households defecates in latrine blocks is 97 per cent. Majority of the households are aware of the fact that open defecation relates with the health condition of the people.

5.7 Conclusions

- People go out for open defecation at shorter distance from home, shorter distance covered in Seelampur and longer distance in Bhim Basti.
- There is gendered segregation of space in open defecation sites, but not in all sites.
- People face problems to use defecation sites and major problems are to go out during rainy season, half of the defecation sites are not gendered segregated, harassments and women face problems to go out for defecation at day times. Rail accidents are frequent in Seelampur.
- Prevalence of diseases is more common among people who practices open defecation than who do not. Information collected on diseases are dysentery, diarrhea, vector borne, UTI and 'other'.
- Household toilets are connected to open drains and during monsoon it flows over roads and sometimes enters within houses.
- Pay-per-use toilets are not present in every settlement sites. Available seats are way lower in comparison to the population covered.
- Pay-per-use toilets charge money for every use and compulsory for across age, socio-economic profile and gender.
- In pay-per-use, insufficient number of toilet seats, compulsion of payment, irregularity of maintenance and cleanliness forces people to go out for defecation.
- Households without toilet facilities and using pay-per-use toilet facility are paying more than households constructed toilet at home.

CHAPTER 6

POLICIES IMPLEMENTED TO ELIMINATE OPEN DEFECATION

India accounts for nearly 11 per cent of the world's total urban population and has 42 per cent of the world's total open defecators in 2015.²⁷¹ Open defecation is rightly considered as dangerous to health²⁷² and has impact on economic condition of individual and household.²⁷³ Efforts to solve this problem, needs the accountability of the government in proper implementation of the initiated programmes. It is very important to improve sanitation facilities to speed up the development process. There are programmes and policies for the development of the sanitary. It is very unfortunate that the condition of sanitation is still not improved even after repeated policy implementation ever since from 1972 in urban areas.²⁷⁴ In India, sanitation programmes are often put under the projects and initiatives of 'Water' by the government policy makers.²⁷⁵ This approach itself shows that the government and policy makers are not much interested to solve out sanitation related problems. Most of the policies and programmes on sanitation are focused on

²⁷¹ Calculated from the data of United Nations Population Division and Joint Monitoring Programme (JMP) of WHO and UNICEF for Water Supply and Sanitation. Calculated by the Researcher.

²⁷² For example,

Annual Report (2011-12). Ministry of Drinking Water and Sanitation, Government of India.

Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.136

Ortiz-Correa, J. S., Resende Filho, M., & Dinar, A. (2016). *Water Resources and Economics*, 14, pp.32.

Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ... & Thomas, V. A. (2007). *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 101(11), pp.1124.

Patil, S. R., Arnold, B. F., Salvatore, A. L., Briceno, B., Ganguly, S., Colford Jr, J. M., & Gertler, P. J. (2014). *PLoS Medicine*, 11(8), e1001709. pp.2.

²⁷³ For example,

Annual Report (2011-12). Ministry of Drinking Water and Sanitation, Government of India.

Ortiz-Correa, J. S., Resende Filho, M., & Dinar, A. (2016). Impact of access to water and sanitation services on educational attainment. *Water Resources and Economics*, 14, pp. 32.

²⁷⁴ Environmental Improvement in Urban Slums (EIUS) was introduced in 1972.

²⁷⁵ WaterAid (200?) The Human Waste: A call for urgent action to combat the millions of deaths caused by poor sanitation. *WaterAid & Tearfund*. pp.6.

provisioning “non-network toilets”²⁷⁶ and failed to bring about positive change in overall condition.

The policies formulated for rural and urban sanitation are developed independently and implemented by different ministry of the government.²⁷⁷ The State and Central Governments provides financial assistance and act as facilitators. The Planning Commission allocates funds through the FYPs for strategic priorities under central government. Formulation of policies, strategies and guidelines for ‘urban water supply and sanitation’ schemes in cities and towns are under the purview of the Ministry of Urban Development (MoUD) and the Ministry of Housing and Urban Poverty Alleviation (MoHUPA); and for ‘rural drinking water and sanitation’ the Ministry of Drinking Water and Sanitation (MoDW&S) takes responsibility for the formulation, implementation and execution of policies.²⁷⁸ In India, there is no independent ministry to look after sanitation problems, exclusively. The responsibility of provisioning sanitation lies with the local governments like Gram Panchayats in rural areas and Municipalities in urban areas. There is very little research on urban sanitation policy in India, and major literature available on case studies of specific policies only.²⁷⁹

6.1 Continuation of Open Defecation

In India, irrespective of rural and urban areas there is no stigma or restrictions on practices of open defecation. It more or less counts as a part of the culture long standing habit,²⁸⁰ it is not unacceptable to not have toilets within premise²⁸¹ both among rich and

²⁷⁶ Patil, S. R., Arnold, B. F., Salvatore, A. L., Briceno, B., Ganguly, S., Colford Jr, J. M., & Gertler, P. J. (2014). The effect of India's total sanitation campaign on defecation behaviors and child health in rural Madhya Pradesh: a cluster randomized controlled trial. *PLoS Med*, 11(8), e1001709. pp.2.

²⁷⁷ MoDWS (2013). South Asian Conference on Sanitation (SACOSAN). *India Country Paper on Sanitation*. Ministry of Drinking Water and Sanitation, Government of India. pp.2

²⁷⁸ *Ibid.*

²⁷⁹ Leavens, M. K. and Derksen-Schrock, K. (2010). Sanitation Policy in India. *Evans School Policy Analysis and Research (EPAR)*. EPAR Brief No. 116.

²⁸⁰ For example,

UNICEF. Eliminate Open Defecation. *UNICEF India*. <http://unicef.in/Whatwedo/11/Eliminate%ADOpen%ADDefecation> Accessed 27th April, 2017.

Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreifelbis, R. (2015). Sanitation-related psychosocial stress: a grounded theory study of women across the life-course in Odisha, India. *Social Science & Medicine*, 139, pp.81.

poor.²⁸² Twenty-seven per cent of households with toilet facility face two problems, (i) water shortage at home and (ii) under maintenance of the existing toilet mostly due to lower quality of the construction. And in addition to these two problems there is 'cultural habit' which also insists to perform open defecation even after having toilet facility at home. Seventy-three per cent of households without toilet facility at home mostly have no other option than open defecation. Households without toilet facility can avail public toilets but reported many problems like the problems long queue due to inadequate public toilet seats, which force people to go out for defecation in the open. Similar argument was given by Desai *et al.* on a case study in Mumbai.²⁸³ And it is very difficult for those live at distance from the pay-use blocks²⁸⁴ which further requires more time to use those and need to travel far. Using public toilets needs money, as these are pay-per-use toilet facilities. Paying money every time to use toilet is not always possible for families belongs to poor economic conditions. There are also problems with the accessibility of pay-per-use toilets which are not maintained and cleaned properly even after paying money for the use. All these problems force people who do not have toilet at home to defecate in the open. Even if people want to use toilets after all these problems they can't, because it gives service for 18 hours a day, not 24 hours. So, people had to go for open defecation daily or occasionally at least daily closure hour.

A person who defecates in open faces many problems to use defecation sites. The major problems are the places are very dirty due practice of defecation in mass level. There are also problems related to accessibility of the sites. Many times one has to cross railway tracks to use defecation site which has a risk of rail accident and death, concrete platform on open drain used as platform during defecation and imbalance of body can results into fall in filthy drain which further could invite serious diseases. There are many problems

Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2014). Revealed preference for open defecation. *Economic & Political Weekly*, 49(38), 43.

²⁸¹ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ...& Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101 (11), 1124-1130.

²⁸² Hussain, R., & Mangla, B. (2014). Toilet as an asset: Necessity versus luxury. *Developing Country Studies*, 4(9), pp.112.

²⁸³ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.100.

²⁸⁴ *Ibid.* pp.107.

to use defecation sites like in the monsoon season; it is very difficult to access sites due to stagnation of water over the place and due to foul smell all around the place. Personal security of both men and women who practices open defecation has also emerged as one of the major problem especially for women. In a patriarchal society where women are not safe outside home²⁸⁵ are can be harassed, raped and even murdered when they go outside of home whether for defecation or any other work. There are also instances when people had to face animals like stray dogs and pigs during defecation.

With change in mindset of the people and government initiation to eliminate open defecation there is a new wave of cultural reform to stop the practice of open defecation. People failed to perform new social norm are stigmatized. After the launch of “*Swachh Sewaks*” or clean attendants under SBM-Urban blow whistles and loudly interrupts whenever finds someone urinating or defecating in open,²⁸⁶ makes it difficult to defecate in open. But the government has failed to take initiatives on building enough public toilets and to provide sufficient water for use.

There are many disadvantages and negative impacts of practicing open defecation. Major negative impacts of open defecation are on health and economic condition. In case of health, people practice open defecation has higher possibility of infectious diseases like diarrhea, jaundice, cholera and dysentery.²⁸⁷ Still in India, there are at least 300,000 under-five children dying because of diarrheal diseases.²⁸⁸ The practice of open defecation leads to diarrheal diseases from fecal oral route, further open chances of polio transmission.²⁸⁹ Poor sanitation also is associated with stunting among children.²⁹⁰ People

²⁸⁵ Menon, S. A., & Kanekar, S. (1992). Attitudes Toward Sexual Harassment of Women in India. *Journal of Applied Social Psychology*, 22(24), pp.1942.

²⁸⁶ Safi, M. (December 20th, 2016). Delhi mascots to blow the whistle on public defecation. *The Guardian*. Accessed 9th February, 2017.

²⁸⁷ For example

Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.136

Annual Report (2011-12). Ministry of Drinking Water and Sanitation, Government of India.

And many other literatures.

²⁸⁸ Nandi, A., Megiddo, I., Ashok, A., Verma, A., & Laxminarayan, R. (2017). Reduced burden of childhood diarrheal diseases through increased access to water and sanitation in India: A modeling analysis. *Social Science & Medicine*, 180, pp.181.

²⁸⁹ Tarraf, A. (2017). Social & Behaviour Change Communication, Insights and Strategy Case Study: Open Defecation in India. *The Government & Public Sector Practice*. In a collaboration with WPP plc and University of Oxford. pp.6.

²⁹⁰ Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2014). Revealed preference for open defecation. *Economic & Political Weekly*, 49(38), pp.54.

often face psychological stress to access defecation sites, especially the women. Whether it is a nature's call or not, women preferably go outside for defecation during twilight and have to regulate life during entire day time so that they not have to go out in front of public.



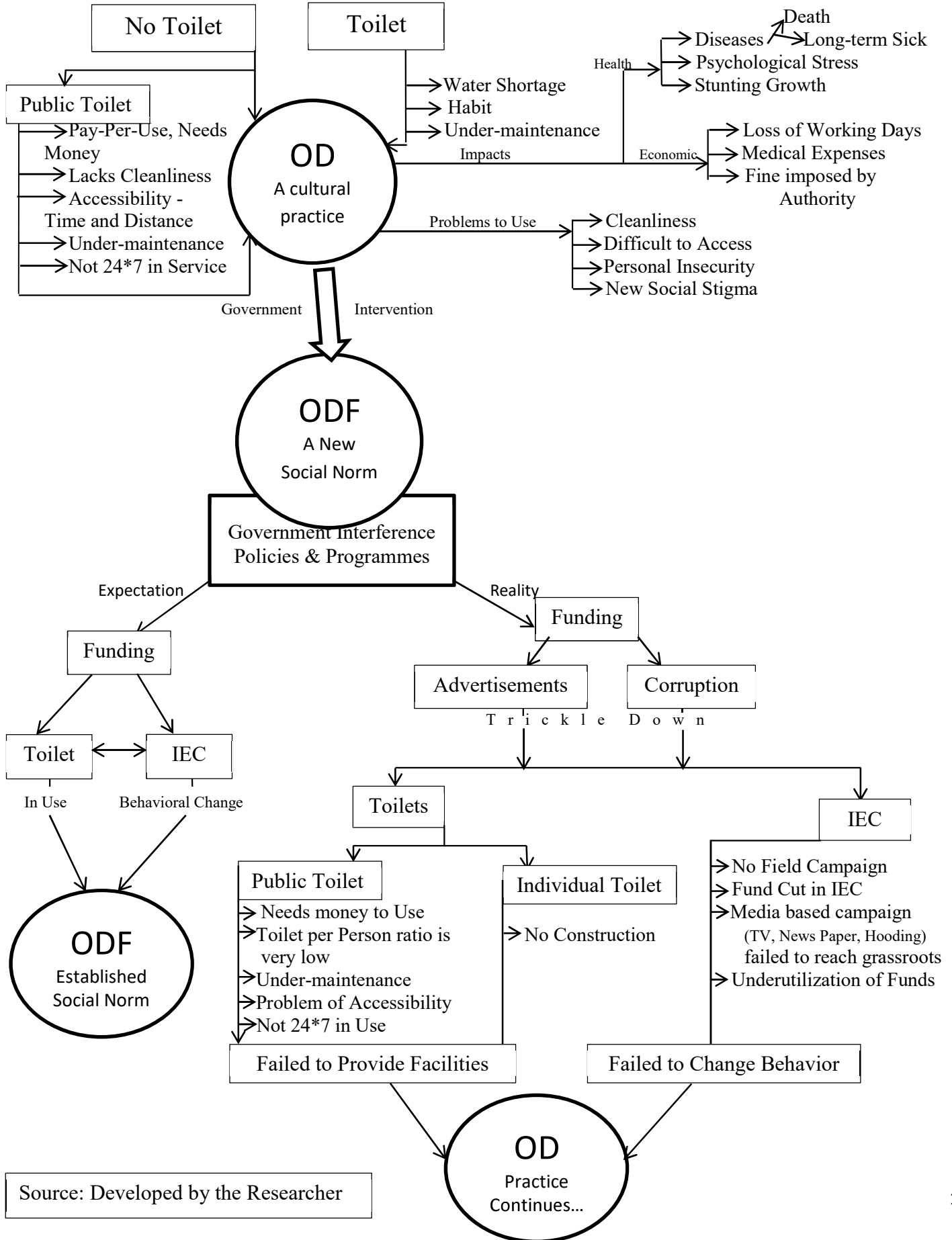
Figure 6.1: Children aged 6-10 years are returning towards home after open defecation in Punjabi Bagh Slum. Photo captured by the Researcher.

In terms of economic loss, at national level, \$13 billion or 1.5 per cent of India's Gross Domestic Product (GDP) losses each year due to diarrheal diseases among children.²⁹¹ Diarrhea, cholera, dysentery, jaundice or any related diseases due to open defecation among adult or working age group people leads to hampering of working days. And further the medical expenses for the treatment causes extra burden on economic condition of the households whose member(s) suffered from diseases. So, the economic loss hampers at both national and individual level. With the dawn of *Swachh Bharat Mission* (SBM) in many places the local government bodies started imposing fines²⁹² on people who are failing to cope up with the law of government's *Open Defecation Free* (ODF) campaign.

²⁹¹ Nandi, A., Megiddo, I., Ashok, A., Verma, A., & Laxminarayan, R. (2017). Reduced burden of childhood diarrheal diseases through increased access to water and sanitation in India: A modeling analysis. *Social Science & Medicine*, 180, pp.181.

²⁹² PTI. (June 16th, 2017). 13 families in Madhya Pradesh village fined Rs 4 lakh for open defecation. *Times of India* (Raisen, MP). Accessed 16th June, 2017.

Diagram 6.2: Continuation of open defecation



Source: Developed by the Researcher

Environmental Improvement in Urban Slums (EIUS) was introduced in 1972²⁹³ in urban areas to present day *Swachh Bharat Mission* (SBM) to provide latrine facility and reduce or eliminate the practice of open defecation.

Now, SBM-Urban is the major and latest programmes on sanitation to provide latrines and eliminate open defecation from the entire country. Eliminating open defecation is popularly known as “*Open Defecation Free*” (ODF) which presently concertized as a new social norm, first used in *Community Led Total Sanitation* (CLTS) under the flagship of *Total Sanitation Campaign* (TSC) in 2002.²⁹⁴ Presently SBM fixed its target to make India ODF by 2nd October of 2019 as tribute to the Father of Nation, Mahatma Gandhi’s 150th birth anniversary. To make the country ODF government initiated programmes and policies which is currently SBM providing fund to construct and maintain *public toilet blocks* and *Individual Household Latrines* (IHHL). Broadly the expectation of the government is provide fund to construct public toilet blocks and IHHL and to change people’s behavior of practicing open defecation through *Information Education and Communication* (IEC) and awareness among public. Through IEC, constructing people’s perception about bad effects of the practice and construction of toilets to make use of them would achieve the status of ODF. The expectation is people’s behavior would be changed through IEC and behavioral change. This would lead to increase and universalize toilet use and further leads ODF as established social norm.

Somehow the reality of ODF is far away from the expectation. The funding releasing from the ministry under the current policy for construction of toilets and IEC are widely used for other purposes. During the first year of launching SBM, the Government of India has spent about 94 crore INR²⁹⁵ and 103 crore INR²⁹⁶ in its second year just for advertisements on Radio, Television and News Paper. The history of corruption²⁹⁷ in almost every programme of the government is no less different in this case also. The

²⁹³ Annual Report 2000-01. Ministry of Urban Development and Poverty Alleviation. 20 Point Programme & National Slum Development Programme, Chapter 17. Government of India. www.urbanindia.nic.in

²⁹⁴ IDS. Community-Led Total Sanitation: India. *Institute of Development Studies*. <http://www.communityledtotalsanitation.org/country/india> Accessed on June 30th, 2017.

²⁹⁵ Press Trust of India. (July 11th, 2015). Swachh Bharat Mission: Govt spends 94 crore on advertising in one year. *Brand Equity, The Economic Times*. Accessed on June 7th, 2017.

²⁹⁶ Dutta, S. S. (28th May, 2016). Rs 100cr ad bill plus an India Gate party. *The Telegraph*. Accessed on June 7th, 2017.

²⁹⁷ Express News Service. (January 23rd, 2017). Central assessor held for ‘seeking bribe’ for higher Swachh ranking. *The Indian Express* (Mumbai). Accessed on June 28th, 2017

party at India Gate lawn on SBM's second anniversary and governing party hold more than 200 events in two week time across the country to highlight the present government's "successes" on initiated polices like SBM²⁹⁸ is the best example of how the money are diverted from the actual target and used for promotional events. There are uncountable instances of incomplete and poor construction of latrines at recent times also by current country-wide sanitation drive SBM. Like in Chhatarpur district of Madhya Pradesh, there are many incomplete constructions of latrines²⁹⁹ and poor construction of toilet blocks by government are falling down to the ground for poor construction in Punjabi Bagh slum surveyed site. Basically the funding is used for the actual purpose as 'trickle down' funding remains after advertisements and corruption. Funds are not properly used in Delhi provided under SBM-Urban and remained as unused. SDMC failed to utilize more than 99 per cent of the fund allocated to the municipal body and the same is for NDMC is entirely unused.³⁰⁰ Even where the toilets build, the municipal corporations and DUSIB failed to provide 24*7 services.³⁰¹ The ratio between toilet seat and person is very low in both the two settlements having pay-per-use toilet facility. As per the guidelines of the SBM-Urban, there must be at least "one seat for 35 men" and "one seat for 25 women"³⁰² but in reality there is one toilet seat per at least 190 persons in Azadpur and 116 persons in Punjabi Bagh.³⁰³ There are also the problems of cleanliness, shortage of water and electricity in pay-per-use toilet blocks push people to defecate in the open. Adding all these problems of public toilets there are one major problem of paying money every time for each use. Poor section would prefer to go out for defecation than paying money to use unclean toilets and damaged toilets with a long queue that too when nature's call. In Punjabi Bagh slum, the pay-per-use public toilet is

²⁹⁸ Deccan Chronicle. (May 28th, 2016). Modi govt goes all out showcasing achievements at 2-year bash. *Deccan Chronicle* (New Delhi). Accessed on May 29th, 2017.

²⁹⁹ Santoshi, N. and Pateriya, A. (February 19th, 2017). Toilet turned into kitchen, grocery shop: Swachhta Abhiyan claims fall short in this MP village. *Hindustan Times* (Bhopal). Accessed 19th February, 2017.

³⁰⁰ PTI. (September 13th, 2016). MCD 'fails' to utilise funds allocated under Swachh Bharat Mission. *The Indian Express*. Accessed on June 3rd, 2017.

³⁰¹ Total of four functional pay-per-use toilets in Azadpur and Punjabi Bagh, and all provides services for only 18 hours a day.

³⁰² MoUD (2014). Guidelines for Swachh Bharat Mission. *Ministry of Urban Development*. Government of India. pp.36.

³⁰³ The data is calculated from the average number of persons in household (primary survey) and total number of households from list of JJ Colony provided by DUSIB.

DUSIB, Govt. of NCT of Delhi. http://delhishelterboard.in/main/wp-content/uploads/2017/01/jjc_list_for_website.pdf

newly build but found as not functioning. It does not have supply of water and electricity and even the care taker's room was locked as observed during survey.

The information given on official website of the SBM-Urban portal says it all. In Delhi, there are only 15 IHHL build under SBM initiative out of 1635 applications received by the government. This clearly shows the problems of providing public and individual latrine facilities by the government body and is completely failed.



Figure 6.3: The picture (left side) showing that a girl walking out of the pay-per-use toilet which has no water supply and caretaker's room is locked. And the other (right side) picture showing that the newly constructed pay-per-use public toilet block is under maintenance and made up of lower quality materials resulted into detachment of doors of latrine blocks in Rajiv Camp settlement, Punjabi Bagh. Photo captured by the Researcher.

IEC and public awareness forms as one of the most important component to spread awareness and behavioral change in any programme, like SBM. Owing to this, IEC needs a big amount but when it is to be the SBM, government has failed to provide required share of fund to the IEC for campaigning on behavioral change and eventually failed to bring the desired results. SBM-Urban provides its fund only 15 per cent of the total fund to the programme, while most remains unused.³⁰⁴ Less than one-fourth of the total IEC funds were used in 2016-17 year.³⁰⁵ Among the used funds most are used for media based campaign on TV, Radio, Newspapers,³⁰⁶ street hooding and on internet. The field

³⁰⁴ Deshpande, D. and Kapur, A. (2017). Budget Briefs: Swachh Bharat Mission-Urban. *Centre for Policy Research. Vol. 9(5)*. pp.1

³⁰⁵ Sharma, N. (February 7th, 2017). Flush with funds, but Swachh Mission kitty still unspent. *The Economic Times*. Accessed on June 3rd, 2017.

³⁰⁶ Dutta, S. S. (May 28th, 2016). Rs 100cr ad bill plus an India Gate party. *The Telegraph*. Accessed on June 7th, 2017.

campaign is almost absent across states.³⁰⁷ The government and ULBs failed to provide public and individual facilities on toilet facilities and to change behavior of people who practice open defecation. Further this resulted in to continuation of practice as it was before implementation of the policies and imposing ODF as social norm and bylaw.

6.2 Policies on Sanitation with special reference to Toilet Facility

Major nationwide programmes emphasized solely on sanitation and on toilet facilities have mostly concentrated to rural areas, right from CRSP, ILCS, TSC, NGP, NBA and SBM-Rural. In urban India, the programmes solely on sanitation and/or looks after providing toilet facility and elimination of open defecation came into existence in 2008 for the first time as NUSP³⁰⁸ and in 2014 as SBM-Urban. It is seen that the policies and programmes on sanitation with special attention on toilet facility and checking open defecation never succeeded because the government never takes the matter seriously unless and until there is a serious issue like spreading of plague in Surat in 1994. This carelessness had been in practice right from the colonial time.³⁰⁹

6.2.1 Policies and Programmes Implemented in Urban India before 2014 (SBM)

Environmental Improvement in Urban Slums (EIUS) was the first focused programme.³¹⁰ It was introduced during the Fourth Five Year Plan (FYP) (1969-74). Sanitation was identified as a basic need for the poor in 1972 in the Fifth FYP (1974-79). The scheme visualized the provision of seven basic amenities to the slum dwellers, and one of the basic needs was *community baths and latrines facilities* to slum dwellers. Later in the Eighth FYP (1992-97) introduced *Accelerated Urban Water Supply Programme* (AUWSP) which put emphasis on providing safe drinking water and basic sanitation³¹¹

³⁰⁷ Deshpande, D. and Kapur, A. (2017). Budget Briefs: Swachh Bharat Mission-Urban. *Centre for Policy Research. Vol. 9(5)*. pp.1

³⁰⁸ World Bank. Urban Water Supply & Sanitation. Accessed on June 30th, 2017. http://web.worldbank.org/archive/website01291/WEB/0_CO-23.HTM

³⁰⁹ Chaplin, S. E. (1999). Cities, sewers and poverty: India's politics of sanitation. *Environment and Urbanization*, Vol. 11(1), pp.145

³¹⁰ Annual Report (2000). Ministry of Housing and Urban Poverty Alleviation. 20 Point Programme & National Slum Development Programme, Chapter 17. Government of India. www.urbanindia.nic.in

³¹¹ MoUD. Accelerated Urban water Supply Programme (1994). Ministry of Urban Development. Government of India, New Delhi.

but not mentioned what stands for ‘basic’. Later on the *Community-Led Total Sanitation* (CLTS) was introduced in 2000 under TSC in rural Rajasthan and rapidly spread in both rural and spread in urban parts of the country.³¹² It mainly emphasized on the behavioral changes among people, mainly to shift the practice of open defecation to toilet use. In many major cities the workout of CLTS failed because of very diverse culture of the people who comes from different regions, speak different languages and of different castes.³¹³

The Government of India launched the *Jawaharlal Nehru National Urban Renewal Mission* (JNNURM) in 2005 for providing housing and basic services to urban poor and slum dwellers in selected 67 cities of India. it has aim to assist State Governments under one of the major objective of *Basic Services to the Urban Poor* (BSUP) which includes provision of improved water supply and sanitation along with construction of community toilets.³¹⁴ The *Integrated Housing and Slum Development Programme* (IHSDP) have same objectives of provisioning for proper shelter, improved water supply, sanitation and construction of community toilet for the cities and towns which are not included in JNNURM.³¹⁵ Duration of the programme was 7 years from 2005-06 which has been extended up to 31st March, 2017 for the completion of the ongoing work.³¹⁶

In 2008, India has adopted National Urban sanitation Plan (NUSP).³¹⁷ It was adopted entirely for all cities and towns of the country in which City Sanitation Plan (CSP) of each individual city and towns marked a key planning tool..³¹⁸ The NUSP was the first nationwide programme solely focused on urban sanitation. The programme has been focused on purely decentralized approach of solutions and liabilities. Responsibilities put to the state governments and/or ULBs to formulate their own plans. ULBs plays a vital role in deciding suitable policies of their own in building better cities for the residents as

³¹² Community-Led Total Sanitation – India. Accessed on June 28th, 2017. <http://www.communityledtotalsanitation.org/country/india>

³¹³ Doron, A., & Jeffrey, R. (2014). Open defecation in India. *Economic & Political Weekly*, 49(49), pp.74.

³¹⁴ MoHUPA. (2005). *Jawaharlal Nehru National Urban Renewal Mission. Guidelines for BUSP and IHSDP. Ministry of Housing and Urban Poverty Alleviation. Government of India.* pp.3. <http://mhupa.gov.in/writereaddata/Guidelines-JNNURM-English.pdf>

³¹⁵ *Ibid.*

³¹⁶ Annual Report, (2016-17). Ministry of Housing & Urban Poverty Alleviation. Government of India.

³¹⁷ MoUD (2008), *National Urban Sanitation Policy*, New Delhi: Ministry of Urban Development, Government of India. <http://www.urbanindia.nic.in/programme/uwss/NUSP.pdf> pp.39.

³¹⁸ *Ibid.* pp.16.

prescribed in 74th constitutional amendment. NUSP only promotes construction of new toilets with subsidy to the economically weaker section to eliminate the practice of open defecation and manual scavenging. But it does not covered other ways of inadequate sanitation including disposal and treatment of sewage wastes.³¹⁹ The decentralized approach of NUSP calls all the states and cities to formulate their own plans and strategies which should be community driven to increase awareness, change behaviors, achieve open defecation free cities and promote city-wide sanitation. The policy emphasized on existing infrastructure rather than developing new infrastructure and leaves to the state, cities and towns to formulate their own suitable plans and strategies. NUSP suggests at least 20 per cent of its fund must be invested for “*minimum levels of sanitation*” of poor. NUSP failed to eliminate open defecation in urban areas because after completion of their deadline for making all the urban areas ODF in 2012, the official data shows almost 11 per cent³²⁰ of urban population in India defecates in open.

6.2.2 Swachh Bharat Mission (SBM)

Government of India launched SBM to promote better health and hygiene of the people. The Government of India launched SBM on October 2nd, in 2014 proclaiming that it aims to fulfill Gandhi’s dream. and targeted to make the country Open Defecation Free (ODF) by October 2nd, 2019 as tribute to Mahatma Gandhi, 150th birth anniversary. The most recent nation-wide sanitation programme has its first and one of the most important objectives as “*elimination of open defecation*” and to make it successful, the programme has mission components like construction of household, community & public toilets; and IEC & public awareness.³²¹ The mission strategies are made to fulfill the dream of SBM and are:

“Comprehensive Sanitation Planning, which includes (a) City Level Sanitation Plans, (b) State Sanitation Concept, (c) State Sanitation Strategy; Behavioral Change Strategy and IEC; Enabling Environment for

³¹⁹ MoUD (2008), *National Urban Sanitation Policy*, New Delhi: Ministry of Urban Development, Government of India. <http://www.urbanindia.nic.in/programme/uwss/NUSP.pdf> pp.6.

³²⁰ WHO/UNICEF, Joint Monitoring Programme (JMP) for Water Supply and Sanitation <http://www.wssinfo.org>

³²¹ MoUD (2014). Guidelines for Swachh Bharat Mission. *Ministry of Urban Development*. Government of India. pp.3-4.

*Private sector participation; Capacity Building; Special focus groups: The State Governments shall pursue”.*³²²

Till 12th, 2017, Government source claim to have constructed 3.37 million toilets for Individual Household Toilets (IHL) and 128.9 thousand community toilets built under SBM scheme in urban areas. A total number of 875 cities declared Open Defecation Free (ODF) in the country.³²³ However after the official announcement of ODF of the cities many are found with defecating open.³²⁴ This clearly shows hollow claims of municipal bodies to declare the city ODF even after practicing open defecation.

Many sub-programmes and awareness programmes carried out like ‘Swachhta Pakhwadas’, ‘Swachh Shakti 2017’, ‘Lok Swachhata Jombesh Saptah’ and many others are launched to boost the programme activities under SBM. In many urban as well as rural areas, the imposition of fine³²⁵ for defecating in the open is initiated by the local government to abide by the scheme. Swachh Survekshan (Clean Inquiry) is an initiative taken under SBM-Urban by MoUD to speed up the process of clean cities by encouraging a healthy competition among cities. The total marks allotted for Swachh Survekshan is 2000. Among which the weightage are distributed into three different bodies as ‘*citizen’s feedback*’ has 25 per cent (500 marks), ‘*ULB’s response*’ has 45 per cent (900 marks) and ‘*independent observation*’ has 30 per cent (600 marks).³²⁶

The ranking of Swachh Survekshan also can be questioned because of its unreliability. One senior official caught on cases of corruption by Anti-Corruption Bureau for asking a bribe to place city’s ranking top on of the list.³²⁷ So, two out of three weightage criteria are biased enough to decide cities ranking that are ‘*ULB’s response*’ for possibility of over exaggeration of the condition and ‘*independent observation*’ for incidences of

³²² MoUD (2014). Guidelines for Swachh Bharat Mission. *Ministry of Urban Development*. Government of India. pp.4-5.

³²³ Swachh Bharat Urban, Ministry of Urban Development. Government of India. <http://www.swachhbharaturban.in/sbm/home/#/SBM> Accessed 12th July, 2017.

³²⁴ TNN (July 8th, 2017). Free of open defecation? Mumbai says no. *Times of India*. Accessed on July 10th, 2017.

³²⁵ Press Trust of India. (June 16th, 2017). 13 families in Madhya Pradesh village fined Rs 4 lakh for open defecation. *Times of India* (Raisen, MP). Accessed June 16th, 2017.

³²⁶ MoUD. (2017). Swachh Survekshan 2017 Survey Brochure. Swachh Bharat Mission. *Ministry of Urban Development*. pp.5.

³²⁷ Express News Service. (January 23rd, 2017). Central assessor held for ‘seeking bribe’ for higher Swachh ranking. *The Indian Express* (Mumbai). Accessed on June 28th, 2017.

corruption & misleading marking. Further this two constitutes 75 per cent of the total marking scheme leads to unreliability of ranking system at its peak.

Table 6.1: Marking Scheme for Swachh Survekshan 2017		
Component	Overall score	Percentage to Total
Municipal Solid Waste: Sweeping, Collection and Transportation	360	40
Municipal Solid Waste –Processing and Disposal	180	20
Public and Community Toilets	135	15
Individual Toilets	135	15
Strategy for ODF and SWM	45	5
IEC/ Behaviour change communication	45	5
Total Score	900	100

Source: MoUD, Swachh Survekshan 2017: A Guidebook for ULBs.

6.2.2a Swachh Bharat Mission in Delhi

In Delhi itself, Individual Household Latrine (IHHL) constructed is only 15, community toilets 7270 and number of ODF city is just 1.³²⁸ 100 per cent door to door waste collection are fully achieved in 85 per cent wards out of 272 wards in Delhi³²⁹ showing on SBM Urban portal is misleading, at least not in slum areas. The data on ODF and waste collection are collected from the self-declaration of the municipal authorities and are not verified by higher authorities and this applies to the ranking system of the cities at the time of Swachh Sarvekshan-2016 and 2017.³³⁰

Policies mostly followed a top-down approach and focused on infrastructural development of construction of toilets and not propagating any campaign for the change in behavior.³³¹ Resulted into lower usage of latrines and people opt to go out for defecation. The very assumption of construction of toilets to the policy makers are like the construction of temples, the moment it will complete people would gather to use

³²⁸ Swachh Bharat Urban, Ministry of Urban Development. Government of India. <http://www.swachhbharaturban.in/sbm/home/#/SBM> Accessed 12th July, 2017.

³²⁹ *Ibid.*

³³⁰ Swachh Bharat Urban, Ministry of Urban Development. Government of India. <https://gramener.com/qci/>

³³¹ PTI. (September 13th, 2016). MCD ‘fails’ to utilise funds allocated under Swachh Bharat Mission. *The Indian Express*. Accessed on June 3rd, 2017.

them. The mission of universal coverage of toilets in any place would fail to make any difference if the operation and maintenance of the toilet blocks are improper. Availability of water (to flush excreta) is also a major hurdle. Like the situation appears in Punjabi Bagh slum through the primary survey. The government assured through SBM that they would monitor the usage of toilets from early 2015³³² but have failed to do so till date. Respondents reported that councilor and/or Member of Legislative Assembly (MLA) never visited in the surveyed settlements, to enquire about their problems regarding sanitation. There are needs to the practice of improvisation which often neglected, it further reproduces and deepen inequalities to the sanitation infrastructure and leads to different forms of open defecation.³³³

In Swachh Survekshan 2017 ranking the Municipal Corporations of Delhi ranked are not good among 434 cities participated in rankings. Out of which only East DMC managed to cross just over fifty per cent of the total score (EDMC, 1004). EDMC ranked 196th, SDMC ranked 202nd and NDMC ranked 279th are not satisfactory in terms of level of cleanliness of the city. New Delhi Municipal Council ranked 7th and Delhi Cantonment ranked 172nd in the ranking, although they are not included in Delhi by law.³³⁴

Table 6.2: SWACHH SURVEKSHAN - 2017 RANK		
Rank	City	Score (2000)
7	New Delhi Municipal Council	1708
172	Delhi Cantonment	1062
196	East Delhi Municipal Corporation	1004
202	South Delhi Municipal Corporation	984
279	North Delhi Municipal Corporation	834

Source: MoUD, Swachh Bharat Urban portal, Swachh Survekshan 2017.

There is a notion among higher and middle class people in India that poor people do not use latrines even if they have it and poverty is not an important reason behind not

³³² PIB, 2015. Restructuring of the Nirmal Bharat Abhiyan into Swachh Bharat Mission. Press Information Bureau, Government of India. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=114226> Accessed on 20th May, 2017.

³³³ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.99.

³³⁴ Verma, R. S. (1998). The Delhi Municipal Corporation Act, 1957. Act 2(10). *Allied Book Company, Delhi*. pp.19.

building a latrine. Such belief hides the inbuilt structural inequalities³³⁵ and institutional inability to provide latrine facilities to the poor and implementation of existing policies. It is often so that the policies are measured in terms of toilets built and not on the functional status.³³⁶ It is obvious the under maintenance or no maintenance of public toilets leads to open defecation.³³⁷ People thus, are bound to go out to defecate as to them, this option is better than using unclean public toilet, like in the case of Punjabi Bagh slum. But in reality it is also noticed that after declaring an area ODF, people still go out.³³⁸ So, there are many hidden problems that surfaces even after providing public toilet blocks to a community or a slum but to make use of that toilet is more important. A successful sanitation depends on not only access to toilet but also availability of water to maintain the toilet.

Recently the SDMC has taken some of good moves to facilitate toilet facilities by making mandatory for restaurants and hotels to the poor section of the society – especially to those who do not have toilet facility at house and to all children & women.³³⁹ it has noticed during the field survey that none of the settlement has a posh restaurants and malls in a radius of at least one kilometer. This initiative opens 3500 toilets for public use, although the SDMC also instructed that they can charge up to Rs. 5 per use for maintaining and cleaning of the toilet facility³⁴⁰ and this started from April 1st, 2017. SDMC also instructed all the petrol pumps within the jurisdiction to must have functional toilets and have sign boards with arrows directed towards toilet. This initiative has been

³³⁵ O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring “The Remote” and “The Rural”: Open Defecation and Latrine Use in Uttarakhand, India. *World Development*. pp.8.

³³⁶ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.117.

³³⁷ *Ibid.* pp.105.

³³⁸ Faujdar, S. (February 23, 2017). “In ODF villages, locals still defecate in open”. *Hindustan Times* (Jaipur). Accessed March 14, 2017.

³³⁹ Iqbal, N. (March 22nd, 2017). In restaurant restrooms order, issues of SDMC’s own responsibility. *The Indian Express*. Accessed on March 23rd, 2017.

³⁴⁰ PTI. (March 23rd, 2017). Restaurants, hotels to open their toilets to women, kids in South Delhi. *Business Standard* (New Delhi). Accessed on March 25th, 2017.

taken mainly for the commuters³⁴¹ EDMC took the same move of the SDMC two months later but only restricted the rule to women and children.³⁴²

In 2016 an initiative has been taken by the government of Delhi to make 52 selected slums out of 675 slums in the capital city as *Adarsh Basti or Model Slum*³⁴³ which is a joint venture of DUSIB and the Centre for Advocacy and Research (CFAR) in the national capital. This initiative includes building new toilets and maintenance of existing toilet facilities and building its connection with sewerage lines, together with illuminating dark spots so that people can avail toilet facilities at night time without fear of personal security.³⁴⁴ But the situations of the slums did not improve and the same problems persists which were previously faced by the slum dwellers. Adarsh Basti initiative failed to maintain existing toilet facilities and also connecting existing toilets with sewage systems.³⁴⁵

6.3 Problems of Policy Execution and Coordination in Delhi

The state and the central government had introduced many policies and programmes for the development of slum areas in the field of sanitation, water supply, waste management and on other basic needs.

In case of Delhi, the policies at the local level related to sanitation is maintained by different bodies. Delhi development Authority (DDA) is responsible for urban planning of Delhi since 1957, construction and provision of housing to residents of Delhi, around 3.67 lakhs of houses provided to till January 2007 and half of those given to the economically weaker sections.³⁴⁶ DDA works for rehabilitation and re-settlement of

³⁴¹ Vasta, A. (July 2nd, 2017). 'Action against defaulters': Petrol pumps must have functional toilets by July 15, says SDMC. *The Indian Express* (New Delhi). Accessed on July 2nd, 2017.

³⁴² Express News Service. (June 14th, 2017). East Delhi civic body throws opens toilets at hotels to women, kids. *The Indian Express* (New Delhi). Accessed on June 14th, 2017.

³⁴³ Government of NCT of Delhi. (June 24th, 2016). Directorate of Information and Publicity. delhi.gov.in

³⁴⁴ Goswami, S. (June 26th, 2016). 52 slums set for a makeover. *The Hindu* (Delhi). Accessed on February 19th, 2017.

³⁴⁵ Goswami, S. (October 12th, 2016). Delhi slums chosen to become 'Adarsh Basti' still waiting for development. *Hindustan Times* (Delhi). Accessed on February 19th, 2017.

³⁴⁶ Housing, Delhi Development Authority. Government of Delhi. Accessed April 4, 2017. <http://dda.org.in/ddanew/housing.aspx>

slums in Delhi through planning.³⁴⁷ DDA is now infamous for corruption and mismanagement, and biggest violators of its own created Delhi Master Plan.³⁴⁸

Municipal Corporation of Delhi (MCD) is responsible for providing health service, water supply, drainage, solid waste management, street lighting and many others. Delhi Jal Board (DJB) is working for providing portable (drinking) water, treatment and disposal of sewage and supply of sludge manure and treated waste water among major functions.³⁴⁹ Delhi Urban Shelter Improvement Board (DUSIB) is working under Delhi government to improve the quality of life of Slum & Jhuggi Jhopri (JJ) Dwellers by implementing number of approved plan Schemes. DUSIB is also working for building community toilet blocks under SBM in the slums.³⁵⁰

These above mentioned urban development bodies usually build the infrastructure for sanitation, water supply and other urban services and leave the operation and maintenance to municipal corporations. Due to lack of financial resources and insufficient numbers of employees,³⁵¹ it seems impossible for municipal bodies to maintain such infrastructure. Quite often it is noticed that the poor coordination³⁵² between different urban development bodies, municipal authorities, state government and the central government, which resulted into dilly dallying of the prescribed works. Inadequate sanitary development and poor coordination between different urban developmental bodies in the city is due to different affiliation of political parties in the process.

The legacy of the lack of accountability, corruption and ineffectiveness of local government,³⁵³ state government and also the central government shows the present low quality sanitary condition in the city where 22 per cent of people practice open defecation

³⁴⁷ DDA (2012). Functions, Duties & Norms in the Planning Department, Government of Delhi. www.dda.org.in

³⁴⁸ Chaplin, S. E. (2011). *The politics of sanitation in India: Cities, services, and the state*. Hyderabad: Orient Blackswan. pp.75

³⁴⁹ Delhi Jal Board, "About Us". Government of NCT of Delhi. Accessed April 5, 2017. <http://www.delhi.gov.in>

³⁵⁰ Delhi Urban Shelter Improvement Board, "Brief History" Government of Delhi. Accessed on March 26th, 2017. <http://delhishelterboard.in>

³⁵¹ Pillai, S. (April 22nd, 2017). Late pay, lack of permanent jobs still a sore point. *The Hindu* (New Delhi). Accessed on April 29th, 2017.

³⁵² Sharma, Vibha (January 5th, 2017). East Delhi residents say they are fed up of blame game over sanitation strike. *Hindustan Times* (Delhi). Accessed on March 22nd, 2017.

³⁵³ Chaplin, S. E. (1999). Cities, sewers and poverty: India's politics of sanitation. *Environment and Urbanization*, Vol. 11(1), pp.152

in the slums of Delhi, as reported by DUSIB in the first quarter of 2015.^{354,355} Community toilets are often not well maintained and a large number of population resort to open defecation³⁵⁶. About one-fourth of slum dwellers defecate in the open. In the congested slum areas, stationary toilets have proven difficult to build due to lack of space and the question of maintenance is far reached.³⁵⁷ Partnerships are essential as governments shoulder the responsibility for ensuring that residents have access to services and are adequately housed.³⁵⁸ The successful sanitation depends on access to environmental, economic, political and social resources and, importantly, they need to come together over same time.³⁵⁹ Public toilets constructed by government funds in Delhi are maintaining by DUSIB. It is compulsory to pay money for each use, be it children or women or old person. Even after paying for toilet usages, DUSIB failed to provide adequate facilities with that money. Problem of water supply to the toilet complex is a common drawback of DUSIB.³⁶⁰

The SBM-Urban provides money to the state / ULB's for construction and maintenance of toilet.³⁶¹ But in Delhi slum areas developed not only over the land of municipal bodies but also over the land of different departments of government bodies, like DDA, DUSIB, Forest Department, Railways, Central Public Works Department (CPWD), Land and Development Office (L&DO) and many others.³⁶² Constructing toilets over the land of other the land of non-MCD is very difficult. Many times toilets are left unconstructed.

³⁵⁴ DUSIB. (2014). Annual Report 2014-15. *Delhi Urban Shelter Improvement Board*. Government of Delhi. pp.47.

³⁵⁵ Janawalkar. M. (April 20th, 2015). Delhi: Slum shame. *The Indian Express* (New Delhi). Accessed March 12, 2017

³⁵⁶ Bhagat, R. B. (2011). Urbanisation and access to basic amenities in India. *Urban India*, Vol. 31(1), pp.9

³⁵⁷ Palnitkar, S. (1988). New Culture of Urban Sanitation (CORO): Mumbai (Bombay), India. *THE MEGA-CITIES PROJECT*.

³⁵⁸ Tomlinson, R. (2015). Scalable community-led slum upgrading: The Indian Alliance and community toilet blocks in Pune and Mumbai. *Habitat International*, Vol. 50, pp.163

³⁵⁹ O'Reilly, K., & Louis, E. (2014). The toilet tripod: Understanding successful sanitation in rural India. *Health & place*, Vol. 29, pp.50.

³⁶⁰ As observed and reported by the residents of Azadpur and Punjabi Bagh slum during field survey.

³⁶¹ MoUD (2014). Guidelines for Swachh Bharat Mission. *Ministry of Urban Development*. Government of India. pp.5.

³⁶² DUSIB, Govt. of NCT of Delhi. http://delhishelterboard.in/main/wp-content/uploads/2017/01/jjc_list_for_website.pdf

Many times legal actions are taken by other governmental bodies against MCD and DUSIB for constructing toilets over their land.³⁶³

The problem of coordination between different government bodies in Delhi could be erased by applying Shimla strategy. Shimla Municipal Corporation (SMC) overcomes the problem of poor coordination between different governmental bodies providing facilities on sanitation. A sanitation cell has been newly constructed by devolution of departments which were previously responsible for providing sanitation facilities in different sanitation sectors.³⁶⁴

6.4 Point of Interest for the Government

What is needed, the willingness of the government and policy makers to pay attention to the problem of sanitation and treat it as a grave concern. Need the best solution to eliminate the problem of inadequate sanitation, be it cultural or scientific way of solution.

The advancement of science in India, it is no less than a developed country like of western world. Indian Space Research Organization (ISRO) in single flight successfully launches 104 satellites³⁶⁵ after launching satellites to the Mars are no less developed in science and technology. So, it's not the problem of government's fund or capability, it is about willingness of the government to invest for good sanitation. The effort required to make the country open defecation free is not a difficult task. So, it is the duty of the government to take initiative to facilitate good sanitation. But the question remains, where the government is spending more and putting more emphasis? And it is none other than Defence (17.24%),³⁶⁶ which receives the maximum share of the budget and whereas the share of sanitation, as SBM (Rural and Urban) was only 0.57percent of the total GDP

³⁶³ PTI. (July 17th, 2017). SC notice to DUSIB on Railways' plea on cubical toilet complex on its land SC notice to DUSIB on Railways' plea on cubical toilet complex on its land. *Financial Express* (New Delhi). Accessed on July 17th, 2017.

³⁶⁴ MCS. (2011). City Level Sanitation Strategy: City Sanitation Plan for Shimla. Municipal Corporation of Shimla. pp.22

³⁶⁵ ISRO, (2017) PSLV-C37 Successfully Launches 104 Satellites in a Single Flight, Accessed on March 20, 2017.

<http://www.isro.gov.in/update/15-feb-2017/pslv-c37-successfully-launches-104-satellites-single-flight>

³⁶⁶ Bansal, S. (2016, March 1, updated 2016, October 18). "Budget 2016: Where the money comes from and where it goes". *The Hindu* (accessed April 2, 2017)

in 2016-17 union budget announcement.³⁶⁷ In a way by launching SBM (Clean India Mission) on October 2nd, 2014 on Mahatma Gandhi's birth anniversary to promote better health and hygiene of the people as his vision on sanitation but on the other hand the government is cutting down the share of health infrastructure largely for public health and promoting Public Private partnership (PPP) instead of delivering free healthcare services to the people of the country.³⁶⁸

Looking at the problems, the policies implemented by the different governments on sanitation are almost same. The approach of building toilets and providing sanitation and to make the country open defecation free is common but not sufficiently emphasized on different effective approaches like ground level mobilization (which are only mentioned in the guidelines of the programmes but never executed). Over the time, major sanitation policies adopted by different government are just 'renaming of policies' like, CRSP renamed as TSC. TSC renamed to Nirmal Gram Puraskar (NGP), further renamed to NBA.³⁶⁹ With similar targets of providing toilets and make ODF is adopted by SBM from NBA. The consecutive sanitation policies adopted are with very little change or with no change from their previous one resulting into repeated failures.

After launching the SBM the target set by the authority is completely "*a race against time*" to make areas open ODF.³⁷⁰ The notion of forced binding of laws without understanding one's cultural practice has strong connection with colonial mindset.³⁷¹ It further creates divisions in the urban landscape. A multibillion-dollar commitment of

³⁶⁷ Press Trust of India. (February 29th, 2016). Union Budget 2016: 'Swachh Bharat Abhiyan' gets Rs 11,300 crore. <http://www.news18.com> Accessed on April 2nd, 2017

³⁶⁸ Sharma, N. C. (March 2nd, 2016). India's health woes: Budget for the National Health Mission remains stagnated at Rs 19,000 crore. www.indiatoday.in Accessed on April 7th, 2017

³⁶⁹ This 'renaming of policies' can be understand through the guidelines of each policies implemented right from CRSP to SBM.

³⁷⁰ Mishra, A. K. (July 17th, 2017). Delhi: Why it's a race against time to end open defecation in these wards. *The Times of India* (Delhi). Accessed on July 17th, 2017.

³⁷¹ Desai, R., McFarlane, C., & Graham, S. (2015). The politics of open defecation: informality, body, and infrastructure in Mumbai. *Antipode*, 47(1), pp.102.

SBM by the government of India is the largest investment in a single mission for improving sanitation throughout the country.³⁷²

6.5 Failure of Policy Workout

The spread of awareness and the message of Swachh Bharat are carried out by the government through high profile section of the society and are mostly celebrities from Bollywood and it would not be enough to reach each and every household who faces their daily life problem related to poor sanitation. To strengthen the practice of using toilets and message of Swachhata there should have involvement of local heroes who overcome the problems of poor sanitation by their own effort and determination. People can more relate to his/her situation who can be from the same background.

Rather than using of celebrities on promotion of Swachh Bharat Mission the policy makers must have organize large scale campaign on micro level for promoting IEC to generate demand through behavioral change and promote latrine use. However, most of the programmes saw failures and hardly paid attention for campaigns on IEC and behavioral changes. During the first year of launching Swachh Bharat Mission the government of India has spent about 94 crore INR³⁷³ and 103 crore INR³⁷⁴ in its second year just for advertisements on Radio, Television and News Paper. If this big amount of rupees spending on advertisement could have used for building new toilets and for maintenance of existing one, it would have been more effective to eliminate open defecation. The very access of newspaper is lower among poor people for whom the advertisements are published.³⁷⁵

³⁷² Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2015). Sanitation-related psychosocial stress: a grounded theory study of women across the life-course in Odisha, India. *Social Science & Medicine*, 139, pp.87.

³⁷³ Press Trust of India. (11th July, 2015). Swachh Bharat Mission: Govt spends 94 crore on advertising in one year. *Brand Equity, The Economic Times*. Accessed on June 7th, 2017.

³⁷⁴ Dutta, S. S. (28th May, 2016). Rs 100cr ad bill plus an India Gate party. *The Telegraph*. Accessed on June 7th, 2017.

³⁷⁵ Findings from the primary survey, November-December 2016. None of the surveyed household is subscribed to any newspaper. But majority have access to TV.

The government and the local bodies approaching public to change the habit of open defecation through policies and rules, those who are failing to maintain the prescribed norms due to economic and social inequalities are even facing social seclusion³⁷⁶ and even fine, as capital punishments.^{377,378} There are instances when SBM took lives of people to fail to maintain its guidelines of restricting the practice of open defecation, a 44-year-old social activist was killed brutally by local civic officials when he tried to stop them from taking photos of women defecating in open in Pratapgarh, Rajasthan.³⁷⁹

Similarly with the collaboration with Ministry of Urban Development (MoUD) - Google introduce 'toilet search' feature in Google Maps application.³⁸⁰ This initiative started in Delhi NCR in February 2017 and expected to cover other cities too. Similar drawbacks persist in this initiative also. A person to avail 'toilet search' facility has to be smartphones plus internet connection, in a country like India where smartphones and internet are mostly limited to the economically affluent sections of the society. So, basically the poor section of the society will remain with no usage of the new initiative. When searched in Google Maps 'toilets near Bhim Basti, New Delhi' it shows there is only one public toilet within the radius of at least 3 km and the toilet showing is within the slum itself and yet to start its service even after four months after the survey had done. The app also shows location of toilets which are not functional.

It is noticed that the government under SBM attempted to build toilets only delivered concrete toilet block but not the septic tank resulted into non-functional of toilets and people are forced to go out.³⁸¹ In Chhatarpur district of Madhya Pradesh, under SBM-

³⁷⁶ O'Reilly, K., Dhanju, R., & Goel, A. (2017). Exploring "The Remote" and "The Rural": Open Defecation and Latrine Use in Uttarakhand, India. *World Development*. pp.2.

³⁷⁷ Press Trust of India. (June 16th, 2017). 13 families in Madhya Pradesh village fined Rs 4 lakh for open defecation. *Times of India* (Raisen, MP). Accessed June 16th, 2017.

³⁷⁸ ANI Bhopal (January 18th, 2017). Defecating in open in Bhopal? Be ready to be slapped with Rs 500 fine. *Hindustan Times*. New Delhi. Accessed on March 14th, 2017.

³⁷⁹ Press Trust of India. (June 16th, 2017). Rajasthan officials lynch man for stopping them from taking photos of women defecating in open. *The Hindu*. Accessed on June 16th, 2017.

³⁸⁰ WaterAid. (March 3rd, 2017) Finding Toilets In India: Google To The Rescue? *WaterAid* <http://www.wateraid.org/news/blogs/2017/march/finding-toilets-in-india-google-to-the-rescue> Accessed March 5th, 2017.

³⁸¹ Banda, K., Sarkar, R., Gopal, S., Govindarajan, J., Harijan, B. B., Jeyakumar, M. B., ... & Thomas, V. A. (2007). Water handling, sanitation and defecation practices in rural southern India: a knowledge, attitudes and practices study. *Transactions of the royal society of tropical medicine and hygiene*, 101(11), pp.1127

Gramin government sponsored latrine construction to the villagers and not provided them the pits over many months, this leads to conversion of the latrine blocks into ‘grocery shop’, ‘kitchen’ and other necessary store room as these incomplete latrines were not ready to use.³⁸² There are greater problem of all is the under-maintenance of public latrines which is most responsible for open defecation in surrounding areas of under maintenance of latrines, like in Punjabi Bagh slum.³⁸³ The situation of under-maintenance is so common in Delhi it can be best suited with a remark of *WaterAid* as “*Finding a clean and hygienic public toilet in India is almost as difficult as trying to find water on Mars!*”³⁸⁴ One of the major problems to eliminate open defecation in India is inadequate or limited human resource for sanitation.³⁸⁵

Among the surveyed settlements the latrines are built by the owners and never received any kind of incentives from the government side and all are functional. A study conducted by Barnard et al. on impact of TSC on latrine construction and usage. They found that only less than 47 per cent latrines were actually in use provided by partial subsidy of TSC. Lower usage of latrines is due to low quality, functionality³⁸⁶ and incomplete construction of latrines. In a study by Coffey *et al.* in rural parts of five north Indian states found that there were possibility of practicing open defecation in households who have latrines are more than twice among latrine users built by government support.³⁸⁷

³⁸² Santoshi, N. and Pateriya, A. (February 19th, 2017). Toilet turned into kitchen, grocery shop: Swachhta Abhiyan claims fall short in this MP village. *Hindustan Times* (Bhopal). Accessed February 19th, 2017.

³⁸³ Primary Survey February-April 2017 as a part of hypotheses testing.

³⁸⁴ WaterAid. (March 3rd, 2017) Finding Toilets In India: Google To The Rescue? *WaterAid* <http://www.wateraid.org/news/blogs/2017/march/finding-toilets-in-india-google-to-the-rescue> Accessed on March 5th, 2017.

³⁸⁵ UNICEF. Eliminate Open Defecation. *UNICEF India*. <http://unicef.in/Whatwedo/11/Eliminate%ADOpen%ADDefecation> Accessed April 27th, 2017.

³⁸⁶ Barnard, S., Routray, P., Majorin, F., Peletz, R., Boisson, S., Sinha, A., & Clasen, T. (2013). Impact of Indian Total Sanitation Campaign on latrine coverage and use: a cross-sectional study in Orissa three years following programme implementation. *PloS one*, 8(8), e71438. pp.4-6

³⁸⁷ Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2014). Revealed preference for open defecation. *Economic & Political Weekly*, 49(38), pp.51.

6.6 Numerical Explanation of Latrine Facility

In the third chapter of this dissertation figure 3.2 showed that overall there are decrease of around 8 per cent of urban household without latrine facility. Through the absolute number of households rather than its percentage of latrine coverage then the number shows that there is an increase in absolute number of household without latrine facility. The percentages of households without latrine facility in urban areas across the country increased only in Assam and Bihar that is also less than one percentage. All other states have shown decrease in percentage of urban households without latrine facility or can be said as overall increase in percentage of latrine facility. Data shows that the household without IHHL was 26.3 per cent in 2001 and declined to 18.6 per cent in 2011 over the period of 10 years in Urban India. But in reality or in absolute number, the number of household without IHHL is increased in between last two census years. The number of household without latrine facility is mostly increased in rural areas. In case of total households, Maharashtra, Punjab, Andhra Pradesh, Kerala and West Bengal are the best performing states with reducing the number of households without IHHL. The worst performing eight states are all belongs to the socio-economically backward states i.e., Empowered Action Group (EAG) states. Overall, the national figure rose by almost 8.9 million of households without IHHL.

Households without toilet facility increased from 122 million to 131 million household in total. Increase from 14.1 million to 14.7 million households in urban areas between last two.³⁸⁸ Data on household without latrine facility shows the percentage change in between two census counts decreased is not case with absolute numbers. In urban areas, households that do not have latrine facilities have increased in number. The worst performing states, West Bengal, Bihar, Jharkhand, Odisha, Uttar Pradesh, Chhattisgarh and Tamil Nadu. The best performing states are Maharashtra and Delhi. In both instances of total and urban category the number of households without latrine facility has increased. The same is for India's urban areas is almost 0.6 million households. The question arises from here is that *what kind of development should we need, in percentage value or in absolute value?*

³⁸⁸ Census of India, 2001 and 2011.

Table 6.3: Number of Household Without Latrine Facility in India (in Million)						
	Total			Urban		
States	2011	2001	Change	2011	2001	Change
Maharashtra	11.18	12.37	-1.198	3.11	3.38	-0.276
NCT of Delhi	0.35	0.56	-0.213	0.33	0.5	-0.169
Karnataka	6.43	6.4	0.035	0.8	0.88	-0.08
Gujarat	5.2	5.34	-0.146	0.67	0.73	-0.065
Punjab	1.12	1.84	-0.72	0.14	0.2	-0.062
Kerala	0.37	1.05	-0.684	0.09	0.13	-0.039
Haryana	1.48	1.96	-0.479	0.18	0.21	-0.031
Himachal Pradesh	0.46	0.83	-0.37	0.02	0.03	-0.015
Uttarakhand	0.68	0.87	-0.186	0.04	0.05	-0.013
Goa	0.07	0.12	-0.05	0.03	0.04	-0.013
Chandigarh	0.03	0.04	-0.014	0.03	0.04	-0.008
Union Territories ²	0.17	0.19	-0.019	0.06	0.06	-0.005
North-Eastern States ¹	0.62	0.65	-0.029	0.03	0.03	0.005
Jammu & Kashmir	0.98	0.73	0.257	0.06	0.05	0.014
Assam	2.24	1.75	0.49	0.06	0.04	0.024
Andhra Pradesh	10.6	11.29	-0.69	0.94	0.92	0.025
Rajasthan	8.18	6.63	1.548	0.56	0.52	0.034
Madhya Pradesh	10.65	8.3	2.354	0.99	0.9	0.09
Odisha	7.53	6.7	0.834	0.53	0.44	0.096
Tamil Nadu	9.56	9.19	0.372	2.22	2.1	0.115
Chhattisgarh	4.24	3.56	0.681	0.49	0.37	0.119
Jharkhand	4.82	3.91	0.914	0.49	0.35	0.138
Bihar	14.57	11.3	3.274	0.63	0.4	0.224
Uttar Pradesh	21.19	17.67	3.522	1.26	1.03	0.225
West Bengal	8.26	8.85	-0.588	0.95	0.69	0.262
INDIA	130.97	122.08	8.895	14.7	14.11	0.593

Note: ¹excluding Assam, ²excluding Chandigarh and NCT of Delhi.

Source: Census of India, 2001 and 2011, Table HH-8 on Households by Availability of type of Latrine Facility Table for India.

In both rural and urban areas Maharashtra performs the best. In which both, worst performing states are the EAG states. West Bengal has altogether scenario with worsening the condition urban areas and performing better in rural areas. Altogether, at national level it clearly shows that the increase in absolute number of household without IHHL is a clear indication of policy failures. To hide the failures, data on sanitation are often manipulated by the government officials to portray in a way that would show improvement in sanitation. Such was the case of 2009-10, and then Ministry of Rural Development report stated that more than 61 per cent of rural household has latrine coverage in rural India.³⁸⁹ On the contrary, according to the Census of India in 2011, there is only 30 per cent coverage of household latrines in rural India.³⁹⁰ This shows that the data are too exaggerated by the government officials.

In case of Delhi, data on toilet facility is showing that there is a decline in both percentage and absolute number of household. But the pace is too slow and is about one per cent change in a year from 21 per cent in 2001 to 10.2 per cent in 2011. In 2001, urban Delhi has 0.5 million households without IHHL and had reduced to 0.33 million in 2011 census. It is a good sign that Delhi has reduced the number of households without IHHL but is not enough. Considering the fact that population of Delhi has increased in last ten years, it is still less than 0.17 million households who gained latrine facility is quite low. The very fact of availability of IHHL is also not generalizing the fact that all the household members are using that. Like in the primary field survey in Delhi shows almost 56 per cent of the slum households has at least one member who practices open defecation and major reason for that is 'shortage of water'.

³⁸⁹ MoRD. Annual Report 2009-2010. Ministry of Rural Development. Government of India. pp.179.

³⁹⁰ Census of India, 2001 and 2011, Table HH-8 on Households by Availability of type of Latrine Facility Table for India.

6.7 SWOT Analysis

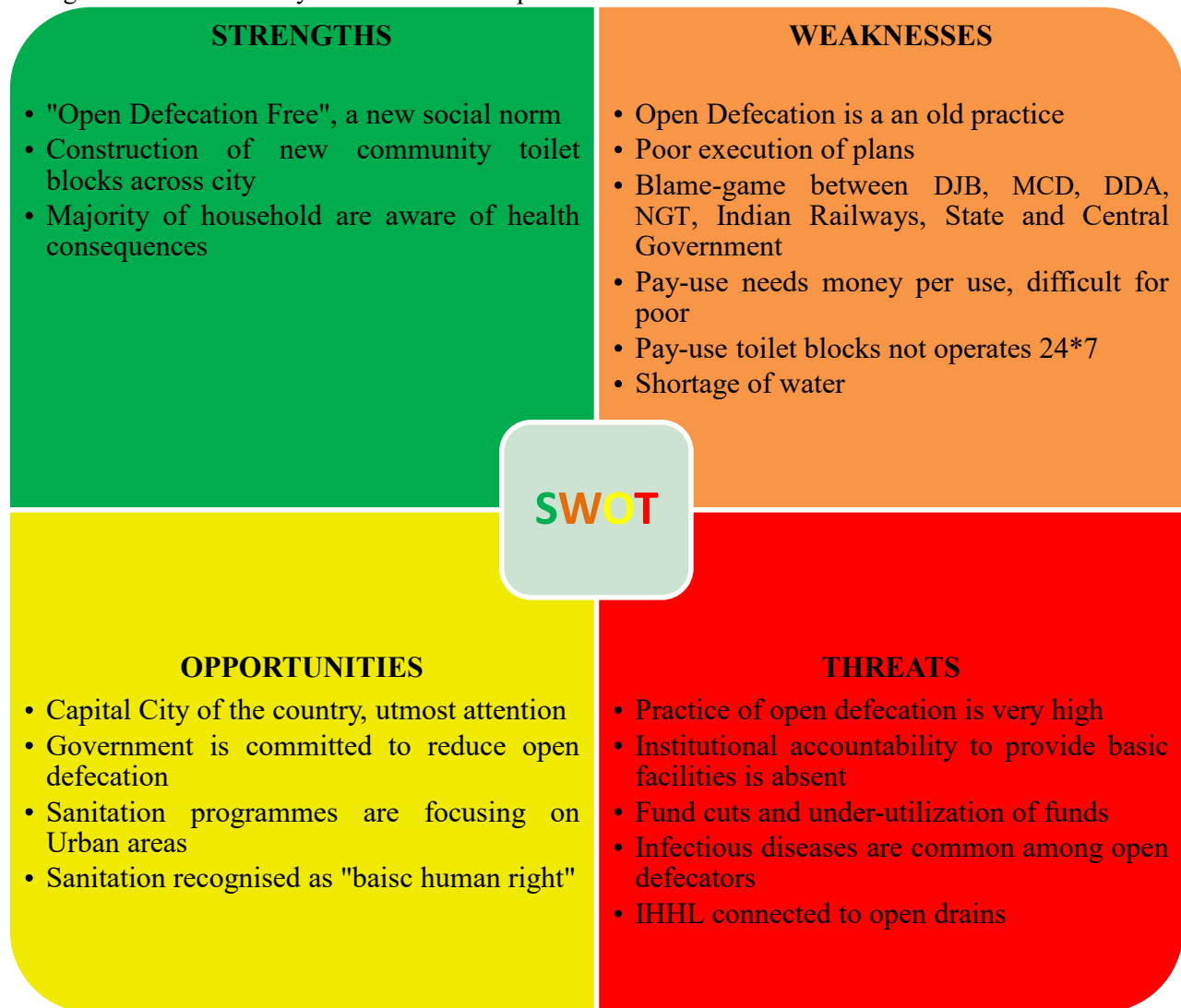
SWOT matrix diagram is used to define internal factors (strengths and weaknesses) and external factors (opportunities and threats) that the study area as a whole is passing through. It helps in reviewing current strategies of eliminating the practice of open defecation and potential solutions to eliminate open defecation by correcting its weaknesses and threats.

The strengths of the initiatives to make Delhi open defecation free is that “ODF” is a new social norm propagated on war footing by the Government by encouraging (also forcing) people to use latrines instead of going out for defecation. The other strengths are the construction of toilet blocks for men and women across the capital city which acting as availability and encouragement for people to use. One of the most important factors to make any area ODF is that the people are to be aware of its bad effects. The people in the study are mostly aware of health consequences of practicing open defecation.

There are many weaknesses that are creating barriers to make Delhi ODF. The first one is the practice of open defecation is an old cultural practice. The policies implemented by the union Governments and Urban Local Bodies (ULBs) to make the area ODF is not executed well. To execute plans co-ordination between different offices which looks after different services of the government is needed. In Delhi it is observed that different government bodies blame each other for any failure. Like for eliminating open defecation from Delhi toilets are to be construction. This is mostly done by ULBs and DUSIB and maintained by DUSIB. To maintain toilet blocks constant water supply is needed often neglected by the Delhi Jal Board (DJB, has to provide water in NCR). This is often surfaced when toilets were constructed to in the slum areas where the lands are owned by other than MCD and DUSIB, i.e., the lands of Delhi Development Authority (DDA), Railways.³⁹¹ Forest Department and finally had to take clearance from National Green Tribunal (NGT). Moreover lack of co-operation is between central and state governments and different governmental bodies mostly due to the differences in their political ideologies weaken the plan.

³⁹¹ PTI. (July 17th, 2017). SC notice to DUSIB on Railways’ plea on cubical toilet complex on its land SC notice to DUSIB on Railways’ plea on cubical toilet complex on its land. *Financial Express* (New Delhi). Accessed on July 17th, 2017.

Figure 6.4: *SWOT* Analysis of Practice of Open Defecation and its Elimination.



Source: Developed by the Researcher.

The role of pay-per-use toilet blocks is to provide toilet facilities to the population who lacks it. Pay-per-use toilet blocks are only managed to provide 18 hours a day service which further pushes people to go for open defecation in between those odd six hours.

The external forces which can control or eliminate open defecations are the opportunities can be applied to get success. The major opportunities are that the study area is a part of the NCR and always receives more attention from the media, different governmental and non-governmental organizations. Other opportunities are the national government is paying attention towards urban areas in the field solely on improving sanitary condition.

The commission of Human Rights on their 57th session in 2005 mentioned that the guidelines of *the right to drinking water and sanitation*³⁹² which impacted on the national sanitation drive to provide basic and improved sanitation services especially to the poor. The other external factor of the analysis is the ‘threats’. To make Delhi an ODF area, there are potential threats which act as a concrete wall to hinder the developments or initiatives. The potential threats are the existing practice of open defecation is very high and is very difficult to bring it down and eliminate in a short time period. The existing public infrastructure like pay-per-use toilet facilities has failed to provide service for the entire day, lacks cleanliness and constructed with lower quality materials resulted into damage of doors, floors and roofs the toilet blocks, and are often ignored by the ULBs and responsible organization i.e., mostly DUSIB. There are also the problems of inadequate infrastructure provided by the government organizations are with very low ratio between population and toilet seats. The institution has failed to provide adequate facilities to the population with needs. Major part of any programme is the spread of awareness and IEC, the municipal bodies in Delhi has failed to utilize the money given for construction of toilets under SBM-Urban.³⁹³ Fund cuts are observed for the current cleanliness drive SBM-Urban³⁹⁴ and negligence towards IEC and public awareness are very common.³⁹⁵ Diseases like diarrhea, dysentery and Urine Track Infections (UTIs) are more common among who practices open defecation³⁹⁶ than who do not. The spreading of diseases can pose a threat to the public health as a whole. Leaving the practice of open defecation in Delhi, it has observed that households in Seelampur and Azadpur with latrine facility at home all have *open drains* connection. The scenario is no different in case of other slum areas in Delhi and is mostly drained into Yamuna untreated.³⁹⁷

³⁹² Commission on Human Rights (2005). Realization of the right to drinking water and sanitation. Report of the Special Rapporteur, El Hadji Guisse. *Economic and Social Council, UN*.

³⁹³ PTI. (September 13th, 2016). MCD ‘fails’ to utilise funds allocated under Swachh Bharat Mission. *The Indian Express*. Accessed on June 3rd, 2017.

³⁹⁴ Sharma, N. (April 20th, 2017). Swachh Bharat: Funds for treating solid waste cut 46 per cent. *Times of India*. Accessed on April 28th, 2017.

³⁹⁵ Kapur, A. and Iyer, S. (2015). Budget Brief 2015-16: Swachh Bharat Mission. *Centre for Policy Research. Vol. 7(5)*.

³⁹⁶ Instances of water-borne diseases like malaria, dengue and Chikungunya are also more common among open defecators may because of greater exposure outside house.

³⁹⁷ ICED (2012-13). Audit Report on Sewage Treatment and Waste Management- Delhi. *International Centre for Environment Audit and Sustainable Development*. Jaipur.

It is clear from the study that the policies and the programmes on sanitation ought to concentrate on providing basic services like sufficient water supply to the household and pay-per-use toilet blocks. Clean the pay-per-use toilet blocks are a must for continuous use. Otherwise, even the uncountable number of toilets would fail to increase in access of available toilets without availability of water and other required facilities like adequate maintenance and cleaned to use toilets.

6.8 Conclusions

- Practice of open defecation continues due to failure of government policies.
- Funds are not properly utilized for the purpose of toilet construction and IEC & behavior change campaigning. Funds are mostly either used for promotional purpose or remain under-used.
- Policies on sanitation mostly concentrated to the rural parts of the country although recently the government is paying attention to the urban areas also.
- Countrywide policies on sanitation are mostly with almost same strategy and only its name with changing Government.
- NUSP is the first policy on sanitation solely on urban areas failed to achieve its target of making urban areas ODF by 2012.
- After NUSP, major urban sanitation policy is SBM-Urban targeted October 2019 as deadline to make all urban areas ODF.
- SBM is also building latrines and proving latrine facilities to make ODF but similarly avoiding IEC and behavioral change campaigning.
- The agenda of SBM-Urban is shifting from Open Defecation Free to Solid Waste Management and can be observed from recent two Swachh Survekshan ranking of cities.
- Quite often the implementation and execution of policies in Delhi faces major problems as the ULBs are not empowered enough to construct infrastructure on sanitation over the land of other departments of the government and eventually failed to provide facilities.

- Money allocated for sanitation is lower than many other departments even after nationwide sanitation crisis.
- Underutilization of funds by ULBs in Delhi results into continuation of the practice of open defecation.
- Low allocation for IEC and its non-usage by ULBs further force people to live in insanitary condition.
- Even the initiatives which are taken by the ULBs and the government are not pro-poor initiatives like 'toilet search', awareness programme on newspapers, radio and television but not any field campaign.
- The progress on sanitation should not be measured only through percentage value and need to look at absolute value also for better understanding of the situation.
- Taking consideration of the situation Government must concentrate on strengths and opportunities to eradicate open defecation. Must avoid potential losses from weaknesses and threats to the process of eliminating open defecation.

CONCLUSIONS AND RECOMMENDATIONS

There is no single reason for practice of open defecation and it is because of multi-faced reasons led by structural inequalities and institutional inability to facilitate slum dwellers for the basic needs. The very practice of open defecation is a result of existing sanitation inequalities. There are no doubts about the fact that the practice of open defecation in Delhi (even all over the country) is decreasing. But the pace of the process needs to be faster to make Delhi open defecation free in coming years. The major conclusions of this dissertation are as follows:

Conclusions

- India accounts more than half of the global practice of open defecation and progress towards eliminating the practice is slowest among neighboring countries.
- The practice of open defecation is higher in socio-economically poor states.
- The percentage of households without latrine facility in urban areas decreased between last two census years. Only exceptions were Assam and Bihar. Among the bigger urban state's areas it increased most in Maharashtra, Tamil Nadu and Delhi.
- Among the top six metro cities, practice of open defecation is highest in Hyderabad.
- Majority of the households are migrated from Uttar Pradesh, Bihar and Rajasthan. Mostly come up in early 1980s and in between 1990 to 1995.
- Settlements are numerically dominated by the Hindu religion and scheduled caste population.
- Family size is big in all the surveyed settlements. Almost two-third of the population aged below 30 years of age and one-third under aged 15.

- Residents of Bhim Basti and Azadpur are more educated than Seelampur, which is far below than two-third of the total population aged 7 and above. Across all the three settlements there are almost one-third of the total population who are illiterate, highest is in Seelampur. Higher education including Graduation and above is less across settlements.
- People are engaged in economic activities mostly as daily wage labors, private company jobs and sanitation workers. People engaged in Government jobs or Government retired employees are all working/worked as sanitation workers across all the three settlements.
- Dependency ratio is high across the three settlements and are more than two-third of the total population. Economic dependents are more among female.
- Almost all the houses are Pakka and semi-Pakka. Only Seelampur has small number of Kutchha houses. Most of the households have one or two rooms in dwelling. Bhim Basti has maximum percentage of households with more than two rooms in dwelling. This is lowest in case of Seelampur.
- Type of ration cards and monthly per capita income shows Bhim Basti has better economic condition among three surveyed settlements. Seelampur is the poorest settlements among all.
- Ownership of Houses is highest in Azadpur and Seelampur while live in rented accommodation is highest in Bhim Basti.
- Amenities at settlement level, Seelampur has the worst amenities among all the surveyed settlements in terms of electricity, bank account and space for separate kitchen. Bhim Basti has best amenities with electricity, bank account, space for kitchen, latrine facility and drinking water facility than other two settlements. Azadpur has good amenities like public toilet and bank account. All the three settlements lack proper dumping facilities.
- Amenities at household level, amenities like electricity service are almost universal. Three-fourth of the households has bank account facilities. Separate kitchen, household latrine and drinking water facility is available in way less than half of the households.

- Availability of mobile phones and television are most among all the households surveyed, followed by refrigerator, water pump and cycle. Valuable assets like four-wheeler and three-wheeler are quite low.
- Practice of open defecation by households is highest in Azadpur followed by Bhim Basti and lowest in Seelampur.
- While urinate, people choose places close to their house on roadside, railway side or other open spaces.
- The factors behind the practice of open defecation is mostly associated with the availability of latrine facility at home, availability of sufficient water and space for latrine construction, old cultural habit and lower availability of pay-per-use toilet facilities.
- Shortage of water is the premium reason of practicing open defecation among latrine owners.
- Households do not have toilets at home are mostly because of poor economic condition and shortage of space.
- Households with toilet facility all constructed by the owner. No households ever get any approach from government or non-government organization to build toilet.
- The practice of open defecation is strongly associated with availability of toilet, caste, type of housing material, occupation, household's expenditure and individual's sex.
- The practice of open defecation is more prevalent among Scheduled caste households and household with semi-pakka type house. The practice is also higher among economic activities of lower wage employment.
- There are also associations between household assets and amenities with the practice of open defecation.
- Households poses costly assets like refrigerator and washing machine are has lower percentage of practice of open defecation.
- Education is not found as associated factor with the practice of open defecation.

- To minimize the practice of open defecation there is a need to look after the factors that contributes to the practice of open defecation and needs to be care of that.
- People go out for open defecation at shorter distance from home, shorter distance covered in Seelampur and longer distance in Bhim Basti.
- There is gendered segregation of space in open defecation sites, but not in all sites.
- People face problems to use defecation sites and major problems are to go out during rainy season, half of the defecation sites are not gendered segregated, harassments and women face problems to go out for defecation at day times. Rail accidents are frequent in Seelampur.
- Prevalence of diseases is more common among people who practices open defecation than who do not. Information collected on diseases are dysentery, diarrhea, vector borne, UTI and 'other'.
- Household toilets are connected to open drains and during monsoon it flows over roads and sometimes enters within houses.
- Pay-per-use toilets are not present in every settlement sites. Available seats are way lower in comparison to the population covered.
- Pay-per-use toilets charge money for every use and compulsory for across age, socio-economic profile and gender.
- In pay-per-use, insufficient number of toilet seats, compulsion of payment, irregularity of maintenance and cleanliness forces people to go out for defecation.
- Households without toilet facilities and using pay-per-use toilet facility are paying more than households constructed toilet at home.
- Practice of open defecation continues due to failure of government policies.
- Funds are not properly utilized for the purpose of toilet construction and IEC & behavior change campaigning. Funds are mostly either used for promotional purpose or remain under-used.
- Policies on sanitation mostly concentrated to the rural parts of the country although recently the government is paying attention to the urban areas also.

- Countrywide policies on sanitation are mostly with almost same strategy and only its name with changing Government.
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- The agenda of SBM-Urban is shifting from Open Defecation Free to Solid Waste Management and can be observed from recent two Swachh Survekshan ranking of cities.
- Quite often the implementation and execution of policies in Delhi faces major problems as the ULBs are not empowered enough to construct infrastructure on sanitation over the land of other departments of the government and eventually failed to provide facilities.
- Money allocated for sanitation is lower than many other departments even after nationwide sanitation crisis.
- Underutilization of funds by ULBs in Delhi results into continuation of the practice of open defecation.
- Low allocation for IEC and its non-usage by ULBs further force people to live in insanitary condition.
- Even the initiatives which are taken by the ULBs and the government are not pro-poor initiatives like ‘toilet search’, awareness programme on newspapers, radio and television but not any field campaign.
- The progress on sanitation should not be measured only through percentage value and need to look at absolute value also for better understanding of the situation.
- Taking consideration of the situation Government must concentrate on strengths and opportunities to eradicate open defecation. Must avoid potential losses from weaknesses and threats to the process of eliminating open defecation.

Recommendations

Based on the above mentioned findings of the study, certain recommendations can be suggested

- DUSIB toilets are pay and use for every use including children, women and elderly. DUSIB failed to provide adequate facilities even on payment. Problem of water supply to the toilet complex and its further impact on cleanliness of the complex is a common drawback of DUSIB. People to use those facilities are bound to pay. When at any circumstance people has to pay, it is necessary to give permissions to the NGOs like ‘*Sulabh International*’ which is doing better than governmental organizations like DUSIB in terms of maintenance of pay-use-toilet complex.
- There is needed to be lower the charge per single use and introduce monthly basis charge for the family. A well-planned provision would include free access to toilet facilities as a means of reducing the spread of infection. Public toilets should not be considered as a profit-making exercise but a necessity.
- The urban local bodies, NGOs, state and central governments should take toilet facility more seriously to eliminate open defecation. To reduce the practice of open defecation it is required to link between poverty, political powerlessness of the poor and poor infrastructure.
- Toilets must be functional at all time and clean. Uninterrupted water supply, affordability remains the key for poor section of the society especially to the BPL and Antodaya.
- It is needed is to provide other basic facilities and behavioral campaign rather than “*tsunami of toiletisation*”³⁹⁸, which would have little success.
- There are needs for pilot programmes before implementation of programmes to the national level. It would initiate latrine coverage and its use and followed by adjusting drawbacks of the programme and then it should be implemented to national level sanitation programme.

³⁹⁸ Gopalakrishnan, A. (January 18th, 2016). What Bangladesh can teach India about toilet training. *Times of India*. Accessed 17th March, 2017.

- Government and policy makers must concentrate on behavioral change and promote latrine use instead of spending big amount of money on advertising on media.
- The need is not only proving latrines to each and every household but to connect in with functioning sewage treatment management and then only the transmission of diseases like diarrhea will reduce. Proper water supply would be a major incentive to encourage people to use latrines. The needs for the fuller utilization of existed 32 STPs are much needed for the betterment of public health.
- It's the time to think beyond the individual responsibility to restrict the practice of open defecation, and institution take some responsibility on their shoulder for real change. The interventions required to change the present situation needs a better tie up with the understanding of existing structural inequalities.
- The problem of coordination between different government bodies in Delhi could be shorted out by applying Shimla strategy. Shimla Municipal Corporation (SMC)³⁹⁹ overcomes the problem of poor coordination between different governmental bodies providing facilities on sanitation. A sanitation cell like that of Shimla can be evolved in National Capital Territory that should be responsible for providing sanitation facilities in different sanitation sectors.

³⁹⁹ MCS. (2011). City Level Sanitation Strategy: City Sanitation Plan for Shimla. Municipal Corporation of Shimla. pp.22

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Appendix

QUESTIONNAIRE ON PRACTICE OF OPEN DEFECATION IN DELHI

1. Background

1. Since when you are at this place (Year):
2. Your previous residence:
3. When did you migrate to Delhi (Year):
4. From which district and state (original residence):
5. Rural / Urban:
6. Do you own this house: Yes / No
7. Type of house: Owned / Rented / Government Undertaken / Other,
8. Kachcha / Pakka / Semi Pakka
9. Ration Card type (Colour): APL / BPL / Antodyaya / Do Not Have
10. Do you have: Voter ID / Aadhar ID / PAN Card / Health Card / Other
11. Main economic activity (main income source):
12. Distance from your home to place of work (Time and Place):
13. Expenditure of the HH including eating, medical, transportation, maintenance and all other expenses [Total Expenses] (Monthly):
14. Income from all sources (Monthly):
15. Religion:
16. Caste: ST / SC / OBC / General
17. How many rooms are there:
18. Is the kitchen separate:
19. Do you have (and Numbers): Electricity / Hand Pump / Cycle / Two Wheeler / Three Wheeler / Four Wheeler / Mobile / TV / Computer / Refrigerator / washing machine / Bank Account / Any Other (Mention):

2. Availability of Toilet

20. Do you have toilets in your home: Yes / No

If YES (Question No. 21 to 34) If NO (Question No. 35 onwards)

21. Whether toilets are: within premise / outside premise

22. Type of toilet: pit latrine / pour flush / open drain

23. If open drain, problem faced during rainy season: Yes / No,
if yes, specify:

24. How many go out (open defecate):

If any, also ask Question No.45 onwards

25. Are the toilet and bathroom attached: Yes / No

26. When was the toilet built:

if known, the amount spent:

27. Whether received any help from NGO / Government to build toilet: Yes / No

if yes, amount:

28. Where do you go for urinal: inside house / outside house

29. If outside, distance from house:

30. Location: On wall / Near Drain (Nala) / Road side / Forest / Railway Line / Open
Field / Other

31. Do you wash your hands after visiting the toilet: Yes (water/ soap/ other) or No

32. Do you feel a different social status for having individual toilet (especially for the
women): Yes / No

33. What do you think about the advantages of owning a toilet:

34. What do you think about the disadvantages of owning a toilet:

If No, Public

35. How do you manage: Pay Use / Open Defecation

If pay use (Question No. 36 to 45) If Open Defecation (Question No. 46-58)

36. Average time spent for toilet:

37. Charge per use: for Latrines: for Urinals:

38. Charge for monthly use (single): _____ family: _____
39. Are toilet and bathroom attached: Yes / No
if yes, bathing charge: _____
40. Are you satisfied with the caretaker's service: Yes / No
41. Where do you go for urinal: inside house / outside house
42. If outside, distance from house: _____
43. Place of Urinal: Pay Use / on Wall / Open Drain / Road side / Forest / Rail line / Forest / open field / other
44. Do you wash your hands after visiting the toilet: Yes (water / soap / other) / No
45. Do you get any special facilities for having BPL / Antodyaya card at the time use toilet: Yes / No

If open defecation

46. Place of defecation: Near Drain (Nala) / Road side / Forest / Railway Line / Open Field / Other
47. Distance from house: _____
48. Average time spent for toilet (two way): _____
49. Is there different place for defecation for male and female: Yes / No,
if yes, specific location: _____
50. Is there different specific time for female (diurnal): Yes / No,
if yes, specific time: _____
51. What kind of problem faced from outside for open defecation: _____
52. Do you face any problem separately during day and night: Yes / No, if yes, specify problem: _____
53. What kind of problem are faced by women: Fear of harassment / harassment / Hygienic / other (specify) _____
54. Do you face any problem during rainy season for open defecation: Yes / No,
if yes, specify problem _____
55. Do you wash your hands after visiting the toilet: Yes (water / soap / soil / other) or No

56. Is the water source away from the place of defecation: Yes / No,
Distance:
57. Is there arrangement for cleaning the night soil: Yes / No,
if yes, by whom:
58. Did you ever hear any kind of accident (as per location) at the time of defecation: Yes /
No, if yes, who? specify:

3. Water Availability (common)

59. Is there proper availability of drinking water: Yes / No
60. Main source of Drinking water: Hand Pump / Municipal Water / Buy Water / Pond /
Other
61. Water source for Bathing and Washing: Hand Pump / Municipal Water / Buy Water /
Pond / Other
62. Water source for other HH use: Hand Pump / Municipal Water / Buy Water / Pond /
Other

4. About Original Residence (common)

63. Before coming to Delhi, where did you use to go for toilets back at home: Had toilet /
Open defecation
64. If Open Defecation: Near Drain (Nala) / Road side / Forest / Railway Line / Open
Field / Other
65. If Open Defecation, distance travelled:
Time spent:

5. Occupation based (common)

66. Do you have toilets in your place of work (within work place): Yes / No
If NO, (Question No. 67 to 70)
67. Where do you go (Place):
68. Do you have to pay for use: Yes / No
if yes, amount:

69. Do they charge for urinal: Yes / No
if yes, amount:
70. Where does the owner go for the same:
71. Do children's school have toilets: Yes / No

6. Perception Based (if Open Defecation)

72. Why do you practice open defecation:
73. Why do you not have a toilet:
74. Has your household ever thought about or discussed building a latrine for your family:
Yes / No
75. Would you consider taking loan to construct a toilet: Yes / No
76. Ever any NGO / government approached you to build toilets: Yes / No
77. If any NGO / MCD builds a toilet will you contribute to that: Yes / No
78. Did you ever receive any incentive from government to build toilets: Yes / No, if yes,
amount:
79. Do you articulate your problems at the time of election: Yes / No
80. What is the role and initiative of the councilor of the area to solve the problem:
81. If government provides toilet for free, would you use that: Yes / No
82. If you were not given a toilet for free, how much money are you ready to pay for it:
Don't want to pay / Rs.
83. Do you ever come across health camp in your locality: Yes / No,
if yes, specify time:
84. A toilet is supposed to bring you a better health- do you think it is true: Yes / No
85. Do you think open defecation is dangerous for the health: Yes / No
86. What do you think about the advantages of owning a toilet:
87. What do you think about the disadvantages of owning a toilet:

88. Do you know any kind of disease caused by open defecation: Yes / No
If yes, name some diseases:
89. Any member suffering from disease (No. of Person): Dysentery (days) / Diarrhea /
Vector borne / Other (specify)
90. If diarrhea, how many days after the diarrhea began did you seek advice or treatment
for:
91. For treatment, total expenditure in Rs.:
92. Place of treatment: Government Hospital / Private Hospital / Private Clinic / Any Other /
Not Treated
93. If not treated, why:
94. No. of member died in the last five year due to any diseases:

7. Pay Use / Public Toilets Installments (NOT for HH)

95. When was the toilet built (Year):
96. Population covered:
97. How many seats are there in the toilet complex:
98. How many of them in functional state:
99. Type of toilet: Pit latrine / Pour flush / Open drainage
100. Drainage condition surrounding the toilet: Open / Closed drainage
101. Problem faced during rainy season: Yes / No, if yes, specify:
102. Any arrangement for cleaning drainage: Yes / No, if yes, frequency:
103. Pay Use, money paying per person / or per family: Rs.
104. How long pay use toilets provide services in a day and night (am - pm):

105. Individual Household Schedule

Sl. No.	NAME	SEX	AGE	IMMUNIZATION	MARITAL STATUS	RELATION TO HEAD	EDUCATION	OCCUPATION	Practice OD
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Respondent

Male-1
Female-2

Yes-1
No-2

Single-1
Married-2
Separated /
Divorced- 3
Widowed-4

Head-1
Spouse-2
Child-3
Grand Child-4
Niece / Nephew-5
Brother / Sister-6
Mother / Father-7
Son / Daughter in law-8
other-9

Yes-1
No-2