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Regional Centre for Urban and Environmental Studies
All India Institute of Local Self Government, Mumbai

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Quarterly Publication

The Urban World

The Regional Centre for Urban & Environmental Studies (RCUES)
All India Institute of Local Self-Government (AIILSG), Mumbai

Established in 1926, the All India Institute of Local Self Government (AIILSG), India is a premier autonomous research and training institution in India. The institute was recognized as an educational institution by Government of Maharashtra in the year 1971. The Institute offers several regular training courses in urban development management and municipal administration, which are recognized by the Government of India and several state governments in India.

The AIILSG works in close collaboration with several international organizations, viz, UN-HABITAT, UNDP, UNICEF, US-AID, WHO, GTZ, FES, Ford Foundation, CIDA, Cities Alliance, and it has close work ties with several international networks such as CLGF (U.K), UCLG-ASPAC, ICLEI, CITYNET and LOGOTRI.

In the year 1968, the Government of India established the Regional Centre for Urban & Environmental Studies (RCUES) at AIILSG, Mumbai to undertake urban policy research, technical advisory services, and building work capabilities of senior and middle level municipal officials, and elected members from the States of Goa, Gujarat, Maharashtra, Rajasthan and UT's of Diu, Daman, Dadra & Nagar Haveli. In western region and Assam and Tripura states in North East Region. The RCUES is fully supported by the Ministry of Urban Development, Government of India. The Principal Secretary, Urban Development Department of Government of Maharashtra is the ex-officio Chairman of the RCUES, Mumbai.

In the year 1991, the RCUES was recognized by the Ministry of Urban Development, Government of India as a National Training Institute (NTI) to undertake capacity building of project functionary, municipal officials, and municipal elected members under the earlier urban poverty alleviation programme-UBSP. In the year 1997, the Ministry of Urban Affairs and Employment recognized RCUES of AIILSG as a NTI for capacity building under SJSRY, the centrally sponsored poverty alleviation programme in the States and UT's in the western region, Madhya Pradesh, and Chattisgarh.

In 2005, the Ministry of Urban Employment and Poverty Alleviation (MOUE&PA), Government of India and UNDP have set up the `National Resource Centre on Urban Poverty' (NRCUP), which is anchored by Regional Centre for Urban and Environmental Studies (RCUES) of All India Institute of Local Self Government (AIILSG), Mumbai. The NRCUP is launched under GOI – UNDP, project titled `National Strategy for the Urban Poor'.

In 2009, the RCUES, Mumbai is recognized as a `Nodal Resource Centre' on SJSRY by Ministry of Housing and Urban Poverty Alleviation, Government of India.

The AIILSG, Mumbai also houses the Solid Waste Management (SWM) Cell backed by the Government of Maharashtra for capacity building of municipal bodies and provide technical advisory services. In 2008 Mumbai Metropolitan Regional Development Authority (MMRDA) established Solid Waste Management Cell to provide technical advise for development of regional landfill sites and capacity enhancement in Solid Waste Management for urban local bodies in MMR. On 5th September, 2011 Water Supply & Sanitation Department, Government of Maharashtra established Waste Management & Research Centre in AIILSG, Mumbai, which will be supported by Government of Maharashtra.

The AIILSG, Mumbai is selected as Nodal Agency by Water Supply and Sanitation Department, Government of Maharashtra in preparation of City Sanitation Plans for 19 Municipal Corporations in Maharashtra State, under the assistance of Ministry of Urban Development, Government of India.

On 13th January, 2010 Water Supply & Sanitation Department, Government of Maharashtra established Change Management Unit Cell at AIILSG, Mumbai which will be supported by Government of Maharashtra.

The AIILSG, Mumbai is handling major Project on Performance Assessment System (PAS) in Maharashtra covering all 248 ULBs in collaboration with CEPT, Ahmedabad & in close cooperation with Water Supply & Sanitation Department, Government of Maharashtra, Urban Development Department, and Directorate of Municipal Administration, Government of Maharashtra.

On 10th April, 2012 Water Supply & Sanitation Department, Government of Maharashtra established Service Level Benchmarking Cell at AIILSG, Mumbai which will be supported by Government of Maharashtra.

The Urban World - Quarterly Publication of Regional Centre for Urban and Environmental Studies of All India Institute of Local Self Government, Mumbai

(January - March 2015)

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Editorial

Designing cities for active ageing and needs approach

The Ministry of Social Justice and Empowerment put in place the National Policy on Older Persons in 1999 with a view to addressing issues relating to aging in a comprehensive manner. According to United Nations estimates, the number of older persons (60+) will double from the current 600 million to 1.2 billion by 2025, and again, to 2 billion by 2050. According to World Health Organization, one million people worldwide turn 60 every month; 80% of these live in developing countries. Ageing cities are the future in the country — that's a statistic fact: the elder population will increase and live longer, gaining a growing influence in society, while coexisting with younger generations. The vast majority of older people live in their homes and communities, but in environments that have not been designed with their needs and capacities in mind.

As per the report, Ageing in the Twenty-first Century: A Celebration and a Challenge, which was produced by UNFPA and Help Age International, suggests that India had 90 million elderly persons in 2011, with the number expected to grow to 173 million by 2026. Of the 90 million seniors, 30 million are living alone, and 90 per cent work for livelihood. Consistent with the global trend of urbanization, the older population is becoming more concentrated in urban areas. Persons aged 60 or older currently comprise 10 per cent of the world population. The 2001 Census has shown that the elderly population of India accounted for 77 million. While the elderly constituted only 24 million in 1961, it increased to 43 million in 1981 and to 57 million in 1991.The proportion of elderly persons in the population of India raised from 5.63 per cent in 1961 to 6.58 per cent in 1991 and to 7.5 per cent in 2001. This is true of other older age cohorts too. The elderly population aged 70 and above which was only 8 million in 1961 rose to 21 million in 1991and to 29 million in 2001. Besides, the proportion of elderly above 70 in the total population increased from 2.0 per cent in 1961 to 2.9 per cent in 2001.

The report also underlines that while the trend of ageing societies is a cause for celebration, it also presents huge challenges as it requires new approaches to health care, retirement, living arrangements and intergenerational relations. "People everywhere must age with dignity and security, enjoying life through the full realization of all human rights and fundamental freedoms. Governments need to put policies and practices in place to support their current older populations and prepare for 2050".

Much progress has been made in the quality and quantity of health care services in India in the last fifty years. However, improvements have been uneven with urban areas getting the best advantage of modern technological advances in medical-care. Much of the emphasis of health care delivery system was on mother and child programmes with special emphasis on controlling population. Older people were largely excluded. While elderly people in India may have reasonable access to family care, they are inadequately covered by economic and health security.

The practical implications of the population ageing in India are far-reaching. The numbers are increasing; the resources are limited and perceived social priorities lie elsewhere. Hence, the response to such demands has to be well orchestrated, multi-sectoral and based on systematic planning. Providing necessary care and support to elderly people within the community setting is recommended instead of opening more old age homes.

Advocacy, research, involvement of voluntary agencies, training different levels of gerontological workers, catalysing the community, awareness building, organizing older persons themselves and networking with international agencies are all essential to empower older Indians.

Based on the above observations made on the health status of India's elderly, it can be concluded that some definite health intervention measures are necessary to cater to specific diseases associated withhold age. This calls for the establishment of special geriatric wards within public sector health facilities and concessions in private hospitals through identity cards for the poor elderly. With the on-going fertility transition, the demand for maternal and child health services are likely to fall sharply and therefore the Medical Council of India should have specially trained personnel to treat geriatric disorders.

This vulnerable section of society like any other economically backward section of the population needs to be provided with subsidised or concessional health care facilities. There should be special wards for treating the elderly in general hospitals throughout the city. There should also be separate counters for elderly patients so that they do not have to stand or wait in long lines along with other patients.

The National Policy on Older Persons put in place by the Ministry of Social Justice and Empowerment in 1999 failed at the implementation level. The Ministry is now formulating a new policy that is expected to address the concerns of the elderly. The idea is to help them live a productive and dignified life. There is a scheme of grant-in-aid of the Integrated Programme for Older Persons, under which financial assistance is provided to voluntary organizations for running and maintaining projects. These include old-age homes, day-care centres and physiotherapy clinics. While the scheme, indeed the concept, is still alien to India, the Ministry is considering the revision of cost norms for these projects, keeping in view the rising cost of living.

The recent intervention has been the introduction of the National Programme for Health Care for Elderly in 2010, with the basic aim to provide separate and specialised comprehensive health care to senior citizens. The major components of this programme are establishing geriatric departments in eight regional geriatric centres and strengthening health care facilities for the elderly at various levels in 100 districts. Though, the scheme is yet to take off because of lack of space in the identified institutions.

The enactment of the Maintenance and Welfare of Parents and Senior Citizens Act, 2007, was a legislative milestone. However, its implementation has been poor.

In this regard, Regional Centre for Urban and Environmental Studies of All India Institute of Local Self Governance, Mumbai is keen in taking up capacity building programs and training programs for ensuring good quality geriatric health care services would greatly help in improving the utilization rates of the available health services. Professional training in Geriatrics and Gerontology needs to be promoted. Few universities, for example, the Indira Gandhi National Open University, offer a Post-graduate diploma in Geriatric Medicine.

Despite the best efforts made by your Ministry of Social Justice and Empowerment there is a need to give emphasis to geriatric medicine in undergraduate medical as well as paramedical courses. Geriatric care givers are however the urgent need of the hour.

The Central and State governments have already made efforts to tackle the problem of economic insecurity by launching policies such as the National Policy on Older Persons, National Old Age Pension Program, Annapurna Program, etc.

The most immediate need for skilled care givers can be addressed by making available and accessible Government of India's Project conducted by the National Initiative on Care for Elderly (NICE) for qualified and trained Geriatric Care givers.

Place : Mumbai

Date : 30th March 2015

Contract Labour in India: Issues and Options

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Introduction

The Government of India has been deeply concerned about the exploitation of workers under the contract labour system. With a view to removing the difficulties of contract labour and bearing in mind the recommendations of various commissions and committees and the decisions of the Supreme Court, particularly in the case of Standard Vacuum Refining Company in 1960, the Contract Labour (Regulation and Abolition) Act was enacted in 1970. This Act seeks to regulate the employment of contract labour in certain establishments and to provide for its abolition under certain circumstances. The late 19th century in American history marked a period of expanding industrialization and national security concerns. In the north manufacturing was growing at an unprecedented rate while the south took over the textile industry .The united states was feeling a virtually never ending demand for cheap labour .The proce of industrialization and urbanization was a main attraction for immigrants' to the US.The contract labour law of 1864 established a policy of encouraging immigration by supporting companies who would provide passage to their workers in exchange for labour .

In the 1880 immigration from South central and eastern Europe rose dramatically and immigrant population's form this region became more influential in American public policy. Including the 1882 Chinese, Exclusion Act. February 7, 1887, the O'Neill bill was passed which amended the contract Labour Law of 1885. In recent decades international Labour movements have increased following the opening of borders and markets (for example as a result of the establishment and enlargement of the European Union or of various bilateral or multilayered international agreements on trade and movement of persons,) Cheaper transportation and easier international communication. On the one hand the opening of markets has led to increases in outsourcing aboard and global manufacturing, which do not necessarily involve international labour movements, and may indeed reduce the movement of labour. For example call centers of American car rental firms, telephone companying or software and computer services enterprises may be placed in India, the Philippines or other foreign countries, so that customers in fact get services directly from employees in another country. However, there may be a flow of workers if the global manufacturing involves goods and services that are not easily sent across borders-construction, personal services or involves services where there is a danger of leaks or spill-over of Knowledge which may put at risk the revenues of the enterprise. There may be a problem of coverage of such movement, since the individuals may be hired by a foreign employer and also may receive all or part of the compensation for their work in another country.

During 1914-1918 nearly all of its capacity was devoted to the British war effort in the Middle East. Its workforce was 30,135 in 1923-24, after which the management began to implement reductions. In the late 1920's the local government reported a work force of 29000, contractor's coolies varied in number from 4000 to 8000. Allied establishments such as the Tinplate Company. The cable company, the copper corporation, the Indian steel and wire products company and the EIR and the Bengal-Nagpur Railway (BNR) workshops employed a total of 14,352, blue collar workers in 1938, The population of

Jamshedpur grew to 57,000 in 1921 and was 84000 in 1931. As the history of the labour movement in chota Nagpur in the 1920's and 1930's This arid is a demographically distinctive region, and the location of the heaviest concentration of metallurgical and mining enterprises in colonial India. The core zones were the belt ground the Tata Iron and steel company in Jamshedpur (TISCO), and the Jharia coalfields in the Dhanbad subdivision of manbhum. Several associated companies were engaged in engineering and metallurgical work in singhbhum, which was also the site of metallic-ore mines.

Definition of Contract Labour -

We can define contract labour as following "Contract Labour means, A person who prepares the plan and design of a building or other structure and sometimes super-vises its construction."

As a result of these finding. the scope of the definition of workers' in the factories Act (1948) the mines Act (1952) and the plantations Labour act was enlarged to include contract labour.

In the case of standard vacuum Refinery company VS their workmen (1960) the supreme court of India observed that contract labour should not be employed where-

a) The work is must go on from day to day

b) The work is incidental to and necessary for the work of the factory.

c) The work is sufficient to employ considerable number of whole time workmen:

d) The work is being done in most concerns through regular workmen.

Types of Contracting :- Internationally there are two types of contracting arrangements - Job contracting and Labour contracting.

a) Job Contracting :-

An enterprise contracts with an established firm for the supply of goods and services, and the latter undertakes to carry out this work at its own risk and with its own financial. Material and human resources. The workers employed to provide the services remain under the control and supervision of the second firm [called contractor or sub-contractor] which is also responsible for paying the wages and fulfilling the other obligations as an employed Job contracting is a simple, commercial activity governed by the general principles of commercial contract law.

b) Labour Contracting :-

The dominant objective of the contractual relationship is the supply of labour (rather than good's & services) by the contractor or sub-contractor to the user enterprise. The user enterprise may bring the contract workers into its premises to work alongside its own employees or it may have the work performed elsewhere. Both Job & Labour contracting are widely prevalent in various countries of the world.

Contract Labours Situation in India :-

Overview :-

In 2012 the International Labour organization in India carried out a study contract Labour in India covering 25 manufacturing enterprises which revealed that every enterprise in the study employs contract labour as per The contract Labour (Regulation & Abolition) Act, 1970. The minimum percentage of contract labour as a ration of permanent labour was S. Y. and the maximum in an enterprise was 222% The study indicates a wide variation in the number of contract workers mainly because some businesses had low automation and hence a large requirement of low skill job which facilitated the engagement of contract labour. Therefore, it is really difficult to formulate an ideal proportion of contract labour to permanent labour as a guideline for running a manufacturing enterprise, unless benchmarking studies are carried out amongst the enterprises of each different type of industry.

A large number of enterprises in India engage contract labour through contractors/service providers under The contract Labour (Regulation & Abolition) Act 1970. This has been on the rise post

the economic reforms of 1991, as most employers believer this approach helps improve flexibility, productivity and also reduces costs. However, engaging contract labour in enterprises has led to industrial relation's issues and will continue to have such implications in the future, although in the recent past the apex Court has passed judgments that have tended to favour enterprises engaging contract labour.

As per the Act there are two items on which enterprises need to ensure compliance.

a) Contract Labour to be supervised by the Contractor

b) If the contract Labour are performing same or similar work. like the permanent labour, then they are eligible for the same ways, as per Rule 25 (V) (a) of the contract Labour (Regulation & Abolition) Act 1970.

Towards this end, enterprises need to ensure that the contract workforce is primarily supervised by the contractor's supervisors and secondary supervision is carried out by on employee of the principal employer. In quite a few cases this provision is violated by the enterprise and hence the principal employer becomes vulnerable when there are litigations moreover the principal employer needs to ensure that the contract labour are not performing by permanent labour, otherwise contract labour become eligible to be paid the same wages many enterprises violate this rule too. At times there are cases, where work performed by the contract labour and permanent labour is same or similar but the designation given to each of them is different based on knowledge, skill and experience. In such cases, the principal employer does become such cases, the principal employer does become venerable when there are litigations.

Contract Labour, by and large, is neither borne on pay roll or muster roll nor is paid wages directly. The establishments, which farm out work to contractors, do not own any direct responsibility in regard to their laborers. Generally, the wage rates to be paid and observance of working conditions are stipulated in agreements but in practice they are not strictly adhered to.

Objective-

1 Enhancing Welfare and Social Security Provisions for Unorganised Sector Workers.

2 Promoting Skill Development.

3 Strengthening Employment Services.

4 Prevention and Settlement of Industrial Disputes and Strengthening Labour Laws Enforcement Machinery.

5 Improving Safety Conditions and Safety of Workers.

Highlights of Important Labour Related Activities-

1. The Unorganized Workers Social Security Act 2008 and National Social Security Fund:

   The Act provides for constitution of a National Social Security Board and State Social Security Boards which will recommend social security schemes for unorganized workers. The National Social Security Board was constituted in August 2009. It has made some recommendations regarding extension of social security schemes to certain additional segments of unorganized workers. A National Social Security Fund with initial allocation of Rs.1000 crore to support schemes for weavers, toddy tappers, rickshaw pullers, beedi workers, etc. has also been set up.

2. **Rashtriya Swasthya Bima Yojana (RSBY):**

   The scheme provides smart card-based cashless health insurance cover of Rs.30,000 per family per annum on a family floater basis to BPL families in the unorganized sector with the premium shared on 75:25 basis by central and state governments. In case of states of the north-eastern region and Jammu and Kashmir, the premium is shared in the ratio of 90:10. The scheme provides for portability of smart card by splitting the card value for migrant workers. As on 31 December 2012, the scheme is being implemented in 27 states/ UTs with more than 3.34 crore smart cards issued.

3. The Ministry of Labour & Employment continues to have consultation with the social partners to obtain a consensus for enacting new laws or bringing about changes in the existing laws. The objective of the Ministry is to knit the views of all the social partners in framing the policy for working class. Accordingly, the Ministry of Labour & Employment held

4. Maintenance of harmonious industrial relations remains an avowed objective of Ministry of Labour & Employment. Due to constant endeavor of the Industrial Relations Machineries of both Centre and the States, the overall industrial relations climate has generally remained peaceful and cordial. The number of incidences of strikes and lockouts which were 389 in 2007 has exhibited a declining trend and were 182 (Provisional) in 2012. The mandays lost on account of these disturbances were 27.17 million in 2007 and 1.79 million in 2012 (provisional) and show variations over this period. As regards the spatial/industry wise dispersion of the incidences of strikes and lockouts, there exits widespread variation among different States/UTs. Wage & Allowance, Bonus, Personnel, Indiscipline & Violence and Financial Intermediaries (excluding insurance & pension funds) are the major reasons for these strikes and lockouts

5 The 101st Session of the International Labour Conference (ILC) held during 30th May to 14th June, 2012 in Geneva was attended by a 30 member Indian tripartite delegation led by Shri Malikarjun Kharge, Hon'ble Minister for Labour & Employment. Besides officials from Ministry of Labour & Employment, the delegation included 9 representatives from Workers (Central Trade Union Organizations) and 9 representatives from Central Organization of Employers in the ILC. The plenary session of the ILC had a detailed discussion on the theme of Future strategies, activities and programs of ILO. Hon'ble Minister for Labour & Employment delivered his speech on this theme. The conference also adopted reports of various Committees on Social Protection Floor, Youth Employment and Fundamental Principles & Rights at Work.

6. In pursuance of excellence in vocational training, a new strategic framework for skill development for early school leavers and existing workers has been developed since May, 2007 in close consultation with industry, State Governments and experts. The Scheme offers multi-entry and multi-exit options, flexible delivery schedule and lifelong learning. Modular Employable Skills (MES) Framework envisaged under this Scheme involves the minimum skills set' which is sufficient for gainful employment. Emphasis in the curricula is mainly on soft skills. Courses are also available for persons who have completed 5th standard and have attained the age of 14 years. Central government is facilitating and promoting training while industry, private sector and State Governments are associated with training the persons through Vocational Training Providers.

7. Wage Fixation under the Minimum Wages Act, 1948

The Ministry of Labour and Employment, Government of India is responsible for fixing/revising the Minimum Wages in respect of the scheduled employments falling in the Central Sphere while the State Governments and Union Territories are the appropriate authorities in respect of deciding the Scheduled Employments falling in the State Sphere and fixing/revising Indian Labour Journal, September 2013 893 the Minimum Wages therein. As per the information received so far during the period July, 2012 to June, 2013, Minimum Wages were fixed/revised in 45 scheduled employments in C.L.C. (Central Sphere), 58 scheduled employments in Uttarakhand and 7 scheduled employments in Tripura. 3. Bonded Labour

7.1 The practice of bonded labour system has been abolished throughout the country with the enactment of Bonded Labour

System (Abolition) Act, 1976. Its practice has been made a cognizable offence punishable by law.

8. The term unorganised worker' has been defined under the Unorganised Workers' Social Security Act, 2008, as a home based worker, self-employed worker or a wage worker in the unorganised sector and includes a worker in the organised sector who is not covered by any of the Acts mentioned in Schedule-II of Act i.e. The Employee's Compensation Act, 1923, The Industrial Disputes Act, 1947, The Employees' State Insurance Act, 1948, The Employees Provident Funds and Miscellaneous Provisions Act, 1952, The Maternity Benefit Act, 1961 and The Payment of Gratuity Act, 1972. As per the survey carried out by the National Sample Survey Organisation in the year 2009-10, the total employment in both organized and unorganized sector in the country was of the order of 46.5 crore. Out of this, about 43.7 crore were in the unorganized sector. Of the 43.7 workers in unorganized sector, 24.6 crore were employed in agriculture sector, crore in construction, and remaining were in manufacturing activities, trade and transport, communication & services. A large number of unorganized workers are home based and are engaged in occupations such as beedi rolling, agarbatti making, papad making, tailoring, and embroidery work. Indian Labour Journal, September 2013 895

9. The unorganized workers suffer from cycles of excessive seasonality of employment, lack of a formal employer-employee relationship and inadequate social security protection. Keeping this in view, many acts have been brought into force to provide protection to them. Similarly, various welfare schemes have also been put in place by the Government. Some of the important Acts/Schemes are, Social Security Act, 2008; Rashtriya Swasthya Bima Yojana; Aam Aadmi Bima Yojana; Indira Gandhi National Old Age Pension Scheme; Swarnjayanti Gram Swarozgar Yojana; Mahatma Gandhi National Employment Guarantee Act, 2005 etc. The Govt. has also constituted funds for some specific categories of workers in the unorganised sector like beedi workers, cine workers and certain non-coal mine workers. The funds are used to provide various kinds of welfare activities to the workers in the field of health care, housing, education assistance for children, water supply etc. Contract Labour Contract labour generally refers to workers engaged by a contractor for the user enterprises..

10. Social Security -

The social security legislations in India derive their strength and spirit from the Directive Principles of State Policy as contained in the Constitution of India. With a view to promote welfare and provide social security to the labour force, Govt. has enacted a number of legislations in the area of social security for the workers. The important among them are as under The Employees' Provident Funds and Miscellaneous Provisions Act, 1952- The Employees' Provident Funds & Miscellaneous Provisions Act, 1952 extends to the whole of India except the State of Jammu & Kashmir. Presently, the Act is applicable to 187 specified industries/classes of establishments as is specified in Schedule I of the Act any activity notified by the Central Government in the Official Gazette and employing 20 or more persons. At present three schemes viz., the Employees Provident Fund Scheme, 1952; the Employees Pension Scheme, 1995, and the Employees Deposit Linked Insurance Scheme 1976 are in operation under the Act. The Central Board of Trustees consisting of a Chairman and representatives of the Central Government, State Governments and the Employers'& Employees' Organisations administers the EPFO. The Central Provident Fund Commissioner is the Chief Executive Officer of the Employees' Provident Fund Organisation and is ex-officio Member of the Board. Apart from the Central Office located at Delhi, the EPF Organisation has a number of field offices

throughout the country. As many as 6,63,556 establishments with 826.61 lakh subscribers have been covered under the EPF Scheme by the end of 31stMarch, 2012.

11. Labour Bureau

The Bureau is entrusted with the work of compiling and publishing Consumer Price Index Numbers for Industrial, Rural and Agricultural Workers and a data base on employment, wages, earnings, strikes and lockouts, labour turnover, working and living conditions, etc. Apart from carrying out research studies and surveys on Country's Employment & Un-employment scenario and also on labour problems on a countrywide basis, the Bureau brings out Annual Reports on the working of a number of labour enactments. In addition it conducts regular training courses on Labour Statistics, brings out reports, pamphlets and brochures on studies and surveys conducted by it on various labour subjects. The regular publications of the Bureau include (i)Indian Labour Journal' (Monthly), (ii) Indian Labour Year Book', (iii) Indian Labour Statistics', (iv) Pocket Book of Labour Statistics', (v) Industrial Disputes in India, (vi) Statistics on Closures, Retrenchments and lay-off in India, (vii) Annual Report on CPI (IW), (viii) Annual Report on CPI-AL/RL, (ix) Wage Rates in Rural India, (x) A.S.I. reports on Absenteeism Labour Turnover; Employment and Labour cost, (xi) Statistics of Factories, (xii)Report on the working of the Minimum Wages Act, 1948- all annual, and (xiii) Trade Unions in India (Biennial). Some of the important activities undertaken by the Bureau are discussed in the ensuing paragraphs.

I) **Consumer Price Index Numbers for Industrial Workers on base:**

2001=100: The current series of Consumer Price Index Numbers for Industrial Workers on base 2001=100 had replaced the previous series of CPI –IW on base:1982=100 w.e.f. January, 2006 index. This series is more representative in character as it is based on Working Class Family Income & Expenditure Surveys conducted during 1999-2000 at 78 centres and thus reflects the latest consumption pattern of the industrial workers. The price data is collected in respect of appx. 392 Indian Labour Journal, September 2013 903 consumption items at all-India level from 289 markets of the country. The methodology for compilation of indices had been approved by the Technical Advisory Committee on Statistics of Prices and Cost of Living (TAC on SPCL).

II) **As an integral part of the main scheme CPI(IW) on base 2001=100,** the Labour Bureau has been undertaking Repeat House Rent Surveys in all the 78 selected centres to collect house rent data from the sampled dwellings on regular basis for compilation of House Rent indices for all the 78 centres. The House Rent Survey is carried out at six monthly intervals known as - ROUNDS °(i.e., January to June and July to December from a fixed sample of dwellings at all the 78 centres. In a round of six months 8,246 schedules (7,686 rented schedules + 560 comparable rented schedules) are canvassed. On the basis of these schedules, indices for each of the 78 centres are compiled for utilisation in the compilation of monthly Consumer Price Index Numbers for Industrial Workers on base: 2001=100. House Rent index is calculated on the `chain base method' once in half year duration and the same is kept constant for the subsequent period of six months i.e. January to June and July to December. So far indices up to 22nd round have been compiled and released. The compilation of indices of 23rd round (January to June, 2013) is in progress. The indices compiled for 23rd round will be utilised for compilation of centre-wise indices during the period July to December, 2014

Year	Month	All-India CPI-IW Numbers on base : 2001=100 (General)	%age of variation over corresponding month of the previous year
2012	July	212	9.84
	August	214	10.31
	September	215	9.14
	October	217	9.60
	November	218	9.55
	December	219	11.17
2013	January	221	11.62
	February	223	12.06
	March	224	11.44
	April	226	10.24
	May	228	10.68
	June	231	11.06

All-India Consumer Price Index Numbers for Industrial Workers on base: 2001=100 from July, 2012 to June, 2013.

The movement of All-India index from July, 2012 to May, 2013 showed an increasing trend. The index increased by 2 points from 212 to 214 points in August, 2012 and continued to increase upto June, 2013 to reach the level of 231 points .The Act applies to every establishment in which 20 or more workmen are employed or were employed on any day on the preceding 12 months as contract labour and to every contractor who employs or who employed on any day of the preceding 12 months 20 or more workmen. It does not apply to establishments where the work performed is of intermittent or casual nature. The Act also applies to establishments of the Government and local authorities as well. cautions have been issued.

Suggestions

There are large enterprises in India that have addressed the concerns of contract workers and facilitated having a positive industrial relations. Climate by taking some of the setup given below.

To promote Harmonious Relations between Labour and Management and to regulate Wages and other Conditions of Work in the Central Sphere..

1. To ensure Speedy Implementation of Labour Law Awards, Agreements, Code of Discipline etc. for improving Industrial Relations, with regard to units in which Central Government is the Appropriate Government.
2. To conduct Evaluatory Studies of Implementation of Labour Laws, Industrial Relations, Personnel Policies and Practices etc. in Public Sector Undertakings.
3. To regulate Working Conditions and Safety in Mines and Factories.
4. To provide Amenities to Workers employed in the Mining Industry and Beedi Manufacturing.
5. To monitor the running of Social Security Schemes viz . Employees' Provident Fund Organisation (EPFO) and Employees' State Insurance Corporation (ESIC).

6. To lay down Policy Framework for National Employment Service, implementation of National Vocational Training Programme.

7. To conduct Programmes relating to Employment Potential of Scheduled Caste and Scheduled Tribe Candidates through Coaching-cum-Guidance Centres.

8. To maintain Data on Wages, all Allowances and other related matters.

9. To sensitize all Sections of Workers for their Active Participation in Social and Economic Development of the Nation.

10. To provide Welfare Measures for certain Sections of the Unorganised Labour.

11. To collect and publish Statistics to conduct Enquiries, Surveys and Research Studies on various Labour Subjects.

12 To undertake Training, Education, Research and Advisory Service in the Field of Industrial Relations and Labour in General.

13. To assist in Rehabilitation of Bonded Labour.

14. Contract labour wages are revised when wages of permanent workers get revised because of the long term settlement. Reaching an agreement with trade Union on engaging contract Labour for certain jobs and that contract labour would be given preference when permanent vacancies arise.

15. Individual contract workers are interview and background checks are undertaken by the contractor jointly with the principal employer before the contract worker is placed in the plant/facility.

16. Paying contract workers a higher wage than the minimum ways through innovative methods like attendance bonus, output linked incentive, certain medical benefits and in some cases also leave travel benefits.

17. Facilitating contract labour to acquire higher skills so that their employability levels improve.

18. Extending some welfare amenities to contract workmen too, but lesser than those provided to permanent workers.

19. Contract workers included in certain events like annual get together. Further they are permitted to avail of facilities like company bus, canteen, food at the same tariff as permanent workers. etc.

20. Positioning of a dedicated social worker/ welfare officer to look after the interests of the contract workers.

21. Provision of a mobile creche/school for children of contract construction workers at the construction site.

22. Creating central and state contract labour board

23. Skills level be considered during wage fixation.

24. Issuing a 'Smart Cart' to each contract labour for indicating his skill, social security and membership.

Conclusion :-

The Central Government and the State Governments are required to set up Central Advisory Board and State Advisory Boards, which are authorized to constitute Committees as deemed proper. The functions of the Boards are advisory, on matters arising out of the administration of the Act as are referred to them. The Boards carry out the functions assigned to them under the Act.The establishments covered under the Act are required to be registered as the Principal Employer. Likewise, every contractor to whom the Act applies is required to obtain a licence and not to undertake or execute any work through contract labour except under and in accordance with the licence issued.The Act has provided for establishment of canteens. For the welfare and health of contract labour, provision is made for restrooms, first aid, wholesome drinking water, latrines and urinals. In case of failure on the part of the contractor to provide such facilities, the Principal Employer is made liable to provide the amenities.The contractor is required to pay wages

and a duty is cast on him to ensure disbursement of wages in the presence of the authorized representative of the Principal Employer. In case of failure on the part of the contractor to pay wages either in part or in full, the Principal Employer is liable to pay the same. In case the contract labour perform same or similar kind of work as regular workmen, they will be entitled to the same wages and service conditions as regular workmen as per the Contract Labour (Regulation and Abolition) Central Rules, 1971.The Act makes provision for the appointment of Inspecting staff, for maintenance of registers and records, for penalties for the contravention of the provisions of the Act and Rules made thereunder and for making Rules for carrying out the purpose of the Act. In the central sphere, officers of the CIRM have been appointed as Inspectors. Enterprises in India can engage contract labour provided they obtain the necessary permission from the appropriate government labour department and follow the work practices as per the contract labour (Regulation & Abolition) Act 1970 Engagement of contract labour in many enterprises is by and large labour contracting. Many enterprises try to project these engagements as job contracting. The engagement of contract labour does lead to problems of industrial relations at the enterprise level, because of the high disparity in wages and benefits between the permanent workers and the contract workers. Each enterprise will have to find its own solutions on engaging contract labour and maintaining industrial peace, as contract labour also desires to have job security and earn decent wages rather than just statutory minimum wages.

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1) Economic & Political weekly (2010) Enterprises.

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Alien contract Labour Law (sess.II chap.164:23 Stat.332 several tripartite meetings of various Committees / Boards during the year which, inter-alia, include:-

i. The meetings of Central Board of Trustees (EPF) held on 25.05.2012, 07.08.2012 and 25.02.2013.

   * The article generally covers the developments during the period July, 2012 to June, 2013 Indian Labour Journal, September 2013 892

ii. The meetings of Executive Committee of Employees Provident Fund held on 06.08.2012 and 25.02.2013.

iii. The meetings of the Committee on Employees State Insurance Corporation (ESIC) held on 16.03.2012, 10.11.2012 and 08.02.2013.

iv. The meetings of Standing Committee, Employees State Insurance Corporation held on 02.06.2012, 10.11.2012 and 20.01.2013.

v. The meeting of Governing Body of Central Board for Workers Education held on 10.09.2012.

vi. The meeting of General Council, V.V.Giri National Labour Institute held on 26.12.2012.

vii. The meeting of Executive Council, V.V.Giri National Labour Institute held on 24.05.2012 and 17.12.2012.

viii. The meeting of the Central Advisory Committee on Iron Ore Mines, Manganese Ore Mines & Chrome Ore Mines Labour Welfare Fund was held on 18.04.2012.

ix. The meeting of the Central Advisory Committee on Limestone & Dolomite Mines Labour Welfare Fund held on 06.08.2012.

x. The meetings on Conventions were held on 25.09.2012.

xi. 45th Session of Standing Labour Committee was held on 04.01.2013.

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Sanitation, Health and Development Deficit in India

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Illnesses caused by germs and worms in feces, wastes and pollutants are constant source of discomfort for millions of people. Poor sanitation is something that not only affects the health of the people of the country, but also affects the economic and social development of the nation. India is still lagging far behind many countries in the field of sanitation. Most cities and towns in India are characterized by over-crowding, congestion, inadequate water supply and inadequate facilities of disposal of human excreta, wastewater and solid wastes. Fifty five percent of India's population (nearly 600 million people) has no access to toilets.

Sanitation in personal and public life is the joint responsibility of individual, community and state. Sanitation is the first step towards achieving the goal of public health. But public health system is very weak in India and sanitation could hardly attract the attention of government policy makers till the last decade of the past century. Experience suggests that India's late entry into ensuring total sanitation and a limited sectoral approach for it has not yielded desired results. This paper tries to locate the structuration of insanitation in the deficit cultured development trajectory of India. It also examines the formation of the habitus and the social world which promote inadequate sanitation rather than sanitation in public life.

Sanitation can no longer be seen as a 'segment' or 'isolated' component of rural/urban development ministries. Sanitation is a 'public good' and needs to be seen as an integral component of the health structure and the 'Basic Health Goods'. The development goals need to imbibe the sanitation standards. India's development trajectory has several deficiencies. There are visible 'sanitation deficits' in policy formulation, implementation and technology appropriation. Insanitation in India is largely the consequence of development deficits. Bureaucratic targetism, medicalism, povertism and dehealthism are some of the factors which promote sanitation deficits in India. 'Sociology of health and sanitation' can help in understanding the larger phenomenon in Indian context. It will also help in understanding the typical Indian behaviour (or practice) of open defecation.

Sanitation

Sanitation generally refers to principles, practices, provisions, or services related to cleanliness and hygiene in personal and public life for the protection and promotion of human health and well being and breaking the cycle of disease or illness. It is also related to the principles and practices relating to the collection, treatment, removal or disposal of human excreta, household waste water and other pollutants. The World Health Organization states that: Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and feces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in households and across communities. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal. According to Mmom and Mmom (2011) environmental sanitation comprises disposal and treatment of human excreta, solid waste and waste water, control of disease vectors, and provision of washing facilities for personal and domestic hygiene. It aims at improving the quality of life of the individuals and contributing to social development.

Sanitation and Development

There can be several answers to the question, 'why sanitation is very important in personal as well as public life?' A study conducted by World Bank's 'South Asia Water and Sanitation Unit' estimated that India loses Rs 240 billion annually due to lack of proper sanitation facilities. The multilateral body said that premature deaths, treatment for the sick and loss of productivity and revenue from tourism were the main factors behind the significant economic loss. Poor sanitation is something that not only affects the health of the people of the country, but also affects the development of the nation. In fact, women are most affected by the hazards of lack of proper sanitation. For instance, in India majority of the girls drop out of school because of lack of toilets. Only 22% of them manage to even complete class 10. On economic grounds, according to the Indian Ministry of Health and Family Welfare, more than Rs 12 billion is spent every year on poor sanitation and its resultant illnesses.

Sanitation and Disease

Illnesses caused by germs and worms in feces, wastes and pollutants are constant source of discomfort for millions of people and animals. These illnesses can cause many years of sickness and can lead to other health problems such as dehydration, anaemia, and malnutrition. Severe sanitation-related illnesses like cholera can spread rapidly, bringing sudden death to many people. Children have a high risk of illness from poor sanitation. While adults may live with diarrheal diseases and worms, children die from these illnesses. More than 300 million episodes of acute diarrhoea occur every year in India in children below 5 years of age. Of the 9.2 million cases of TB that occur in the world every year, nearly 1.9 million are in India accounting for one-fifth of the global TB cases. More than 1.5 million persons are infected with malaria every year. Diseases like dengue and chikungunya have emerged in different parts of India and a population of over 300 million is at risk of getting acute encephalitis syndrome/Japanese encephalitis. One-third of global cases infected with filaria live in India. Nearly half of leprosy cases detected in the world in 2008 were contributed by India (MOHFW 2010: 14).

Sanitation Infrastructure

India has a population of almost 1.2 billion people. Fifty five percent of this population (nearly 600 million people) has no access to toilets. Most of these numbers are made up by people who live in urban slums and rural areas. A large populace in the rural areas still defecates in the open. Slum dwellers in major metropolitan cities, reside along railway tracks and have no access to toilets or a running supply of water. India is still lagging far behind many countries in the field of sanitation. According to Harshal T. Pandve (2008), most cities and towns in India are characterized by over-crowding, congestion, inadequate water supply and inadequate facilities of disposal of human excreta, wastewater and solid wastes. No major city in India is known to have a continuous water supply and an estimated 72% of Indians still lack access to improved sanitation facilities. Besides this, the 63 percent of urban population in India is without proper sanitation. Besides these, the waste disposal and sewage treatment plants are missing in most of the cities. Most of the wastes are disposed in rivers, canals or outskirts of the cities. The 11th five year plan envisages 100% coverage of urban water, urban sewerage, and rural sanitation by 2012. Although investment in water supply and sanitation has seen a jump in the 11th plan over the 10th plan, the targets do not take into account both the quality of water being provided, or the sustainability of systems being put in place (Kumar, Kar, and Jain 2011).

Whose Responsibility?

Sanitation in personal and public life is a joint responsibility of individual, community and the state. Some experts believe health problems caused by poor sanitation can be prevented only if people change their personal habits, or "behaviours," about staying clean (Conant, 2005). When behaviour does not change, people are blamed for their own poor health. But this idea often leads to failure because it does not take into consideration the structural barriers or the development gaps that people face in their daily lives, such as poverty or lack of access to clean water. Others consider lack of infrastructure as the main problem. Many other experts look for

technical solutions, such as modern toilets that flush water. Technical solutions are often suggested without understanding the habitus or the social worlds of the people. Sometimes they go unnoticed and often they create more problems than they solve. The diseases caused by poor hygiene and sanitation will not be prevented if people are blamed or victimised for their own poor health, or if only technical solutions are promoted without mitigating the development deficits. Hence, sanitation needs to be seen as an integral component of the public health programmes and individuals, communities and the state agencies are treated as equally important agencies in achieving total sanitation.

Sanitation and Public Health

Sanitation is first step towards achieving the goal of public health for all. Most histories of public health begin with a discussion of what is known as the 'sanitation phase' in the mid –nineteenth century, a period characterised by concentration on environmental issues such as housing, working conditions, the supply of clean water and the safe disposal of waste. Further, the motivating force of this public health movement is thought to be a concern with economic efficiency and better social cohesion between the working poor and other sectors of society. There has also been a significant investment in many countries in creating infrastructures and services to protect health and to prevent ill health. In most industrialising countries over the last 150 years, public health regulations and health and safety legislation have been enacted to provide safeguards for the industrial workforce, to control pollution levels in rivers, and to ensure proper sewerage and drainage. In nineteenth century England, sanitary reformers and radical politicians argued, on economic grounds, for ill health prevention through public policy interventions. The sanitation phase of the public health movement emphasised environmental change. This sanitation phase led to a considerable and measurable reduction in infectious diseases-especially diphtheria, tuberculosis and cholera (Sarah Earle 2007:11-12).

However, in India, things are quite different. Public health system is very weak and sanitation could hardly attract the attention of government policy makers till the last decade of the last century. Initiative taken by agencies like Sulabh International brought huge impact but such initiative could hardly get translated into government mission for several limitations and structural handicaps. The Government of India launched the Total Sanitation Campaign (TSC) in 1999 with the goal of achieving universal rural sanitation coverage by 2012. The responsibility for delivering on programme goals rested with local governments (Panchayati Raj Institutions — PRIs) with significant involvement of communities. The state and central governments had a facilitating role that took the form of framing enabling policies, providing financial and capacity-building support, and monitoring progress. To give a fillip to the TSC, the government introduced an innovative incentive programme known as Nirmal Gram Puraskar (NGP) in 2003. The NGP offers a cash prize to motivate Gram Panchayats (GPs) to achieve total sanitation. In addition, the NGP is an attractive incentive as winners are felicitated by the President of India at the national level and by high-ranking dignitaries at the state level. The TSC has recently completed a decade of implementation (1999-2009) and the NGP has completed five years of operation (2005-10). Since its launch, the programme framework of the TSC and NGP has been based on a common national guideline whereas implementation has been decentralised to the state and district levels.

An assessment of the TSC is carried out by the 'Department of Drinking Water and Sanitation', Ministry of Rural Development, Government of India after completion of one decade of the TSC and a report is published. The report (A Decade of the Total Sanitation Campaign: Rapid Assessment of Processes and Outcomes, Vol. 1: Main Report) finds that the TSC has achieved significant success over the last one decade. The sanitation coverage has increased significantly from 21 percent in 2001 (Census, 2001) to more than 65 percent. The number of Gram Panchayats which have won the Nirmal Gram Puraskar for achieving total sanitation has also increased to more than 22,000. The report finds that there is an undeniable upward trend in scaling up

rural sanitation coverage. But the national performance aggregates conceal significant disparities among states and districts when it comes to the achievement of TSC goals. It also acknowledges that open defecation is a traditional behaviour in India and in most of the states, changing this practice is the biggest challenge. It is also important to note here that the 'Rural Development Department', Government of India had initiated India's first national programme on rural sanitation, the 'Central Rural Sanitation Programme' (CRSP) in 1986. The CRSP interpreted sanitation as construction of household toilets, and focused on the promotion of a single technology model (double pit pour-flush toilets) through hardware subsidies to generate demand. However, according to the report, the key issue of motivating behaviour change to end open defecation and to use toilets was not addressed, contributing to the programme's failure. The government launched National Urban Sanitation Policy in 2008 and identified 100% sanitation as a goal during the 11th Five Year Plan. The ultimate objective is that all urban dwellers will have access to and be able to use safe and hygienic sanitation facilities and arrangements so that no one defecates in the open. The overall goal of this policy is to transform urban India into community-driven, totally sanitized, healthy and liveable cities and towns.

Experience suggests that India's late entry into ensuring total sanitation and a limited sectoral approach for it has not yielded desired results. The disparity among states in outcomes is a cause of great concern. To improve sanitation in a lasting way, the issues related to defecation, waste disposal, water, environment and health must be seen from a comprehensive and sustainable solution perspective. When communities use hygiene and sanitation methods that fit their real needs, abilities, and expectation, they will adopt sanitation practices and enjoy better health. It is, therefore, very important to understand the structural handicaps and the development trajectory responsible for inadequate and poor sanitation conditions prevailing in India. Sanitation can no longer be seen as a 'segment' or 'isolated' component. Sanitation needs to be seen as an integral component of health structure and development agenda. 'Sociology of health and sanitation' can help in understanding the larger phenomenon in Indian context. It will also help in understanding the typical Indian behaviour (or practice) of open defecation.

Sociology of Health and Sanitation

Health is the basic human right of all the human beings. Health contributes to a person's basic capability to function. Denial of health is not only denial of 'good life-chance', but also denial of fairness and justice (Sen 2006). The Universal Declaration of Human Rights stated in Article 25: 'Everyone has the right to a standard of living adequate for the health and wellbeing of himself and his family….'(United Nations 1948). The Preamble to the World Health Organisation (WHO) constitution affirms that it is one of the fundamental rights of every human being to enjoy the highest attainable standards of health. Article 21 of the Constitution of India also identifies health as an integral aspect of human life (Desai 2007). Further, Article 47 (Part IV: directive principles of state policy) says: The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties and, in particular, the State shall endeavour to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health. However, the spirit of the constitution hardly gets reflected in the health policies and programmes in India.

The concepts of health, disease and treatment are related to the social structures of communities. Every culture, irrespective of its simplicity or complexity, has its own system of beliefs and practices concerning health and disease and evolves its own system of treatment to combat disease (Akram 2007). Definitions and conceptualisation of health may vary systemically among various social groups and it is likely that different accounts of health are drawn according to social circumstances (Nettleton 2006). The biomedical approach which dominated the medical thought till the end of nineteenth century and based on the 'germ theory of disease' views health as an 'absence of diseases'. This approach almost

ignores the role of environmental, psychological and other socio-cultural factors in defining health. The ecological approach views health as a dynamic equilibrium between man and his environment. For them, disease is maladjustment of the human organism to environment. The psychological approach states that health is not only related to the body but also to the mind and especially to the attitude of the individual. The socio-cultural approach considers health as a product of the social and community structure (Advani and Akram 2007). A holistic definition of health has been given by the World Health Organisation (WHO) which states that health is a state of complete physical, mental and social well-being, and not merely an absence of disease or infirmity.

Sociologists show how diseases could be differently understood, treated and experienced by demonstrating how disease is produced out of social organisation rather than nature, biology, or individual lifestyle choices only (White 2002). A functional definition of health implies the ability of a person to participate in normal social roles. This may be contrasted with an experiential definition which takes sense of self into account (Kelman 1975). The Marxists see the role of economy and class structure in the causation, production, distribution and treatment of disease. Medicine in a capitalist society reflects the characteristics of capitalism: it is profit-oriented, blame the victim, and reproduce the class structure in terms of the people who become doctors. Foucault, too, highlights the social role of medical knowledge in controlling populations, and like Parsons emphasises the diffused nature of power relationships in modern society. Foucault also sees the professions, especially the helping professions, playing a key role in inducing individuals to comply with 'normal' social roles. For him, modern societies are systems of organised surveillance with the catch being that individuals conduct the surveillance on themselves, having internalised 'professional' models of what is appropriate behavior (White 2002). McKenzie, Pinger & Kotecki (2002) have defined health as a dynamic state or condition that is multidimensional in nature and results from person's adaptations to his/her environment. It is a resource for living and exists in varying degrees (for a detailed discussion see Akram 2012).

India had its first National Health Policy (NHP) in 1983 and before it only vertical health programmes like National Malaria Control Programme (NMCP), National Leprosy Eradication Programme, National Tuberculosis Control Programme, National Cancer Control Programme, etc. existed, which were meant to address specific diseases. The first National Health Policy came in the aftermath of the Alma Ata declaration of 1978 and specified the target of health for all by 2000 as its specific goal. However, health was not seen in a holistic perspective and the focus always remained on clinical treatment of 'diseases'. The Primary Health centres (PHCs) and sub-centres could never attract the attention that they deserved in many parts of the country even after the comprehensive recommendations made by the Alma Ata Declaration. The second National Health Policy (2002) came in the aftermath of Millennium Development Goals (MDGs). It incorporated many of the health related goals and objectives suggested by the MDGs. The National Rural Health Mission (NRHM) was launched in 2005 to ensure participation of the local self-government institutions at village and panchayat level in a meaningful way. Although the NRHM claimed to make an architectural correction in the health policies and plans, it again grossly missed the recommendations of the Alma Ata declaration for taking a comprehensive approach on health and primary care.

A revisit to the Alma Ata Declaration (1978) is very relevant here. The declaration states that primary healthcare includes at least: (i) education concerning prevailing health problems and the methods of preventing and controlling them; (ii) promotion of food supply and proper nutrition; (iii) an adequate supply of safe water and basic sanitation; (iv) maternal and child health care, including family planning; (v) immunisation against the major infectious disease; (vi) prevention and control of locally endemic disease; (vii) appropriate treatment of common disease and injuries; and, (viii) provision of essential drugs. However, India's policy makers could never include the first three elements, as

suggested by the declaration, into India's health policies, plans and programmes. India's health policies are dominated by the bio-medical "germ theory" and mainly prescribe clinical treatment oriented curative care. The broad based preventive and promotive health care (except immunisation against select diseases) could never find their place in the core health policies and programmes. Food, nutrition, potable water and sanitation could never become component of health policy in India.

Out of the eight primary elements necessary for primary health care, as suggested by Alma Ata declaration, the author considers unadulterated nutritious food, safe drinking water and sanitation as the 'Basic Health Goods (BHGs)'. BHGs are basic in the sense that they are indispensable for human life and life is impossible without them. 'Health for all' is just an illusion without the comprehensive and sustainable availability of the BHGs to all individuals in any society and more particularly in developing societies like India (Akram 2012). Most of the states in India have a lackadaisical approach towards making universal availability of primary health care and especially the BHGs. The mechanism and practice of denying primary health care and especially the BHGs to the population or a part of it or even gradual withdrawal from it is denial of health chance and can conveniently be termed as 'dehealthism' or at least 'ahealthism'. Any group, community or state practicing dehealthism or ahealthism can't achieve the goal of health for all, no matter how much medicalisation it is promoting.

Thus, health policies and programmes in India don't treat the BHGs and especially sanitation as a component of health or health care. The Total Sanitation Campaign, as discussed earlier, did make some efforts in ensuring sanitation but in the absence of proper budget, infrastructure and strategies, sanitation practices are yet to find their popularisation among the masses in India. A recent policy initiative of government of India in the form of 'Universal Health Coverage' has also missed the importance of sanitation, potable water and nutrition as component of health coverage. It gives the impression that health policies and plans in India are witnessing 'over-medicalisation' and the BHGs are becoming victim of 'medical neglecting'. 'Medicalisation of health', 'privatisation of health care', and 'pharmaceuticisation of health behaviour' are the dominant trends of Indian health scenario.

Universal availability and accessibility of 'public health facility' is the first step towards developing a modern health system in any society. But such facilities are poorly funded in India. And further, such facilities are poorly designed and even more poorly implemented (through bureaucratic targetism). The under achievements of various development plans and programmes and the wastage and pilferage of the resources are 'bureaucratically managed' by blaming the people for their cultural poverty and illiteracy (povertism). On the other hand, the poorly designed public health institutions are further degraded by 'medical absenteeism'. The absenteeism of the medical professionals from their duties is explained as people's traditionalism and lack of preference for institutional care. Medical managers and vested interests are playing dominant role in redesigning the public domains of 'health care' and 'health coverage' as 'medical care' and 'medical coverage'. The cumulative and compounding negative consequences of 'medical neglecting', targetism, povertism, absenteeism and 'over' medicalism are manifested in continuous perpetuation of prevalence of communicable disease in India. The mechanisms and processes together create a development deficit in the health structure of India.

Further, labelling 'open defecation' as an 'unchangeable traditional behaviour or practice' of rural or poor people is also a part of the larger mechanism of blaming people for inadequate institution building, improper policy making, inefficient programme implementing, unprofessional and ad hoc target making, and diverting all the issues through capitalising povertism. Cleanliness and hygiene is a natural and human choice, universally. Given a choice and the power to decide, people always prefer sanitation and good environment. No illiterate or poor person will ever prefer a dirty piece of cloth over a clean piece while

purchasing it by paying the same amount. But when offered a lower price for the dirty cloth, he/she can purchase it for saving his/her hard earned money. The choice for the dirty cloth, in the second situation, is reflecting the development deficit and not a cultural deficit. Just like it, the choice of open defecation is an indication of development deficit and not a cultural deficit. The statement 'women demand mobile phones, not toilets' reflects an improper understanding of development and cultural deficits.

Sanitation, in India, is yet to become an integral part of development paradigm. Most of the industries in India run without having any standard mechanism of waste disposal. No city in India can claim to have a state of the art sewage treatment plant. No river in India has pure water. This is a reflection of policy deficit and implementation deficit in India. Indian rail is one of the largest systems of modern transportation. Passengers, travelling in all the classes in Indian rails, unite the rural and urban India by expelling and spreading the feces in the railway tracks. This is development deficit. The drainage system in most of urban India is inadequate. A good rain in any city and everything that we put under the carpet is coming out. Sanitation, in India, never received the attention that it deserves. The local self governments in most of the cities in India are unable to deliver the sanitation rights of citizens of India. No government office in India can claim to have a 24×7 clean premise or even toilets. One may get an impression that Indians don't value sanitation in personal or public life. That is not true. The problem lies elsewhere. The problem lies with Indian elites and rich. It may sound strange, but true. Let us examine.

Indian rails were neither designed by rural poor people nor used by them, at least initially. But India continued with the technology deficit trains. The industries are neither owned by poor nor controlled/administered by the illiterate. But the infrastructure deficit is approved by all. It needs to be realised that the organs, symbols and vehicles of development and modernity often promote insanitation in public life because of ignored or neglected deficits. Just as development cannot be achieved through continuous financial deficits or budgetary deficits; development cannot be achieved even through continuous or perpetual development deficits. The developed world is developed because it keeps identifying and rectifying such deficits. The deficits cannot be improved without identifying those who are responsible for the acts. Very often, the development models are set in urban spaces; the rural spaces gradually adopts. If rural India can learn to operate ATMs, mobiles, smart cards, it can also learn to sanitise its behaviour. The deficits need to be removed by the elite and the urbanites first because they structure the development goals. This is perhaps difficult, because the elites and urbanites have learnt to 'manage' and 'pass the buck'. Often, we talk about 'corporate social responsibility'. We also talk about government's responsibility. We seldom talk about 'individual's social responsibility' or 'intellectual's social responsibility'. Sanitation is a social apace: it needs engagement not only between citizen and the state, it also needs engagement between the individual occupying government/private positions and the citizen he or she, himself or herself is. We need to come above the deficit model we all are habituated in working with. We need to fill up the deficits.

The problem of open defecation is not denied here. The health problem created by it is also undeniable. But what is denied here is that, the problem is related to only rural or urban poor class. The problem is equally related to the elite and the governing class. In India, the citizens, in general, are yet to take up the citizenship roles as duties. The citizens are more or less influenced by the habitus and the social world (terms used by Bourdieu) which are structured by multitude of factors and the government agencies are the most important among them. The habitus is yet to adopt the sanitation goals because of the sanitation deficits of the government, elite or urban middle class agents/agencies.

Sanitation needs a conscious decision making. The citizens are yet to become the conscious agents in the field of sanitation and health. The state organs are yet to become the agencies. India needs the active presence of many more conscious agencies like civil society groups, who can fill up the various deficits. The habitus both produces and is produced by the social world. Sanitation needs to be a part of the social world. From a broader perspective, health and health care needs to become parts of the social world. From a holistic perspective, active citizenship needs to be an integral part of the social world. This social world is not confined to rural or urban, elite or masses, rich or poor, or even literate or illiterate. The habitus is a structuring structure as well as, a structured structure. It is also the dialectic of the internalisation of the externality and the externalisation of the internality (Bourdieu 1977, 1989). A practice is not just traditional or modern; a practice is something that is structured within the social space of interfaces between the habitus and the social world. If development is a part of the habitus and social world, development deficit is also a part of the duo. The sanitation deficit can be mitigated only through mitigating the policy deficits, technology deficits, implementation deficits and the overall development deficits. So, one can conclude from the perspective of sociology of health and sanitation: insanitation in India is structured by development deficits and not by cultural deficits.

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Women, Disability and Sustainable Development

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Sustainable development is a dynamic concept with many dimensions and interpretations. The idea of sustainable development includes not only ensuring that there are enough resources for the human population as a whole, but also that these resources are distributed to benefit as many as possible. According to Brundtland Commission (1987) sustainable development is that development which meets the needs of the present without compromising the ability of future generations to meet their needs. The aim of sustainable development is to maintain a delicate balance between the human need to improve lifestyles and feeling of well-being on the one hand, and on the other hand preserving natural resources and ecosystems, on which we and our future generations depend. The goals of sustainable development are far reaching and a key objective is formulation of new paradigms of economic, political, cultural, ecological and social development.

The interest in sustainable development results from the growing concern over depletion of natural resources that we as humans need for survival. As our population continues to grow to unequalled numbers, our environment's resources are being stretched thinner than ever, and are unevenly distributed among the population. While economic growth has led to a rise in living standards for certain sections of human society, it has also led to economic and social inequalities as well as over exploitation of natural resources and environmental degradation. Moreover, economic growth has not been inclusive and instead it has created large differences in income levels and standards of living among different segments of society. Thus, a large part of human population lives in very adverse conditions.

There are some key concepts which make sustainable development a more holistic approach as compared to traditional development activities. According to Bharatiya (2012) a hallmark of these key concepts is the desire to seek a balance between economic, social and ecological aspects of a community. Goodland (1991) has distinguished between environmental, social and economic sustainability. Social sustainability requires maintaining human and moral capital, increasing community participation and reducing poverty. Economic sustainability is defined as keeping economic capital stable. Environmental Sustainability requires that use of natural resources does not exceed their replenishment rate. Harris (2000) also states that a concept of sustainable development must remedy social inequities and environmental damage, while maintaining a sound economic base. These three types of sustainability are interrelated and none can fully succeed without the others.

Barbier (1993), Gale and Robert (1991) and Simon (1989) have considered sustainable development as a process of development by which various environmental, economic and social benefits can be simultaneously and concurrently maximised. According to Human Development Report (1994), sustainable development puts people at the centre of development and points out forcefully that the inequalities of today are so great that to sustain the present form of development is to perpetuate similar inequalities for future generation. The essence of sustainable development is that everyone should have equal access to development opportunities now and in future. Hence sustainable development offers

an alternative to traditional decisions, policies and values. According to Harris (2000), social component of sustainability is not just an idealized goal, but a necessity for achieving the economic and environmental components. Democratic governance, participation, and the satisfaction of basic needs are an essential part of sustainable development.

Sustainable development is a process, not an end in itself in which change is inevitable. This process of change is heavily reliant upon local contexts, needs, and priorities. The implication here is that participation and genuine dialogue among stakeholders are key prerequisites for sustainable development. It needs democratic thinking but it can also help strengthen democratic institutions through consensus based public participation. So, sustainable development sets society on a course to a place where inalienable rights do not exist. Adisheshiah (1989), aptly opines sustainable development to be a development which meets the basic needs of all, particularly the poor majority, for employment, food energy, water, and housing and ensures growth of agriculture, manufactures, power and services to meet these needs.

According to the Brundtland Commission, sustainable development has three essential elements: (i) quality of life, (ii) integrated decision making, and (iii) equity. The concept of quality of life recognizes the significance of economic and social development and improvement of environmental quality. Reconciling economic development, social equity and environmental quality is at the core of sustainable development. A healthy economy meets demands for job creation, economic security and thus, improved living standards. Integrated decision making acknowledges the connections and interdependence among economic, social and environmental objectives and any conflict that may emerge among them should be dealt with openly, on the basis of full information.

To fully comprehend the implications of social equity let us examine social inequity. Social inequity refers to the' state of being unequal' between persons of or things in respect of social matters due to which the unequal occupy a more or less disadvantageous position with respect to material things, status and power as compared to those who are more equal to others (Pandey, 1982). Therefore, a commitment to equity involves a fair distribution of the costs and benefits of development between the rich and poor, among generations and among nations. Equity also implies that we all have the means to meet basic needs and that we are all entitled to basic rights.

Components of sustainable development according to Bharatiya (2012) are inclusiveness, connectivity, equity, prudence, and security. These components are in a sense indicators for development to be sustainable. Inclusiveness refers to the fact that sustainability embraces both environmental and human systems. Connectivity implies an understanding of the world's problems being systematically interconnected and interdependent. Social Equity, the fulfilment of basic health needs, and participatory democracy are crucial elements of development and are interrelated with environmental sustainability. Prudence calls for life supporting ecosystems and inter-related economic systems resilient and maintaining scale and impact of human activities within regenerative capacities. Security refers to safe, healthy and high quality of life for current and future generations. However security, equity and inclusiveness are components of sustainable development which elude people with disabilities.

According to the United Nations report on Monitoring the Convention on Rights of Persons With Disabilities (2010), women, men and children with disabilities are far too often the amongst the most marginalised in societies and face unique challenges in the realisation of their human rights. The report further states that the discrimination faced by persons with disabilities is widespread which cuts across geographical boundaries and affect people in all spheres of life and all sectors of society.

Although we know that sustainable development serves as a comprehensive framework for the formation of policies that integrate environmental, economic and social issues, has it been used prudently to ensure inclusion, equal access to opportunities for all segments of society? Have the opportunities for economic growth and fruits of same been equally available to all – even the disabled population of the society? This article focuses on the situation women with disability find themselves with reference to sustainable development.

Women with Disability

Women and men do not enjoy equal status anywhere in this world. There are several differences in the opportunities available to either, with men having greater scope and opportunities for upward mobility as compared to women. These are clearly visible in education, health status, work responsibilities, employment, and decision-making powers and so on. Women face numerous challenges in establishing their equality and political, social, economic or cultural rights. Analysis of Human Development reports and other UN reports throws light on the status of women at the international level. There are fewer women than men in the world, 98.6 women for every 100 men (HDR, 2004). Of the world's nearly one billion illiterate adults, two-thirds are women. General health status of women is lower than men worldwide due to a wide range of factors. The majority of women earn on an average about three-fourths of the income of men for the same work, both in developed and developing countries. The value of women's unpaid housework and community work is estimated to be 10-35 percent of GDP worldwide. The participation of women in political decision making bodies is negligible in countries worldwide.

According to Ray (2012), the 'subordination of women to men is prevalent in large parts of the world. We come across experiences where women are not only treated as subordinate to men but are also subject to discriminations, humiliations, exploitations, oppressions, control and violence. Women experience discrimination and unequal treatment in terms of basic right to food, health care, education, employment, control over productive resources, decision making and livelihood opportunities not because of their biological differences or sex, which is natural, but because of their gender differences which is a social construct'.

Why do we have a social order where women are accorded a secondary status? The answer is explicit. In a society where definitions, policies and rules are male oriented, women's issues and concerns are not given due consideration. Hence, it wouldn't be clichéd to state that women form a marginalised group in society. Within this group is a sub-group of disabled women who are even more marginalised since although disability may be the predominant characteristic by which a disabled person is labelled it is essential to recognize that gender influences play an important role in determining the ways in which a person's disability is perceived and reacted to.

A glaring instance of further marginalisation of women with disability is that till date there is lack of reliable data with regard to their numbers. The situation is more acute in case of disabled women in developing nations (Bhambhani, 2003). According to Ghai (2002), disabled women in India occupy a multifarious and marginalised position owing to their disability and also socio-cultural identities that separate them into categories constructed according to such properties as caste, class and residential position. Disabled women thus have plural identity markers which make their lives perplexing and difficult.

Having said this there is a need to examine the place women with disability have in sustainable development. The participation, role, and access to facilities and opportunities of disabled women in the social, economic and environmental dimensions of sustainable development is explored through this article.

Social Dimension

Gender and disability are social constructs and both are inextricably linked in determining the access

to opportunities and participation of disabled women in social life and hence sustainable development. The social status of disabled women varies according to individual circumstances and the country in which they live. Disabled women in developing and poor nations face a particular disadvantage. Here, she becomes easily marginalised since she is unable to meet the requirements society places on women. She cannot be a 'good wife' or a 'good mother' as per the common wisdom. She is viewed as weak and useless and assumed to be dependent on others lifelong. Disability then becomes a burden for the woman as well as her family. So, women and girls with disability (far more than boys and men with disability) face discrimination within their families and are denied equal access to health care, education, training, employment, and income generation opportunities (Sharma, 2010). All these experiences point towards exclusion of disabled women from the mainstream of society rendering them unable to participate in the decision making process at various levels of social organization, be it family, community, government policies and so on. The elements of sustainable development, inclusiveness and equity, as mentioned earlier are not met for disabled women.

Isolation and confinement based on culture and traditions, attitudes and prejudices often affect disabled women more than men (Nughally, 1996). They are rendered invisible in a host of different ways. First, they actually appear less, and are literally seen less often in public. Second, even when they are not physically out of sight, they are psychologically out of sight which implies that they remain hidden and silent, their concerns unknown and their rights overlooked. Third, as minority group they are often ignored and devalued. Therefore they remain largely neglected when it comes to research, state policies, the disability rights movement and the mainstream women's movement. As sustainable development includes all is there any justification for neglect, isolation and marginalisation faced by disabled women within their own contexts? Where can they go for seeking social justice? The basic question here is, are they even recognized and acknowledged as citizens who have the potential to contribute to economic growth given a fair chance to do the same.

In general very little attention has been devoted to the situation of women who are disabled. Almost all research on persons with disabilities seems simply to assume the irrelevance of gender, social class and caste. Although disability leads to inequality and marginalization of both men and women, disabled people are not a homogenous group. The disability rights movement has aimed its protest against segregation and discrimination faced by the disabled. However, according to Ghai (2002), and Bhambhani (2003) disabled women must contend with gender bias in terms of being treated as second class citizens of the disability rights movement. Ironically, the feminist movement's exhaustive list does not include disability oppression, despite the fact that disability cuts across all categories and may be associated with the experience of many of the other oppressions against which women's movement is fighting.

One reason highlighted by theorists and activists alike has been that disabled women have not participated in the movements' meetings and actions (Ghai, 2002). During the UN Fourth World Congress and NGO Forum on Women there was a great deal of activism by women with disabilities. After the conference much was written about disabled women and their issues in women's presses worldwide. But surprisingly little of substance has emerged in subsequent years from international women's movements to include women with disabilities. Even now women and girls with disability live under extremely difficult circumstances. Despite their significant numbers, they are most vulnerable even within the women population. Majority of them are hidden and silent, their concerns unknown and their voices unheard (Sharma, 2010). This fact is corroborated in United Nations report on Monitoring the Convention on Rights of Persons with Disabilities (2010), which mentions that state parties recognize that women and girls with disabilities are subjected to multiple discriminations.

These experiences completely go against the indicators of connectivity and security for disabled women since isolation and exclusion faced by disabled women at an individual level and form the mainstream women's movement as well as the disability rights movement deny them their rights and identity. These experiences result in negatively impacting the quality of life of disabled women. As mentioned earlier participation of people in society and social processes is of critical importance in the process of sustainable development. Also participation of marginalized groups must be facilitated through multiple mechanisms consciously and deliberately set in motion by different stakeholders. This is corroborated by Falk (1972), as he stresses on the need for universal participation, especially to avoid oppression that is associated with the exclusion of people from actions and processes that directly impact the quantity and quality of their lives.

Economic Dimension

Economic growth of a country is expressed as Gross Domestic Product (GDP). It also indicates the rise in per capita income and purchasing power of the people and thus is one of the indicators of quality of human life in the world. Rise in economic growth as reflected through rise in incomes indicates that there are more jobs available and more and more people can seek employment and thus many can pull themselves out of poverty.

Growth in GDP has been considered as an indicator of economic growth but it does not reflect the status of natural resources or human resources which are the actual basis of economic development. Economic Growth, also, has not been inclusive. Instead it has created large differences in income levels and standards of living among different segments of society. As a consequence disabled women who had been existing in the margins of society have been pushed further outwards since they were excluded from the benefits from economic growth, as the gap between rich and poor increased pushing the poor farther from the mainstream of society.

Employment is an important feature in the economic development of any nation and it is the hallmark of modern socio-economic order (capitalism). Employment as a phenomenon is inextricably linked with existing material conditions of a particular region, group or community. It is one of the major driving forces for most adults in the age group of 18 to 60 years who are expected to be employed and financially independent. Work provides not only economic rewards, but also a sense of identity, accomplishment and meaning. Being part of the work force is a primary activity for most people of working age. It enhances the quality of life of an individual, ensures financial security, builds self-esteem and provides a sense of satisfaction to the individual for contributing to the society (Delsen, 1989).

Employment is considered a key element in full citizenship and is strongly linked to both disability related supports and incomes. It provides a sense of fulfilment and self-worth. It also is the best defence against poverty (Hawley, 2003). Jenkins' research (1991) on disability and social stratification found that sections of people with disability are deprived of entering the labour market or employment resulting in increased vulnerability to unemployment.

Employment is a critical component in enabling disabled women to support themselves financially and thereby achieve self-esteem and social recognition. However, gender structures are embedded in the labour market and generate very different employment experiences for men and women where the former have more privileges than the latter in wages, benefits, occupational status and job quality (Phillips and Phillips, 2000; Reskin and Padavic, 1994). Disabled women find it harder than disabled men to get work. Women in general face discrimination in employment. For women with disabilities this discrimination is far greater especially in situations where there is high unemployment.

According to the report of the Monitoring Committee on the UN Convention on the Rights of Persons with Disability (2010), the unemployment and underemployment rates are very high among disabled women, and the factors responsible for the same are poor education attainment, absence of appropriate skills and training and social barriers of prejudice and discrimination. As per the World Bank Report (2007), eighty percent of the disabled population of the world belongs to developing nations and twenty percent of the world's poorest people are disabled and tend to be regarded in their own communities as the most disadvantaged. There are various laws and rights on paper but they are yet to be implemented. Women with disabilities have been sidelined from both the women's movement and the disability movement where they face everyday problems and structural disadvantages in terms of education, employment and marriage.

In addition to the above mentioned factors, inaccessibility of the physical environment like buildings, roads, and transport and toilet facilities is a serious obstacle to disabled women working outside their homes. Even where disabled women have jobs, their rights as workers may be overlooked. Faced with discrimination, little job mobility and few skills, disabled women workers may be forced to endure oppressive working conditions. This is because they lack bargaining power due to paucity of employment opportunities and thus they find it prudent to accept oppression rather than lose the job.

The discussion above clearly points to the fact that the basic elements of sustainable development like equity of all kinds, and maintenance of certain living standards to achieve a minimum quality of life are denied to disabled women through limited opportunities for gainful employment to them. How can the society claim to be moving towards sustainable development when a significant percentage of the world population, i.e, women with disability are forced to live in sub-human conditions owing to lack of earning opportunities which grievously endanger their survival chances.

Environment Dimension

The extent of use of natural resources by the human species has grown with evolution of social, economic and political organization of human society. Long term economic sustainability is possible only with environmental sustainability as our economy is ultimately dependent on the use of natural resources from nature. However, the vicious cycle of poverty, human degradation and environment destruction exists in many developing nations of the world. People with disability and especially disabled women, who are over-represented among the poorest population of the world as per the World Bank Report (2007), are drawn into the vortex created by poverty and environmental degradation. Therefore they cannot have a standard of living adequate enough to achieve a quality of life desirable as per the human development index.

In developing nations there is a lack of technology and funds for sustainable utilization of natural resources and mitigation of environmental pollutions. As a result there is rampant pollution of air, water and soil with harmful impact on human health, thus, negatively affecting quality of life. Over-exploitation of natural resources such as coal and minerals has devastated forest landscapes and arable land. On one hand certain sections of society in the developing world are experiencing the benefits of economic growth. On the other hand, most of the population in the developing world is exposed to risky environmental situation, sometimes resulting in disability in population affecting people of all age groups. This is the result of environmentally unsustainable economic growth. In a scenario like this opportunities for improving the quality of life of women with disability are virtually non-existent as they are already living a life of subordination, without education and adequate employment. Disabled women have fewer opportunities to take part in action to sustain the environment. Das and Agnihotri (1999) have indicated that disabled women are marginalised more than disabled men.

Economic and social inequalities have been the most important side-effects of economic growth with rise in incomes of only certain segments the gap between the rich and the poor has increased further. The most serious effects of economic growth perhaps have been depletion of natural resources due to over harvesting, global warming, generation of large amount of wastes, and loss of biodiversity.

If the trends continue without change – not redistributing from high income to low income, not shifting from polluting to cleaner goods and production technologies, not shifting priority from consumption from for conspicuous display to meeting basic needs – today's problem of consumption and human development will worsen.

Conclusion

Many cultures over the course of time have recognized the need for harmony between society, environment and economy as sustainable development is not a new idea. Sustainable development requires an understanding that inaction has consequence and that we must find innovative ways to change institutional structures and influence human behaviour. Hence, it is about taking action, changing policy and practice at all levels. Sustainable development requires parity for individuals, communities and nations.

Without effective remedial action the consequences of disability will add to the obstacles to development of women with disabilities. Hence it is urgent that we include immediate, adequate and appropriate measures for the equalization of opportunities for girls and women with disabilities. Sustainable development when practiced with keeping in view its objectives can make a difference to lives of disabled women so as to ensure social justice for them. A will to achieve the same is needed by all the stakeholders concerned.

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The Politics of Open Defecation: Informality, Body, and Infrastructure in Mumbai

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Introduction

How are bodies and infrastructure related in contexts of severe urban poverty and exploitation? Or more precisely, what kinds of relations become possible, and how are they experienced, in the shifting sociomaterial configurations of infrastructures in informal neighbourhoods? Despite the vital wealth of critical research on urban infrastructures and political ecologies, critical urban and geographical research lacks understanding of the micropolitics through which infrastructures are differently made, unmade and experienced. This is an important gap, because it is in this making and unmaking that much of urban life is increasingly lived and politicized, and especially so for the growing numbers of people—in both global South and North—living in informal settlements.

Drawing on examples from fundamental infrastructures of sanitation in Mumbai, we explore in this paper a multiplicity of relationships between the body and infrastructure. Issues of access, routine, perception and experience—in short, the lived worlds of urban infrastructure—come to the fore. Important here are practices of improvisation, too often neglected in accounts of urban infrastructure and political ecologies, which we examine in relation to different forms of open defecation. These practices of improvisation are coping mechanisms that often reproduce and deepen inequalities rather than articulate political claims such as the right to sanitation infrastructure. But these practices also, we will argue, enter into political claim-making for residents of informal neighbourhoods, whether in the form of demands for certain kinds of sanitation infrastructure, or in response to new forms of disciplining by the state, or in the ways in which residents can become divided around lines of class, religion, ethnicity or caste in response to improvisatory practices pursued by different groups.

By way of context, we want to begin with a particular and important moment in Mumbai in 2006, when the city saw the legislation of the Cleanliness and Sanitation Byelaws which introduced punitive measures against cooking, bathing, spitting, urinating and defecating in public spaces.[1] While the byelaws—which regulate a variety of other activities like littering, waste segregation, etc—are aimed at disciplining all urban residents and elevating their civic consciousness, many of the punitive measures are based on what Baviskar (2003) refers to as "bourgeois environmentalism". This casts upper-class concerns around aesthetics, leisure and health, which usually clash with the rights of the poor, under broader, seemingly class-neutral discourses of the environmental quality of life. In introducing disciplinary action against open defecation in a city in which around 25% of residents have no or inadequate sanitation facilities (MW-YUVA 2001:10), the byelaws pitted the basic bodily need to empty one's bowels against the right to a clean and sanitary environment.[2]

These byelaws, moreover, rest on particular conceptions of the relationship between the body and the sanitary/unsanitary city. Open defecation is prohibited under the byelaws because it creates "public nuisance". This includes any act or thing which "causes or is likely to cause injury, danger, annoyance or offence to the sense of sight, smelling or hearing or which is or may be dangerous to life or injurious to health or property and environment" in a public place (MCGM 2006). Such a discourse of public nuisance casts practices of open defecation

and the presence of human excreta in open spaces as offending to the city's visual and olfactory aesthetic. This, however, privileges the sensory experiences of the urban middle-class and elites and erases the sensory experiences of the urban poor, many of whom have to contend with the offensiveness of using unbearably dirty public toilets and who might at times even turn to open defecation precisely because of this. The public nuisance discourse also ascribes open defecation as an individual's private bodily act which is in conflict with the city's public health and environment.[3] The significant role of infrastructures in mediating the relationship between private and public, the body and the city, and the body and bodily wastes, is thus all but absent in this discourse.

The byelaws do include a section on the obligatory duties of the municipal government to provide "adequate community toilets" in "slum localities", however, there is no consideration of what constitutes adequate toilets. Government sanitation programs, which are setting higher targets for toilet provision than ever before, are largely restricted to "notified slums", that is, informal settlements entitled to basic services. "Non-notified slums", in which 4.5% of Mumbai's population lives, and pavement dwellers are not entitled to basic services.[4] Even "notified slums" comprise a wide array of toilet blocks with different levels of cleanliness, maintenance and accessibility, leading residents to regularly or intermittently defecate in the open in many cases. Partly as a response to the lack of cleanliness and maintenance of toilets delivered under various sanitation programs in Mumbai, slum sanitation approaches have changed, introducing partnerships between the state, NGOs and communities through the Slum Sanitation Programme. However, sanitation program outcomes are still measured and publicized primarily in terms of numbers, taking a narrow conception of sanitation inadequacy. Moreover, even inadequate sanitation is often not perceived as a good enough reason for people to turn to open defecation. For instance, the CEO of a private security agency contracted to implement the byelaws explained: "It is not that there aren't toilets but perhaps there are inadequate toilets and long lines so people just go in the open. Even women."[5] This hostile logic implies that people are impatient and if only they would wait in the toilet queues for their turn, Mumbai would be cleaner in this regard.

In this paper, we seek to chart out radically different conceptions of the relationship between the body and the sanitary/unsanitary city by thinking through the body's relationship to infrastructures in the metabolic city, which creates profoundly unequal opportunities for fulfilling basic bodily needs. The paper emerges from ethnographic fieldwork carried out in two informal settlements: Rafinagar, a "non-notified" settlement which comprises an older and more established Part 1 and a newer and still expanding Part 2, in eastern Mumbai; and Khotwadi, an established and "notified" settlement in western Mumbai. The paper begins with a discussion of debates around the body, sanitation, filth and infrastructure, to lay out the intellectual context and framework for the article. By "infrastructure", we are referring both to material configurations—toilets, water connections, etc, which of course are made and unmade through not just physical but also social, economic, political and ecological processes—and social configurations, such as women coordinating with other women to make or unmake systems that enable everyday urban life. This latter use of infrastructure includes, for instance, routinized social arrangements for using particular open spaces at particular times for defecation, and they too are infrastructures because we take infrastructure to be, expansively, systems that enable urban life to collectively take place. If this leaves us with a rather open definition of infrastructure, then that is part of what we want to achieve with the paper: to disrupt what and who we read and recognize as infrastructure by paying greater attention to the multiple ways in which systems have to be put in place to allow urban life to take place in precarious and marginalized neighbourhoods (Simone 2004).

In the next section, we examine how open defecation emerges through everyday embodied experiences, practices and perceptions that are forged in relation to the diverse materialities of sanitation infrastructures. We do so by tracing the

micropolitics of provision, access, territoriality and control of sanitation infrastructures; daily routines and rhythms, both of people (their physiological routines and rhythms as well as those of daily living in informal settlements) and infrastructures; and experiences of disgust and perceptions of dignity. Through a discussion of these embodied materialities of open defecation, we seek to show how the capacities of sanitation infrastructures to meet people's individual and collective needs—and thus prevent open defecation—are shaped by a multiplicity of relationships between the body and infrastructure. We also think through the body's relationship to open space in the metabolic city by interrogating practices of open defecation as embodied spatial and temporal improvisations that require considerable effort and produce particular risks.

This focus on the everyday embodied materialities of open defecation attends to the ways in which defecation and sanitation experiences, practices and perceptions are differentiated by class, income, gender, age and other social power relations as well as how they are forged in relation to urban materialities of informality and infrastructure. We conclude by discussing how our analysis deepens understandings of the relationships between the body, infrastructure and the city; how the nature of these relationships constitute urban poverty and inequality; and how the objectives of sanitation policies and programmes need to be expanded to address these relationships.

Defecation is a bodily process that is crucial to life itself. Yet, there has been scant research on open defecation despite its widespread prevalence in many cities in the global South. Perhaps one reason for this is that open defecation is perceived to be at complete odds with the modern city. Investigations by development practitioners, journalists and scholars have of course directed attention to practices of open defecation. In this moment of a "sanitation crisis" and urgency to meet the Millennium Development Goals, their writings focus on the dire consequences of these practices for health, women's dignity and safety, the environment, the economy and so forth, and call for appropriate sanitation interventions in terms of technology, cultural and social norms, and the differentiated needs of men, women and children (see, for example, Bapat and Agarwal 2003; Bartlett 2003; Black and Fawcett 2008; George 2008; Jewitt 2011). However, the relationships between open defecation, the body and infrastructure in the city remain under-researched and under-theorized in these investigations. Debates around the body, sanitation, filth and infrastructure are crucial for exploring these relationships.

Scholars have argued, for instance, that the exclusion of what is considered filth, particularly human excreta, and the distancing from bodily substances and odours has been central to the ways in which modern urban citizens define themselves (Cohen 2005:vii–xxxvii; also see Barnes 2005; Corbin 1986; Laporte 2000). Architecture, urban planning, public health initiatives, and the regulation of public spaces have played a key role in this quest to protect the human senses from contact with bodily wastes, normalizing practices through which bodily functions like defecation are carried out and bodily wastes like shit are disposed. Thus, shit was increasingly relegated to the private sphere (Laporte 2000) and then was increasingly brought under public management. Attitudes to filth and cleanliness and the regulation of bodily functions and bodily wastes have thus been central to the shaping of the modern city. Yet, the bourgeois regulation of filth and cleanliness not only served to carry out vast urban improvements but also served as justification for the surveillance and control of the poor and the denigration of certain groups (Cohen 2005:vii–xxxvii).

Unsanitary conditions and disease were associated with poverty, crime and immorality in nineteenth and early twentieth century European and American cities, justifying sanitary reforms that penetrated the daily lives of the poor and working classes. In the colonies, unsanitary conditions and disease were associated with spaces of the "native", particularly the inner cities, and with disloyalty and potential rebellion (Chakrabarty 1992). Orientalist binaries separating clean and sanitary Europeans

from unclean colonial Others usually led to colonial interventions in sanitation that were imposed from above through demolition, policing, coercion and punishment. These were often met with local resistance based on indigenous views of health and urban life (Hosagrahar 2005; McFarlane 2008b). Ultimately, with military and economic concerns taking precedence over social welfare in the colonies, colonial cities developed as fragmented and polarized landscapes. Spacious residential quarters with modern infrastructure networks were developed for Europeans and their Indian elite and upper-middle-class collaborators. However, "native" inner cities and poorer areas remained devoid of sanitary improvements (Chaplin 2011; Glover 2008; Hosagrahar 2005; McFarlane 2008b). Indian elites, even when involved in local government, also failed to prioritize city-wide sanitation provision (Chaplin 2011). After independence, these cities became sites of new kinds of modernist projects, and these fragmentations and polarizations increasingly evolved into a formal/informal divide. Sanitation divides became more entrenched in cities like Mumbai as the impetus for widespread sanitary reform dissipated with urban middle classes increasingly able to protect themselves from disease by monopolizing state-provided urban services and access to modern medicine (Chaplin 1999).

Chakrabarty (1992) argues that while the attempts by colonial governments and elites to regulate and create orderly public spaces were rooted in discourses of the "natives" being indifferent to filth in public spaces and using these spaces in inappropriate ways, nationalist projects of social reform also sought to create clean and orderly public spaces, albeit through transformed discourses that appealed to civic consciousness and citizen-like behaviour. People's practices have, however, continually challenged the realization of such projects in Indian cities. With regard to practices of open defecation, for the Indian middle classes and elites, these have increasingly come to mark the presence of the rural and the non-modern in the contemporary Indian city. Those who defecate in the open are often cast as uncivilized folk who need to be coercively disciplined into using toilets. These othering discourses in the contemporary Indian city have a powerful echo of the colonial, which closes off alternate possibilities of understanding people's sanitation practices as well as sustaining and creating new fragmentations and polarizations in the urban landscape.

Chakrabarty (1992)—and following him, Kaviraj (1997)—have brought a postcolonial reading to the presence of filth in public spaces in India. They contrast the conception of public space based on modernist desires, civic consciousness and public order to the notion of the "outside" held historically in India. This "outside" was the opposite not of the "private" but of the "inside" and was viewed as a space that carried fears of miscegenation and dangers of offence, especially for people accustomed to living in a caste society. While care and attention to cleanliness might be lavished upon the home that was the "inside", the street as the "outside" was a space that lacked any association with obligation and "did not constitute a different kind of valued space, a *civic* space with norms and rules of use of its own" (Kaviraj 1997:98). This had consequences for behaviour in urban open spaces, and garbage, when thrown "outside" was understood to be thrown over a conceptual boundary. Kaviraj further argues that this historical conception of the inside/outside mapped onto the European modernist conception of private/public to produce a peculiar configuration of the modern, which moreover varied across classes as well.[6] For the poor and destitute, "public" gradually came to mean that which is not private; spaces from which they cannot be excluded by somebody's right to property; an "outside" that is a matter not of collective pride but of desperate uses, sanctioned by the state through "a curious mixture of paternalism, obligation of the powerful to care for the destitute, and democracy" (Kaviraj 1997:104–105). In this analysis, the use of public space in Indian cities and the presence of filth in them is understood as a reflection of the "plebianisation of public space" (Kaviraj 1997:108), and the different conceptual maps of private/public among the rich and poor in Indian cities chart a very different practice of modernity. It is striking too that in the contemporary period, while the logics and imaginaries may well be different, there

are legacies of this in the casting out of many sites, groups and practices of the urban poor as unsanitary and in need of punitive treatment (see, for example, Baviskar 2003; Ghertner 2008; McFarlane 2008b).

The postcolonial analyses described above are useful in alerting us to different notions of public and private, of filth in public space and of what might be considered an "appropriate" or "inappropriate" use of public space. However, they also have serious limitations, particularly when they include shit in their discussion of filth and open defecation as one among many uses of public space by the poor. This fails to consider the nature of embodiment in practices of defecation that differentiates it from other "private" uses of "public" space by the poor. These analyses also suggest that the poor have a fixed conceptual map of public/private and a greater tolerance to filth, and while this is considered to be a consequence of their impoverished circumstances, there is nonetheless a tendency not to connect open defecation to the politics of urban informality, infrastructure and political economy. In the process, they also essentialize notions of filth held by the poor and ignore the efforts often made by them to create sanitary environments. We argue that to understand open defecation, a focused analysis of the relationships of the body to the diverse materialities of sanitation infrastructure in the unequal city is imperative.

Debates in urban political ecology are an important point of departure in exploring these relationships. Writings on urban metabolism (Gandy 2004; Heynen 2006; Heynen et al 2006; Swyngedouw 2004, 2006) approach the city as a metabolic process involving circulations and flows mediated through biophysical and social networks of bodies, infrastructures, and political economies, in which uneven power relations are deeply implicated. They direct attention to the uneven, fragmented and polarized urban environments—and the enabling and disabling environments (Heynen et al 2006)—that are produced through urban metabolic transformations, which refer to complex and contested processes of socio-environmental urban change. Here, power-laden processes structure relations of access to (and exclusion from access to) food, water, and so forth, linking individual bodies to urban social processes (Heynen 2006; Swyngedouw 2004). Everyday life in the city is thus understood as being constituted by entanglements of the social and technological across a variety of spatialities (Gandy 2004).

However, despite these important theorizations, there is still limited scholarship in urban political ecology that explores people's everyday experiences and practices in relation to infrastructure and that deepens our understanding of the relationships between the body, infrastructure and the city. Certainly, a growing body of literature offers a glimpse into the significance of the everyday in shaping experiences and practices around water and sanitation (Bapat and Agarwal 2003; Black and Fawcett 2008; George 2008; O'Reilly 2010; Page 2005; Swyngedouw 2004). Recently, a feminist political ecology approach has been brought to urban political ecology to show how everyday embodied experiences, processes of social differentiation and micropolitics over resources can complicate and deepen our analyses of water inequality in cities (Truelove 2011). There is also a growing body of work, of which Truelove (2011) is an example, examining the intersections between everyday life, political ecologies, and infrastructure in the city in South Asia. This includes, for example, important studies of the movement, internment and experience of different sorts of urban waste (Gidwani and Reddy 2011), the biophysical and political travels of water (Anand 2011), or the relationship between water and citizenship (Truelove and Mawdsley 2011). This literature has enriched our understanding of the everyday experience and multiplicity of exploitative urban political ecologies in South Asia and as such has been very helpful in formulating our own approach and arguments here (also see McFarlane et al forthcoming). It is also part of an important wider effort to rethink urban political ecology from the urban global South (eg Lawhon et al 2014).

With some exceptions, however (eg Truelove 2011), everyday sanitation practices and experiences in the making and unmaking of urban political

ecologies and infrastructures, particularly open defecation, continues to command less empirical and analytical attention. We attend to this by examining the everyday embodied materialities of (open) defecation. By this, we refer to how open defecation emerges through everyday embodied experiences, practices and perceptions forged in relation to complex materialities of informality and infrastructure; and the embodied spatialities and temporalities of open defecation. To examine the former, we focus on three processes (which take us beyond toilet seat numbers to understand sanitation adequacy): the micropolitics of provision, access, territoriality and control of sanitation infrastructures; daily routines and rhythms, both of people (physiological routines and rhythms as well as those of daily living in informal settlements) and of infrastructures; and experiences of disgust and perceptions of dignity. There is a large literature on the centrality of patronage and vote-bank politics in the provision of tenure security and basic services (such as water and sanitation) to informal settlements (eg Chatterjee 2004; Wit 2010); however, we argue that there is a need to expand the analysis of sanitation politics. Understanding infrastructure as constituted by a range of social relations allows us to attend to the micropolitics of infrastructure provision, access, territoriality and control within informal localities, how they structure people's everyday experiences and practices, and how they contribute to the emergence of open defecation. Here, the location of toilet blocks, the role of formal and informal caretakers as well as toilet users, the commodification or privatization of public sanitation, and social power relations such as age and gender, all play a role in shaping this micropolitics.

There is also a growing body of literature that examines the role of repair and maintenance in the working of infrastructures and the disruption and failure of infrastructure networks (Graham and Thrift 2007). While this literature recognizes the significance of these processes for shaping everyday lives and possibilities in the city, there are few in-depth studies. In this paper, we attend to the routines and rhythms of use, repair, maintenance and breakdown of sanitation infrastructures in informal settlements and show how these shape people's experiences and practices, including open defecation, in crucial ways. Our emphasis on the embodiment of people's practices also leads us to attend to people's routines and rhythms as they intersect with the routines and rhythms of sanitation infrastructures.

A third set of processes that we examine involve experiences of disgust and perceptions of dignity amongst residents of informal settlements. Debates on disgust, filth and cleanliness show how sensory responses such as disgust have played a key role in the distancing of filth, including human excreta. While many regard disgust as an "evolved aversion to potential sources of disease" and thus automatic and unmediated by conscious thought, others like Mary Douglas (2002 [1966]) have viewed it as culturally mutable (Barnes 2005:105). Writings also show that there are distinct historical variations in disgust to shit and in responses to this disgust (Barnes 2005; Laporte 2000). There are also cross-cultural variations and Jewitt (2011) writes of faecophilic and faecophobic cultures, the former tolerating the handling of shit and the latter—which includes India—finding it abhorrent and ritually polluting. In India, the association of handling shit with so-called "untouchable" castes whose occupation was restricted to manual scavenging, that is, manually removing, carrying and disposing of human excreta, links abhorrence and disgust around human faeces with cultural notions of pollution and purity and a policing of social hierarchical boundaries (Jewitt 2011; on caste and manual scavenging, see Thekaekara 2003). These experiences and notions of disgust—and the imagined "geographies of contamination" (McFarlane 2008b) they give rise to—have recently mobilized revanchist actions in Mumbai with the formulation of byelaws that bring a police approach to open defecation and the city's cleanliness. However, tracing subaltern rather than middle-class and elite experiences of filth reveal another geography of disgust and contamination.

Disgust has been taken seriously in sanitation programs such as Community Led Total Sanitation (CLTS), which deploys these emotions—indeed, produces them—to "trigger" behavioural change from

open defecation to toilet use (Mehta and Movik 2010).[7] However, contemporary sanitation literature unfortunately remains limited in its understanding of subaltern perceptions of cleanliness and filth, subaltern experiences of disgust and the everyday practices that emerge through these. We seek to take a step towards addressing this lacunae. By contrast, the literature on sanitation provides ample evidence of the indignity experienced by women when they are forced to turn to open defecation. However, this has also foreclosed any in-depth analysis into perceptions of dignity vis-à-vis defecation: the differentiation of these perceptions by age and gender, the variation across rural and urban geographies, their link to conditions of visibility, privacy and safety, their link to experiences of sanitation infrastructures. As a result, we have scarce understanding about how perceptions of dignity shape practices of open defecation.

To examine the embodied spatialities and temporalities of open defecation, we propose "improvisation" as a useful analytic. This notion of improvisation is inspired by Abdoumaliq Simone's writings on urban practices in African cities. For Simone, improvisation involves practices through which bodies, infrastructures, objects, and spaces are brought into various combinations and configurations that become a platform for providing for life in the uncertain city and generating stability. These practices facilitate "the intersection of socialities so that an expanded space of economic and cultural operation becomes available for residents of limited means" (Simone 2004:407). Such improvisations are pursued around sanitation as well, for instance, when groups of residents without access to toilets come together to contribute time, money, material and labour to the construction of makeshift hanging latrines, or when groups of residents introduce lock-and-key arrangements on a public toilet block to restrict access and thus control the cleanliness of the toilets they use. However, such improvisations might not always be possible or the improvisations by one group might restrict access to sanitation infrastructures for another group. In such situations, people may turn to open defecation to fulfil their bodily needs and in this context, practices of open defecation themselves emerge as improvisations which involve devising the least vulnerable and most convenient configurations of the body, time and space. This not only reveals how people cope with lack of or limited sanitation, but also shows how particular practices of open defecation emerge, and the efforts and risks they entail.

1. Micropolitics of Provision, Access, Territoriality, and Control

The experiences and practices of residents of Rafinagar and Khotwadi around fulfilling their bodily needs were shaped in significant ways by both the unevenness of sanitation provision in Mumbai, as well as the settlement-level micropolitics of toilet provision, access, territoriality and control. In Rafinagar, six toilet blocks—three public and three private—had been constructed over the years, thus providing one toilet seat for every 263 persons. While the official acceptable standard is to provide one toilet seat for every 50 persons—a number that emerged as part of the city's Slum Sanitation Programme (McFarlane 2008a)—our toilet surveys found that each toilet seat was used by many more, between 80 and 115 persons in most cases. While inadequate toilet numbers certainly meant that open defecation in Rafinagar was inevitable, the micropolitics of toilet access, territoriality and control was an important factor shaping people's experiences and thus, the emergence of open defecation amongst certain residents and not others. Not only were all toilet blocks located in Rafinagar Part 1, but the distance of the three public toilet blocks from Part 2 and many parts of Part 1 too, the location of two of them in internal lanes, and the attempts by surrounding residents and/or informal caretakers to restrict access meant that these were territorialized and controlled in a way that effectively removed them from being truly public toilets. As a result, each block was accessible to residents from only a particular cluster of lanes in Part 1, and Part 2 residents as well as many Part 1 residents were effectively unable to access them at all.

By contrast, Khotwadi has 24 toilet blocks, which means that there is one toilet seat for every 55 persons. Given that this closely conforms to the official acceptable standard of one toilet seat for every 50 persons, one is apt to conclude that there should be no open defecation in Khotwadi on account of infrastructure. However, we observed a similar micropolitics of toilet territoriality and control in Khotwadi, with many of the blocks or some individual cubicles in them territorialized and controlled by groups of residents, thus making them inaccessible to others. In the early morning hours, this led to longer queues at the other blocks, which were open to all. This, in turn, led many men from some of the neighbourhoods along the railway tracks to turn to open defecation along the tracks. This underlines the significance of understanding sanitation in terms of the micropolitics of toilet provision, access, territoriality and control.

As a result of the territorialization and control of the public blocks in Rafinagar Part 1, the only blocks that Part 2 residents could use were the three private pay-per-use blocks. However, two of these were at a distance from Part 2, and were thus not quickly accessible to its residents. In fact, one of these blocks was not even accessible to Part 1 residents at times since the toilet block operator and caretaker had full control over the block, and thus kept the block closed on days when they could not obtain water (an issue that was linked to the wider water crisis in the area). Moreover, Part 2 residents also sometimes found the third, nearer, private toilet block difficult to access due to the long toilet queues. Taslima, a resident of Part 2, explained her experience:

When there are long queues then people shout at each other, no? Then the residents who live [near the private toilet block] complain about the people who go from here. They say there is such a big *maidan* (open field) there, why are you coming here?

Equally significantly, the private pay-per-use toilet blocks were accessible only to those who were willing and able to pay the Rs.1–2 that these toilet blocks charged per use. The per-use charges (and in one block, monthly passes) were a form of control that determined who was able to access the toilet, including how many times, and who was not. With many families in Rafinagar, particularly in Part 2, earning Rs.100–150 a day as ragpickers, this form of control over sanitation infrastructures led many to turn to open defecation, either on a daily basis or intermittently. Taslima explained that when possible she would use open space because "if I can save one rupee then my children can eat something more". However, as discussed later, the spaces and routines of open defecation did not always allow Taslima to use open space. On such days she took her 6-year-old daughter with her to the private toilet since the caretaker allowed children of that age to use the block for free when they came with their mother. If her daughter wanted to defecate at any other time, Taslima made her sit on a newspaper outside their house. In fact, many families in Part 1 and Part 2 who did not have access to any of Rafinagar's public toilet blocks and whose financial circumstances were straitened, allowed children to defecate in the open since spending a minimum of Rs.30/month (Rs.1 per use) for each family member was just too expensive. One 14-year-old boy explained that he used open space because of "tension around money".

Everyday Routines and Rhythms

Practices of open defecation emerge through everyday routines and rhythms, both physiological routines of the body as well as routines and rhythms of daily life in informal settlements, as they intersect with sanitation infrastructures in these settlements. These routines mean that large numbers of residents in Rafinagar and Khotwadi sought the use of toilet blocks in the morning hours. In the context of inadequate toilet numbers, this led to long toilet queues in Rafinagar during these hours. As a result, users were also pressurized to hurry up so that others could use the toilet. Our toilet surveys at Rafinagar's public toilet blocks revealed that in one block, each of the men had an average of 5 minutes to answer nature's call, and at another block, each had an average of 3.75 minutes. Many men came with their water pots to use a particular toilet block and then, on seeing long queues or after waiting for a few minutes, departed to use open space outside the settlement. If they were willing and able to pay, they

would first check the queues at one of the private pay-per-use toilet blocks. Many men could not afford to wait for long in toilet queues not only because of their body's physiological routines but also because of their routines of urban living. For many men, the latter not only involved getting to work on time but also the time-consuming and cumbersome task of fetching water on their cycles from long distances between 7 and 10am, especially after December 2009 when municipal raids on "illegal" water supplies in the area led to a deepening water crisis (Graham et al 2013).

In the women's sections at these blocks, our findings varied only marginally, and each user had an average of just under 5minutes to answer nature's call. We found rare instances of women from Rafinagar Part 1 resorting to open defecation, partly because given the social norms of modesty in a patriarchal society. Women were more likely to cope with this situation by controlling their bodies and its excretions, working around domestic routines (which often involved searching for, waiting for and filling water), and revisiting the toilet block when queues might have become shorter.[8]

However, there were women who turned to open defecation intermittently as a result of these routines and rhythms and their intersection with sanitation infrastructures. Consider Naina, a young woman who used one of Rafinagar's private pay-per-use blocks, but also at times used open space in the early mornings. Naina and her husband were among the more well-earning households in Rafinagar and she thus had both a willingness and ability to pay for using the private toilet. She worked with a religious charity, running tuition classes at her home for children in the mornings. However, "If the line is long, if it is urgent, if there is no time, then [one can] immediately go there", she had explained, vaguely waving towards the vast open space visible from her house. Her response captures how her practices of intermittent open defecation were shaped by the intersections of her body's physiological rhythms ("if it is urgent"), her domestic and work routines ("if there is no time") and the nature of available sanitation infrastructures, in this case, the distance of the toilet block from her house and its inadequate toilet seats for meeting the collective rhythms and routines of the area's residents ("if the line is long").

Shakira, who had lived in Rafinagar Part 1 for more than 20years, had explained that she often used to go to the nearby *maidan* (open field) when the toilet block she uses today used to be smaller:

There would be a crowd there, people from all over the place used to come there. There would be ten people in the queue. We would get a stomach problem so we used to go to the *maidan*. The *maidan* was open, so sit down in comfort.

This notion of being able to defecate in comfort, without having to experience the bodily discomfort and pain of waiting in a queue to defecate, is clearly not that of the notion of luxurious comfort that is increasingly shaping residential toilet design in urban India [see Srinivas (2002) for an analysis of how bathrooms in middle-class Hindu homes have become showplaces of conspicuous consumption and display]. Rather, this is the basic comfort of being able to satisfy rather than fight off the urge of one's physiological bodily routines and rhythms. Not being able to relieve oneself when one has the urge to defecate leads to abdominal pain and psychological stress, and regularly delaying defecation can also lead to chronic constipation (WHO-UNICEF 2004).

For Taslima in Rafinagar Part 2, her domestic routines—which involve being at home to take care of her young children while her husband goes to fetch water on his cycle between 7 and 10am—led her to try and finish with her bodily needs early in the morning before her husband leaves. At this time, the private toilet, which was also far from her house, had long queues, and in any case, since she was hard-pressed to pay daily for the use of a private toilet, she usually turned to open defecation at this time.

The routines and rhythms of the sanitation infrastructures are shaped by the frequency of cleaning, the time of the day when they are cleaned, the availability of adequate water for cleaning, the frequency and adequacy of their maintenance (such as repairing broken doors, removal of choke-ups, maintenance of the septic tank/aqua privy, etc) (all

of which are in turn shaped by the practices and politics of municipal officials, municipal sanitation workers, local political leaders, toilet block caretakers, informal sanitation workers, etc), leading to intermittent practices of open defecation. For instance, most of the public toilet blocks in Rafinagar choked up and became entirely unusable for a few days every few months. While most women then turned to private pay-per-use blocks, many men and even many children turned to open defecation during this time.

In Khotwadi, the routines and rhythms of cleaning and maintaining the toilets were generally more regular and frequent than in Rafinagar since most of the toilets were territorialized and controlled by resident groups or looked after by local political leaders or community-based organizations (CBOs). Serious disruptions in the workings of the toilets were therefore rare to find. In case of such disruptions, people temporarily resorted to other blocks since there are a larger number of toilet blocks in Khotwadi. As a result of this larger number of blocks, the physiological routines of the body as well as routines and rhythms of daily life were also generally fulfilled without having to resort to open defecation, except where the micropolitics of toilet provision, access, territoriality and control made this impossible. As discussed earlier, this was the case only in the neighbourhoods near the railway tracks where men turned to open defecation.

Disgust and Dignity

Many women in both Rafinagar and Khotwadi talked about the toilets they regularly used, and how they got dirty, choked up and often stank unbearably, making them difficult to use. For instance, one resident of Rafinagar explained that the informal cleaner had not come for some days, as a result of which she had had to use half the water in her water pot to throw on the worms breeding in the toilet so that they wouldn't climb onto her feet. Another resident explained that there were only four toilets for the women in the neighbourhood, leading to frequent blockages. Still another resident explained: "When the toilet fills up, then it fills up to the top. There is no place to keep one's feet also, it becomes so dirty." Many women talked about how toilets got dirty and smelly because of practices of other women, particularly those who left sanitary cloths in the toilet. One woman explained: "It is shameful that women throw all this in the toilet. If we keep the toilet clean then it will remain clean. These women should understand that sanitary cloths should not be left like this. They should be wrapped in plastic and thrown directly into the garbage bin." In Khotwadi, one resident asked the researcher to go into the toilet block and experience for herself that it was impossible to even stand there because of the smell. These narratives show that the filth and smell in most shared toilets provoked disgust amongst residents who had to occupy these spaces while answering nature's call.

For some, the visual and factory experiences of bodily wastes in overloaded, poorly ventilated and infrequently cleaned toilets provoked disgust to the point of it being a potentially sickening experience. One resident expressed this when she explained that she would not be able to eat all day if she used the dirty public toilet block near her house in the morning, adding that she used a private toilet block a bit further away. Such options are not always available, however, and while it is certainly not clear how many men and women turn to open defecation because of dirty and smelly toilets, it is possible that rather than be disgusted by open defecation, some would actually turn to open defecation precisely because of disgust with the condition of shared toilets.

Jewitt (2011) argues that in rural areas, where there is plenty of open space and privacy, "people often choose open defecation in preference to using a smelly, mosquito-infested toilet". Comparing her use of the *maidan* with the toilets in Rafinagar, Taslima explained that "in the *maidan* you don't get a smell. The smell is bad in the toilet since it is closed." While this reveals that when it came to smell, Taslima preferred the *maidan* to the existing toilets, she had to also factor in questions of privacy. Such choices then are of course more difficult in the city, which does not easily offer open space and privacy. But, the narratives explored here show that for residents of informal settlements, everyday geographies of disgust, contamination and the unsanitary city

involve poorly ventilated, irregularly cleaned toilets that large numbers of people are forced to use without adequate access to water. While it is not entirely clear how often these experiences and geographies lead people to turn to open defecation, there is clearly a need for more sophisticated understandings in this direction.

Subaltern perceptions of dignity also play a role in shaping open defecation practices. Naina had shared her views on cleanliness and the role of personal responsibility in keeping oneself, one's house and one's neighbourhood clean. In this context, the casual, matter-of-fact tone in which she mentioned her intermittent open defecation practices suggested that she did not consider this to be an undignified or humiliating practice. Given writings on urban sanitation—which have repeatedly pointed to the impacts that open defecation have on women's privacy, dignity and safety—as researchers we have perhaps come to expect that women informants will talk about open defecation only in ways that fit into these narratives. These narratives certainly emerged in Rafinagar as well, as we will later discuss in this paper. However, when Naina—and a number of other women in Rafinagar—mentioned open defecation in a casual, matter-of-fact tone, it was unsettling to us as researchers and provoked questions.

Clearly, open defecation is not a humiliating practice in all contexts. The humiliation associated with open defecation is, indeed, a historical construct. Srinivas (2002) writes about how bathing and defecation in rural areas in India were social activities until the late 1940s (though certainly segregated by gender). It was, in fact, considered to be quite appropriate to be sociable while bathing and defecating, and people "made a separation between the corporeal self and the social self, [thus] while the physical body engaged in evacuation or purification, the social self continued interaction unabated" (Srinivas 2002:371). According to Srinivas, this "communal bond of defecation" was lost as villagers began to build individual toilets in their backyards; the social individual and the corporeal body fused into one, and notions of privacy and shame became associated with open defecation. While Srinivas seems to suggest that open defecation is uniformly seen as a shameful practice now, this is clearly questionable. Writings on rural sanitation, for instance, reveal that collective norms and behaviours can make open defecation acceptable (see, for example, Jewitt 2011; Mehta and Movik 2010).

In the case of recent migrants to the city from rural areas, it is indeed possible then that not everyone perceives open defecation as a humiliating practice in and of itself. Indeed, being forced to use a disgustingly dirty toilet can also be a challenge to one's dignity and one might prefer open defecation on these grounds as well. As Bhaskar Mukhopadhyay (2006) argues, toilet festivals organized by middle-class activists advocating improvements in sanitation in Mumbai's slums, link open defecation, humiliation, victimization and a lack of dignity (and are approvingly described as such by Appadurai 2004) in ways that are not necessarily shared by slum dwellers themselves. Rather than impose urban elite notions of dignity and humiliation onto urban subalterns, he argues that there is a need to examine attitudes that shape sanitation norms, more so because the rendering of certain defecation practices as unacceptable and humiliating can foreclose options. There is clearly a need for a better understanding of notions of dignity vis-à-vis open defecation. How do notions of dignity (and indignity) get linked to visibility, privacy, safety, disgust, and infrastructures, and how do they vary across age and gender?

Spatialities and Temporalities of Open Defecation

Although there were large areas of open space around Rafinagar, people did not "*just go in the open*" as presumed by the security agency's CEO quoted earlier. Rather, they spatially and temporally improvised so as to use open space in ways deemed most proper and safe in the context of prevailing social relations and norms. Open spaces were thus differentiated for their use for open defecation by different groups. While young children living in Rafinagar Part 1 went on the road outside the settlement, other children and most men of Part 1

walked across the road to the garden or *maidan*, a vast open space located behind one of the private toilet blocks (see Figure 1). In Rafinagar Part 2, most young children used the adjacent *maidan* (also known as *kabrastan* since the municipal government had earmarked this land for a graveyard), beyond which rose the Deonar garbage dump, Mumbai's largest garbage disposal site. The youngest of the children were often made to sit on newspapers and plastic bags just outside the house because of fears (such as their getting bitten by aggressive stray dogs) associated with letting them defecate further away. Some men used the *maidan/kabrastan* as well.

For men and women, the Deonar garbage dump with its heaps of garbage provided a particularly suitable topography for creating gendered separations for open defecation (see Figure 1). Men often used open spaces at the lower edges of the dump, especially along the water channel along the dump's western edge, while women walked up onto the garbage dump, finding spaces behind garbage heaps or in the ditches created by the dumping of garbage to shield themselves from prying eyes. These spatial improvisations thus involved cooperation between men and women. However, not everyone cooperated. There were many cases of women being harassed when they went to the garbage dump. Some residents recounted instances of young girls being raped. Salma explained the reasons for these cases of harassment:

> Our sons and husbands understand. That our mothers and sisters go. But [men] come from outside and harass us … They [drink] alcohol; they do *charas*, *ganja*, *solution* … Many rapes have happened. Some parents don't bring it out in the open to protect their honour; they are scared.[9]

She went on to explain that these were men from other parts of Shivaji Nagar, the larger area comprising an official slum resettlement site and various informal settlements. But it is possible that men from within Rafinagar also harassed women at the dump. Many residents mentioned alcohol and drug abuse amongst young men within Rafinagar and women recounted instances of harassment by such men, including at one of the toilet blocks.[10]

Although using open spaces such as the *maidan* and *kabrastan* that were visible to more people might have at least prevented sexual assault, securing some kind of privacy for performing bodily functions was more important for women given the social norms of modesty in a patriarchal society. Most women tried to decrease the possibilities of assault by going to the garbage dump with other women and by going before 10 and 11am after which garbage trucks began to ply the dump. Collaborations amongst women thus constituted social infrastructures necessary to safely fulfil sanitation needs. However, certain kinds of verbal and visual harassment were still not easily avoided. One woman resident explained that if one went alone, someone would "cover your mouth and carry you off"; this, she added, would not happen if two women went together, although men might still pass comments and make obscene gestures. It would not be an exaggeration to say that at times some women took a chance on their safety in their search for privacy and to conform to social norms of modesty. Moreover, going on to the garbage dump to find privacy itself posed risks of being bitten by aggressive stray dogs, falling into deep ditches, and sinking into the garbage, especially during the monsoons.

The spatial and temporal improvisations that constituted open defecation practices thus involved considerable effort, particularly by women. If these improvisations tried to minimize certain risks, then they also deepened other risks. Women who did not want to undertake the risks associated with going on to the garbage dump used the *maidan/kabrastan* but only under the cover of darkness. However, as this involved controlling the body and its excretions, it made women vulnerable to various health-related risks.

Moreover, everyday life in informal settlements often involves coping with change in the unevenly developing city, over which residents have little control. Such changes can also profoundly disrupt practices of open defecation, requiring new improvisations that often created new risks and vulnerabilities. In November 2009, plans began for the scientific closure of the Deonar garbage dump.

Receiving Mumbai's garbage since 1927, the garbage disposal site had been reaching the end of its life. Middle-class residents from surrounding areas had also protested against the air pollution caused by the vapours of decomposing garbage and the fumes caused by garbage burning by ragpickers to extract metals. The municipal government thus handed the site to a private company for its closure. Salma explained how this had affected the use of this space for open defecation:

The vehicles start to run [on the dump] at 6–7am. They run the entire day. Till seven in the evening. Even at night sometimes … The road [on which the vehicles run] is high. Everything can be seen from above if someone is sitting below … If one is sitting then sometimes somebody will come and chase one away. If you've worn a *sari* then it is okay. But it is difficult in a *salwar* [a kind of loose trouser], there is no time to tie it also … First the [garbage] trucks used to come "time to time" [i.e. at specific times]. Ever since it has become private there is more harassment. No matter where you look there is a vehicle.

The garbage dump was also being levelled by the private company for its conversion into a sanitary landfill and development as a green belt (see Figure 2). Salma explained that this too created difficulties since there were no longer heaps of garbage and ditches where one could shield oneself. Other women mentioned that whereas earlier they could go onto the dump till 10–11am, with the coming of the private company's bulldozers, security guards and vehicles, they now had to go earlier in the morning, usually before 8am. Amina now woke her 16-year-old daughter at 6am daily to send her to the garbage dump so as to decrease chances of her being seen or harassed.

Taslima had begun to go to the dump before 6–7am, but on many days she could not finish with her bodily needs this early. On such days she would walk over to a private toilet block around 10–11am, after her husband returned from fetching water. She paid Rs.1 to use this toilet block. Both Taslima and her husband work alternately as ragpickers on the garbage dump, earning Rs.100–150/day between them for their family of six. As mentioned earlier, Taslima took her 6-year-old daughter with her to the private toilet so that she would not have to pay separately for her as well. Their use of the private toilet was not about willingess-to-pay, as the World Bank and many development practitioners would like to portray it, but the inescapable need to fulfil the body's physiological needs in the context of the changing city around them, their domestic routines (some of which are shaped by the fragmentary and polarized geographies of water in Mumbai), the narrow toilet block options available to them, and their own deeply straitened financial circumstances. In a couple of years, the family will have to spend more on toilet access as their daughters grow up, even as they will have to explore other livelihood options with the garbage dump's closure. The private block had also begun to charge Rs.2 in the men's section and so per-use charges were also likely to increase in the women's section in the future.

In mid-2010, the municipal government also began constructing a wall around the *kabrastan* to develop the graveyard. This would narrow the open space that children could use for defecation and that women could use under the cover of darkness. Several people pointed to this emerging enclosure, emphasizing the urgency of building a toilet block in Rafinagar Part 2.

Elsewhere too, changes in the unevenly developing city often mean a narrowing of open spaces affording privacy, safety and gendered separation. In Khotwadi, for instance, many men defecated along the railway tracks adjacent to the settlement, risking their limbs and lives every day in the process of fulfilling their bodily needs.

Practices of open defecation emerge then from deep sanitation inequalities in the city. They involve considerable effort through spatial and temporal improvisations, and while these seek to ensure maximum privacy, safety and gendered separation, they also deepen urban inequalities in various ways, especially for women and children. Deepening inequalities also emerge from the effects of open defecation on health. NGOs working in Rafinagar noted the high incidence of diarrhoea, dysentery and worms (for more on health and open defecation, see

Black and Fawcett 2008; UN Millennium Project 2005). In Rafinagar, open spaces used for defecation are some of the only open spaces for children to play (as with the garden, *maidan* and *kabrastan*) and are also spaces where many adults and children spend long hours working as ragpickers (as with the Deonar garbage dump).

In this paper, we analyzed how open defecation emerges through everyday embodied experiences, practices and perceptions that emerge in relation to the materialities of sanitation infrastructures in the deeply fragmented and unequal Indian city, by tracing the micropolitics of access, territoriality and control of sanitation infrastructures; people's daily routines and rhythms; and people's sensory experiences of disgust and perceptions of dignity and humiliation. By interrogating these embodied materialities, this paper seeks to better articulate the multiplicity of relationships between the body and infrastructure in the metabolic city, and thus also expand our conception of the relationships between the body, infrastructure and the sanitary/unsanitary city. The manner in which these embodied materialities create precarious conditions for the fulfilment of basic bodily needs, or deny the fulfilment of these needs (regularly or intermittently), is a crucial dimension of urban poverty and inequality.

We have also interrogated practices of open defecation as spatial and temporal improvisations. These improvisations produce and reinforce inequalities through their implications for health and women's safety. As the Rafinagar case shows, these improvisations are also disrupted in the unevenly developing city, forcing people to chart out new improvisations. These disruptions and the new improvisations that emerge often deepen vulnerabilities and inequalities in various ways. Our tracing of these improvisations and experiences is not to simply reveal how people cope with lack of or limited sanitation, but to emphasize the different ways in which they emerge and take shape.

Indeed, practices of improvisation around open defecation are essentially coping mechanisms, and often reproduce and deepen inequalities rather than articulate political claims such as the right to sanitation and water. In this sense, improvisation perhaps lacks a politics. However, these improvisation practices and the difficulties and inequalities they produce are at times made visible in political claim-making. For instance, political demands for more toilets or for certain kinds of toilets or for toilets in particular localities could be strengthened by how persuasively and powerfully people narrate their everyday experiences, the efforts they make (ie their improvisations) to fulfil their bodily needs in the absence of adequate sanitation, and the risks and vulnerabilities these produce. Moreover, improvisation can become political in different ways. This might be due to the state byelaws further disciplining improvisatory responses, or when residents become divided around lines of class, religion, ethnicity or caste in response to improvisatory practices pursued by different groups. While these improvisatory micropolitics of making and unmaking urban infrastructure have been largely neglected in debates on urban infrastructure and political ecology, we hope that we have shown that this constitutes a vital realm of urban life that demands more research focus, especially given that it is in these practices that more and more of urban life is lived.

This focus on people's everyday practices, experiences and perceptions in relation to sanitation infrastructures and open defecation also problematizes the bourgeois urban aesthetic which has recently mobilized a police approach to sanitation in Mumbai's public spaces and the relationships between the body, infrastructure and the urban environment that such approaches presume. Such an approach is part of a wider move across many Indian cities to reclaim the city from the poor and working classes for its middle classes and elites (see Baviskar 2003; Ghertner 2008; Sharan 2006), with many of these urban revanchist moves (Smith 1996) pitting "public" (read "middle-class") concerns around the environment against the "private" acts of the urban poor. While such approaches presume that the urban poor are unwilling to use sanitation infrastructures, are impatient and irresponsible in their use of them, and do not mind using open space because they lack any sense of disgust or dignity, our analysis challenges these presumptions.

The histories of colonialism and nationalism have continually produced an urban modernity in postcolonial cities wherein the relation between the body, infrastructure and the city has continually been rendered uncertain, precarious, shifting and disruptive for the majority of urban dwellers. This investigation of how open defecation emerges through the relations between the body and infrastructure in the fragmented and unequal Indian city, and how open defecation involves precarious spatial and temporal improvisations shows that in the current moment of a globalizing urbanism in cities like Mumbai, the uncertainty and disruption that marks this relation continues to be deepened.

We hope that it is evident that this focus on open defecation, informality, the body and infrastructure has implications for sanitation policy and practice. Many writings on urban sanitation have, of course, pointed to how open defecation is prevalent in cities because of inadequate toilets. The recent emphasis on community participation in urban sanitation programs like the Slum Sanitation Program in Mumbai has partly emerged from an awareness that not only must more toilets be built in the city but that they must be functional and they must meet people's needs if they are to prevent open defecation. However, the outcomes of such programs continue to be calculated in policy circles in terms of the number of toilet seats built, even though in practice the outcomes are uneven in terms of creating adequate—that is, clean, well maintained, easily accessible and affordable—toilets in the city (McFarlane 2008a; TARU and WEDC 2005). To create adequate sanitation for truly fulfilling the bodily needs of urban dwellers, sanitation policy and practice will have to engage with people's practices, experiences and perceptions in relation to sanitation infrastructures and (open) defecation. It is imperative that to bring an end to open defecation and provide truly adequate sanitation for all, sanitation policies and programmes need to be broadened to address the multiplicity of relationships between the body and infrastructure that we have discussed.

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Endnotes

1.1 Under the byelaws, a person is liable to pay a fine of Rs.200 for urinating and Rs.100 for defecating in a public place.

2.2 We focus only on open defecation because most women from the informal settlements we studied did not resort to open space for urinating since bathing spaces inside their houses were usually used for this.

3.3 See Sharan (2006) for the colonial roots of nuisance discourses. Also see Ghertner (2008) for how legal discourses of nuisance facilitates slum demolitions in Delhi.

4.4 In 2001, 6.25 million people lived in 1959 "slum settlements", accounting for 54% of the city's population. Of this, the city's "non-notified slums" included 137 settlements with a population of 0.52 million (MW-YUVA 2001).

5.5 Personal interview, 27 April 2010. According to the CEO, the most common actions for which people were fined by his agency were spitting, littering, urinating and defecating.

6.6 We do not think that Chakrabarty and Kaviraj mean this as an argument about cultural specificity. It is widely known that people threw garbage and emptied chamber pots on the streets in Europe and America until the eighteenth to nineteenth centuries. However, while notions of "public space" linked to a bourgeois notion of "civic consciousness" became hegemonic in shaping the use of streets and open urban spaces in Europe and America (with indoor plumbing, city-wide sanitation systems etc playing a role in this), Chakrabarty and Kaviraj seek to show that this was not the case in Indian cities.

7.7 CLTS involves participatory mapping of neighborhoods in order to understand current

practices of open defecation and sanitation more broadly, and then organizing communities into self-help groups to build and maintain toilets. A key strength of CLTS is precisely its concern with building sanitation solutions directly from everyday experience (see Mehta and Movik 2010).

8.8 We did not trace other practices of defecation that women might resort to under such circumstances, such as defecating in plastic bags at home.

9.9 *Charas* and *ganja* are made from the cannabis plant. "Solution" refers to Erazex, a typewriter correction fluid inhaled to produce intoxication.

10.10 Alcohol, tobacco addiction and drug abuse amongst young men in Rafinagar were mentioned by participants of our focus group discussion with a male youth group.

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Life of Aged Residing in the Urban Slum Areas of Mumbai

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Introductions

The research team collected the details of life of the aged with the help of a structured interview schedule. The interview schedule was prepared in a workshop by the experts. The data was collected during March-June, 2013. Approaching the aged was not an easy task. It was challenging to find slums in each ward, get the permission of the local leaders and family members, but most importantly to bring the aged to open up for the research. The research work was done during the rainy season. The research team visited 24 wards of Mumbai city. After identifying the slums, talking to the local leaders, some space was found to interact with the aged. The aged were interviewed as per the time and place convenient to them. And then the information was gathered from 1,262 aged successfully. Following tables give details of the information collected from the aged about their profile and overall life.

Table 1
Ward wise distribution of the Aged

Ward	Sex		Total
	1 Male	2 Female	
A	18	36	54
	3.80%	4.60%	4.30%
B	31	48	79
	6.60%	6.10%	6.30%
C	18	32	50
	3.80%	4.10%	4.00%
D-Tulsiwadi	17	34	51
	3.60%	4.30%	4.00%
E	19	31	50
	4.00%	3.90%	4.00%
F – south	22	28	50
	4.70%	3.50%	4.00%
F/N	12	38	50
	2.50%	4.80%	4.00%
G – north	13	37	50
	2.70%	4.70%	4.00%
GS	32	34	66
	6.80%	4.30%	5.20%
H	20	30	50
	4.20%	3.80%	4.00%
H – east	18	32	50
	3.80%	4.10%	4.00%
K – east	13	37	50
	2.70%	4.70%	4.00%
K – west	16	34	50
	3.40%	4.30%	4.00%
L	18	32	50
	3.80%	4.10%	4.00%
M	20	42	62
	4.20%	5.30%	4.90%
MW	20	30	50
	4.20%	3.80%	4.00%
N	23	27	50
	4.90%	3.40%	4.00%
P – north	23	27	50
	4.90%	3.40%	4.00%

P – south	27	23	50
	5.70%	2.90%	4.00%
R	25	25	50
	5.30%	3.20%	4.00%
R – Central	16	34	50
	3.40%	4.30%	4.00%
R – north	19	31	50
	4.00%	3.90%	4.00%
S	14	36	50
	3.00%	4.60%	4.00%
T	19	31	50
	4.00%	3.90%	4.00%
Total	**473**	**789**	**1262**
	100.00%	**100.00%**	**100.00%**

The above table No.1 shows the wards from which the sample for the present research was drawn.

For the administrative purpose Mumbai city is divided in to 24 wards. Efforts were made to cover minimum 50 aged from each ward.

Sex of the respondents

A sample of 1,262 senior citizens was selected from 24 wards of Mumbai city. Out of this, 473 were males and 789 were females. The number of females covered under study was more because at the time of data collection women were available in the slum area to provide their information to the research team. Men were either not available in the slum or had gone out for work. Further, number of widows was also more. Another logical reason is that the longevity among women is more and that the same was also depicted in the present data.

Table 2
Age distribution of the sample of the study

Age	Male No	Male Percent	Female No	Female Percent	Total	Total percent
60 to 65 years	212	44.8%	493	62.5%	705	55.9%
66 to 70 years	129	27.3%	158	20.0%	287	22.7%
70 to 75 years	75	15.9%	78	9.9%	153	12.1%
76 to 80 years	34	7.2%	33	4.2%	67	5.3%
81 to 85 years	19	4.0%	15	1.9%	34	2.7%
86 to 90 years	3	6%	7	9%	10	8%
91 to 95 years	1	2%	4	5%	5	4%
96 to 99 years	0	0%	1	1%	1	1%
Total	**473**	**107.2%**	**789**	**113.5%**	**1262**	**111.7%**

Table No. 2 shows that the aged who were in the age group of 60-65 years were around 62%.

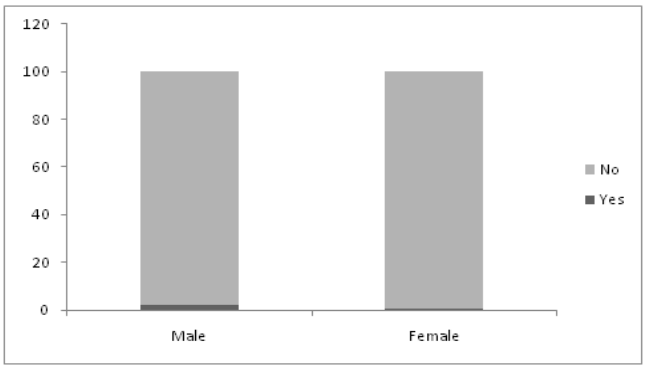
The table 3 indicates that the educational level of the aged residing in the slum areas varied from illiteracy to post graduation. The illiterate aged were half (52.8%) and out of this, 66.3% were females which was double than that of the men (30.3%). Number of women illiterates was high may be because 60-70 years back women were not encouraged to learn due to poverty and ignorance. But those women who liked to learn and wanted to pursue their education could get chance to learn and could become neo-literates. Neo-literates in the selected sample were negligible (4.2%). Among the neo literates, the number of female (5.1%) neo-literates was more. Some men said they did not learn much due to poverty and pressure from their families to earn money.

Table 3
Education of the aged by their gender

Education		Q4 Sex		Total
		1 Male	2 Female	
1	Illiterate	143	523	666
		(30.2%)	(66.3%)	(52.8%)
2	Neo-literate	13	40	53
		(2.7%)	(5.1%)	(4.2%)
3	Up to Std. IV	82	70	152
		(17.3%)	(8.9%)	(12.0%)
4	Std. V to VII	90	104	194
		(19.0%)	(13.2%)	(15.4%)
5	VIII to X	105	37	142
		(22.2%)	(4.7%)	(11.3%)
6	XI to XII	25	11	36
		(5.3%)	(1.4%)	(2.9%)
7	Above XII to Graduate	12	3	15
		(2.5%)	(.4%)	(1.2%)
8	Post Graduate	3	1	4
		(.6%)	(.1%)	(.3%)
	Total	473	789	1262
		(100.0%)	(100.0%)	(100.0%)

Graduates and post graduate aged were very less. 26.7% had attended secondary schools. Higher education and postgraduates was very negligible (0.3%). 12% had completed their education up to IV standard. 15.4% had completed their education from V to VII the standard. Those who had completed secondary education were less in number (11.3%).

Diagram No. 1
Showing computer literacy among the aged

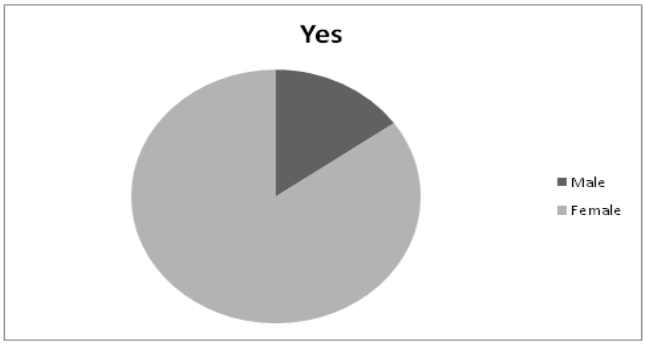


Very negligible percent of aged had completed their education from V to VII standard.

The above bar diagram 1 clearly shows that elderly people of Mumbai city are almost digitally illiterate. As only 1.3% of them said that they are computer literate. These elderly persons could not learn computer as in those days computer was not used for performing any functions related to their work. And the aged who were educated up to graduation and post graduation did not show keen interest in learning computer. But considering a need of today it is necessary for the aged to learn computer.

Hence, almost all the aged or those who have completed SSC and are residing in the slum need to be provided with some exposure to today's communicative and interactive high tech media.

Diagram No. 2
Involvement of the aged in cooking



The above diagram 2 depicts involvement of the aged in cooking. It shows that out of the total, almost 33% people cooked regularly. The males (8.5%) who did so were substantially meagre as compared to the females (47.5%). Being a male dominant society, this trend seems simultaneous.

Above table 4 shows the number of aged who cooked food regularly was 32.9%. Out of 1262 aged respondents 47.5% females cooked food regularly and that less number (8.5%). A very large chunk of the elderly men were not involved in cooking food regularly.

As per Indian tradition the women are responsible to cook and men are almost never intended to do so. This is due to the gender discrimination prevalent in the society. Further, women of the house have been involved in cooking hence, aged women cooking on regular basis is an extension of women's daily life activities. But even in their old age, men need not have to cook food as usually they get ready made food prepared by women of the family. These women could be their wife, daughter or daughter in law or a woman servant.

Toilet facility for the aged

68% of the aged people residing in the slums do not have toilet facilities in their own homes. Without toilet facility one has to get used to the habit of controlling the natural desire to pass the bowels. Such habits lead to lot of health problems like stomach ache, piles, etc. Among all, the maximum toilet facilities were in the ward B.

Table 4
Aged who cook food

Do you have to cook food?	Q4 Sex		Total
	1 Male	2 Female	
Regularly	40	375	415
	(8.5%)	(47.5%)	(32.9%)
Sometimes	62	219	281
	(13.1%)	(27.8%)	(22.3%)
Never	277	168	445
	(58.6%)	(21.3%)	(35.3%)
NA as sick/old	94	27	121
	(19.9%)	(3.4%)	(9.6%)
Total	473	789	1262
	(100.0%)	(100.0%)	(100.0%)

Most of the slum dwellers do not have water or electricity in common toilets.

Commode toilet facility inside the house

Commode facility in the slum area was made available for themselves by very negligible percent. 7.8% people have commode facility inside the house and 92.15 % people do not have it. Mostly it was in the B and C wards and South Mumbai region which had higher prevalence.

Above table 5 shows, occupation and sex of the aged

The number of aged who were unemployed was high i.e. 79.6% and it was almost equal in the case of both men and women. Those in full time private job were 5%. This reveals the fact that at this age as well, they have to do a regular job. Regular job would mean making one self-available throughout the day for almost the whole month. 8.7% were in to private business or freelancing. This is a good sign that even at an older age people work and contribute to the economy of Maharashtra state of India.

The above table no 6 shows that those who said that they have retired were very less 20%. Out the retired persons male members who have retired from their job were 43.8%. May be the number of males working in the organized sector have been always

Table 5
Current Occupation

	Current Occupation	Male	Female	Total
1	Nothing	378	626	1004
		79.9%	79.3%	79.6%
2	Private full time service	35	29	64
		7.4%	3.7%	5.1%
3	Business	20	26	46
		4.2%	3.3%	3.6%
4	Free lancing	20	20	40
		4.2%	2.5%	3.2%
5	Private Part- time service	20	25	45
		4.2%	3.2%	3.6%
6	Teach/give tuitions	0	1	1
		.0%	.1%	.1%
7	Housewife	0	60	60
		.0%	7.6%	4.8%
9	Artist	0	1	1
		.0%	.1%	.1%
11	Any other Pl	0	1	1
		.0%	.1%	.1%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table 6
Age at which Aged Retired

		Sex		Total
		1 Male	2 Female	
1	Yes	207	45	252
		43.8%	5.7%	20.0%
2	No	115	357	472
		24.3%	45.2%	37.4%
3	NA	151	387	538
		31.9%	49.0%	42.6%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

more than women in India. Females retiring from their jobs were very less (5.7%). This may be because in the earlier days these aged women would not have worked for organized sector. Hence, the question of their retirement did not arise. Almost one fourth, i.e.; 24.3% of the elderly persons did not ever retire from

their job may be because they were working in an un-organized sector. This did not provide them with the retirement benefit like Pension, which interferes with their security.For 42.6% of the aged the question of retirement never occurred as they never worked for an organized sector.

Table 7
Age of retirement

	Age at which the aged retired	Q4 Sex		Total
		1 Male	2 Female	
1	NA	255	733	988
		54.0%	92.9%	78.4%
2	Below 50years	27	13	40
		5.7%	1.6%	3.2%
3	51 to 55 years	38	8	46
		8.1%	1.0%	3.6%
4	55 to 59 years	80	18	98
		16.9%	2.3%	7.8%
5	60 years	58	12	70
		12.3%	1.5%	5.6%
6	61 to 65 years	14	2	16
		3.0%	.3%	1.3%
7	Any other	0	3	4
		.0%	.4%	.2%
	Total	**472**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table no. 7 shows the age at which aged retired. When the aged were asked when did you retire? 78.4% said this question is not applicable to them as they had never retired. This was may be because they have been working in the un-organized sector and that is why the question of their retirement never occurred in their case.

Table 8
Aged having their own source income

		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	183	200	383
		38.7%	25.3%	30.3%
2	No	290	589	879
		61.3%	74.7%	69.7%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Above table no. 8 shows that 30.3% of the elderly people said they had their own source of income. Male members having their own source of income were more 38.7% and female having their own source of income were 25.3%.

The number of male (38.7%) aged having their own source of income was slightly more than females (25.3%). It could be because males had their pension or that few were still working but it was not so with women

Table 9
Present income per month

Amount earned per month		Sex		Total
		1 Male	2 Female	
1	Up to Rs. 500	203	426	629
		42.9%	54.0%	49.8%
2	Rs. 501 to 1000	69	104	173
		14.6%	13.2%	13.7%
3	Rs. 1001- 3000	83	143	226
		17.5%	18.1%	17.9%
4	Rs. 3001 to 5000	64	82	146
		13.5%	10.4%	11.6%
5	Rs. 5001 to 10,000	46	34	80
		9.7%	4.3%	6.3%
6	Rs 10,001 to 15,000	5	0	5
		1.1%	.0%	.4%
7	Rs. 15,001 to 25,000	3	0	3
		.6%	.0%	.2%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table no. 9 shows that those who had their income up to Rs. 500/- per month were almost 50%. The aged having income more than Rs. 5000 were very less.

Table no. 10 shows details of aged holding a credit card.

Table 10
Aged holding Credit card

Aged holding Credit card		Sex		Total
		1 Male	2 Female	
1	Yes	12	2	14
		2.5%	.3%	1.1%
2	No	461	787	1248
		97.5%	99.7%	98.9%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Today's world is the world of plastic money but the aged residing in the slum area not at all taking advantage of credit as the number of aged holding credit card was negligible (1.1%) and only 0.3% were females.

Actually, the poor especially, aged are really in need of credit money but they have no guarantee so no banks are interested in coming forward to offer them help.

Above table 11 gives details of **Aged having outstanding debts.**

When asked the aged do you have any outstanding debts 5.7% said yes. Out of which the number of men was 6.6% little more than females (5.2%). One of the reasons for the elderly people to not to remain in debt could be because the lenders do not lend money to the poor elderly people as they have no surety and loan paying back capacity. But the men who were in debt though less may be having their own problems such as stress and worry to be free from loan. Further, those elderly persons who really need loan may be suffering as there are very few sources that pay loans to the elderly. One needs to probe into this issue further.

Table 11
Aged having outstanding debts

		Sex		Total
		1 Male	2 Female	
1	Yes	31	41	72
		6.6%	5.2%	5.7%
2	No	421	721	1142
		89.0%	91.4%	90.5%
3	NA	21	27	48
		4.4%	3.4%	3.8%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Above table no. 12 showed if aged were in need of taking loan. 12.1% males said that they were in need of loan and 87.9% males said no need of loan but 9.5% females were in need of loan and 90.5 % female said they had no need of loan.

Table 12.
Aged if in need of loan

		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	57	75	132
		12.1%	9.5%	10.5%
2	No	416	714	1130
		87.9%	90.5%	89.5%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table 13
Aged who have insured their life

		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	21	16	37
		4.4%	2.0%	2.9%
2	No	433	747	1180
		91.5%	94.7%	93.5%
3	NA	19	26	45
		4.0%	3.3%	3.6%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

The aged who took loans from organized sector were very less. Usually whenever aged needed money the private persons like the elder persons own relatives, friends, fellows, neighbors, private society, landlords, owners of jewelry shop. Marwari's and private financial companies came to their rescue. As mentioned earlier it is needed to conduct research to find out who really helps elderly when they are in financial problems.

Above tableo13 showed that the aged who have insured their life were very negligible in number (2.9%). Out of which maless insuring their life were more. May be elderly persons in their early days would not be having enough money to pay for the premium. Also due to poverty at that time they could not have insured their life. In fact now-a-days government and NGOs are coming up with lot of innovative schemes to ensure that people will insure their lives. But at that time, no such schemes were there and therefore the aged were out of all this.

Table 14 shows the senior citizens residing in the slum areas and who have made their wills were very negligible (3.6%). This may be because they do not own much property. Further, the children of the aged would know that when their parents do not have much property then why insist on making a will.

Table 14
Aged persons who have made will of their property

		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	24	22	46
		5.1%	2.8%	3.6%
2	No	363	548	911
		76.7%	69.5%	72.2%
3	No property so no will	73	182	255
		15.4%	23.1%	20.2%
4	NA	13	37	50
		2.7%	4.7%	4.0%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table 15 shows that of all the men, at least 80% of them had the ownership of one house. The statistics are almost the same among the men and women. The elderly persons having house on their own name were 80,9%. Out of this 75.4% were males and 56.8% were females. The study also reveals the fact that elderly usually stayed in a house owned either by themselves or their spouse, son, daughter, close relative like brother/sister or by parents. Those staying in some other homes were very negligible (0.4%).

Aged living in a house owned by their son was 9.6%. Out of which number of female (12%) aged was more than men (5.6%). Aged living in a house owned by their daughter was 2.9%. Out of which number of female (4%) aged was more than men (1.2%) This means more number of mothers stay in the houses of their sons (12%) and daughter (4%) than the fathers.

In fact, it is surprising that though a very large number of the aged hold the ownership of their homes yet they have not thought of making a will. Hence, it is suggested that all elderly persons need to be made aware about how to make a will. As such an action from the part of aged will stop further disputes in the lives of their children

Table 15
Distribution of the aged by their house ownership

House ownership	Q4 Sex		Total
	1 Male	2 Female	
Self	362	616	978
	(80.3%)	(81.3%)	80.9%
Spouse	48	86	134
	(10.6%)	(11.3%)	(11.1%)
Son	31	48	79
	(6.9%)	(6.3%)	(6.5%)
Daughter	2	0	2
	(.4%)	.0%	.2%
Relatives	8	8	16
	1.8%	1.1%	1.3%
No House	50	3	53
	(3.96%)	(.2%)	(4.1%)
Total	**451**	**758**	**1209**
	100.0%	**100.0%**	**100.0%**

Table 16 shows that the elderly persons having house on their own name were 63.8%. Out of this 75.4% were males and 56.8% were females. The study also reveals the fact that elderly usually stayed in a house owned either by themselves or their spouse, son, daughter, close relative like brother/sister or by parents. Those staying in some other homes were very negligible (0.4%).

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Table 16
Distribution of the aged by the House in the name

House in the Name		Q4 Sex		Total
		1 Male	2 Female	
1	Self	309	384	693
		75.4%	56.8%	63.8%
2	Spouse	56	167	223
		13.7%	24.7%	20.5%
3	Son	23	81	104
		5.6%	12.0%	9.6%
4	Daughter	5	27	32
		1.2%	4.0%	2.9%
5	Relatives	6	10	16
		1.5%	1.5%	1.5%
6	Parent	10	4	14
		2.4%	.6%	1.3%
7	Any other	1	3	4
		.2%	.4%	.4%
	Total	**410**	**676**	**1086**
		100.0%	**100.0%**	**100.0%**

Table 17
Ownership of other property

Ownership of property		Q4 Sex		Total
		1 Male	2 Female	
1	Land/Farm	106	143	249
		75.2%	71.1%	72.8%
2	Vehicle	1	6	7
		.7%	3.0%	2.0%
3	Material (Jewellery)	0	1	1
		.0%	.5%	.3%
4	Flat	11	16	27
		7.8%	8.0%	7.9%
5	Own house given on rent	4	7	11
		2.8%	3.5%	3.2%
6	Any other	19	28	47
		13.5%	13.9%	13.7%
Total		**141**	**201**	**342**
		100.0%	**100.0%**	**100.0%**

Table 17 shows that out of 342 persons 72.8% of the aged reported that they owned land. Actually, one gets surprised to know this reality as then the question comes to the mind as to if the elderly have land in their name then why are they staying in the slum area? But when we probed more we came to know that though they own a land it is usually in the joint custody and that elderly person is one of the joint holders of the land. Further, there is a problem in occupying that land. Sometimes the aged are also not very much aware and informed about the fact that really they own the land or not. Most have it at places which are away from the city and this curbs them from taking residence there.

The elderly having vehicle, jewelry, flats and any other valuables were very less in number.

Special skills possessed by the aged

The elderly people possessing special skills were negligible in number. This may be because they were not usually inclined to learn the skills when they were young.

The aged knowing how to chant Bhajans were very large in number (80%). This is because with age people tend to turn more religious.

Table 18
The frequency at which the Aged visit Temple/Church/ Masjid/ Gurudwara

Visit release place		Q4 Sex		Total
		1 Male	2 Female	
1	Daily	167	107	274
		37.0%	15.4%	23.9%
2	Many times in week	99	130	229
		22.0%	18.7%	19.9%
3	Once a Week	72	114	186
		16.0%	16.4%	16.2%
4	Once a month	25	42	67
		5.5%	6.0%	5.8%
5	Once a year	11	16	27
		2.4%	2.3%	2.4%
6	Sometimes	49	104	153
		10.9%	14.9%	13.3%
7	During festivals	11	91	102
		2.4%	13.1%	8.9%
8	Never	16	92	108
		3.5%	13.2%	9.4%
9	Any other	1	1	2
		.2%	.1%	.2%
	Total	**451**	**697**	**1148**
		100.0%	**100.0%**	**100.0%**

Table 18 shows that all together 23.9% visited temples daily, out of which, aged Males visiting temple daily were more (37.0%) and females visiting were just half than that of the men (15.4%). Probably, here the gender role plays an important role, as women prefer to stay back home and men who have lots of freedom of movement can go places. Otherwise, more or less most of the aged visited temples or religious grounds.

Table 19
Aged who have access to telephone

Access to telephone		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	93	74	167
		19.7%	9.4%	13.2%
2	No	377	709	1086
		79.7%	89.9%	86.1%
3	NA	3	6	9
		.6%	.8%	.7%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table 19 shows that overall, 13.2 % of all the surveyed aged had access to telephone services, which is considerably lower than expected. It could be because, they aren't technologically savvy, as well as, the other members of the family would be giving them theirs when they need it. There is a need to make all the aged self sufficient and telephone knowledge is a must to stay connected.

Table 20 shows that little less than one forth (22.7%) had mobile phone. Again, this number has to do with the technologic backwardness in the aged groups. Most of the aged do have mobile phones but can use it just for switching it on and off purpose.They need to be not only taught but also given the confidence that they can use mobile phones with ease.

Table 20
Do aged have mobile phone of your own

Aged if have mobile phone their own		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	172	114	286
		(36.4%)	(14.4%)	(22.7%)
2	No	300	669	969
		(63.4%)	(84.8%)	(76.8%)
3	NA	1	6	7
		(.2%)	(.8%)	(.6%)
	Total	473	789	1262
		100.0%	100.0%	100.0%

Table 21 shows that most of the aged (95.9%) do not have access to Radio. This could be because due to modernization Radio is not a common device used in the house. As it is, this facility is mostly available on mobile and television.

The aged listening to Radio were very just 3%, out of this female listening to Radio were more (3.3%) than males (2.5%).

Table 21
Aged who have access to Radio

Access to Radio		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	15	32	47
		3.2%	4.1%	3.7%
2	No	458	752	1210
		96.8%	95.3%	95.9%
3	NA	0	5	5
		.0%	.6%	.4%
	Total	473	789	1262
		100.0%	100.0%	100.0%

Table 22shows that more than half of the aged had access to television and out of this males having access to TV were more (65.8%) than the females (53.1%).

Table 22
Do aged have access to T.V

Access to T.V.		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	311	419	730
		65.8%	53.1%	57.8%
2	No	158	367	525
		33.4%	46.5%	41.6%
3	NA	4	3	7
		.8%	.4%	.6%
	Total	473	789	1262
		100.0%	100.0%	100.0%

Table 23 shows that the numbers of aged watching TV for up to 1 hour were more 44%, out of this men doing so was a little more than females. The aged watching TV for up to 2 hours were 22.1%. Those who watch TV up to 3 to 4 hours were 12%. In conclusion it can be said that the aged watching TV were more but hardly government makes any note of this as the programs meant specially for men are almost not there.

Table 23
How long do aged watch T.V

Duration of aged watching TV		Q4 Sex		Total
		1 Male	2 Female	
0	No	69	159	228
		17.4%	25.8%	22.5%
1	Upto 1 hr	171	249	420
		43.1%	40.4%	41.4%
2	Upto 2hrs	95	129	224
		23.9%	20.9%	22.1%
3	Upto 3 to 4 hrs	56	66	122
		14.1%	10.7%	12.0%
4	From 5 to 8 hours	4	10	14
		1.0%	1.6%	1.4%
5	More than 8 hrs	0	1	1
		.0%	.2%	.1%
6	No access	2	3	5
		.5%	.5%	.5%
	Total	**397**	**617**	**1014**
		100.0%	**100.0%**	**100.0%**

Table 24
Do the aged have access to computer

House ownership		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	12	7	19
		2.5%	.9%	1.5%
2	No	452	755	1207
		95.6%	95.7%	95.6%
3	NA	9	27	36
		1.9%	3.4%	2.9%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table No 24 showed that very less number of aged 1.5% had access to computer. And therefore they may be using it. But most (95.6%) of the elderly persons have no access to television.

The aged do one or the other type of exercise. Those who practiced yoga were 30%. Walking was practiced by lot of aged (69.9%) people. Number of female (24.8%) practicing yoga were less than males (38.9%)

Table No. 25 shows that 71.3% of the aged said that yes they do go out for eating food. A very small number (3.8%) of the aged said that they do not go out for eating purpose out of this number of females mentioning the same was more than males. The aged going out daily for eating were 7.7%, out of this, males were more than females. Only 2.1% of the elderly eat outside once a year.

Table 25
Do aged eat outside

Eat outside	Q4 Sex		Total
	1 Male	2 Female	
Yes	294	572	866
	64.8%	75.3%	71.3%
Never	27	19	46
	5.9%	2.5%	3.8%
Daily	43	51	94
	9.5%	6.7%	7.7%
Once a week	35	60	95
	7.7%	7.9%	7.8%
Once in six months	36	38	74
	.9%	5.0%	6.1%
Once a year	13	12	25
	2.9%	1.6%	2.1%
Any other	6	8	14
	1.3%	1.1%	1.2%
Total	**454**	**760**	**1214**
	100.0%	**100.0%**	**100.0%**

Table 26
With whom do the aged go outside for eating

Aged go outside for eating		Q4 Sex		Total
		1 Male	2 Female	
1	Alone	86	73	159
		46.7%	34.0%	39.8%
2	With spouse	13	15	28
		7.1%	7.0%	7.0%
3	With the family members	71	108	179
		38.6%	50.2%	44.9%
4	With friends	11	8	19
		6.0%	3.7%	4.8%
5	Any other .	3	11	14
		1.6%	5.1%	3.5%
	Total	**184**	**215**	**399**
		100.0%	**100.0%**	**100.0%**

Table No. 26 shows that the number of males going alone to eat outside was more 46.7% than the females (34%). 44.4% of the aged went out with their family members to eat outside. Aged females (50.2%) going out to eat with their family was comparatively more than males (38.6%).

Table 27
Do you know your blood group

Know your blood group		Q4 Sex		Total
		1 Male	2 Female	
1	Yes	82	32	114
		17.3%	4.1%	9.0%
2	No	311	607	918
		65.8%	76.9%	72.7%
3	Don't know	80	150	230
		16.9%	19.0%	18.2%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table No.27 gives the details of the aged who knew their blood group. From the health point of view the aged should know their blood group. But only 9% knew their blood group. This may be due to the fact that the aged who reside in the slum area may not be aware about the importance of having knowledge of blood group. This data clearly reveals the need to make people aware about the importance of knowledge about blood group.

As any time whenever needed they should not do the running about at eleventh hour. Explain S.

The aged knowing their blood group 9%.

The aged having dentures was very insignificant (4.2%). Dentures are not needed for aesthetic purpose alone. They are needed to ensure that the food which the elderly eat would get properly digested. (But it seems in the slum areas elderly people are least concerned about this issue). This must be because Dentures are expensive in the private sector and the procedure followed in the government hospitals was time and energy consuming, therefore many senior citizens though require dentures, it is practically difficult for them to get them.

There needs to be a very authentic method for aged to get this basic requirement and the government has to do something sincerely about this.

Table 28
Health of the aged person

Health of the aged person		Q4 Sex		Total
		1 Male	2 Female	
1	Very good/excellent	34	32	66
		7.2%	4.1%	5.2%
2	Good/Average/Fine/ Ok	326	544	870
		68.9%	68.9%	68.9%

3	Bad	50	96	146
		10.6%	12.2%	11.6%
4	Always sick	63	115	178
		13.3%	14.6%	14.1%
5	Any other	0	2	2
		.0%	.3%	.2%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table No.28 depicts the perception of aged about their health. When the aged were asked, ''How is your health?''. Those who said that their health was excellent or very good were very few (5.2%). Most of the senior citizens in organized sector usually suffer from Hypertension, Diabetes Mellitus, Ischemic Heart Disease, Chronic Back Ache, Joint pains etc., Though these chronic non communicable diseases can be controlled without special treatment, the cost of medicines and investigations are high, on an average Rs. 5000/- per month. It may be unaffordable for many of the senior citizens. Therefore, they prefer to accept the status quo with happiness. But equal number of aged males and females (68.9%) reported that their health was good / average/ fine / OK. Those reporting that they are always sick were few (14.1%). The aged who said that their health was bad were less (11.6%).

Table 29
In the past one year how many times aged were admitted in a hospital

In the past one year how many times aged were admitted in a hospital		Q4 Sex		Total
		1 Male	2 Female	
1	Never	340	556	896
		71.9%	70.5%	71.0%
2	Once	103	170	273
		21.8%	21.5%	21.6%
3	Twice	21	34	55
		4.4%	4.3%	4.4%
4	Thrice	5	10	15
		1.1%	1.3%	1.2%
5	More than thrice	4	17	21
		.8%	2.2%	1.7%
6	Any other	0	2	2
		.0%	.3%	.2%
	Total	473	789	1262
		100.0%	100.0%	100.0%

Table No. 29 gives details of admission of aged in the hospital. It is worth noting that 71.0% of aged males and females were never admitted in the hospital in the past one year. 21.6% of both men and women reported that they were admitted in the hospital once in the past one year. But as compared to men (1.1%) more women (1.3%) were admitted thrice in the hospital in the last one year. The aged who required more than three times hospital admission were less (1.7%).

Table 30
Aged covered under government schemes

Aged covered under any scheme		Q4 Sex		Total
		1 Male	2 Female	
1	ESIS	0	1	1
		.0%	.1%	.1%
2	Medi-claim	26	32	58
		5.5%	4.1%	4.6%
3	Railway	22	22	44
		4.7%	2.8%	3.5%
6	Pvt. insurance	0	1	1
		.0%	.1%	.1%
7	Public sector union	2	1	3
		.4%	.1%	.2%
8	other	2	0	2
		.4%	.0%	.2%
9	No benefit of scheme	404	717	1121
		85.4%	90.9%	88.8%
	medical scheme	2	1	3
		.4%	.1%	.2%
	Pension	15	13	28
		3.2%	1.6%	2.2%
	Public policy done	0	1	1
		.0%	.1%	.1%
	Total	**473**	**789**	**1262**
		100.0%	**100.0%**	**100.0%**

Table No. 30 shows that the number of aged covered under any insurance scheme were less about 1%.

Table 31
Present source of income

Source of Income		Q4 Sex		Total
		1 Male	2 Female	
1.	If no what is your present source of	118	42	160
	income-Self Pension	30.2	6.1	14.9
2.	Pension"	10	59	69
		2.6	8.6	6.4
3.	Husband/ wife pension			
4.	Shravan bal scheme	9	27	36
		2.3	4.0	3.4
5.	Sanjay Gandhi Niradhar Scheme		3	3
		.4	.3	
6.	Relative's support		4	4
		.6	.4	
7.	Monetary help from an orphanage	258	552	810
		66.0	80.8	75.4
8.	Help from third person	7	10	17
		1.8	1.5	1.6
9.	Small savings		1	1
		.1	.1	
	Total Count	**391**	**683**	**1074**
	Column %	**100.0**	**100.0**	**100.0**

Table No 31 shows that 30.2% and 6.1% men and women respectively lived on the pension. As the figure suggests more number of men were recipients of pension. 2.6% and 8.6% men and women respectively lived on the pension of their spouse. Recipients of ShravanBal and Sanjay Gandhi NiradharYojna were very insignificant i.e. 2.3% and 4% respectively. One needs to probe why is the number of such recipients is less.

Table 32
Place where Savings saved by the aged

Savings		Sex		Total
		1 Male	2 Female	
1)	Bank	140	134	274
		32.7	19.3	24.4
2)	Post	5	5	10
		1.2	.7	.9
3)	Cheat Fund	1		1
		.2		.1

4)	Social institute			
5)	Others	3	5	8
		.7	.7	.7
6)	No	283	551	834
		66.1	79.4	74.3
	Total Count	**428**	**694**	**1122**
	Column %	**100.0**	**100.0**	**100.0**

Table 32 shows that 34.4% of the aged saved their money in the bank. Out of this the number of male members was higher than women i. e. 32.7% and 19.3% respectively. The aged keeping their savings in the post office were insignificant i.e. .9%. The banking system is not very aged oriented and this should be improved.

Table No. 33 shows that most of the aged (95.3%) were not members of any organization. Those who were members were the members of Bhajan Mandal (3.1%), DharmikSanstha (1.8%). The aged being the members of SHG or educational institutions were less in number.

Table 33
Distribution of the aged by their house ownership

Membership of the organization	**Q4 Sex**		**Total**
	1 Male	**2 Female**	
Mahila Mandal	1	14	15
	0.3	1.9	1.3
Bhajan Mandal	12	23	35
	3	3.2	3.1
Swayamsevi Sanstha	2	9	11
	0.5	1.3	1
Sahkari Sanstha	3		3
	0.8		0.3
Dharmik Sanstha	16	4	20
	4	0.6	1.8
Educational Sanstha			
Political Sanstha	3	2	5
	0.8	0.3	0.4
Swaymsahita Gat	1	2	3
	0.3	0.3	0.3
No	376	689	1065
	94.2	96	95.3
Total Count	399	718	1117
Column %	100	100	100

Table 34 showed that when the aged were asked what are your hobbies almost 75% reported that watching Television was their main hobby. 35.6% of the aged enjoyed having discussion with the same age old people. This was followed by those who nurtured the hobby of listening to music and reading 17.8% and 17.1% respectively.

Table 34
Hobbies of the aged

Hobbies	Sex		Total
	1 Male	2 Female	
Reading	108	52	160
	28.6	9.3	17.1
Writing	21	4	25
	5.6	.7	2.7
Music Listen	77	89	166
	20.4	15.9	17.8
TV watch	267	432	699
	70.8	77.4	74.8
Discussion with same age people	143	190	333
	37.9	34.1	35.6
Embroidery	2	5	7
	.5	.9	.7
Tailoring	4	4	8
	1.1	.7	.9
Self study	3	1	4
	.8	.2	.4
Total	377	558	935
	100.0	100.0	100.0

Table N0. 35 showed that almost 50% of the aged informed that they did contribute in their family life by taking care of the house in the absence of other members of the family, out of which females were more (51.4%) than males (45.1%). 16.8% and14.1% aged were involved in Babysitting and child care for the whole day and half day respectively. Both males and females were involved in the work of babysitting but the number of female aged involved in babysitting was more 18.5% and 14% for the whole day and half day respectively compared to females 13.4% & 14.4%. But for the society which does gender discrimination this change is a remarkable change that even males are involved in babysitting. The elderly involved in the work related to children like taking the studies of grand children or bringing them from school bus or school were 7.1%.

About 50% (48.9%) of the aged informed that they helped in cooking work of their family. Out of this females involved in cooking related work were more (62.4%) than males (21.2%).

Table 35
Contribution of aged in household functioning

Contribution in household	Sex		Total
	1 Male	2 Female	
Contribute in family life 1)	138	322	460
Taking care of family peoples	45.1	51.4	49.3
Baby sitting, child care	41	116	157
for the whole day	13.4	18.5	16.8
Baby sitting for about a half day	44	88	132
	14.4	14.0	14.1
Marketing	164	327	491
	53.6	52.2	52.6
Daily house hold work	104	391	495
	34.0	62.4	53.1
Help in cooking	65	391	456
	21.2	62.4	48.9
Water filling everyday	85	273	358
	27.8	43.5	38.4
Taking care of children from	22	28	50
school /bus stop	7.2	4.5	5.4
Help in the study of grand children	10	6	16
	3.3	1.0	1.7
Total Count	306	627	933
Column %	100.0	100.0	100.0

Aged residing in the slum areas was helping their families in various ways. 38.4% of the aged do the work of fetching water every day. Out of this male number is less (27.8%) than females (43.5%)

Table No. 36 shows that the majority of the aged (78.3%) kept themselves busy in some or the other work. Quite a large number of aged (19.7%) were busy in religious activities. About 10 % of the aged (9.9%) kept themselves busy in reading and walking, 2.5% in writing. A total of 7.9% of the aged kept themselves busy in social work out of which males were more in number (11.5%) than the females (5.9%). This could be because males have less work to do in the family as compared to females or may be that males were more interested in doing social work than females. Those who kept themselves busy in music, singing and Adhyapan were negligible in number.

Table 36
How do aged persons keep themselves busy

How do aged keep themselves busy		Q4 Sex		Total
		1 Male	2 Female	
1)	Reading	69	29	98
		19.8	4.5	9.9
2)	Writing	17	8	25
		4.9	1.3	2.5
3)	Walking	56	42	98
		16	6.6	9.9
4)	Social work	40	38	78
		11.5	5.9	7.9
5)	Music	8	5	13
		2.3	0.8	1.3
6)	Adhyapan		3	3
		0.5	0.3	
7)	Relegious work	94	101	195
		26.9	15.8	19.7
8)	Busy In work	227	547	774
		65	85.6	78.3
9)	Singing	2	2	4
		0.6	0.3	0.4
	Total Count	349	639	988
	Column %	100	100	100

Table 37
Distribution of the aged by their habit of consumption of Tobacco

Habit of consumption of Tobacco		Sex		Total
		1 Male	2 Female	
1)	Chewing/consumption 1Gutkha	49	85	134
		36.6	42.7	40.2
		14.7	25.5	40.2
2)	Supari	15	33	48
		11.2	16.6	14.4
		4.5	9.9	14.4
3)	Pan	70	152	222
		52.2	76.4	66.7
		21.0	45.6	66.7

4)	Alcohol	34	2	36
		25.4	1.0	10.8
		10.2	.6	10.8
5)	Drugs	8	12	20
		6.0	6.0	6.0
		2.4	3.6	6.0
	Total Count	134	199	333
	Column %	100.0	100.0	100.0
	Table %	40.2	59.8	100.0

Table No. 37 shows that 66.7% of the aged had the habit of eating pan on regular basis.

40.2% of the aged had the habit of chewing Gutkha out of this more were women (25.5%) than men 14.7%. The number of aged eating supari was 14.4%. The aged who admitted that they do take alcohol were 10.8%.

Table 38
Who accompanies aged with Doctor visit

Who Accompanies Aged With Doctor Visit		Sex		Total
		1 Male	2 Female	
Who accompanies to visit doctor 1) nobody	Count	162	246	408
Column %		35.8	32.5	33.8
husband/wife	Count	155	79	234
Column %		34.3	10.4	19.4
son	Count	154	247	401
Column %		34.1	32.7	33.2
daughter	Count	45	143	188
Column %		10.0	18.9	15.6
daughter in law	Count	14	94	108
Column %		3.1	12.4	8.9
Son in law	Count	1	7	8
Column %		.2	.9	.7
grand children	Count	7	35	42
Column %		1.5	4.6	3.5
Servant	Count		1	1
Column %		.1	.1	
Neighborhood	Count	3	11	14
Column %		.7	1.5	1.2
Friends	Count	2	1	3
Column %		.4	.1	.2
Total		452	756	1208
		100.0	100.0	100.0

Table 38 shows that about 33% aged are not accompanied by anyone to their health visits, the ratio is almost similar for both men and women. 33% are accompanied by their sons, after which comes their spouse.

When the aged were asked who Cared for them when they were hospitalized 40% of them said that they were attended either by their spouse or son when they were admitted in the hospital.

Table 39
Who should take care the aged

Who should take care the aged	Sex		Total
	1 Male	2 Female	
	152	66	218
	(34.5%)	(9.2%)	(18.8%)
Husband/wife	324	584	908
	(73.6%)	(81.3%)	(78.4%)
Son	35	67	102
	(8.0%)	(9.3%)	(8.8%)
Daughter	15	31	46
	(3.4%)	4.3	4.0
daughter in law	29	79	108
	(6.6%)	11.0	9.3
Son in law	1	1	2
	(.2%)	.1	.2
Grand children	1		1
	(.2%)		.1
Servant	6	5	11
	(1.4%)	.7	.9
Total	440	718	1158
	100.0	100.0	100.0

Table No. 39 shows that about 78% of the aged said that in their old age the spouse should take care of them. They expect that the daughter in law (9,3%) and son (8.8%) should take care of them in their old age. Only .9% of them wanted to be taken care of by the servants

Table No 40 shows that Arthritis (66.8%), High blood pressure (40.2%), Diabetes (19.7%), Heart disease (8.3%), Deafness Bed **soars (0.8%),** Psychological disorder Sleeplessness/ anxiety/ insecurity (9%).

Nearly 40%i of senior citizens suffer from high blood pressure, only half of these people take medicines. Other condition like joint pains, Diabetes Mellitus the no of people who take medicines is around 50%. If refered to earlier table no. most of the senior citizens still say they are healthy.

Table 40
Ailments the aged suffer from

Ailments the aged suffer from…	Sex		Total
	1 Male	2 Female	
High blood pressure	160	302	462
	-38.90%	-40.90%	-40.20%
Taking medicine	138	267	405
	-33.60%	-36.10%	-35.20%
Arthritis	231	537	768
	-56.20%	-72.70%	-66.80%
Taking medicine	185	432	617
	-45.00%	-58.50%	-53.70%
Diabetes	91	136	227
	-22.10%	-18.40%	-19.70%
Taking medicine	83	117	200
	-20.20%	-15.80%	-17.40%
Heart disease	47	49	96
	-11.40%	-6.60%	-8.30%
Taking medicine	38	40	78
	-9.20%	-5.40%	-6.80%
Bed sores	3	6	9
	-0.70%	-0.80%	-0.8
Taking medicine	1	2	3
	-0.20%	-0.30%	-0.30%
	8	11	19
	-1.90%	-1.50%	-1.70%
Taking medicine	6	6	12
	-1.50%	-0.80%	-1.00%
Paraplegics	2	7	9
	-0.50%	-0.90%	-0.80%
Taking medicine	1	5	6
	-0.20%	-0.70%	-0.50%

Infirmities of aging	9	21	30
(paralysis, can't walk)	-2.20%	-2.80%	-2.60%
Taking medicine	7	6	13
	-1.70%	-0.80%	-1.10%
Deafness	52	59	111
	-12.70%	-8.00%	-9.70%
Taking medicine	17	20	37
	-4.10%	-2.70%	-3.20%
Blindness	106	186	292
	-25.80%	-25.20%	-25.40%
Taking medicine	49	104	153
	-11.90%	-14.10%	-13.30%
Parkinson	8	24	32
	-1.90%	-3.20%	-2.80%
Taking medicine	5	9	14
	-1.20%	-1.20%	-1.20%
Psychological disorder	27	76	103
Sleeplessness, anxiety, insecurity, Any other	-6.60%	-10.30%	-9.00%
Taking medicine	1	19	20
	-0.20%	-2.60%	-1.70%
Dementia related/Alzheimer10	21	31	
Alzheimer disease	-2.40%	-2.80%	-2.70%
Taking medicine	1	4	5
	-0.20%	-0.50%	-0.40%
Any other	7	7	14
	-1.70%	-0.90%	-1.20%
Taking medicine	191	347	538
	-46.50%	-47.00%	-46.80%
Total	411	739	1150
	100	100	100

Conclusion

- Major findings about the profile and life of the aged revealed following details:
- The details of 1,262 aged out of which 473 males and 789 were females residing in the slum areas of Mumbai city were collected.
- The educational level of the aged residing in the slum areas varied from illiteracy to post graduation. The illiterate aged were half (52.8%) and out of this, 66.3% were females which was double than that of the men (30.3%).
- Graduates and post graduate aged were very less. 26.7% had attended secondary schools.
- Elderly people of Mumbai city are almost digitally illiterate. As only 1.3% of them said that they are computer literate.
- 68% of the aged people residing in the slums do not have toilet facilities in their own homes.
- Commode facility in the slum area was made available for themselves by very negligible percent.
- The number of aged who were unemployed was high i.e. 79.6% and it was almost equal in the case of both men and women.
- Those who said that they have retired were very less 20%.
- When the aged were asked when did you retire? 78.4% said they never retired. This was may be because they have been working in the un-organized sector and that is why the question of their retirement never occurred in their case.
- 30.3% of the elderly people said they had their own source of income. Male members having their own source of income were more 38.7% and female having their own source of income were 25.3%.
- Those who had their income up to Rs. 500/- per month were almost 50%. The aged having income more than Rs. 5000 were very less.
- As the number of aged holding credit card was negligible (1.1%) and only 0.3% were females.
- When asked the aged do you have any outstanding debts 5.7% said yes.
- The aged who have insured their life were very negligible in number (2.9%).
- The aged residing in the slum areas and who have made their wills were very negligible (3.6%).
- At least 80% of them had the ownership of one house. The statistics are almost the same among the men and women.
- The elderly persons having house on their own name were 63.8%.
- The elderly people possessing special skills were negligible in number
- All together 23.9% visited temples daily
- 13.2 % of all the surveyed aged had access to telephone.
- Little less than one forth (22.7%) had mobile phone
- Most of the aged (95.9%) do not have access to Radio and that the aged listening to Radio were very just 3%,
- More than half of the aged had access to television and out of this males having access to TV were more (65.8%) than the females (53.1%).
- Number of aged watching TV for up to 1 hour were more 44%, out of this men doing so was a little more than females. The aged watching TV for up to 2 hours were 22.1%.
- Very less number of aged 1.5% had access to computer. And therefore they may be using it.\
- That all the aged do one or the other type of exercise
- 71.3% of the aged said that yes they do go out for eating food.

- Only 9% knew their blood group
- When the aged were asked, ''How is your health?''. Those who said that their health was excellent or very good were very few (5.2%).
- It is worth noting that 71.0% of aged males and females were never admitted in the hospital in the past one year
- The number of aged covered under any insurance scheme was less about 1%
- 30.2% and 6.1% men and women respectively lived on the pension. As the figure suggests more number of men were recipients of pension. 2.6% and 8.6% men and women respectively lived on the pension of their spouse.
- 24.4% of the aged saved their money in the bank. Out of this the number of male members was higher than women i. e. 32.7% and 19.3% respectively.
- Most of the aged (95.3%) were not members of any organization. Those who were members were the members of Bhajan Mandal (3.1%), DharmikSanstha (1.8%). The aged being the members of SHG or educational institutions were less in number.
- When the aged were asked what are your hobbies almost 75% reported that watching Television was their main hobby. 35.6% of the aged enjoyed having discussion with the same age old people. This was followed by those who nurtured the hobby of listening to music and reading 17.8% and 17.1% respectively.
- Almost 50% of the aged informed that they did contribute in their family life by taking care of the house in the absence of other members of the family, out of which females were more (51.4%) than males (45.1%). 16.8% and14.1% aged were involved in Babysitting and child care for the whole day and half day respectively.
- Majority of the aged (78.3%) kept themselves busy in some or the other work. Quite a large number of aged (19.7%) were busy in religious activities. About 10 % of the aged (9.9%) kept themselves busy in reading and walking, 2.5% in writing. A total of 7.9% of the aged kept themselves busy in social work out of which males were more in number (11.5%) than the females (5.9%).
- 33% aged are not accompanied by anyone to their health visits, the ratio is almost similar for both men and women. 33% are accompanied by their sons, after which comes their spouse.
- 40% of the aged were attended either by their spouse or son when the aged were admitted in the hospital.
- About 78% of the aged said that in their old age the spouse should take care of them.
- Arthritis (66.8%), High blood pressure (40.2%), Diabetes (19.7%), Heart disease (8.3%), Deafness **Bed soars (0.8%),** Psychological disorder Sleeplessness/ anxiety/ insecurity (9%).

The life of aged residing in the urban slums of Mumbai is not at all homogeneous. Their issues include the following:

Major issues of the aged

- Isolation
- Neglect
- Abuse
- Social protection
- Financial security
- Self security
- Support of old age home is less
- High density mass
- No ventilation
- No open space like gardens
- Small houses, hence difficulty in adjusting with new additions in the family especially daughters in -law and grand children

- Though willing to stay in old age home, they cannot afford to pay the rent of the old age homes
- Domestic abuse to elders
- Low status of widows

Suggestions

- Government should provide social security to the aged like pension of Rs. 3000 p/m.
- There should be Public toilets
- Positive approach among aged towards organ donation need to be adopted
- Abandoned old people should be rehabilitated at Old Age Homes
- Health facilities should be made available free of cost and easily accessible
- Computer class for the aged can be provided with the help of Jestha Nagrik Sanghs and NGOs as this will facilitate adult education
- E learning facilities for the aged can be improved
- Seminar on the topics related to senior citizens can be organized to keep them informed and sharing the information and knowledge
- Senior citizens want to increase tax ceiling to 5 lakh rupees.
- The lonely aged need to be visited by Police as per the timings convenient to them.
- During the tenure of *Shivsena* government in Maharashtra the government had helped in establishing old age homes in every district across Maharashtra State. But now many of the Old Age Homes are not working. Government needs to offer Old Age home as an alternative to them
- Special programmes need to be organized for the younger generation to make them understand the problems of the elderly
- Younger generation should see that old couples stay together and not stay separately in different houses with two different children
- Involve daughter in-law and mother in- law in positive discussions
- There needs to be one representative of the elderly people at the cabinet level
- Special programmes for the elderly people should be organized in media like Newspaper, Radio, TV
- The elderly people need to be counseled to prepare themselves to face death
- Laughter clubs need to be there in every locality, co-operative society
- Short course like gardening, kitchen gardening, and library maintenance can be organized through senior citizen clubs.
- Youth be made to be more sensitive towards senior citizens
- Aged should have an easy access to available government facilities.
- Counseling the elderly people and their family members
- Information about legal issues such as: to make a will, to get legal help for property, possession of the house, etc
- Parks for recreation of aged people

The aged want to live a peaceful life where in they need food on time, and someone to talk to them with love and affection.

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Issues Relating to Foreign Direct Investment in India's Retail Sector

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1. Introduction

In the era of globalization and market economy involving competition, India is now one of the major economic forces in the world. This is also the time when this economic power is looking for fresh capital and investment for economic growth. For fresh investments, foreign capital is a mandatory requirement - in addition to the capital generated at home. Inflow of foreign capital has been possible in India after economic reforms initiated in early 1990s. One of the objectives of liberalization was to attract foreign direct investment (FDI) in India. As the policies of liberalization, privatization and globalization have been a great success, 51% FDI in retail sector in India, including large number of other reforms, was announced by the then Prime Minister, Dr. Manmohan Singh in September, 2012 as a new round of the reform process.

However, according to Commerce and Industry Minister Smt. Nirmala Sitharaman "We are clear that FDI will not be allowed in multi-brand retail trade in line with the position the BJP had articulated in its manifesto on the basis of which we won the elections," she said. She added that at the moment there was no move to reverse the notification that the UPA government had issued to open up the multi-brand retail sector, allowing up to 51 per cent FDI. If a FDI proposal comes up the Government would do so, she said (The Hindu, Sep. 8, 2014).

There are major retail opportunities available as for the 4th time in five years, India has been ranked as the most attractive nation for retail investment among 30 emerging markets by the US-based global management consulting firm, A T Kearney in its 8th Annual Global Retail Development Index (GRDI) 2009. Global players in the retail sector are eager to grab this opportunity.

2. Foreign Direct Investment in India

As in developing countries own funds are not adequate to meet the developmental requirements, inflow of investments in the form of FDI serves as a medium through which foreign capital inflows into a country. Foreign direct investment (FDI) has played an important role in India's growth dynamics. There are several sectors of the economy which received benefits of FDI. The examples are software and services industry, two-wheeler, automobile and auto-component industries, electronics and telecommunications. FDI in these industries expanded home and export markets, benefitted consumers, generated employment, increased productivity and wages and generated externalities to local firms. Similarly, FDI in the retail sector also can play an effective role in expansion of this sector and strengthening the economy.

3. Rationale for Liberalization in India's Multi-brand retail

The main reasons for not allowing FDI in multi brand retail sector till 2012 were the fear of foreign companies taking monopoly of Indian retail market and price rise due to the monopoly of foreign retailers. As Indian retail sector is the second most employed sector after agriculture, the fear of loss of employment opportunities in local retail outlets was also there. It was also thought that foreign retailers will squeeze suppliers and engage in predatory pricing to wipe out competition. According to Stiglitz India is an unusual country and different from many other developing and emerging markets. It has a large entrepreneurial class and has lots of savings, wealth.

And this entrepreneurial class is very talented. So that raises the question as to why India needs foreign entrepreneurs in any sector, particularly the retail or the financial sectors (Stiglitz, 2012).

In spite of the above fears, there are a number of reasons to allow FDI in India's multi-brand retail. Foreign investment in post-harvest and back-end infrastructure, agro-processing and logistics will help augmenting growth process, employment and economic prosperity in rural areas of the country. International retailers will bring with them technology and management know-how that will improve our whole retail sector through the adoption of best practices. Stabilization of prices and reduction in consumer goods inflation could be achieved through direct buying from farmers, removing supply chain inefficiencies to lower transit losses, improved storage capabilities to control supply and demand imbalances, better quality and safety standards and yield improvement through up-gradation in agriculture and increased processing of produce. FDI in retailing can boost exports also through greater sourcing from India. With large middle-class close to 300 million which is continuously growing at nearly 2% a year, organized retail in India is sure to see large returns. These facts have prompted the earlier Indian government to open the retail sector to FDI slowly through a series of steps:

1995: World Trade Organization's General Agreement on Trade in Services included both wholesale and retailing services.

1997: FDI in cash and carry (wholesale) with 100% rights allowed under the government approval route.

2006: FDI in cash and carry (wholesale) brought under the automatic route. Up to 51 percent investment in a single-brand retail outlet permitted.

2011: 100% FDI in single brand retail permitted.

In September, 2012 the most awaited and talked about announcement was made to allow 51% FDI in multi-brand retail.

4. FDI in Multi Brand Retailing - Global Scenario

FDI in retail has played a major role in improving the productivity of the whole economy in various countries. The positive impact of organized retailing could be seen in USA and UK. Retail is the second largest industry in US. It is also one of the largest employment generators. Besides, Argentina, China, Brazil, Mexico, Chile, Indonesia, Malaysia, Russia, Singapore and Thailand have allowed FDI in multi brand retail. These countries benefited immensely from it without displacing the small retailers. The quality of the services has improved. China permitted FDI in retail in 1992 and has seen huge investment flowing into the sector. It has not affected the small or domestic retail chains on the contrary the number of small retailers has increased since 2004 from 1.9 million to over 2.5 million. In Indonesia 90% of the retail business still remains in the hands of small traders. FDI in retail sector has been a key driver of productivity growth in Brazil, Poland and Thailand. This has resulted in lower prices to the consumer, more consumption and higher profit for the producer.

5. Structure of Retail Market in India: Organized and Unorganized

The organized retail industry is one of the sunrise sectors with huge growth potential. The Indian Retail Industry is the 5th largest retail destination and the second most attractive market for investment in the globe after Vietnam as reported by Kearney's seventh Annual Globe Retail Development Index (GRDI), in 2008. In 2011, food accounted for 70% of Indian retail, but was under-represented by organized retail. Kearney estimated India's organized retail had a 31% share in clothing and apparel.

In the year 2012, the Indian retail sector is estimated to contribute around 15 percent to GDP and 8 percent to total employment. The sector is highly fragmented with about 96 percent of the stores in the unorganized sector. The Kirana stores number around 12 million spread throughout India. These are mostly family owned with family labour. At the bottom of the pyramid there are millions of pavement stalls.

Organized retailing refers to trading activities undertaken by licensed retailers, that is, those who are registered for sales tax, income tax, etc. These include the corporate-backed hypermarkets and retail chains, and also the privately owned large retail businesses. Unorganized retailing, on the other hand, refers to the traditional formats of low-cost retailing, for example, the local *kirana* shops, owner manned general stores, *paan/beedi* shops, convenience stores, hand cart and pavement vendors, etc. The unorganized retail sector is the largest source of employment after agriculture, and has deep penetration into the country. India has the highest shopping density in the world with 11 shops per 1,000 people. It has 12 million shops employing over 40 million people; 95% of these are small shops run by self-employed people. The organized retail however is at a very nascent stage. India is Asia's third largest retail market after China and Japan. Organized retailing is yet to set in India. Only 5% of the total sales are being done by organized retailers.

Both the conventional unorganized and modern organized sectors of retail have their own advantages. Consumers can enjoy large bargaining power at *kirana* stores while large stores have low operating cost and overheads. *Kirana* shops are in the proximity to consumers while big stores provide range and variety of goods. Small shops have strong customer relations and large stores have convenience of shopping and hygiene with quality assurance and brand related durability. We can compare the organized and unorganized retail sector in different countries in the following table:

Table : 1
Share of Organized Retail in Selected Countries (2009)

Country	Total Retail Sales (US $ Billions)	Share of Organized Retail (%)
USA	2983	85
Japan	1182	66
China	785	20
United Kingdom	475	80
France	436	80
Germany	421	80
India	322	4
Brazil	284	36
Russia	276	33
South Korea	201	15
Indonesia	150	30
Poland	120	20
Thailand	68	40
Pakistan	67	1
Argentina	53	40
Philippines	51	35
Malasia	34	55
Czech Republic	34	30
Vietnam	26	22
Hungary	24	30

***Source**: Planet Retail and Technopak Advisors PVT. LTD*

6. Growth Drivers of Indian Retail Sector

High rate of economic growth since 1990s has meant greater disposable incomes for the Indian middle class, which currently comprises 22% of the total population. Disposable incomes are expected to rise at an average of 8.5% p.a. till 2015. The number of households with income of over Rs 45,000 per annum has grown from 58 million in 1999-2000 to 125 million by 2011. With rising incomes purchasing power of Indian urban consumer is growing. As a result, branded merchandise in categories like Apparels, Cosmetics, Shoes, Watches, Beverages, Food and even Jewellery, are widely accepted by the urban Indian consumers. Educated youth get knowledge about the latest trend and fashion through different media like Internet, Television etc. This has also helped in boosting demand for latest products. Besides, 47% of the India's population is under the

age of 30 and strong growth is expected to continue in this age bracket. A younger population tends to have higher aspirations and spends more as it enters the earning phase. Increasing consumerism among this category, which is pursuing a different lifestyle, is writing the consumption story of India. Nuclearization of families also has led to enhanced demand.

7. Mandatory Requirements for Investment in Multi-brand Retail

Positive effect of FDI in retail depends much on the effective regulations by the government. As part of the recent announcements, 51% FDI in multi-brand retail is not likely under the automatic route. It will be possible after Foreign Investment Promotion Board (FIPB) approval on case by case basis. It is mandatory that minimum investment should be $100 million. 50% of the investment should be done in improving the back end infrastructure. 30% of all raw materials have to be procured from the small and medium enterprises. Permission will be there to set retail stores only in cities with a minimum population of 10 lakhs. The government will have the first right to procure material from the farmers.

8. Prospective Effects of FDI in Multi-brand Retail on Indian Economy

Trance National Companies that build backward linkages with local firms are more beneficial than those that operate as 'islands' in developing countries. Prior to the reforms, several Indian large firms had backward linkages with small and medium scale firms through sub-contracting practices. However, the relationship was exploitative with large firms exercising monopsony power (Patibandla, 1998). After the reforms, TNCs such as Suzuki and Hyundai built backward linkages with supplier firms and transferred technology and organizational practices through cooperative arrangements. Subsequently, several Indian firms such as Bajaj, Mahindra and Mahindra and Tata Motors imitated these practices. As a consequence, the Indian auto-component sector has become internationally competitive (Okada, 2009). The issue is that the reforms, supported by effective local institutions, can benefit larger sections of the stakeholders in the long run.

Opening up of the retail sector for FDI and the entry of foreign retail chains may on the one hand set up supply chains and logistical capabilities, improve the infrastructure needed to source, ship, store and deliver products like - storage, warehousing, and information-intensive operations. On the other hand arrival and expansion of foreign retailing companies may encourage domestic players to invest in infrastructure and logistics and improve the product standards. The growth of monopsony buyers and traders can be avoided. This way the impact of foreign investment in retail creates multiplier effect which goes beyond its direct investment impact. It is understood that large multi-national retail firms' real competition will be with the domestic organized sector multi-brand retailers and not with the local *Kirana* stores. Some studies have predicted that after the entry of foreign retail chains the size of organized retail could grow to about 20.8% of the total market from the 5% at present. Still, the remaining 79% of that sector will remain open for the unorganized sector. It does not seem reasonable that the 20.8% organized retailers can drive 79% *kirana* stores out of business. Dr C. Rangarajan also said the fear that FDI in multi-brand retail "could result in large scale replacement of small retailers is misplaced". Emerging mixed picture portrayed so far in this paper indicates that the competition introduced by the entry of foreign players will benefit some and will be detrimental to the others.

A. Effect on Consumers

The beneficiaries are the Indian consumers who will get much more variety at competitive prices. By keeping prices low, multi-national retailers increase sales so much more than just to compensate for the decrease in markup. When Wal-Mart enters a market, prices decrease by 8 percent in rural areas and 5 in urban areas (Ghemawat and Mark, 2006). The food price savings accrue first to the middle class, but as supermarkets spread into the food markets of the urban poor and into rural towns, they have positive food security impacts on poor consumers. For example, in Delhi, India, the basic foods of the urban poor are cheaper in supermarkets than in traditional retail shops: rice and wheat are 15% cheaper and vegetables are 33% cheaper.

B. Effect on Suppliers

Farmers and other suppliers of the products, which have been at the mercy of middlemen and monopsony buyers and trader monopolies, may be gainers in the competitive environment. It is argued that there is no evidence to suggest that farmers will earn higher prices after the entry of multinational retailers as the multinational retail giant firms are expected to act as monopsonies. Bhagwati indicates that Indian farmers typically earn a third – instead of the international norm of two-thirds – of the final price of their produce because of greater waste and less efficient distribution, and because wholesalers operate as exclusive buyers by the state Agriculture Produce Marketing Committee (APMC) Acts. Moreover, Contrary to the claim that multinational retailers will become monopsonies, Bhagwati argued that farmers should to able to sell to multiple (domestic and multinational) organized retailers as well as the existing wholesalers supplying unorganized retailers (Bhagwati, 2012).

P C Reddy, secretary General of Consortium of Indian Farmers Association (CIFA's) said farmers' biggest problem is marketing. Farmers declared a crop holiday in Andhra Pradesh because they couldn't sell. Cotton farmers in Maharashtra committed suicide because they couldn't sell. FDI in retail will open alternative avenues of sale for us, Reddy added. He said the *mandi* system does not favour farmers because they lose 5% of the value in transportation, 10% in broker commission and 10% in quality parameters. Direct purchase by large retailers will solve this problem.

A Bharti Walmart spokesman says the cash-and-carry wholesaler sources about 90% of its products locally. This helps minimize costs and pass on the benefits to customers, he says. The joint venture between Walmart and Bharti Enterprises supports SMEs in a variety of ways, including sharing information and resources to help raise efficiency standards, improve production techniques, provide technological support and better management skills, the spokesman said. Bharti Walmart has built a direct network of 400 SMEs in less than three years of entering the country. And more than 40% of its total products are supplied by small and micro enterprises.

Future Group, the country's largest retailer, has more than 4,000 SMEs supplying more than 35% of its total requirements. They have become our partners for a decade now and understand the business well to service us accordingly, says Future Group Chairman Kishore Biyani. He says it is important to source from smaller business because the retail business is highly localized.

SME Chamber of India, which represents more than 45,000 small entrepreneurs, is not in favour of allowing foreign retailers into the country. The chamber members' bigger fear, however, is that the foreign retailers will import most their products, as is the practice among most foreign car makers. In the auto industry, players such as Bajaj and Tata Motors source products from SME members which have small businesses. Most international firms import most of their products and source just 5-7% of auto parts from these companies.

Suryamurthy, in an article in The Telegraph, claims farmer groups across India do not support status quo and seek retail reforms, because with the current retail system the farmer is being exploited (Suryamurthy, 2011).

C. Effect on Supply Chain Intermediaries

As a result of the entry of global players in Indian retail business, the growth dynamics of the sector will change. As it increases farmers' surplus and agricultural productivity, people from agriculture would be released. If these agricultural workers are possessing basic literacy skills they have to be absorbed by the manufacturing, which in turn may grow because of home and export market expansion. If the government policies encourage fair competition for balanced growth, FDI may challenge the existing stranglehold of agents and traders. While this may lower the cost of goods in the short term, it will lead to rapid mass dislocation of workers involved in the supply chain.

D. Effect on Unorganized Retail (*Kirana*) Shops

The entry of multinational retailers may lower the sales increase for unorganised retailers, but it will not reverse their growth in the near future (Bhagwati,

2012). Some of the wholesalers and small *Kirana* stores have already adopted innovative practices of procuring and selling goods from the large retailers which may improve the overall organization of the markets. The main losers would be the middlemen rather than small traders. The question being raised is whether the traditional *kirana* stores will survive and co-exist or leave the field for major organized retail players?

The answer could be a co-existence. The major advantage for the smaller players is the size, complexity and diversity of the Indian markets. Most of the organized retail players have opened shop in the Metros, Tier 1 and Tier 2 towns. Very rarely organized players are found in the rural areas and India has more than 70% of the population living in the small cities and rural areas. Thus the reservations against the introduction of Multi-Brand retail on the ground that it may adversely affect small retail shops are mostly misplaced. Besides, the technical know-how, global best practices, quality standards and cost competitiveness brought forth through FDI would encourage the domestic players to derive the necessary support to sustain their growth.

9. Arguments in favour of FDI in Retail sector

FDI in retail sector will attract global players in this field that will help in generation of world class supply chain in India which will decrease transaction, information and production costs of business and expand markets significantly. In addition, this can help removing the following deficiencies in the Indian system (based on Mancheri, 2010):

- There has been lack of proper infrastructure facilities to link to distant markets, including overseas markets, round the year for perishable horticulture commodities. Though India is the second largest producer of fruits and vegetables but it has a very limited integrated cold-chain infrastructure, 80% of which is used only for potatoes. Though FDI is permitted in cold-chain to the extent of 100%, through the automatic route, in the absence of FDI in retailing; FDI flow to the sector has not been significant.
- Intermediaries dominate the value chain. They hardly follow the *mandi* norms and their pricing has developed a monopolistic and non-transparent character. As a result, Indian farmers realize only 1/3rd of the total price paid by the final consumer, as against 2/3rd by farmers in nations with a higher share of organized retail.
- Due to improper Public Distribution System ("PDS") bill on food subsidies is rising still overall food based inflation has been a matter of great concern. The absence of a proper retail supply system has led to the ultimate consumers paying a higher price due to shortages and wastages.
- The Micro Small & Medium Enterprises (MSME) sector has also suffered due to lack of branding and lack of avenues to reach out to the vast world markets. This has largely been due to the inability of this sector to access latest technology and improve its marketing interface.
- Apart from this, by allowing FDI in retail trade, India will significantly flourish in terms of quality standards and consumer expectations, since the inflow of FDI in retail sector is bound to pull up the quality standards and cost-competitiveness of Indian producers in all the segments.
- It is to be noted that the Indian Council of Research in International Economic Relations (ICRIER), a premier economic think tank of the country, which was appointed to look into the impact of BIG capital in the retail sector, has come to conclusion that investment of large corporate and FDI in the retail sector would in the long run not harm interests of small, traditional, retailers.
- Huge investments in the retail sector will see gainful employment opportunities in agro-processing, sorting, marketing, logistics management and front-end retail.

- Policy mandates a minimum investment of $100 million with at least half the amount to be invested in back-end infrastructure, including cold chains, refrigeration, transportation, packing, sorting and processing. This is expected to considerably reduce post-harvest losses and wastage.
- Sourcing of a minimum of 30% from Indian micro and small industry is mandatory. This will provide the scales to encourage domestic value addition and manufacturing, thereby creating a multiplier effect for employment, technology up-gradation and income generation.

Arguments against FDI in Retail Sector

Arguments put forth against the FDI in retail are as follows:

- MNCs retailers, using their big size, are known to kill the competitors. In order to bring down the prices at lowest possible levels for customers, they squeeze the margins of their suppliers. Thus, as claimed by many that suppliers will benefit, is doubtful. These anomalies need to be corrected through the strong regulations for the sector and right kind of body to vigil the giants.
- GDI in retail will lead to large-scale job losses. International experience shows supermarkets invariably displace small retailers. Small retail has virtually been wiped out in developed countries like the US and in Europe. South East Asian countries had to impose stringent zoning and licensing regulations to restrict growth of supermarkets after small retailers were getting displaced.
- Global retail giants will resort to predatory pricing to create monopoly/oligopoly. This can result in essentials, including food supplies, being controlled by foreign organizations.
- Fragmented markets give larger options to consumers. Consolidated markets make the consumer captive. Allowing foreign players with deep pockets leads to consolidation. International retail does not create additional markets, it merely displaces existing markets.
- Jobs in the manufacturing sector will be lost because structured international retail makes purchases internationally and not from domestic sources. This has been the experience of most countries which have allowed FDI in retail.
- Argument that only foreign players can create the supply chain for farm produce is not correct. International retail players have no role in building roads or generating power. They are only required to create storage facilities and cold chains. This could be done by governments in India.
- Comparison between India and China is misplaced. China is predominantly a manufacturing economy. It's the largest supplier to Wal-Mart and other international majors. It obviously cannot say no to these chains opening stores in China when it is a global supplier to them. India in contrast will lose both manufacturing and services jobs.

11. Issues for Resolution before allowing FDI in Indian Multi-brand Retail Sector

In addition to the conditions put by the earlier government for foreign investors in India's retail sector, there are some more issues that need to be resolved. Initially the foreign players should be allowed in limited cities, as was the case in China. They should be allowed to expand their business in other cities slowly. Government should allow maximum number of foreign retailers to enter Indian market in order to control the price hike through competition among them. Establishment of in-built policy is needed to give preference to displaced people in employment, re-employment or re-location due to opening of big malls in the vicinity. Small retailers should be assisted to improve efficiencies and upgrade themselves by extension of concessional credit and other proactive measures to provide a level playing field. Setting-up of a Retail Regulatory Authority and formulation of a model Central Law to look into problems is necessary to

regulate the fiscal and social aspects of the entire retail sector. In order to become capable of competing with foreign retailers local players should be encouraged to become big organizations through mergers and acquisitions and other incentives.

12. Challenges and Attractions for Global Retailers

It is said that opening up of the retail sector for FDI will bring number of foreign players in the sector to India who are waiting to grab the opportunity. But there are several challenges which the country has to face:

- FDI in retail sector is opposed on various grounds. For example, the entry of large global retailers such as Wal-Mart would destroy the unorganized retail sector which is the largest employer in the Indian economy after the agriculture sector. They would kill local shops and millions of jobs. Besides, the global retailers would exercise monopolistic power to raise consumers' prices and to reduce the prices received by the suppliers. Hence, both the consumers and the suppliers would lose, while the profit margins of such retail chains would go up.
- It is also argued that the Indian retailers have yet to consolidate their position. The existing retailing scenario is characterized by the presence of a large number of fragmented family owned businesses, who would not be able to survive the competition from global players. In South East Asian countries after allowing FDI, the domestic retailers were marginalized and this led to unemployment.
- Another apprehension is that FDI in retailing can upset the import balance, as large international retailers may prefer to source majority of their products globally rather than investing in local products.
- Moreover, the global retailers might resort to predatory pricing. Due to their financial supremacy and power, they often sell below cost in the new markets. Once the domestic players are wiped out of the market foreign players enjoy a monopoly position which allows them to increase prices and earn profits.
- Indian retailers have argued that since lending rates are much higher in India, Indian retailers are at a disadvantageous position compared to foreign retailers who have access to International funds at lower interest rates. High cost of borrowing forces the domestic players to charge higher prices for the products.
- Yet another argument against FDI is that FDI in retail trade would not attract large inflows of foreign investment. Goods are bought on credit and sales are made on cash basis. Hence, the working capital requirement is negligible. On the contrary; after making initial investment on basic infrastructure, the multinational retailers may remit the higher amount of profits earned in India to their own country.

On the other hand, Retailing is being perceived as an attractive commercial business for organized retail business.

- Indian organized retail industry is one of the sunrise sectors with huge growth potential. Organized retail industry accounts for approximately 5%. AT Kearney, the well known international management consultancy, recently identified India as the second most attractive retail destination globally from among thirty emerging markets.
- Foreign companies' attraction to India is the billion-plus population. Also, there are huge employment opportunities in retail sector in India. According to Associated Chambers of Commerce and Industry of India (ASSOCHAM), the retail sector will create 50,000 jobs in the next few years.
- As per the US Census Bureau, the young population in India is likely to constitute 53per cent of the total population by 2020 and 46.5 per cent of the population by 2050 — much higher than countries like the US, the UK, Germany, China etc. India's demographic

scenario is likely to change favourably, and therefore, will most certainly drive retail sales growth, especially in the organised retail segment.

- India in such a scenario presents some major attractions to foreign retailers. There is a huge, industry with no large players. Some Indian large players have entered just recently. The transition will open multiple opportunities for companies and investors.
- In addition to these, improved living standards and continuing economic growth, friendly business environment, growing spending power and increasing number of conscious customers aspiring to own quality and branded products in India are also attracting to global retailers to enter in Indian market.
- Growth rates of the industry both in the past and those expected for the next decade coupled with the changing consumer trends such as increased use of credit cards, brand consciousness, and the growth of population under the age of 35 are factors that encourage a foreign player to establish outlets in India.

Thus, there is certainly a lucrative opportunity for foreign players to enter the Indian field.

13. Recommendations for formulation of the policies

While opening the country's market for modern multi-brand retail it is important for the government to put certain regulations in place.

i. In most of the developing countries the initial regulations have mainly restricted the location and hours of modern retail. Very few developing countries have a pro-traditional or pro–small retail policy. But in the advanced stage of supermarket spread, when the sector becomes concentrated, it is important for governments and the private sector to enforce competition policies.

ii. Along with the modern retail, traditional retail also should be upgraded and should be competitive. Some countries even train the small operators in business skills, food safety, and hygiene.

iii. Government should take initiative to upgrade wholesale markets, infrastructure and services to serve retailers and Farmers better.

iv. Government needs to supplement farmers' efforts with public investments in improving their access to assets, services, training, and information so that they become competitive suppliers to the supermarkets.

v. In India, so far there is no ceiling on the size or number of retail outlets that may be started in any commercial area. Regulations for the establishment of big retail projects in States Regional Planning documents must be included and it should be ensured that any large retail outlet meets the requirement of urban planning.

vi. For ensuring free and fair competition, possible monopolistic/ monopsonistic tendencies of the large retailers should have to be proactively dealt with.

vii. The sources of power of organized retail need to be understood to control the abuses of this power proactively.

viii. Modernization of markets through public-private partnerships also can be encouraged.

ix. Co-operatives and associations of unorganized retailers for direct procurement from suppliers and farmers should be facilitated.

x. Licensing and permit regime must be simplified for organized retail.

xi. There is a need to strengthen the Competition Commission's role for enforcing rules against collusion and predatory pricing.

14. Conclusions

The Indian Council for Research on International Economic Relations (ICRIER) has strongly advocated FDI in retailing since it would speed up the growth of organized formats. The proposed FDI norms will open up strategic investment opportunity for global retailers, who have

been waiting to invest in India. 1991 reforms brought FDI in various sectors in Indian economy like insurance, banking, outsourcing, IT, manufacturing, telecommunication, construction and transportation, which has helped development in all these sectors at global scale. Now it's turn of the largest sector - retailing, next only to agriculture, which connects all top, bottom, left and right sections of the society with manufacturing and distribution chain. ICRIER study has shown that hardly 1.7 per cent of small shops have closed down due to competition from organized retail. They have competed successfully against organized retail through adoption of better business practices and technology. FDI has positive spillover effects on the economy as its ownership advantages get disseminated to locally owned enterprises, enhancing their productivity. All these benefits of foreign direct investment have been well proven in India in sectors such as automobiles, telecom and consumer electronics. Retailers entering the Indian market need to ensure that they have considered the opportunity along with the challenges to maximize their returns. The investment from global retail giants would surely benefit the country in many ways but how they can do it effectively, only future can tell.

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Analysis of Recent Trends in financial stability of Urban Co-operative Banks In India[1]

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Introduction:

In modern economy, Banks play an important role in providing various financial services required for the development of an economy. The strength of an economy of any country basically depends on a sound and solvent banking system.

Bank is a financial institution which deals with deposits and advances and other relates services. According to Indian Banking Act, 1949-banking is 'accepting, for the purpose of lending or investment, of deposits from the public, repayable on demand or otherwise, and withdrawable by cheque, draft, order, or otherwise'. Thus, deposit mobilization and loan disbursement are primary functions of banks. The banks act as an intermediary that mobilize savings from surplus sector i.e. Households and channelize the same to be used by deficit sector i.e. Firms. Thus, as per circulation flow of National Income concept, the part of income that act as a leakage from the circulation in the form savings is injected back in the circulation by the financial system (including Banks) in the form of investment. In this way, mobilization of resources and channelizing the same for productive use is an important function of financial system in general and banks in particular. In this regard, the development of particular region depends on development of banking services available therein. The performance of banks located in particular region determines mobilization and utilization of resources for productive purpose which is necessary for the development of that region. Hence, understanding the role of Urban Cooperative banks on the basis of its primary functions viz; deposit mobilization and Loan disbursement and financial stability of *UCBs* is important.

Objective of study:

The present study tries to analyse recent trends in Deposit Mobilisation and Loan Disbursement by Urban Cooperative Banks functioning in India by considering two categories of Urban Cooperatives viz; scheduled and Non-scheduled. The study also tries to find the differences in performance of both the above categories of Urban Cooperative banks and financial stability of UCBs.

Research Methodology and Data Collection:

A. Keeping in mind above objective, present study analyses recent trends in deposit mobilisation and loan disbursement by Urban Cooperative Banks functioning in India. For the analysis purpose data pertaining to recent years 2011-14 has been collected from various RBI Publications like Report on Trend and Progress of Banking in India, Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks, Branch Banking Statistics of Commercial banks, Basic Statistical Returns (BSR) of Commercial Banks etc.. The parameters included for the study are:

   A. Number of Urban Cooperative banks functioning in India and its categorisation

   B. Deposits and Credit (Loan Disbursement)

   C. Credit-Deposit Ratio

   D. Deposit mobilised per office

[1] This is a working paper related to on-going PhD research work titled "Comparative Study of Performance of UCBs and Public Sector Banks in Thane District" by the author under the guidance of Dr.S.R.Dastane.

E. Loan Disbursed per office

F. Credit - Deposit ratio

G. Balance sheets

H. Profitability

I. Performance

J. Liquidity risk

K. Stress tests credit risk

Scenario at all India level:

For an analysis of performance of Urban Cooperative banks, an all India level scenario of number of Urban Cooperative present and functioning in India will be of immense help. Following table (Table: 1) will be helpful in this regard.

From the above table it is obvious that at all India level, Urban Cooperative Banks are in leading with the highest number of banks (1618) followed by Regional Rural Banks (82). Thus, it becomes clear that as a Bank group Urban Cooperative banks have good presence in

However, for performance analysis it will be important to know the Distribution of Urban Cooperative Banks functioning in India.

A. Categorisation of Urban Cooperative

The Urban Cooperative banks in India are divided into two categories:

1. Scheduled Urban Cooperative Banks and 2. Non-scheduled Urban Cooperative Banks[2]

Following table shows category-wise distribution of Urban Cooperative Banks functioning in India.

Table 1
Bank Group-Wise Distribution of Banks
(All India)

Sr. No.	Bank Group	No. of Banks
1	SBI and Associates	7
2	Nationalised Banks	20
3	Old Private Sector Banks	15
4	New Private Sector Banks	7
5	Foreign Banks	32
6	Urban Cooperative Banks	1618
7	Regional Rural Banks	82
	Total	**1,781**

Sources: (**Compiled from**) *Report on Trend and Progress of Banking in India, Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks, Branch Banking Statistics of Commercial banks, Basic Statistical Returns (BSR) of Commercial Banks* (for the period 2011-12).

Table 2
Categorisation of Urban Cooperative Banks

Sr.No.	Category	No. of banks	% share
1	Scheduled	52	3
2	Non-scheduled	1566	97
	Total All	1618	100

Source: As per table: 1

[2] Scheduled Banks in India are those banks which have been included in the Second Schedule of Reserve Bank of India (RBI) Act, 1934. RBI in turn includes only those banks in this schedule which satisfy the criteria laid down vide section 42 (6) (a) of the Act.

From above table it becomes clear that though there is large number of Urban Cooperative Banks functioning in India, the scheduled categories are only 52 and its share to total remains just at 3% as compared to that of Non-scheduled Urban Cooperative Banks.

B. Deposit Mobilisation

Deposit mobilisation is an important primary function of any bank. Deposits play the most important role in any banking system, whether-co-operative or commercial. Deposits provide limits to the working capital of the bank concerned. The higher the deposits, the higher will be the funds at the disposal of a bank to lend and earn profits[3].

Following table shows deposit mobilisation by the Scheduled and Non-scheduled Urban Cooperative Banks functioning in India.

Table 3
Deposit Mobilisation by Urban Cooperative banks in India

Sr.No.	Category	Deposits (in Rs.Cr.)	% share
1	Scheduled	11040	46
2	Non-scheduled	12810	54
	Total All	23850	100

Source: As per table: 1

From the above table it becomes clear that though the Scheduled Urban Cooperative banks are having only 3% share in total number of Urban Cooperative Banks, in deposit mobilisation its share is almost half and remaining share is that of Non-scheduled Urban Cooperative Banks which comprises of 97% share in total Urban Cooperative Bank group. Thus, in deposit mobilisation Scheduled Urban Cooperative Banks have performed well compared to Non-scheduled Cooperative Banks.

[3] N. Desinga Rao, 'Deposit Mobilisation by Co-operative Banks: A Comparison with Scheduled Commercial Banks ', Economic and Political Weekly, Vol. 10, No. 29 (Jul. 19, 1975), pp. 1098-1100

C. Deposit mobilisation Per Bank

Though at aggregate level in deposit mobilisation the Scheduled Urban Cooperative banks are leading, it would be interesting to understand the performance at per banks level. Following table shows deposit mobilisation by per bank of Urban Cooperative Banks category-wise.

Table 4
Deposit mobilisation Per Bank of Urban Cooperative Banks

Sr.No.	Category	Deposits (in Rs.Cr.)	Deposit per Bank (in Rs.Cr.)
1	Scheduled	11040	(212)
2	Non-scheduled	12810	(8)
	Total All	23850	(15)

Source: As per table:1 [Figures in the parentheses show average value of respective total]

By analysing the bank level performance of Urban Cooperative Banks category-wise, it becomes clear that on an average each bank of each category of Urban Cooperative Banks viz; Scheduled and Non-scheduled have mobilised Rs. 15 cr. of deposits. However, category-wise, the Scheduled Urban Cooperative Banks have outperformed as each bank in this category on an average has mobilised deposits worth Rs. 212 Cr. while those of Non-scheduled banks stood at only Rs. 8 cr. (around 25 times less of Scheduled Urban Cooperative Banks)

Thus, in deposit mobilisation per bank, Scheduled Urban Cooperative Banks are found more efficient than Non-scheduled Urban Cooperative Banks.

D. Loan Disbursement

Loan and advances provided by the banks are considered one of the important sources of funds for industries. The idle fund mobilised in the form of deposits by the banks are put into productive use by the loan disbursement. The loans and advances provided by the bank is also one of the important sources of earning profits for the banks.

In this regard, thus, the loan disbursement by the both the categories of Urban Cooperative Banks viz; Scheduled and Non-scheduled remains important as discussed in the below.

Table 5
Loan Disbursement by Urban Cooperative Banks in India

Sr.No.	Category	Credit (in Rs.Cr.)	% share
1	Scheduled	7440	47
2	Non-scheduled	8360	53
	Total All	15800	100

Source: As per table:1

E. Loan disbursement Per Bank

For proper understanding of efficiency in loan disbursement it is important to understand loan disbursement at micro-level i.e. at per bank level. Hence, the table gave below shows loan disbursement performance by each category of Urban Cooperative banks viz; scheduled and Non-scheduled.

Table 6
Loan disbursement Per Bank of Urban Cooperative Bank

Sr.No.	Category	Credit (in Rs.Cr.)	Credit per Bank (in Rs.Cr.)
1	Scheduled	7440	(143)
2	Non-scheduled	8360	(5)
	Total All	15800	(10)

Source: As per table:1 [Figures in the parentheses show average value of respective total]

From the above table it again becomes obvious that the scheduled Urban Cooperative Banks are better that Non-scheduled Urban Cooperative banks as each bank in former category disbursed credit worth Rs. 143 cr. while the latter disbursed credit worth Rs. 5 cr. only.

Thus, there is excellent performance in this regard by the Scheduled Urban Cooperative banks as compared to that of Non-scheduled Urban Cooperative banks.

F. Credit-Deposit ratio

This ratio depicts the use of deposits for the productive purpose. The excess of deposits above the required limit shows under utilisation of funds and the over utilisation beyond the limit also may prove harmful for bank's performance. Hence, maintaining the balance between the two is important. It is calculated as- Credit – Deposit Ratio (%) = Total Advances/Total Deposits

The table below shows Credit-Deposit ratio of both the categories of Urban Cooperative Banks viz; scheduled and Non-scheduled.

Table 7
Credit-Deposit ratio of Urban Cooperative Banks

Sr. No.	Category	Credit (in Rs.Cr.)	Deposits (in Rs. Cr.)	C-D ratio (%)
1	Scheduled	7440	11040	67
2	Non-scheduled	8360	12810	65
	Total All	**15800**	**23850**	**66**

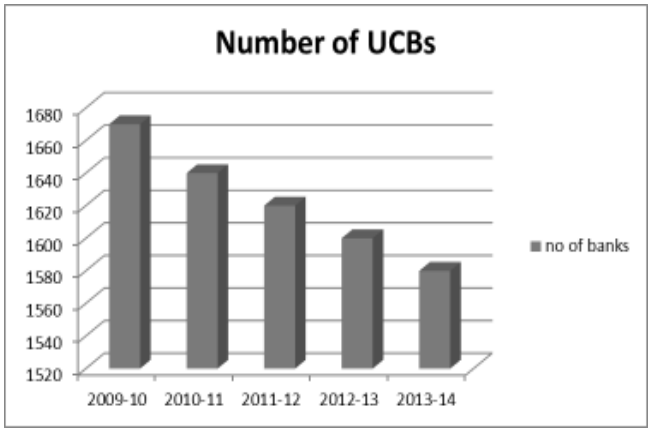
Source: As per table:1

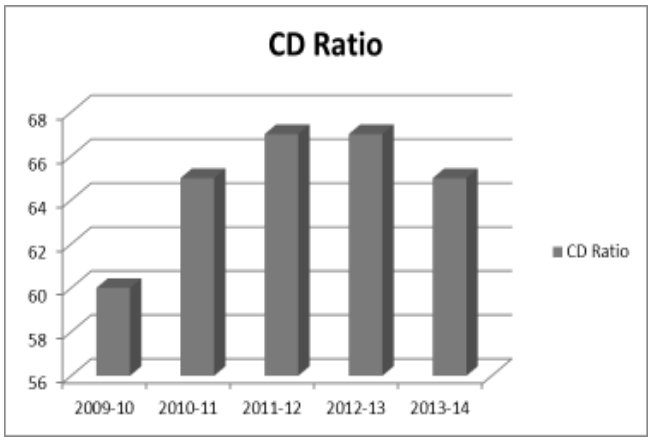
From the above table it is obvious that Scheduled Urban Cooperative Banks have higher Credit-Deposit ratio than Non-scheduled Urban Cooperative Banks. This indicates that as far as utilisation of funds is concerned, investments are preferred to loans and advancements.

G. The Balance Sheets

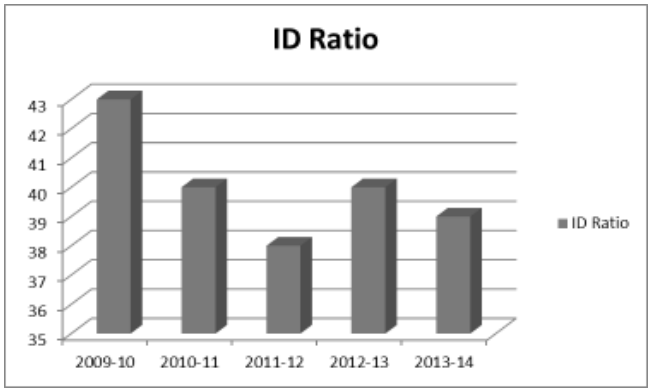
The balance sheets of urban co-operative banks (UCBs) showed stable growth in 2013-14 in following chart.

Growth in liabilities was driven by an increase in their other liabilities and deposits. The number of UCBs came down marginally to 1,589 in 2013-14 from





over 1,600 a year ago. 2.39 In 2013-14 UCBs' C-D ratio declined by about 2 percentage points and the investment-deposit ratio also showed a small contraction in the following chart.



H. Profitability

Net profits of UCBs increased by 31 per cent during 2013-14 as compared to a decline of 25 per cent in the previous year. Although the growth in both income and expenditure decelerated during the year, the sharp contraction in provisions, contingencies and taxes resulted in an increase in their net profi ts. Consequently, RoA and RoE of UCBs improved to 0.9 per cent and 9.0 per cent, respectively, during the year from 0.8 per cent and 7.2 per cent during 2012-13.

I. Performance

At the system level,22 CRAR of scheduled urban co-operative banks (SUCBs) improved to 12.7 per cent as of September 2014 from 12.4 per cent as of March 2014. However, at a disaggregated level, seven banks failed to maintain the minimum required CRAR of 9 per cent. The asset quality of SUCBs, measured in terms of GNPAs, deteriorated and their provision coverage ratio declined significantly.

J. Liquidity Risk

A stress test on liquidity risk was carried out using two different scenarios assuming 50 per cent and 100 per cent increase in cash outflows in the one to 28 days' time bucket. It was further assumed that there was no change in cash inflows under both the scenarios. The stress test results indicate that the SUCBs will be significantly impacted under stress scenarios (out of 50 banks, 24 banks under scenario I and 38 banks under scenario II).

K. Stress Tests Credit Risk

A stress test for assessing credit risk was carried out for SUCBs using the provisional data as of September 30, 2014. The impact of credit risk shocks on CRAR of SUCBs was observed under four different scenarios. The results showed that except under the extreme scenario (1SD increase in GNPAs which are classified as loss advances), the system level CRAR of SUCBs remained above the minimum regulatory required level, though individually a large number of banks (28 of the 50 banks under the fourth scenario) would not be able to meet the required CRAR levels.

Conclusion:

There is large number of Urban Cooperatives Banks in Non-scheduled category.

In Deposit mobilisation and loan disbursement, the performance of scheduled Urban Cooperatives Banks is very impressive as compared to that of Non-scheduled Urban Cooperatives Banks.

Performance of Non-scheduled Urban Cooperatives Banks in deposit mobilisation and Loan disbursement per bank is also very low as compared to that of scheduled Urban Cooperatives Banks In use of funds, loan and advances are not preferred by both the banks as Credit-Deposit ratio of both the categories of Urban Cooperatives Banks is very low. There are drastic trends in financial stability of Urban Cooperatives Banks.

Suggestions:

There is need to have more number of Urban Cooperatives Banks in Scheduled category to strengthen financial system in general and banking system in particular.

For Non-scheduled Urban Cooperatives Banks efficiency of Scheduled Urban Cooperatives Banks in deposit mobilisation and loan disbursement can be set as benchmark.

There is requirement of consolidation in Urban Cooperatives Banking segment and for this merger of weaker Urban Cooperatives Banks with stronger Urban Cooperatives Banks can be preferred.

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Risk Factors of Indoor Air Quality and Respiratory Diseases in Lucknow City

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Discussion

It is general belief that air pollution is associated with the concentration of urban air from automobile exhaust and industrial effluent. However in developing countries, the problems of indoor air pollution is far out of weights, the ambient air pollution, and the indoor environment of houses often has a higher level of air pollution than the surrounding one in cities and towns. Unfortunately, indoor pollution has not been given much importance, while most people spent as much as 80-90 per cent of their time indoor.[1] In India, burning of unprocessed cooking fuels in home causes pollution, domestic cooking is one of the major activities of the average Indian house wife. Therefore during her life time, she is exposed for thirty to forty year equivalent 60,000 hours.[2] Commonly available cooking devices in India include mainly 'chulha' release a complex mixture of aerosol which contain significant amount of pollutant such as, carbon monoxide, nitrogen dioxide, and particulate matter. About 75 per cent of Indian households still rely on bio fuels. Mineral coal, kerosene are also used in number of households. In poorly ventilated home women and children are forced to breath this polluted air. Studies reveal that the pollutant levels in which they breathe is as much as 20 times, the acceptable limit set by CPCB.[3]

Modern concept of housing includes not only the physical structure providing shelter, but also the immediate surroundings, and related community services and facilities. Basically, housing prefers to use the term "residential environment" which is defined as the physical structure that man uses the environs of the structure including all necessary services, facilities, equipments and devices needed or desired for the physical and mental health and the social well being of the family as well as individual.[5] However housing maintains the minimum standard for healthy life like, Site, Set back, floor space, windows, lighting, ventilation, kitchen, privy, garbage and refuse and water supply.[6]

In view of the phenomenal change that is taking place in the cities and their environment. It is proposed to study the existing indoor air pollution in Lucknow city. Many scholars have studied on indoor air pollution in different cities of India pertaining to different attributes like, Armstrong (1991)[8], A.L. Singh and A. Rahman (1998)[9], Jayati Hazra (2000)[10], Mukesk and Gupta (2000)[11], Das Jayati (2004)[12], M. Haq (2006)[13], Ajay Taneja (2008)[14]. etc But no one has focused in a holistic view regarding the causes and consequences of indoor air pollutions in intensive manner, and proposed a diagnostic mechanism to reduce the level and its effects on health. The Present study is unique and different from aforesaid studies in the sense that it has analysed and evaluated the causes and consequences of indoor air pollution in holistic manner through spatio-temporal analysis and proposed a diagnostic approach to reduce the menace of indoor air pollutions affecting human health. For the present analysis the city has been divided into different zones and different sites have been marked out for collecting primary data through experiments and empirical observations.

The independent variables of indoor air pollution includes, per head living space availability (x_1), non ventilated or ill ventilated house (x_2), biofuel (coal, wood, leaves, dust, cow dung), (x_3) Multiuse room House (x_4), kerosene as a fuel (x_5), smoking in house (x_6), smoke come from out side (x_7), smoke

remain inside the house (x_8). The dependent variable pertaining to health includes diseases Conjunctivitis (y_1) Rhinitis (y_2), Sore throat (y_3), Allergy (y_4), Asthma (y_5), Bronchitis (y_6), Tuberculosis (y_7) and Pneumonia (y_8).

Objectives

The objective of the present analysis is to examine the correlation between determinants of indoor air pollution and diseases, and recommendations have been made to reduce the impact of indoor air pollution on health.

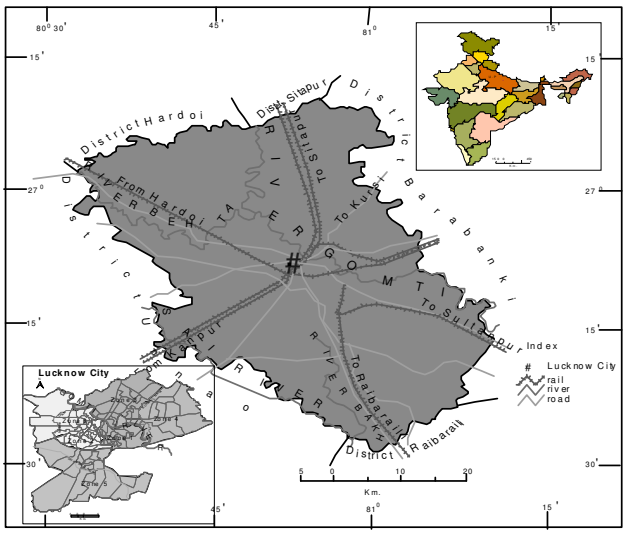
Data Base and Methodology

To establish the relationship between indoor air pollution variables and the diseases, primary data have been generated through conducting field survey taking one per cent household from each wards of the city, i.e. 110 wards. The numbers of households are varied from wards to wards depending upon their size. Therefore the number of house are selected variedly from each wards, thus the total number of houses have been selected based on purposive random sampling i.e. 3000 houses out of 298767 residential and residential cum commercial houses. Detailed questionnaire has been prepared for obtaining the information from the respondent. Different age group, men and women have been interviewed, basically children working women in the kitchen and old people, who spends their maximum time in their home. During the course of survey, affected and non affected people were interviewed. These information have been supplemented with the information regarding disease affected people, are taken from nearest private nursing home, govt. hospitals and medical colleges. The information obtained from primary sources has been organized, categorized, analyzed through standard statistical techniques i.e. correlation, regression, t- test in order to find out the level of significance of different variables related with different diseases. Moreover, the intensity of indoor air pollution and diseases have been analyzed using composite z-score besides pictorial presentation of analyzed data has been exhibited in the form of graphs, diagrams and maps using GIS techniques.

Study Area

Lucknow city formed the central part of the province of *Oudh* and capital of Uttar Pradesh occupies central position of the district. It is situated along both side of the river Gomti- a tributary of the river Ganga.

Figure 1



It lies in between 26°30¢ to 27° 10¢ North latitude an 80°30¢ to 81° 13¢ East longitude. It covers an area of 2544 sq. km and the area of city is 310.104 sq km excluding cantonment area. It has 2.207 million populations with the density of 7120.25 persons per sq. km. It is surrounded by the districts Sitapur in the North, Barabanki in the East, Raibareli in the South, Hardoi in the North West and Unnao in the South West (Fig 1).

Administratively the whole city has been divided into six zones. Each zone is divided into wards and ward is further divided into *mohallas*. Thus there are 6 zones and 110 wards in the study area.

Correlation between indoor air pollution and incidence of respiratory diseases

To examine the causal association between the indoor air pollution and associated respiratory diseases, karl pearsons, technique of coefficient of correlation has been adopted the significance of their correlation has been tested with student 't' test technique 108 degree of freedom.

Table 1: Correlation (r) between indoor Air pollution and Occurrence of diseases

Factors	Per Head Living Space Availability	Non ventilated Houses	multi porpuse room	(wood/coal/ saw/dust dung/cake/ dry leaves)	kerociene/ electricity	smoking	smoke come from out side	Smoke Remains inside the rooms/ house
Diseases								
Conjunctivitis	0.41*	0.71*	0.35*	0.67*	0.46*	0.70*	0.26**	0.36*
Rhinitis	0.38*	0.85*	0.44*	0.80*	0.64*	0.86*	0.27*	0.38*
Sore throat	0.39*	0.85*	0.38*	0.77*	0.70*	0.85*	0.28*	0.41*
Allergy	0.32*	0.77*	0.41*	0.69*	0.58*	0.75*	0.46*	0.44*
Asthma	0.28*	0.86*	0.32*	0.72*	0.62*	0.80*	0.35*	0.27*
Bronchitis	0.34*	0.74*	0.29*	0.61*	0.63*	0.72*	0.41*	0.42*
Tuberculosis	0.26**	0.47*	0.25**	0.49*	0.54*	0.53*	0.44*	0.44*
Pneumonia	0.41*	0.73*	0.34*	0.63*	0.58*	0.79*	0.34*	0.41*

Table 1 exhibit that all the variables of indoor air pollution are positively correlated to probable diseases. Their correlation is significant at 1 per cent level with exception of association between the independent variable per head living space availability and dependent variable tuberculosis, multipurpose room and tuberculosis and smoke come from outside and conjunctivitis which arte significant at 2 per cent level. It may be asserted from the analysis that the diseases which have been taken under study are4 supposed to be the consequences of indoor air pollution and former is increases as much as with the increase of indoor air pollution.

But it is important to note that though their relationship is significant at 1 per cent and 2 percent level, they arte correlated with varying degree of r value. It is observed that same correlations are significant at 1 per cent level. Though with very low degree of r value of unit of study (108 degree of freedom).

Causal factors (Indoor pollution) which highly affect diseases with value of correlation more than 60 per cent.

For the better clarification and convenience of study to understand the impact of indoor air pollution on occurrence of diseases at varying degree, they are grouped in to four categories on the basis of percentage of correlation (i.e. < 20 per cent, 20 per cent – 40 percent, 41 per cent – 60 percent, > 60 per cent)

Table 2 exhibited that the variable per head living space availability to the diseases rhinitis, sore throat, allergy, asthma, bronchitis and tuberculosis with r value 20- 40 per cent. However; it is correlated with r value 41-60 percent to the diseases conjunctivitis and pneumonia. Again it is observed that no one disease is neither very highly correlated nor very poorly with r value more than 60 per cent and less than 20 per cent.

As far as the variable non ventilated houses are concerned, it is correlated to the diseases tuber culosis (r= 0.47) which fall under the category of r value ranging from 41-60 per cent, correlation of the diseases conjunctivitis, rhinitis, sore throat, allergy, asthma, bronchitis, pneumonia with r value more than 60 per cent.

Same as the variable per head living space availability, multipurpose room is neither highly (more than 60 per cent) nor poorly (less than 20 per cent) correlated to any diseases with r value ranging between 20-40 per cent, it is associated with the diseases conjunctivitis, sore throat, asthma, bronchitis and tuberculosis. The diseases like allergy and rhinitis are correlated with multipurpose room with r value ranging 41-60 per cent.

Again the table 2 reveals same association between biofuel and diseases as between non ventilated houses and diseases. bio fuel is positively correlated to tuberculosis (r = 0.49 per cent), but it is correlated to rest of the diseases with r value more than 60 percent. Highest degree of correlation of it, is observed with the diseases rhinitis (r= 0.80). The positive association is observed between electricity and use of kerosene as cooking fuel and diseases like conjunctivitis, allergy, tuberculosis and pneumonia with r value ranging between 41-60 per cent. However it is correlated to rhinitis, sore throat, asthma and bronchitis with r value more than 60 percent. No one disease correlated with this factor neither to less than 20 percent and nor is 20 – 40 per cent. Same as non ventilated houses and bio fuel, the variable smoking in house is correlated to diseases tuberculosis (r= 0.53), while correlated to rest of the diseases with higher degree of correlation more than 60 per cent. The highest of degree of correlation is observed with the disease rhinitis (r= 0.86 per cent). It also observed that not any disease poorly correlated with this independent variable i.e. less than 20 percent and again it observed that no one disease correlated with this factor r value 20-40 per cent. Variable smoke come from outside is correlated to the diseases of conjunctivitis, rhinitis, sore throat, asthma, and pneumonia with r value ranging between 20 -40 per cent however, it is associated with the diseases tuberculosis, bronchitis, and allergy with value of correlation ranging between 41-60 per cent. But the variable neither poorly nor strongly correlated to the diseases with lower or higher percentage of r value though they are significant they are significant at 1

Table 2:
egree of relationship between indoor air pollution and associated diseases

Value of correlation	Per Head living space Availability	Non ventilated houses	Multi-purpose room	Bio-fuel	Kerosene/ electricity	Smoking in house	Smoke coming from outside	Smoke remain inside
< 20	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
20-40	Rhinitis, Sore throat, Allergy, Asthma, Bronchitis, Tuberculosis	Nil	Sore throat, Asthma, Bronchitis Tuberculosis, Conjunctivitis and pneumonia	Nil	Nil	Nil	Rhinitis, Sore throat, Asthma, Conjunctivitis and pneumonia	Rhinitis, Conjunctiviti Asthma
41-60	Conjunctivitis and pneumonia.	Tuberculosis	Rhinitis, Allergy	Tuberculosis	Tuberculosis, Conjunctivitis Allergy and Pneumonia.	Tuberculosis	Allergy, Bronchitis, Tuberculosis	Tuberculosis, Sore throat, Bronchitis Allergy and pneumonia.
> 60	Nil	Rhinitis, Sore throat, Allergy, Asthma, Bronchitis,	Nil	Rhinitis, Allergy Sore throat, Asthma, Bronchitis, Conjunctivitis and pneumonia	Rhinitis,Sore throat, Asthma, Bronchitis,	Rhinitis, Sore throat, Asthma, Bronchitis Conjunctivitis Allergy and Pneumonia.	Nil	Nil

per cent level except r value of 0.26 (smoke from outside vs conjunctivitis). Again, the variable smoke remains inside the house shows moderate correlation with the associated diseases with r value 20-60 per cent. Three diseases i.e, conjunctivitis, rhinitis and asthma are positively correlated to the dependent variable with r value ranging between 20-40 per cent. However, it is related to rest diseases with r value ranging between 41-60 per cent, are sore throat, allergy, bronchitis, tuberculosis and pneumonia. (Table 2)

Intensity of Indoor Air Pollution

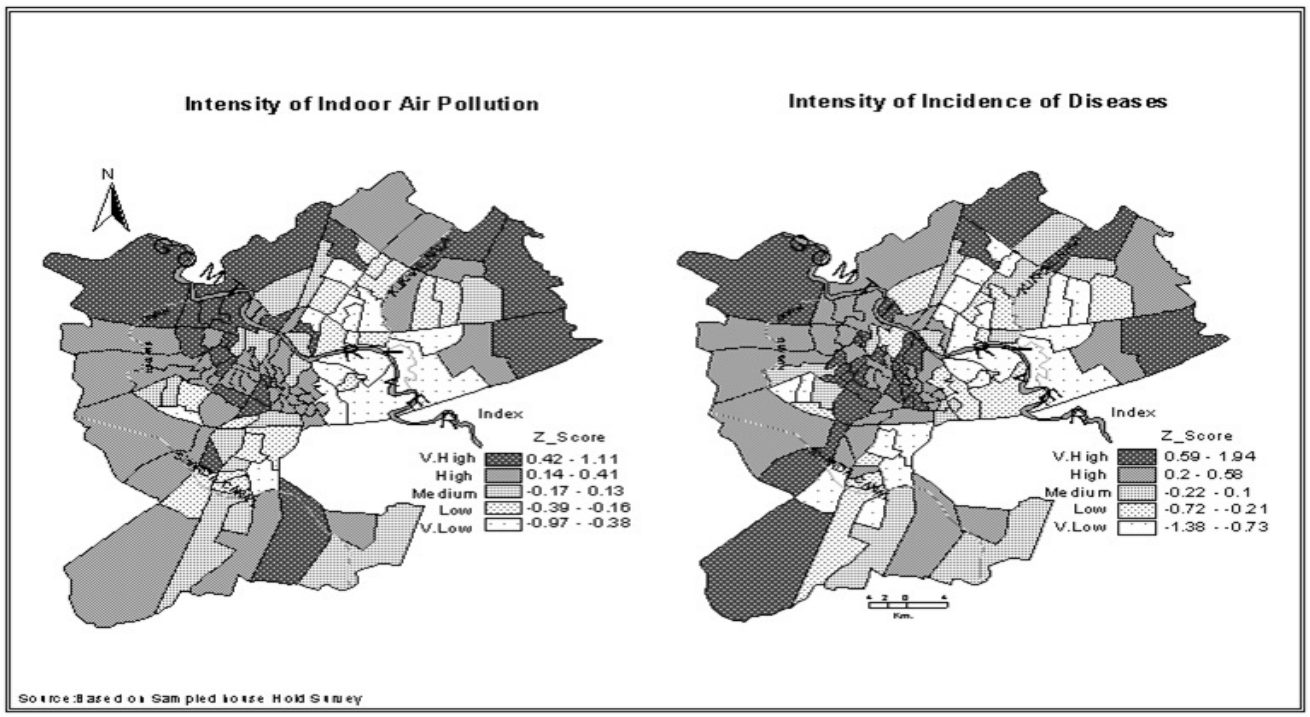
The spatial analysis of intensity of indoor air pollution based on z- score clearly revels that under very high category of intensity indoor air pollution comes in between 0.43 to 1.12 holds 19.09 per cent wards of the city (table 3) consisting of 21 wards such as Balakganj, Mallahitola, Daulatganj, Faizullahganj, Bazarkaliji, Qadamrasool, Shankarpurwa, Chinhat ward etc. High intensity of indoor air pollution ranges from 0.11 to 0.43 spread over in 36 wards covers 32.73 per cent wards of the city like Kanhiyamadhopur, Haiderganj, kashmirimohalla, Bhawaniganj, Sarojininagar, Aishbagh, Jalsansthan, Daliganj, Rajabazar ward ets. Moderate intensity of indoor air pollution ranging in between -0.21 to 0.11 found in 19.09 per cent wards of the city which accounts 21 wards including ward Labourolony, Ambedkarnagar, Chowk Ibrahimpur, Lalbahadurshastri, Jankipuram Indiranagar etc. Low intensity of indoor air pollution ranges -0.38 to -0.21 accounts 17.27 per cent ward of the city prevail in 19 wars. Some of the important wards like Gurugovind singh, Hardeenrai, hazratganj, Aliganj, Murlinagar, Nishatganj etc. -0.93 to -0.38 comes under very low intensity of indoor air pollution occur in 11.81 per cent wards of the city counts 13 wards including ward Rajajipuram, Vikramadiya, Rafiahmadkidwainagar, gomtinagar, Niralanagar etc.

It has been clear from the spatial analysis of intensity of indoor air pollution, are mainly found in the central part of the city and peripheral zone of the city as well as in industrial areas. The central part of the city characterized by v. high population density and also old part of the city beside it this area unplanned residential areas have the narrow lane, street and ill ventilated houses. Some areas are as congested as there is no space for fresh air to replace the intensive room air. Peripheral zone though covered large area and has high space and houses come under middle non ventilated houses. But there in use of fuel for cooking is bio fuel like leaves cow dung, wood and wood dust they contact with long time to smoke which release from these bio fuel. All the factor responsible for the high intensity of indoor air pollution where low and v. low indoor air pollution. These areas inhabited by spacious houses and most of the gentry in these areas belong to v. high to high income group low population density and access in these areas is very easy.

Table 3
Intensity of Indoor Air Pollution Lucknow City 2010 (Based On Z- Score)

Category	Ranges	Total wards	per cent of Total wards
Very High	0.43-1.12	21	19.09
High	0.11-0.43	36	32.73
Medium	-0.21-0.12	21	19.09
Low	-0.38-0.20	19	17.27
Very Low	-0.93-0.37	13	11.81

Fig 2



Intensity of Diseases

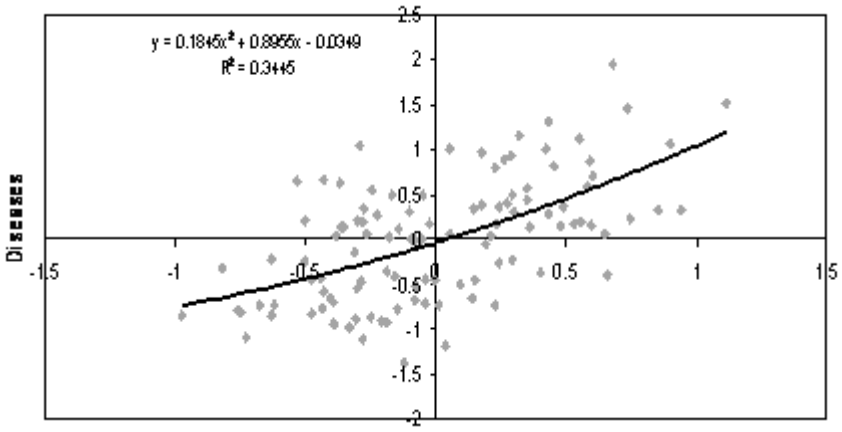
It is clear reveals from the (table 4) analysis of z-score the intensity of very high intensity of diseases ranges 0.56 to 1.96 found in the 17.27 per cent wards of the city that is 19 wards such as Balakganj, Jankipuram, Bazarkaliji, Tilaknagar, Ambedkarnagar, Ganeshganj, Chimhat etc. under high intensity of diseases prone households ranges from 0.18 to 0.56 found in 33.63 per cent wards of the city that is 37 wards such as ward, Kanhiyamadhopur, Haiderganj, Garhipeerkhan, Husainabad, Aishbagh, Jalsansthan, Daliganj, shankarpurwa, Mootilalnehru etc. Under medium intensity of disease prone households ranges from -0.25 to -0.18 found in 19.09 per cent wards of the city that is 21 wards such as ward Mallahitola, Daulatganj, Chowk, Kashmirimohallah, Bhawaniganj, golaganj, ismailganj etc. Under low intensity of disease prone households ranges from -0.72 to -0.25 found in the 12.72 per cent wards of the city that is 14 wards such as ward Rajajipuram, murlinagar, Hazratganj, Nishatganj, Mahanagar etc. Under very low intensity of disease prone households ranges -1.4 to -0.72 found in the 17.27 per cent wards of the city that is 19 wards such as ward Gurugovind singh, Niralanagar, Aliganj, Bajrangbali, Indiranagar, Gomtinagar etc.

After foregoing discussion it can say that the peripheral zone of the city and central part of the city is the diseases prone area of the city, due to its high intensity of indoor air pollution. Central part of the city is the commercial and traffic congested area also. There is RSPM, SPM, SO_2 and NO_2 found highest and RSPM and SPM beyond the prescribed limit, which discuss in previous chapter in air pollution combination of indoor air pollution factor supplemented with out door air pollutant causes different respiratory diseases. There is positive correlation between the intensity of indoor. There is strong causal correlation between the intensity of indoor air pollution and occurrence of diseases. Air pollution and disease shows the (r= 0.58) 1 per cent level of significant at 108 degree of freedom explained 99.9 per cent significant.

Table 4:
Intensity of Diseases Lucknow City 2010 (Based On Z- Score)

Category	Ranges	Total wards	per cent of Total wards
Very High	0.57- 1.95	19	17.27
High	0.18- 0.56	37	33.63
Medium	-0.25 to -0.11	21	19.09
Low	-0.72 to -0.24	14	12.72
Very Low	-0.1.4 to -0.71	19	17.27

Correlation between determinants of indoor air pollution and associated diseases (Lucnow City 2010)



Indoor Air Pollution

Conclusions and Recommendations

After foregoing analysis regarding variable of indoor pollution and their impact on health, it may be concluded that indoor air pollution and respiratory diseases are positively correlated. At 108 degree of freedom, 99 per cent significant are observed at 1 per cent level, among all the variables. It is commonly seen that intensity of pollution is more pronounced in peripheral, industrial and central i.e. old part of the city it is attributed to the high consumption of biofuel by the slum dwellers living in peripheral and along the *Nalas* and river Gomti, ill ventilation, low availability of spacing for living, smoke remains inside the houses are the common features of the central and old part of the city. The settlement in industrial area are exposed to emission of industrial smoke, in combustion of traffic fuel, indoor and outdoor smoking as well as poor exit capacity of smoke from inside the house.

Recommendations

In order to reduce the level of indoor air pollution and incidence of diseases following recommendations have been made:

- Mass awareness programme should be organized through mass media, television, radio, street drama, plays, stage drama, hoardings, handbills, depicted through caricature narrating the effects of indoor air pollution on health. The programme should be arranged time to time in proper manners.

- The housing plan with well ventilation should be proposed by the Housing development Corporation and it should be binding to every one. The housing plan should not be passed by legal authorities for the construction it is devoid of ventilation. Separate kitchen with full ventilation be allowed to prevail.
- The size of the room should be as per recommendation i.e. 50 sq feet need living space. Because over-crowding causes incidence of respiratory diseases.
- The use of biofuels kerosene should be replaced by LPG as far as possible, solar cooker, scientific stove, smokeless chullahas should be encouraged in place of traditional means of cooking. The government should offer maximum subsidies to the people living below poverty lines for the utensils and means used for cooking.
- The slums and squatter settlement should be provided laterine with flush systems, cooking gas, utensil and smokeless chullahs on very affordable prices.
- Jhuggies and jhopdies should be replaced with one or two room sets with full ventilations in order to avoid indoor air pollution.
- Promotion of research programmes on indoor air pollution and related subject should be encouraged.

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