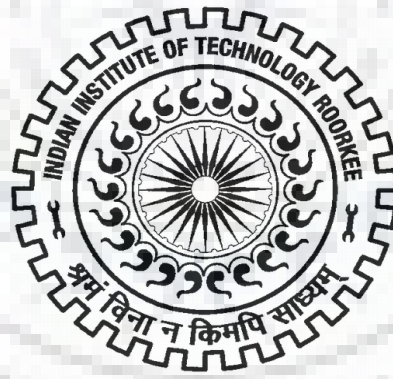


AFFORDABLE HOUSING FOR THE WEAKER SECTION IN NAGPUR CITY

Ph.D. THESIS

by

VILAS KESHAV BAKDE



**DEPARTMENT OF ARCHITECTURE AND PLANNING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE-247667 (INDIA)**

JULY - 2014

AFFORDABLE HOUSING FOR THE WEAKER SECTION IN NAGPUR CITY

A THESIS

*submitted in partial fulfilment of the
requirements for the award of the degree*

of

DOCTOR OF PHILOSOPHY

in

ARCHITECTURE AND PLANNING

by

VILAS KESHAV BAKDE

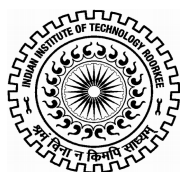


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CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the thesis entitled **AFFORDABLE HOUSING FOR THE WEAKER SECTION IN NAGPUR CITY**, in partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy and submitted in the Department of Architecture and Planning, Indian Institute of Technology Roorkee, Roorkee is an authentic record of my own work, carried out during the period from July 2011 to July 2014 under the supervision of **Prof. S. Y. Kulkarni**, Professor, Department of Architecture and Planning, Indian Institute of Technology Roorkee, Roorkee.

The matter presented in this thesis has not been submitted by me for the award of any other degree of this or any other Institute.

Date: _____

(VILAS KESHAV BAKDE)

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Date: _____

(S. Y. KULKARNI)
Supervisor

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ABSTRACT

Apart from food and clothes, housing is the basic necessity of humans, which not only protects him from the surrounding adverse conditions, but also gives a sense of well being and courage to develop further. The issues of providing housing to all the population is not a challenge only in Indian context but throughout the world. Moreover, recent developments on the industrial and economic fronts have augmented the rates of migration. Besides, this migration is unidirectional, wherein the people move from the rural to urban area. In last few decades, this movement has always seen an upward trend adding enormous pressure on the receiving community as well as the Governing bodies in the urban area. Often, it has been witnessed that the people, especially belonging to the weaker sections end up in slums. However, such regular addition of people in the slums makes their life miserable. Since, these people are part of the society, the local as well as Central Governments have to proactively make necessary arrangements for their living as well as other amenities like electricity, water, and further basic infrastructure need to support their lives. In the backdrop of above information, often the government floats housing schemes that are affordable to people, especially those belonging to the weaker sections.

Presently, the world is undergoing the largest wave of urban growth in the history of mankind. In 2008, for the first time in history, more than half of the world's population was living in towns and cities. By 2030 this number is expected to swell to almost 5 billion. While mega-cities have captured much public attention, most of the new growth is expected to occur in Tier – II and III cities, which often have fewer resources to respond to the magnitude of the change. In principle, cities offer a more favourable setting for the resolution of social and environmental problems than rural areas as cities generate jobs and income. In the backdrop of above, it is important to know the state-of-art of the living conditions of this migrated population and to study the possible means and subsequently delineating affordable housing policies. Though there are numerous criteria to define the affordable housing, most prominent is the one that focuses on the economic condition of the people.

Affordable housing is a type of housing that is appropriate for the needs of a range of very low to moderate income households and priced so that these households are also able to meet other basic living costs such as food, clothing, transport, medical care and education. As a rule of thumb, housing is usually considered affordable if it costs less than 30 percent of gross household income. In this context, affordable housing refers to housing that has been developed with some assistance from the

Governments. These type of houses may be developed in different ways with different sizes, including single or multi-bedroom units or houses. Besides such dwelling are available only in some specific locations and eligibility criteria applies for availing such households.

In spite of Best & Sincerest efforts by Government, there always exists a huge gap between the demand and supply of houses i.e. number of houses required and the number of houses available. For example, as per 2011 census, India had a population of 1,210.98 million, out of which, 377.10 million (31.16%) lived in urban areas. During 2001-2011, the urban population of India grew at a CAGR of 2.8%, resulting in the increase in level of urbanization from 27.81% to 31.16%. This growing concentration of people in urban areas has led to problems of land shortage, housing shortfall and congested transit and has also severely stressed the existing basic amenities such as water, power and open spaces of the towns and cities. According to the 2011 census, the housing stock in urban India stood at 78.48 million for 78.86 million urban households. Though the gap between household and housing stock is narrowing, actual shortage is high due to a certain part of the current stock being dilapidated and people living in congested dwellings.

In view of the above mentioned aspects, the present study was carried out to determine the state-of-art of the slums as well as slum dwellers of India with special emphasis on those located in the Nagpur City of central India (the study area). The specific objectives of study includes issues such as i) study of habitats of weaker sections, ii) study of economic, social, educational, cultural, occupational, and infrastructural aspects vis-à-vis household income of weaker section, iii) determination of association between socio-economic, educational, occupation related parameters and the household income, iv) identification of critical factors that govern household income of the weaker sections and to suggest evidence based set of policy guidelines for 'affordable housing'. The objectives of the study were finalized on the basis of research gaps that exist in the subject area. The research gaps were identified on the basis of the comprehensive review of the published literature pertaining to the affordable housing.

The study was delimited to the Nagpur City, which is located at practically the geographical center of India. It is estimated that 36% of the population in the city of Nagpur lives in slums. There are about 446 slum pockets in the city spread over an area of about 17 sq. km. Of the 446 slums, 287 slums are notified slums. The present study was carried out in three steps involving reconnaissance, sampling and analysis, followed by interpretation of statistics. Data collection was carried out by following standard methodology. The primary data collection in view of the objectives of the

study involved preparation of research instrument i.e. interview schedule. Analysis of data has been done with the help of suitable statistical tests and the significance level was selected as 0.05 (or equivalently, 5%) by keeping in view the consequences of such an error.

The salient findings of the study showed that the monthly household income of majority of slum dwellers is meager and the sex ratio is not skewed. Furthermore, the noticeable finding of this study indicates that the people mostly belong to hindu religion and have very less education. The primary reason for migrating to this place is the lack of job opportunities in their respective native places. Furthermore, strikingly, it is observed that the slum dwellers have no major social problems. Hence, in order to have an affordable housing policy for such a population, it will be necessary to first increase the awareness of benefits of good and well planned housing amongst them. The lack of awareness of good quality housing and perceived benefit of the same appears to be a hindrance for convincing these people to move to a new well planned housing. Though there are certain areas where the slum dwellers experience problems, the survey data showed that the problems faced by these individuals are as follows, the problems with respect to its gravity in decreasing order are those related to Water Supply, Solid Waste Management, Sewerage, Drainage, Communication, Transportation, Electricity. Since, the affordability of the households is an important issue for availing the same i.e. a household, baseline data of the individuals forming the society is crucial. Majorly, the key areas, which may influence the success of Govt.'s housing policy demand that more focus should be given towards improving the literacy as well as the skill levels of the population as these were found to be the core issues. Lastly, it is evident from the study results that the household income of slum dwellers is very low and hence the architects and planners should design the houses in such a way that cost of constructing house should be as low as possible. Besides, the role of Local and State/Central Govt. is also appears to be critical in formulating as well as implementing the affordable housing schemes. Major issue, which appears to put hindrance towards success of housing policies, is the unfavourable attitude of slum dwellers to move from the existing locations. Hence, an integrated approach is needed to successfully implement the new policy.

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To take up a Ph.D research on the inherently complex subject “AFFORDABLE HOUSING FOR THE WEAKER SECTION IN NAGPUR CITY” was indeed a formidable task. In all humility I acknowledge, that from its humble beginning to its final plausible finish, many hands and minds, directly or indirectly contributed in my research work. Now its my turn to express my profound gratitude towards all of them.

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Dated:

(VILAS KESHAV BAKDE)

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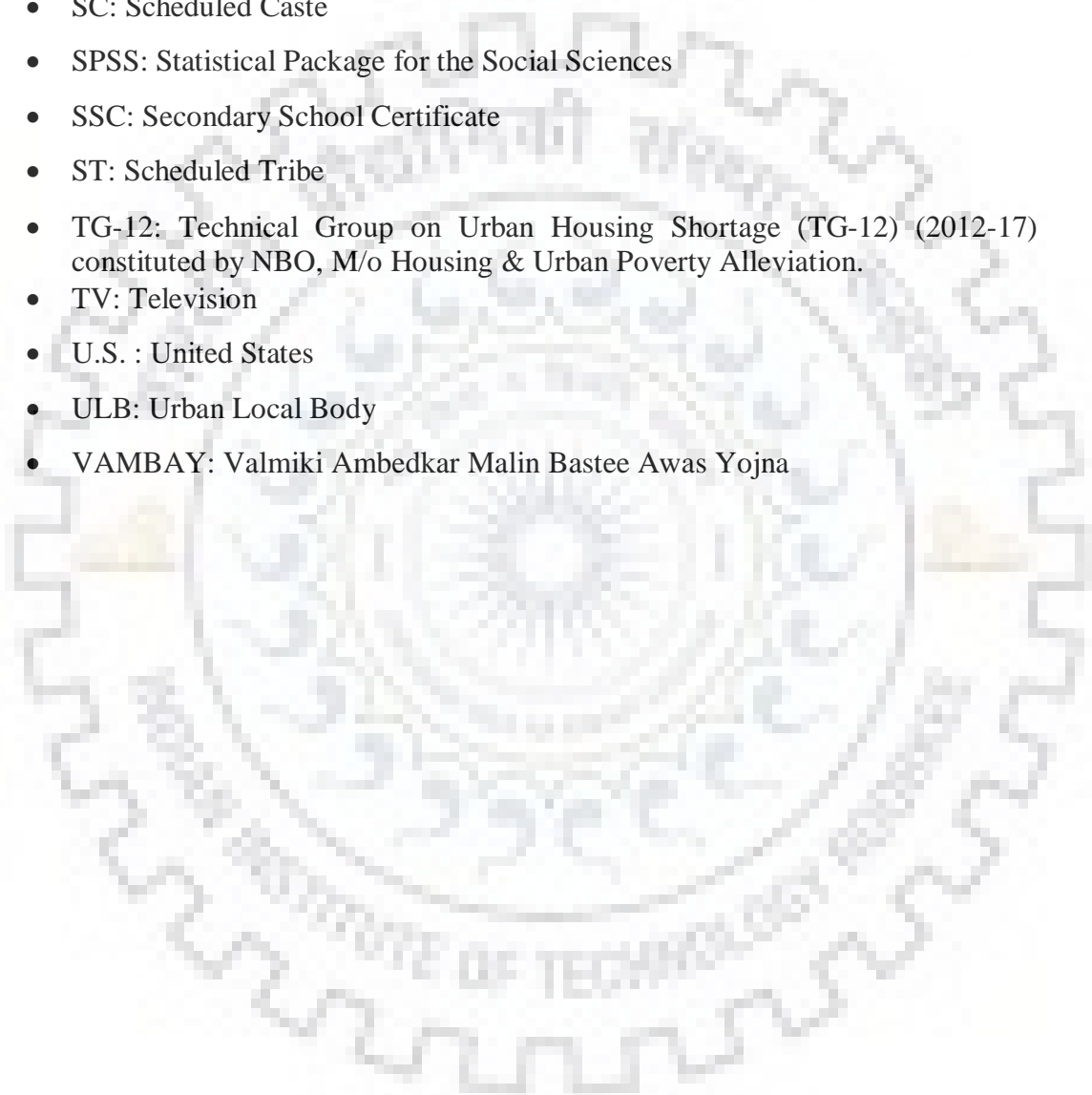
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Abbreviations

- AC: Asbestos Cement Sheets
- AHIP: Affordable Housing in Partnership
- BBDO: BBDO is a worldwide advertising agency network, with its headquarters in New York City. The agency began in 1891 with George Batten's Batten Company, and later in 1928, through a merger of BDO (Barton, Durstine & Osborn) and Batten Co. the agency became BBDO.
- BC: Backward Class
- BPO: Business Process Outsourcing
- BSU: Basic Services for the Urban Poor
- BSUP: Basic Services for the Urban Poor
- CAGR: Compound Annual Growth Rate
- CHF: Cooperative Housing Foundation, 1952
- CMA: Census Metropolitan Area
- DVD/VCR: Digital Video Disc/ Videocassette Recorder
- ECB: External Commercial Borrowing
- EWS/ LIG/ HIG: Economical Weaker Section/ Low Income Group/ Higher Income Group
- EWS: Economical Weaker Section
- FM: Frequency Modulation
- G: Ground Storey
- G+1: Ground + One Storey
- G+2: Ground + Two Storey
- GN: Guidance Notes
- GSE Act: Federal Housing Enterprises Financial Safety and Soundness Act
- GSE: Federal Housing Enterprises Financial Safety and Soundness Act
- HIG: High Income Group
- HSSC: Higher Secondary School Certificate
- ICT: Information, Communication and Technology
- IDC: International Data Corporation
- IHSDP: Integrated Housing and Slum Development Programme

- ISHUP: Interest Subsidy Scheme for Housing the Urban Poor
- IT: Information Technology
- ITES: Information Technology Enabled Services
- IT-ITES: Information Technology and Information Technology Enabled Services
- IZ: Inclusionary Zoning
- JNNURM: Jawaharlal Nehru National Urban Renewal Mission
- JNNURM-BSUP: Jawaharlal Nehru National Urban Renewal Mission- Basic Services for the Urban Poor
- KPMG: Klynveld Peat Marwick Goerdeler (accounting firm)
- LIG: Low Income Group
- LPA: Local Planning Authority
- LPG: Liquefied Petroleum Gas
- M/o Housing & Urban Poverty Alleviation: Ministry of Housing and Urban Poverty Alleviation
- MHUPA: Ministry of Housing and Urban Poverty Alleviation
- MIG: Middle Income Group
- MoEF: Ministry of Environment and Forests
- MPCE: Monthly Per Capita Expenditure
- NASSCOM: National Association of Software and Services Companies
- NBFC: Non-Banking Financial Companies
- NBO: National Building Organization
- NGO: Non-government Organization
- NGOA: Needs, Gaps and Opportunities Assessment
- NHB: National Housing Bank
- NHHP: National Housing and Habitat Policy
- NISA: Newly Identified Slum Areas
- NMC: Nagpur Municipal Corporation
- NSDP: National Slum Development Programme
- NUHHP: National Urban Housing and Habitat Policy 2007
- OBC: Other Backward Class
- PH: Physically Handicapped

- PPP: Public-Private Partnerships
- PPS3 : Planning Policy Supplement 3
- RAY: Rajiv Awas Yojana
- RICS: Royal Institution of Chartered Surveyors
- SC/ST/BC/OBC/PH: Scheduled Caste/Scheduled Tribe/Backward Class/Other Backward Class/Physically Handicapped
- SC: Scheduled Caste
- SPSS: Statistical Package for the Social Sciences
- SSC: Secondary School Certificate
- ST: Scheduled Tribe
- TG-12: Technical Group on Urban Housing Shortage (TG-12) (2012-17) constituted by NBO, M/o Housing & Urban Poverty Alleviation.
- TV: Television
- U.S. : United States
- ULB: Urban Local Body
- VAMBAY: Valmiki Ambedkar Malin Bastee Awas Yojna



Chapter – I

Introduction

Housing is one of the basic needs of man that ranks third in order of importance after food and clothing according to Abraham Maslow's 'Hierarchy of needs'. The importance of housing was universally accepted from times immemorial. Man perceived the essence of space and shelter in his first home, the cave. Even the Neolithic man who lived between 10,000 and 2000 B.C. built durable habitats like pit dwellings, lake dwellings and beehive huts. Primitive men sought some kind of protection against wild animals, enemies and natural calamities. However, its functions increased manifold as civilization progressed. When the institutions of private property came to be recognized, housing received a big boom in the investment sector. Some federal regulations govern the construction of buildings or structures. Housing needs vary from individual to individual depending on their age, family, and geographic location. Anything that covers, protects, or supports another thing is termed as Housing. (<http://www.businessdictionary.com>).

Housing forms a vital part of ensuring human dignity where adequate housing does not simply mean having four walls and a roof over one's head but encompasses many more things. Moreover, housing is necessary for living a normal life though there are many definitions of normal life, a trouble free and sustainable life is considered as normal life in this study. In addition to above, housing also fulfills deep-seated psychological needs of privacy and personal space that are strongly warranted at different times in one's life. Besides, housing satisfies the physical need for security and protection from severe weather and social needs for comfortable ambience where important relationships are established and nurtured.

1.1 History of Housing

A house is a building that provides shelter, comfort, and protection. Shelter protects man from wind, rain and extremes of weather. It protects him against insects and wild animals and shields him from other dangers. Man lived in trees before he knew how to build a shelter. The trees kept some of the rain off. They also protected him from some animals that could not climb up the tree. Later man taught himself to

pile branches and make crude shelters to protect him from the wind and sun. This was followed by living in caves. Man slowly learned to make simple tools, first of stone and much later of metal. These helped him build better houses. He built his home from the best material he could find around him to suit his needs. Where there were few trees, man learned to pile stones together to make a shelter. In some places, he found that he could build houses from the earth itself. He learned how to form clay into small blocks that could be dried in the sun. He made his shelter by piling these bricks one on the top of other.

1.2 Modern Day Houses

Today a house must fulfill the need of comfort, satisfaction and protection. It has bedrooms, a kitchen, a dining room, a drawing room and bathrooms. Many bungalows have a garden in the front. Today people are privileged enough to have washing machines, heating and cooling systems, refrigerators and electricity. The modern houses are of different shapes, sizes and styles. People have a choice to choose from apartments of different types. Today, houses are made of bricks much similar to those of the Assyrians. These are put together with cement. There are different types of glasses for the windowpanes. The nature of housing has undergone sea change and the modern day housing along with that occurs in the slums offers an intriguing situation that demands critical investigation with respect to its utility and supportive role in the life of human beings.

Since last few decades the demand for housing is exponentially growing. This is especially in the context of urban areas which are continuously experiencing the influx of people (often uncontrolled) from the rural areas. The problems related to housing are arguably the most important problems in urban area, as the sustainability of life depends on it. Since, the phenomenon of urbanization is relatively new in the tier II and tier III cities, the dynamics associated with this process i.e. urbanization are also evolving. Besides, the cultural diversity in the people migrating to such urban areas is also very high and hence, adds to the social and economic intricacies. Since, majority of migrated population does so due to economic hardships at their native place; the immediate concern of shelter in the urban areas becomes a big challenge to them and subsequently these people end up in a slum area to meet their shelter related

need. Since, the shelter in urban area has a peculiar characteristic, it is important to know the process of urbanization so as to understand the housing vis-à-vis urban area.

1.3 Urbanization

Urbanization is the movement of people from rural to urban areas and the result is the growth of cities. It is also a process by which rural areas that are in the vicinity of bigger cities are transformed into urban areas. Urbanization is a process that has occurred, or is occurring, in nearly every part of the world that humans have inhabited. People move into cities to seek economic opportunities. Urbanization therefore summarizes the relationship between the total population and its urban component. It is mostly used as a demographic indicator or in the demographic sense, whereby there is an increase in the urban population to the total population over a period of time. The concept of urbanization has a dual meaning—demographically and sociologically. The demographic meaning refers to the increasing proportion of population in a country or a region that resides in cities. Sociologically, it refers to the behavior, institutions and materialistic things that are identified as urban in origin and use. In other words, it is a social process which is the cause and consequence of a change in the man's way of life in the urban milieu.

Presently, the world is undergoing the largest wave of urban growth in the history of mankind. In 2008 for the first time in history more than half of the world's population was living in towns and cities. By 2030 this number is expected to swell to almost 5 billion. While mega-cities have captured much public attention, most of the new growth is expected to occur in Tier – II and III cities, which often have fewer resources to respond to the magnitude of the change. The fact remains that cities offer a more favorable setting for the resolution of social and environmental problems than rural areas as cities generate jobs and income. Furthermore with good governance, they can deliver education, health care and other services more efficiently than less densely settled areas simply because of their advantages of scale and proximity. Moreover migration is a significant contributor to urbanization, as people move in search of social and economic opportunities. Often people who leave the rural area to find better lives in the city have no choice but to settle in shantytowns and slums, where they lack access to decent housing and sanitation, health care and education—in effect, trading in rural for urban poverty. Urban growth is inevitable and the cities

of India including Nagpur are no exception to this phenomenon. However the speed and size of the growth are not fixed and vary widely among regions which make the policy delineation relatively difficult.

According to Anderson, 'Urbanization is not a one-way process, but it is a two way process. It involves movement from villages to cities and change from agricultural occupation to business, trade, service and profession. Thus, according to him, urbanization involves the following

- i. Concentration of people at population densities higher than those associated with agricultural populations with only very rare exceptions on either side.
- ii. Population shift (migration) from rural to urban areas.
- iii. Occupational shift from agricultural to non-agricultural.
- iv. Land-use shift from agricultural to non-agricultural.
- v. Urbanization involves changes in the migrants' attitudes, beliefs, values and behavior pattern.

Even if the phenomenon of urbanization is not unique to India, the population dynamics make the situation (with respect to urbanization) more challenging than the other countries. Like, other challenges the housing related issues are of primary concern to the Govt. of India as most of the targets (of housing) set so far have not been achieved.

1.4 Urbanization and Housing

Between urbanization and housing it is important to note that housing needs are largely driven, by population and demographic changes. India underwent a rapid population rise after independence, which somewhat stabilized in the recent decades. The number of households has been largely growing due to increase in family size and nucleation of families and important phenomenon accompanying urbanization (Rakeshmohan 1996). The share of urban population in total population has been increasing from 20 per cent in 1950s to touch almost 30 per cent by now (MoEF 2002). Figure 1 presents a picture of urbanization and urban population growth in India. Yet, in comparison with the urbanization levels of 60-70 per cent in Africa and 70-80% in the Europe, India is yet to transform in to a predominantly urban society.

Among all classes of cities, metropolitan cities, which already have a large population and a major share of total urban population, are experiencing faster growth. Mega cities i.e., cities with more than ten million population, share almost 40 per cent of urban population and another 30 per cent is shared by other Class I cities i.e., cities with more than one million population (Rakeshmohan 1992, Kundu 2006). The polarization of growth towards metro cities and mega cities poses a greater challenge to provide housing in urban areas, which are rapidly becoming areas of crowded habitations without basic amenities. This gets reflected in an increasing proportion of slum population which constituted 28 per cent of the urban population. In fact, the proportion of slum population in Mumbai, Delhi and Kolkata is rapidly reaching the levels of 40%; in Mumbai, it has reached almost 60% of total population according to latest census (Dadich 2002). The slum population faces challenges ranging from insecure tenure and poor shelter conditions to the lack of access to basic infrastructure facilities like water supply, sanitation and solid waste disposal.

The report of National Commission on Urbanization (1985) eloquently pointed out the reality of comparatively rapid growth of population as well as the scale and intensity of urbanization, the critical deficiencies in the items of infrastructure, the concentration of vast number poor and deprived people, the acute disparities in shelter and basic services, deteriorating environment quality and the impact of poor governance on the income and productivity of enterprises. However, only recently, the economic importance of urban areas in terms of their contribution to the national income has been recognized and so do their potential in absorbing large 'surplus labour' of the rural hinterlands. Cities began to contribute to more than 50% of the MoEF from less than a quarter in the post-independence era. Given the rising importance of urban areas and increasing challenges of urban housing, the problems and issues of urban housing assume significance and so do the reform agenda towards improving it.

1.5 Different Socio-Economic Levels and Housing

Housing affordability is one of the major social and economic issues which have attracted the attentions of policy makers, urban researchers and planners in many countries. Over the past two decades, many countries have experienced a significant and persistent level of increase in housing prices (Kotkin 2011). This increase is often

accompanied by changes in regional economic performance and labor market restructuring (Berry 2006), social cohesion and exclusion (Winter and Stone 1998; Coles et al. 2000), and social polarization (Winter and Stone 1998).

1.6 Present Status of Housing

India's population has already crossed a mark of 1 billion and it is estimated that by the year 2021, 350 million people will be added with further concentration of population in urban center up to 12 percent. According to Census 2011, India has a total population of 1.21 billion out of which 31.1 % live in urban areas. About nineteen million (18.78 million) households grapple with housing shortage in Urban India (2012) as per the estimate of the Technical Group on Urban Housing Shortage (TG-12) (2012-17) constituted by NBO, M/o Housing & Urban Poverty Alleviation. The estimate is based on Census & NSS 65th Round results on Housing conditions and Urban Slums (July 2008-June 2009) with usual inputs like obsolescence factor, congestion factor & homeless households. Furthermore, a large proportion of population has no access to sanitation facility, no electricity and drainage facility. The lack of basic infrastructure facilities in present housing stock and the shortfall indicates chronic shortage of dwelling units with basic needs. Moreover, it is estimated that by the year 2021 the population of urban poor will be nearly 180 million.

This indicates that with present pace of growth, urban centers will face chaotic conditions for housing provision and the shanty image of our cities will create a question over environmental sustainability of human settlements. To ameliorate housing conditions in deteriorating slums radical changes are required in present land policies assuring tenure security. However government strategies on slum relocation or redevelopment have failed. Furthermore, it was recognized that private sector housing market excludes a large segment of population under poverty line in the urban centers due to limited profitability. This implies that there is a need for a reorientation in the present notions of housing provision by public intervention, which becomes an urgent need to provide housing for all.

According to an estimate, India had a chronic shortage of 21.23 million dwelling units out of which 36% are required in urban centers. The Ninth Five-Year plan suggests that there is a need to build / upgrade 10 million dwelling units for

urban poor or NBO, M/o Housing & Urban Poverty Alleviation and 5 million for LIG in the urban centers alone. Considering the present rate of supply of urban housing, the future rate of supply has to be accelerated three times to eradicate housing problem in urban areas. However, it seems to be difficult for public sector agencies to accelerate rate of housing provision looking at limited financial resources of Rs. 34,000 crore in comparison to required investment of Rs. 1,21,370 crore for urban centers.

The present crisis in the housing sector and dilapidated living condition of LIG and EWS segments is largely due to inappropriate government interventions. Although, government has used various strategies to fulfill housing demand, the current state of affair indicates alarming level of backlog in affordable housing especially to LIG and EWS segments. This along with ever increasing shortfall leads to exponential growth in housing demand. To eradicate housing shortage the National Housing and Habitat Policy (1998) aimed at providing shelter to all by 2010, which seems to be a dream rather than a reality.

1.7 Housing Policies (<http://mhfcindia.com>)

Several policies adopted by Central Government have assisted in the delivery of affordable housing for the EWS, LIG and lower MIG. The first National Housing Policy was formulated in 1988. It was followed by a series of public sector interventions and related developments of human settlement sector in India, with the formulation of National Housing Policy in 1994, National Housing and Habitat Policy (NHHP) in 1998 and follow-up of 74th Constitution Amendment of 1992. These policy initiatives focused on transition of public sector role as 'facilitator', increased role of the private sector, decentralization, development of fiscal incentives and concessions, accelerated flow of housing finance and promotion of environment-friendly, cost-effective and pro-poor technology. The NHHP introduced landmark initiatives such as involvement of multiple stakeholders, repeal of Urban Land Ceiling Act and permitting foreign direct investment in housing and real estate sector.

However all these policies were generic and applicable to both rural and urban areas. Taking into account the emerging challenges of required shelter and growth of slums, the first policy specific to urban areas, the National Urban Housing and Habitat Policy was announced in December 2007.

1.7.1 National Urban Housing and Habitat Policy (NUHHP), 2007

NUHHP 2007 has identified 'Affordable Housing for All' as a key focus area to address concerns that could potentially impede sustainable urban development. The policy seeks to promote various types of partnerships between public, private, cooperative and the institutional sectors in order to attain some of the objectives listed below:

- facilitating accessibility to serviced land and housing with focus on economically weaker sections and low-income group categories;
- land assembly, development and disposal to be encouraged by both private and public sectors;
- forging strong partnerships between public, private and cooperative sectors for accelerated growth in the housing sector and sustainable development of habitat;
- accelerating the pace of development of housing and related infrastructure;
- creating adequate housing stock both on rental and ownership basis with special emphasis on the economically weaker sections through appropriate capital or interest subsidies; and
- Using technology to modernize the housing sector and enhance energy and cost efficiency, productivity and quality.

1.7.2 Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

JNNURM was launched in December 2005 with an aim to encourage and expedite urban reforms in India. For the housing sector in particular, its main aim was construction of 1.5 million houses for the urban poor during the mission period (2005–2012) in 65 mission cities

- ***Basic Services for the Urban Poor (BSUP)*** – The scheme is managed by the Ministry of Urban Development. It seeks to provide seven entitlements or services – security of tenure, affordable housing, water, sanitation, health, education and social security to low-income segments in the 65 mission cities

Integrated Housing and Slum Development Programme (IHSDP) – Integrated Housing and Slum Development Programme aims to combine the existing schemes of Valmiki Ambedkar Awas Yojana (VAMBAY) and National Slum Development

Programme (NSDP) for having an integrated approach in ameliorating the conditions of the urban slum dwellers that do not possess adequate shelter and reside in dilapidated conditions. The scheme is applicable to all cities and towns as per 2001 census except cities/towns covered under BSUP.

- The sharing of funds would be in the ratio of 80:20 between Central Government and State Government/ULB/Beneficiaries.
- A minimum of 12% beneficiary contribution is stipulated, which in the case of SC/ST/BC/OBC/PH and other weaker sections is 10%.

Affordable Housing in Partnership (AHIP) – The scheme of Affordable Housing in Partnership aims to promote various types of public-private partnerships amongst the private sector, cooperative sector, financial services sector, state parastatals and urban local bodies, for realizing the goal of affordable housing for all. This scheme is a part of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and takes into account the experience of implementing Basic Services to the Urban Poor (BSUP) and Integrated Housing and Slum Development Programme (IHSDP).

- Modification in the guidelines of JNNURM (BSUP) to facilitate and incentivize land assembly for affordable housing.
- Central assistance of 25% for the cost of the provision of civic services at an approximate cost of INR 5,000 crore.
- Support the construction of 1 million affordable dwelling units in Phase I, with a minimum of .25 million EWS dwelling units.
- Disbursement of funds linked to the actual provision of amenities. A normative cap per EWS/LIG dwelling unit is fixed in consultation with the states for the purpose.

1.7.3 Interest Subsidy Scheme for Housing the Urban Poor (ISHUP)

- Modification in the guidelines of JNNURM (BSUP) to facilitate and incentivize land assembly for affordable housing.
- Central assistance of 25% for the cost of the provision of civic services at an approximate cost of INR 5,000 crore.

- Support the construction of 1 million affordable dwelling units in Phase I, with a minimum of .25 million EWS dwelling units.
- Disbursement of funds linked to the actual provision of amenities.

A normative cap per EWS/LIG dwelling unit is fixed in consultation with the states for the purpose.

1.7.4 Rajiv Awas Yojana

Rajiv Awas Yojana (RAY) for the slum dwellers and the urban poor envisages a 'Slum-free India' by encouraging states and union territories to tackle the problem of slums in a definitive manner. RAY will provide the support to enable states to redevelop all existing slums in a holistic and integrated way and create new affordable housing stock. The existing schemes of Affordable Housing in Partnership and Interest Subsidy for Housing the Urban Poor (ISHUP) would be dovetailed into this scheme. No new projects under the BSU and IHSDP scheme of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) will be sanctioned once implementation of RAY scheme is taken up except to consume existing 11th Five Year Plan allocations that may be left uncommitted.

The scope of RAY envisaged is as follows

- Integrated development of all existing slums, notified or non-notified, i.e. development of infrastructure and housing in the slums or rehabilitation colonies for the slum dwellers or urban poor, including rental housing.
- Development, improvement and maintenance of basic services to the urban poor, including water supply, sewerage, drainage, solid waste management, approach and internal roads, street lighting, community facilities such as community toilets and baths, informal sector markets and livelihoods centers.
- Other community facilities like preschools, child care centers, schools, health centers to be undertaken in convergence with programmes of respective ministries.
- Convergence with health, education and social security schemes for the urban poor and connectivity infrastructure for duly connecting slums with city-wide infrastructure facilities and projects.

- Creation of affordable housing stock, including rental housing with the provision of civic infrastructure and services, on ownership, rental or rental-purchase basis.

1.8 External Commercial Borrowing for Affordable Housing

Under the Union Budget 2012–13, External Commercial Borrowing (ECB) has been allowed for affordable and low-cost housing. This has been done to ensure a lower cost of borrowing for the segment. Under the norms, ECB may have to be routed through the National Housing Bank (NHB), which could act as a centralized mechanism to help small developers avail the facility. The government would also allow developers to raise such debt only for projects where a significant portion of units (75–90%) are reserved for the LIG and EWS.

1.9 Affordable Housing

During 2001-2011, the urban population of India grew at a CAGR of 2.8%, resulting in the increase in level of urbanization from 27.81% to 31.16%. This growing concentration of people in urban areas has led to problems of land shortage, housing shortfall and congested transit and has also severely stressed the existing basic amenities such as water, power and open spaces of the towns and cities. According to the 2011 census, the housing stock in urban India stood at 78.48 million for 78.86 million urban households. Though the gap between household and housing stock is narrowing, actual shortage is high due to a certain part of the current stock being dilapidated and people living in congested dwellings.

Urbanization has resulted in people increasingly living in slums and squatter settlements and has deteriorated the housing conditions of the economically weaker sections of the society. This is primarily due to the skyrocketing prices of land and real estate in urban areas that have forced the poor and the economically weaker sections of the society to occupy the marginal lands typified by poor housing stock, congestion and obsolescence.

Considering these factors, there currently exists a wide gap between the demand and supply of housing (both in terms of quantity and quality) in urban India. According to estimates of the Technical Group constituted by the Ministry of Housing and Urban Poverty Alleviation (MHUPA), the urban housing shortage in the country

at the end of the 10th Five-Year Plan was estimated to be 24.71 million for 66.30 million households. As per 2011 census, the country had a population of 1,210.98 million, out of which, 377.10 million (31.16%) lived in urban areas. The group further estimated that 88% of this shortage pertains to houses for Economically Weaker Sections (EWS) and another 11% for Lower-Income Groups (LIG). For Middle- and High-Income Groups (MIG and HIG), the estimated shortage is only 0.04 million. During the 11th Five-Year Plan, the group estimated that the total housing requirement in Indian cities (including backlog) by end-2012 will be to the tune of 26.53 million dwelling units for 75.01 million households. If the current increase in backlog of housing is maintained, a minimum of 30 million additional houses will be required by 2020. In India, private developers primarily target luxury, high-end and upper-mid housing segment, since it fetches a premium over low-income housing. This leads to a sustained supply for this segment, increasing market competitiveness for developers. On the other hand, the housing for the poor and EWS is primarily provided by the government for welfare purposes. However, it is insufficient compared to the existing shortage in the segment. Thus, it is the housing requirements of the lower middle-income and lower income groups that are grossly neglected, and there exists a huge dearth in the supply of affordable houses primarily demanded by this income group in India.

There is no clear-cut definition of the term ‘affordable’, as it is a relative concept and could have several implied meanings in different contexts.

- According to the RICS Report on Making Urban Housing Work in India, affordability in the context of urban housing means provision of ‘adequate shelter’ on a sustained basis, ensuring security of tenure within the means of the common urban household. RICS Practice Standard Guidance Notes (GN 59 2010) states that ‘affordable housing is that provided to those whose needs are not met by the open market’.
- According to the KPMG Report on ‘Affordable Housing – A Key Growth Driver in the Real Estate Sector’, affordable housing is defined in terms of three main parameters, namely income level, size of dwelling unit and affordability. Whilst the first two parameters are independent of each other, the third is a dependent parameter that can be correlated to income and property prices.

- As per US Department of Housing and Urban Development, the generally accepted definition of housing affordability is ‘for a household to pay no more than 30% of its annual income on housing. Families who pay more than 30% of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care’. However, in the Indian scenario, the expenses on housing are much lower i.e. around 20 – 25%. This is because the expenditure for other aspects like, food grains, vegetables, clothing are highly variable (with high inflation) and the marginalized communities have to bear that extra burden.
- According to the Task Force on Affordable Housing set up by the MHUPA in 2008, affordable housing for various segments is defined by size of the dwelling and housing affordability derived by the household income of the population.
- The JNNURM Mission Directorate of MHUPA has also defined affordable housing in its amended Guidelines for Affordable Housing in Partnership released in December 2011.

1.9.1 Concept of Affordable Housing

The affordable housing segment has emerged as one of the most vibrant and dynamic sectors in the Indian real estate industry. Various factors have contributed to this growth—on the supply side it is the entry of various real estate developers and availability of financial options; whereas rapid urbanization, growing trend of nuclear families and rising income levels have fuelled the demand for affordable housing. There is hardly a dispute that there still is a considerable supply shortage in this segment.

As a concept, affordable housing is not a new one. It is at least a decade old, with the local development agencies of big cities being the original pioneers with their lower income group flats. While the market for affordable homes never really diminished, large real estate firms started focusing almost exclusively on premium and luxury projects between 2004 and 2008 as the economy expanded rapidly and banks and financial institutions adopted a more liberal approach to giving out loans.

Since 2008, however, with the overall changes in the economy and the real estate market, companies, even large ones, have turned to low-cost housing projects with a renewed focus. Large scale real estate firms have launched low-cost homes at various locations in the price bracket of Rs.10 lakh to Rs.30 lakh and investments in the affordable housing sector are moving north. A recent news report spotted a rising trend of homes in the affordable segment being bought for investment. These were bought by people who do not plan to stay in them as the houses are located too far away from commercial areas and have lesser support infrastructure. Gujarat, Bangalore, Madhya Pradesh and Ahmedabad are among the states that have seen traction in affordable housing. Given the lower off-take of mid-range and luxury units in India that are clearly seeing some challenges, the growth is going to be sustained from rural and affordable housing in the range of about 18-20% coupled with the aspiration need to have a house and by the acute shortage in this sector.

While less than five years ago there were not many financiers for customers of affordable housing. Today most of the established names are entering rural housing with built-in risk pricing so as to make it a viable business model. Established names in the industry are rushing into the sector to cater to the existing demand supply gap. More and more projects are being promoted across India. Tier II and III cities have seen a higher rate of adoption for these projects. Low-income customers are happy with their new homes, improved living conditions, safe neighborhoods and enhanced overall social status, which are some of the benefits that the segment has been able to provide. Many banks may be slow to approach affordable housing properties because of their remote location and the estimated land value not meeting their expectations. In such cases, loans would be harder to come by and the perceived higher rates of interest may deter potential buyers from approaching non-banking financial companies (NBFCs) that now focus on retail housing finance business, a sector dominated by commercial banks. NBFCs, though, have been able to offer loans at competitive rates. While banks have been able to provide loans at relatively cheaper rates since their cost of funds is lower, debt markets have come in handy for NBFCs to raise cheaper funds. Essentially, their focus on growth segments, efficient loan recovery, individual focus and simple processes have helped them keep the cost low and reduce interest rates on home loans, passing it on to borrowers.

Indians consider their homes their most important possession, and, therefore, make paying their financial obligations towards them their highest priority. In a challenging economy, people may think twice before making any new high-value financial commitments. They tend to be very cautious about doing so during times of financial uncertainty but pursue their home ownership dreams when they perceive that stability has been restored in the economy.

The concept of affordable housing as a whole has been well received by consumers, developers and financiers. This has led to end-to-end servicing of this segment, thus it has become a lucrative proposition for one and all. Housing finance companies are expanding to new geographies and encouraging developer perception of real demand and ensuring there is enough awareness and education being imparted to prospective customers on the home ownership process through standardization of processes and campaigns. Recently, the Reserve Bank of India allowed real estate developers and housing finance companies to raise up to \$1 billion through external commercial borrowings to promote affordable housing projects. This will help them access cheap overseas funds and reduce the overall costs. Affordable housing is the “sunshine” sector for the next five years from a developer and lender perspective. To put it simply, this will be the growth engine of the future for all stakeholders.

1.9.2 Benefits of Affordable Housing

Households with modest means need safe, suitable housing that they can afford. When housing is affordable, low and moderate income families are able to put nutritious food on the table, receive necessary medical care, and provide reliable daycare for their children. Research has shown that the stability of an affordable mortgage or rent can have profound effects on childhood development and school performance (Lubell and Brennan 2007) and can improve health outcomes for families and individuals (Lubell, Crain, and Cohen 2007).

But the benefits of affordable housing extend beyond its occupants to the community at large. The research reviewed in this brief demonstrates that the development of affordable housing increases spending and employment in the surrounding economy and it acts as an important source of revenue for local governments by reducing the likelihood of foreclosure and its associated costs. Without a sufficient supply of affordable housing, employers and entire regional

economies can be at a competitive disadvantage because of their subsequent difficulty attracting and retaining workers. In addition to these proven linkages between affordable housing and economic development, this review also discusses several promising hypotheses that have not yet been as well researched but that nonetheless suggest ways in which affordable housing can foster local economic growth.

Researchers, practitioners, and housing advocates have a variety of widely used “input/output” models with which to estimate the employment effects of building affordable housing. Using “inputs” such as information on the purchase and production of goods and services for hundreds of U.S. industry sectors, the type and number of business establishments in a local economy, and a measure of direct spending for a given program, the models “output” the level of economic activity expected to result from the investment. In measuring economic activity, these models include not only the direct spending associated with the housing construction or rehabilitation itself, but also spending by suppliers (indirect effects) and the spending of wages in the local economy by those employed directly and indirectly (induced effects). In addition to the total economic activity, the models also estimate the number of new local jobs supported by the activity, the wages paid by the new jobs, and the taxes that can be expected to flow to various levels of government.

Housing those workers cannot afford and that is sometimes overcrowded, and time consuming commutes to work that conflict with family needs can make it necessary for workers to leave their jobs. This employee turnover creates significant costs for employers. Increasing the supply of affordable housing throughout the City can reduce these problems and produce cost savings for employers.

The benefits accruing to employers of low and moderate income workers include having increased access to workers within a convenient commuting radius to their work site and to workers with longer-term for more stable connections to their home. This increased residential permanency and predictability means fewer turnovers of workers and greater labor force stability for employers. It has been reported that often majority of workers are unable to pay rent and hence, workers and their families need to carefully balance costs for housing, healthcare, education, childcare and other critical needs with income from the jobs that sustain their lives. For some, this means longer and more time-consuming commute to access jobs to

secure desirable housing arrangements. For others, this means paying higher costs for housing or renting overcrowded or unrepaired apartments in order to be closer to employment opportunities. This balance is met with difficulty for low-income households to obtain adequate and affordable housing and also limits their ability to access jobs.

1.10 Housing and Urbanization – National and Nagpur City’s Status

Since a long period, housing forms one of the most important long term needs of man that influences majority of his decisions throughout his life. Apart from providing a secure place, a house provides a means for living a good quality life. In spite of best and sincerest efforts by Government, there always exists a huge gap between the number of houses required and the number of houses available. The growing concentration of people in urban areas has led to problems of land shortage, housing shortfall and congested transit and has also severely stressed the existing basic amenities such as water, power and open spaces of the towns and cities. Though the gap between household and housing stock is narrowing, actual shortage is high due to a certain part of the current stock being dilapidated and people living in congested dwellings. Urbanization has resulted in people increasingly living in slums and squatter settlements and has deteriorated the housing conditions of the economically weaker sections of the society.

Despite its universal importance, housing still remains a critical area of concern. This has not only lagged behind other issues, but in majority of areas, it the most dominating issues. Also, there are many reports, which point towards great figures of homeless people with the issue of affordability dominating the situation of homelessness amongst the weaker sections. Affordable housing is a type of housing that is appropriate for the needs of a range of very low to moderate income households and priced so that these households are also able to meet other basic living costs such as food, clothing, transport, medical care and education. As a rule of thumb, housing is usually considered affordable if it costs less than 30 percent of gross household income. In this context, affordable housing refers to housing that has been developed with some assistance from the Government. These types of houses may be developed in different ways with different sizes, including single or multi-

bedroom units or houses. Besides such dwelling are available only in some specific locations and eligibility criteria applies for availing such households.

Affordable housing is housing deemed affordable to those with a median household income as rated by country, province (state), region or municipality by a recognized Government Ministry or agency. For e.g. in Australia, the National Affordable Housing Summit Group developed their definition of affordable housing as housing that is, "...reasonably adequate in standard and location for lower or middle income households and does not cost so much that a household is unlikely to be able to meet other basic needs on a sustainable basis." Furthermore, in the United Kingdom affordable housing includes "social rented and intermediate housing, provided to specified eligible households whose needs are not met by the market." Most of the literature on affordable housing refers to a number of forms that exist along a continuum - from emergency shelters, to transitional housing, to non-market rental (also known as social or subsidized housing), to formal and informal rental, indigenous housing and ending with affordable home ownership.

Though different countries have different definitions for affordable housing, it appears that most of them are largely the same, i.e. affordable housing should address the housing needs of the lower or middle income households. Affordable housing becomes a key issue especially in developing nations where a majority of the population isn't able to buy houses at the market price. Hence, disposable income of the population remains the key factor in determining the affordability. As a result, it becomes the increased responsibility of the government to cater to the rising demand for affordable housing. The Government of India has taken various measures to meet the increased demand for affordable housing along with some developers and stressing on public-private partnerships (PPP) for development of these units. However, since, the demand has not been met completely; there appears a lacunae that should be looked into.

In Nagpur, as per CHF International survey (2008), approximately 40 per cent of the population lives in slums. The inhabitants are mostly rickshaw pullers, seasonal small vendors, house maid servants with a family income ranging from a meager Rs.1500 to Rs.3000/- per month. The issue has perforce and needs to be addressed from the standpoint of annual/monthly household income, which arguably is one of

the best criteria. Although there are many grave concerns for the Indian population, one of the biggest and most serious problem of housing in general and affordable housing in particular needs urgent attention, and in view of this, this study was carried out to review literature to determine the state-of-art of the affordable housing, which may throw light on the concepts that can help on delineating a robust and holistic affordable housing policy. In the backdrop of importance of the housing in the life of man in general and its role in the changing environment (like urbanization) in particular, it was important to determine the status of body of knowledge pertaining to this aspect i.e. affordable housing. The objectives of study are as follows-

1.11 Objectives of the study

The objectives of the study are as follow:

1. To study the habitats of weaker section of the Nagpur City (study area).
2. To study the economic, social, educational, cultural, occupational, infrastructural aspects vis-à-vis household income and housing condition of the weaker section of Nagpur City.
3. To determine the association between socio-economic, educational, occupation related parameters and the household income of the weaker section of the Nagpur City
4. To determine the critical factors that governs household income of the weaker section of Nagpur City.
5. To delineate evidence based set of policy guidelines for 'affordable housing' for the weaker section.

1.12 Hypotheses of the study

The hypotheses of the study are as follow:

1. There is no difference in the economic status of the weaker sections living in slums of the Nagpur City
2. There is no difference in the social status of the weaker sections living in slums of the Nagpur City
3. There is no difference in the educational status of the weaker sections living in slums of the Nagpur City

4. There is no difference in the occupation (organized unorganized sector) of the weaker sections living in slums of the Nagpur City
5. There is no relationship between the socio-economic, educational, occupation related parameters and the household income of the weaker section of the Nagpur City
6. There is ample scope for delineating novel affordable housing related policy for the weaker section.



Chapter-II

Review of Literature

The present chapter deals with literature review that was carried out to study the previous research efforts in the context of the aim and objectives of this study. The background considered the following aspects on the research question being posed. They are theoretical background, methodology, previous findings, etc. The research gaps were identified and the reviewed literature was used for synthesizing and gaining a new perspective of the issues concerning affordable housing facility for weaker sections of the society. Wherever possible an attempt has been made to present the discussions in a chronological order so that the review also indicates the underlying pattern of evolution of thoughts and ideas in the focused domain. Similarly care was taken to a large extent to reproduce the original terminology used by the authors, to preserve the originality of the view.

Soifer (1990) reported that shortly after Ronald Reagan's election in 1980, Bernard Sanders, a socialist, became mayor of Burlington, Vermont. The Burlington Community Land Trust, one of many policy initiatives under the Sanders administration is a nonprofit corporation which makes housing affordable for low and moderate income people. This article gives a brief history of the evolution of the community land trust model and a detailed analysis of the operation of the Burlington Community Land Trust.

Afshar (1991) demonstrated how the design of standards, pricing and finance must be integrated if affordable housing is to be achieved in a sustainable and replicable way. The paper does this by identifying basic principles in achieving affordability and applying these principles through a simple, computer-based integrated-design model to a 'model' housing project in Pakistan. In most instances, where there is not a development grant or forgivable loan, affordability must be combined with cost-recovery if projects are to be sustainable and replicable. Keys to such projects are the use of market prices, incremental construction using sweat equity, efficient and affordable standards, differential pricing, and financing using market interest rates but with affordable down payments and repayment rates. The

paper demonstrates that the 'model' designed project in Pakistan is not affordable. Through examining several alternative designs using different land-use standards, pricing and financing systems, the paper shows what needs to be done to make such projects affordable. In doing so, it illustrates how affordability, standards, pricing, finance, and cost-recovery can be integrated in the design process. This integrated-interactive design process is seen as applied in Pakistan and its relevance in Canada is explored.

Nyden and Adams (1996) mentioned that over the past years they have witnessed declining federal investment in affordable housing at the same time as there has been growth in low-income households. During this same quarter of a century we have seen a shift from a national "War on Poverty" to federal policies that treat poor adults and children as hopeless, undeserving citizens. In this new era of fiscal constraints there is no talk about meeting basic nutritional, housing, health care, and educational needs. A chorus of new conservative leaders claims to be speaking for the suffering middle class. The media increasingly talk of the "haves" and the "have-nots." It is not easy to hear talk of helping the working poor over the din of politicians seeking to protect "the family" and "traditional American values." This report is an effort to give voice to some of those working poor who have been struggling to preserve the affordable housing that is their road to self-sufficiency. It is the story about Uptown, a Chicago community which is about as "American" as it gets. Like the "traditional" urban communities in American cities in the late 1800s and early 1900s, our community is filled with immigrants who came to the United States, sometimes escaping persecution in their homelands and other times hoping to improve their quality of life through hard work in the land of opportunity.

Smets (1999) demonstrated how formal housing finance is the product of the perceptions that prevail among the middle and upper classes, who as policy-makers, economists and managers, determine how housing finance institutions fix the terms and conditions of housing loans for the urban poor. They use affordability criteria that fit the purchase or construction of a house in one go. However, affordability criteria for the urban poor have to be linked with practices of incremental building and consequently incremental financing. Failing to do so, leads to serious mismatches between the demand and supply of formal housing finance for the urban poor. To be

able to serve the poor adequately, the middle and upper classes need to stop aiming at the financing of housing constructed in one go. Instead, they need to open their minds to the building and financing practices of the urban poor.

Tebbal and Ray (2001) have reported that globally, the shelter conditions of the poor are deteriorating, wherein approximately 1.3 billion people do not have access to clean water and the same number live on less than a dollar a day; around 2.6 billion people do not have access to basic sanitation, while 5 million die from diarrhoeal diseases every year. The authors have stated that the problem of homelessness in cities around the world defies generalization, essentially because the growth of every city and the way the authorities attempt to manage its growth are rooted in its history, culture, as well as its local politics. Nevertheless, at the global level, some general trends are evident and offer some useful lessons for the future, which are needed to be studied in detail.

Sanyal (2001) demonstrated how institutional pluralism in the delivery of housing can evoke major disagreements and ultimately conflict between different stakeholders. The case study focuses on a case of slum redevelopment in Mumbai and shows how a major nongovernment organization (NGO) became involved in conflicts with the other stakeholders, including private market actors, government agencies and even the community group. But, these conflicts did not necessarily have only negative impacts. Under certain conditions, such as when property values were booming in Mumbai, communities can actually benefit from such conflicts.

Tiwari (2001) reported that India faced the challenge of providing adequate shelter to 18.5 million households in 1991 and employment for its citizens. The construction sector represents the most pressing need, viz., shelter. This sector has a great potential of generating employment through its forward and backward linkages. Earlier researchers have indicated that construction activity contributes 17% to the carbon dioxide emission in India. In this paper author tried to interweave these three issues and propose a construction strategy for the Indian housing sector. Affordability of a house and availability of building materials for its construction are the main determinants of access to shelter. This demands efficient use of resources at low cost. In this paper author analyze whether it is possible to reduce cost, reduce emissions and generate employment in house construction. Author developed a model for

technology evaluation in house construction based on design codes for India. Recent Government policy statements have indicated that an annual supply of two million new houses would be required to meet the current shortage of housing in India. This model is applied to the construction of two million houses. The construction technologies that he evaluated were the puccal construction technologies as well as low-cost techniques. It is asserted that by a proper selection of such techniques and material the costs and emissions can be reduced substantially and at the same time employment can be generated.

According to **Kumar (2001)** more often than not, housing tenure is viewed as a binary entity – landlords the exploiters and tenants the exploited. As a result, the main thrust of urban housing policies in poorer countries has consisted of attempts to confer ownership rights on the poor by way of sites-and-services projects and settlement upgrading programmes. In reality, the social relations underpinning housing markets in general are complex - they are at the interface between poverty, employment, politics, social obligations, gender, age, exclusion, inclusion and identity.

Sivam (2002) reported that access to serviced land for housing is one of the major problems faced by practically all developing countries. In most cities of developing countries, the urban poor and even the middle-income group often have to step outside the formal land market to gain access to land and housing. Generally, in cities of developing countries the informal land market is much bigger than the formal market. To improve the operation of the formal land market it is necessary to understand the constraints that are preventing it from operating efficiently. It was found that finance; policies, regulation, laws and other instruments formulated to improve the efficiency of the land market have often themselves become constraints requiring change. It is suggested that to overcome these constraints it will be necessary for governments to recognize the informal market and work with it, rather than ignore or oppose it as at present.

Johnson (2003) discussed why, with budget crunches and enrollment increases, and has stated that privatization is a viable option for higher education administrators needing affordable student housing. Furthermore, author has stressed a

need to have a policy that includes affordable housing not only for the families but for the students as well.

Sivam (2003) has reported that Delhi is experiencing the highest population growth rate among mega cities in India. By 2021 its population is projected to be around 27 million. The consequence of rapid increase in population and the changing socio-economic pattern in Delhi has resulted in an acute shortage of housing and related infrastructure especially for the poor and low-income households. Nearly half the population however lives in conditions of miserable poverty, crammed into overcrowded slums and hutment. Delhi's informal housing is a reflection of a poor and inappropriate urban planning system, with a lack of public investment and restriction in the formal land and housing market. This study reviews the housing delivery system and the problems associated with the housing delivery system in Delhi and present a broad guideline for policy makers to improve the housing delivery system in Delhi. It was found that to improve the housing delivery system of Delhi multiple sectors' approaches are required. The study demonstrates that the informal housing sector and its quality can be improved and transformed into formal housing by improving the essential infrastructure.

Crowley (2003) reported that helping poor families increase their residential stability can have direct bearing on school stability and student academic achievement. Discusses the role of housing in child and family wellbeing; residential mobility and school performance; residential mobility and housing problems; housing affordability; (federal housing policy); homeownership; affordable rental housing; residential mobility and racial integration; and residential mobility and school vouchers. School- and housing-based strategies are presented.

Mukhija (2004) critically examined the policy advice of enabling markets and market-based actors to provide affordable housing in developing countries through a case study of a private developer of housing in India. In this case, after receiving public sector help, the developer stopped constructing housing for low-income groups. Author argues for a more cautious, circumspect and varied approach because enabling strategies focused on market actors can produce highly uncertain outcomes. In addition, it emphasizes that policy-makers need a better understanding of how the informal and formal sectors can overlap. Enabling informal developers can be even

trickier because public support can reduce their flexibility and incentives, as well as impacting on the expectations and opportunities of the home-buyers.

Mahadeva (2006) noticed that the housing sector in India for several decades faced a number of set-backs, such as an unorganized market, development disparities, a compartmentalized development approach and a deterrent rent control system. There was not even a concerted attempt to understand the housing problem let alone promote it. Reforms introduced in the sector during the 1990s, however, have overturned the situation to a great extent. The designing of a shelter policy, the organization of the housing finance market, the introduction of fiscal incentives, increased public investment, legal reforms and others initiatives have brought about a number of changes in the housing sector. Interestingly, these changes have been concerned with both reducing the housing shortage and increasing the number of quality housing stock besides increased access to various other housing amenities like safe drinking water, good sanitation and household electricity. However, the reform initiatives of the housing sector need to take deep roots and to go a long way to address the growing incidence of sub-standard and dilapidated housing stock for further minimizing the deprivations of housing amenities. This paper considers a few policy options towards addressing the challenges of the housing sector.

Public-private partnership (PPP) is the most prominent urban housing policy that has emerged in the last decade in India. Housing reforms in Kolkata, under the flagship of PPP has taken the city into a different league after decades of ineffective housing policy. **Sengupta (2006)** investigated the dynamics of PPP policy in Kolkata, where public housing agencies have assumed both facilitator and regulator roles within a socialist institutional setting to achieve a balance between market forces and the needs of the low-income people. At the performance level, the joint sector brings together the efficiency in production and technical and marketing expertise of the private sector with the accountability and righteousness of the public sector. However, and despite some reform attempts, at the operational level, major bottlenecks are identified including antiquated legislation, besides high municipal taxes, stamp duties and sanction fees. Housing production under the PPP model to date is impressive in terms of costs and quality, but minuscule in terms of numbers. It is still early to comment on the likely long-term success of such partnerships. However, given the

huge housing stock deficiency, high proportion of low-income groups in the city and slow pace of regulatory reforms, it is argued that future success is contingent upon the inclusion of low-income communities, which comprises of half of the population of Kolkata.

Honawar (2006) presented that a new wave of plans to recruit and retain teachers who say they cannot afford to buy or rent homes in pricey school districts. Officials are considering measures that would put affordable housing within their reach. Those who have had teacher-housing programs in place for a while say they have seen success, although the programs have not completely resolved housing-affordability issues for teachers. In Nevada's 292,000-student Clark County district, which includes Las Vegas, officials are working on a proposal for attainable housing based on a University of California, Irvine model. Under the proposal, which would have to be approved by the school board, the district would use parcels of its own land to build houses that would then be offered to teachers at affordable rates.

In 2002-2003, a Needs, Gaps and Opportunities Assessment (NGOA) were conducted to investigate relationships between socio-economic dimensions of housing and health. **Dunn et al., (2006)** pointed to a dearth of research on the socioeconomic dimensions of housing and health, despite its potential for promoting health. The NGOA sought to identify research needs and gaps, and future opportunities for research in housing, socio-economic status and health. The methods used included a literature scan, a scan of research capacity, eight regional stakeholder workshops across Canada, and an open-ended e-mail survey of stakeholders. In this paper, authors report the findings of the stakeholder consultations. The main finding of the NGOA was that there is a significant dearth of research on housing as a socio-economic determinant of health but enormous potential for conducting high-impact, longitudinal and quasi-experimental research in the area. Of particular interest to stakeholder participants in the NGOA were the economic aspects of housing and health; the impact of housing on health for vulnerable subgroups (e.g., Aboriginal peoples, immigrants, children, seniors); the role of socio-economically and ethnically mixed communities; and the interaction between socio-economic aspects of housing and biophysical hazards in the home. The NGOA demonstrated that there is a substantial audience eager for knowledge on housing as a socio-economic determinant

of health and that such knowledge could make an immediate impact on policy decision-making and program operation. Although knowledge gaps are substantial, the NGOA clearly identifies opportunities for high-impact, longitudinal and quasi-experimental research. Recently signed federal-provincial funding agreements for housing make the findings of the NGOA timely. Moreover, the NGOA results demonstrate how research on housing as a socioeconomic determinant of health could be a strategy for improving our understanding of the effects of social environments on health and for reducing health disparities.

Lubell and Brennan (2007) argued with the proposition that providing quality, affordable housing helps to meet families' fundamental need for shelter, which is an important end, in and of itself, whose achievement warrants significant societal investment. But many practitioners point to benefits from affordable housing that extend beyond shelter. For example, some emphasize the role of affordable housing in increasing residential stability, which may lead to improved educational outcomes for children and improved labor market outcomes for adults. Others focus on the community-wide impacts of affordable housing, arguing that affordable housing contributes to the economic development of distressed neighborhoods and to economically vibrant and successful communities. Still others focus on the benefits of affordable housing for particular populations, such as the elderly and the homeless.

Murdei et al., (2007) examined the housing situations and needs of immigrants in the Toronto Census Metropolitan Area (CMA) in 2001. Authors describe the history of immigration in the Toronto area and recent trends in the housing market. The housing conditions of immigrants living in the CMA in 2001 are reviewed before various social characteristics of immigrants who are experiencing affordability problems, such as income, household type, ethnic origin, and visible-minority status, are examined. In the final section, they explore how recently-arrived immigrants find housing and the extent to which their initial housing situations are affordable, adequate, and suitable. The analysis draws on special tabulations from the 2001 census, and information from the first wave of the Longitudinal Survey of Immigrants to Canada. In 2001, immigrant households accounted for a disproportionately high proportion of renters and homeowners spending at least 30 per cent of total income on housing in the CMA. The analysis carried out by authors

highlighted the early onset of affordability problems. Within the first six months of arrival, the majority of immigrants and refugees were spending at least 30 per cent of total income on housing. Affordability problems may persist for years. The findings suggest that immigrants and refugees are forming three housing classes that consist of successful homeowners, households whose housing situations are financially precarious, and vulnerable renters.

Sengupta and Tipple (2007) described that the public sector has been a prominent actor in the urban housing sector in the State of West Bengal for the past three decades. Reform measures introduced since 1990 have led to a shift in the mode of public housing delivery from direct provision to providing housing in the market model. The concept of private-sector participation in construction and finance has emerged as a natural response to meet the colossal demand for housing within government's dwindling budgetary capacity and a need for a catalyst to boost macroeconomic conditions. Paradoxically, the public-sector agencies are leading the reform initiatives by assuming the role of a real estate developer. The paper reviews the housing output in Kolkata in the pre- and post-reform eras in terms of housing quantity, quality, price and affordability. It is argued that new reforms have been successful in stimulating the overall housing market, but more targeted programmes are needed to improve the supply, quality and affordability for low-income families in the city.

Nyasulu and Cloete (2007) have reported the non-affordability of housing and limited access to finance as limiting factors to the provision of adequate housing in the urban areas of Malawi. Primary data were collected by means of questionnaires followed up by semi-structured personal interviews. These interviews were conducted with all major role players in the urban housing finance industry. Finance from the formal sector is accessible to fewer than 35 per cent of the urban population and less than 16 per cent of households in the major urban areas can afford an average house. Authors report that no government subsidies are available for end users and development financing is limited and extremely dear. The contribution from non-conventional finance sources to housing finance is negligible and hence, authors suggested that the use of various instruments may alleviate the situation. Such instruments could include a housing tax for the implementation of subsidies, subsidies

from developed countries, the formation of cooperatives and the implementation of securitization.

Monk et al., (2007) conceived the study as a way of exploring the current state of local planning authority (LPA) practice with regard to the provision of affordable housing through Section 106 (S106) against a background of rapidly changing policy and practice. Much of the discussion has so far been anecdotal; therefore this study was designed to fill this gap in our knowledge. The study presents the findings from a large-scale survey of all local authorities to which 117 responded, and in-depth telephone interviews with a sub-set of 14 respondents. Since the research was commissioned, policy emerged in the form of Planning Policy Supplement 3: Housing (PPS3). The study explored how LPAs are responding to the new policy, and what impact they believe it will have. The study also looked at LPA participation in Housing Market Assessments and the perceived impacts of the proposed Planning Gain Supplement. The study found that in many LPAs, policy on affordable housing is in a state of flux, with changes either recent or underway. Policy is by no means consistent across the country. Whilst the data show that more affordable housing is being delivered through S106, few LPAs meet their affordable housing targets.

Arman et al., (2009) observed that sustainability is one of the most contested ideologies of our time because everyone acknowledges that it must occur but no one can agree on what needs to change in response. This is unsurprising, because objecting to the goal of sustainability is like objecting to other inherently good goals like peace or freedom. Responses to sustainability exist on a long continuum, with some interpreting sustainability to mean conservation-at-all-costs and reduced economic growth, while others suggest that the market will ensure sustainable outcomes eventually result. Further, sustainability can be easily manipulated to justify predetermined outcomes. There are, indeed, a multitude of conceptual and pragmatic challenges to operating on sustainability, particularly when the scale shifts from a global goal to local action. Using the application of sustainability to affordable housing in Australia as a case study, this article argues that rather than limiting sustainable outcomes, the existence of the sustainability debate which focuses on the many challenges is a positive indicator that sustainability may be attainable.

According to **Carter and Osborne (2009)** most refugees arriving in Winnipeg settle in the inner city, an area of substantive urban decline. The attraction of the area is the affordability, but poor quality, housing and proximity of service agencies. The area is characterized by unemployment, poverty, crime, and safety issues. It is also the destination of a significant influx of Aboriginal people, also seeking affordable housing and services. This study tracks refugee households over a three-year period, documents trajectories in labor force participation, income and poverty trends, neighborhood experiences, and housing circumstances. It also examines the dynamic related to the competition for affordable housing that exists with a marginalized Aboriginal population. The picture that emerges is one of improving trajectories over time but also very difficult circumstances and sacrifices in housing and neighborhood choices. The effect of settling in declining neighborhoods and the competition for affordable housing complicates the resettlement process. The findings suggest a range of policy and program changes that would improve the housing circumstances of newly arrived refugees, and facilitate their resettlement and integration into a new society.

Wright (2009) reported that shelter is a basic human need. Unfortunately, affordable housing is a need that low income families who are caring for children and adults with disabilities can rarely afford without assistance. Because participating families generally pay rent of no more than 30 percent of their adjusted monthly income, the Section 8 program can provide much-needed assistance. In this article, the author talks about the Section 8 program and present a technical primer for those who want to know more about this useful program.

Ganapati (2010) observed that housing cooperatives became active in urban areas in Sweden, India and the United States during the interwar period. Yet, after the Second World War, while housing cooperatives grew phenomenally nationwide in Sweden and India, they did not do so in the United States. This article makes a comparative institutional analysis of the evolution of housing cooperatives in these three countries. The analysis reveals that housing cooperatives' relationship with the state and the consequent support structures explain the divergent evolution. Although the relationships between cooperatives and the state evolved over time, they can be characterized as embedded autonomy, over embedded and non-embedded Sweden,

India and the United States respectively. Whereas the consequent support structures for housing cooperatives became well developed in Sweden and India, such structures have been weak in the United States. The article highlights the need for embedded autonomy and the need for supportive structures to enable the growth of housing cooperatives.

Meltzer and Schuetz (2010) mentioned that social scientists offer competing theories on what explains the policymaking process. These typically include economic rationalism, political competition or power struggles, and policy imitation of the kind that diffuses across spatially proximate neighbors. In this paper, authors examine the factors that have influenced a recent local policy trend in California: inclusionary zoning (IZ). IZ programs require developers to make a certain percentage of the units within their market-rate residential developments affordable to low- or moderate-income households. By 2007, 68 percent of jurisdictions in the San Francisco Bay Area had adopted some type of IZ policy. They test the relative importance of economic, political, and spatial factors in explaining the rapid diffusion of IZ, across 100 cities and towns in the Bay Area. Consistent with an economic efficiency argument, results of hazard models provide some evidence that IZ is adopted in places with less affordable housing. However, political factors, such as partisan affiliation and the strength of affordable housing nonprofits, are even more robust predictors of whether or not a local government adopts IZ. There is no evidence of spatial diffusion in the case of IZ adoption; jurisdictions are not, on average, responding to the behavior of their neighbors.

Tam (2011) stated that adequate shelter for all people is one of the pressing challenges faced by the developing countries. India is currently facing a shortage of about 17.6 million houses. The dream of owning a house particularly for low-income and middle-income families is becoming a difficult reality. Hence, it has become a necessity to adopt cost effective, innovative and environment-friendly housing technologies for the construction of houses and buildings for enabling the common people to construct houses at affordable cost. This paper compares construction cost for the traditional and low cost housing technologies. Case studies in India are used for the investigation. Construction methods of foundation, walling, roofing and lintel are compared. Strength and durability of the structure, stability, safety and mental

satisfaction are factors that assume top priority during cost reduction. It is found that about 26.11% and 22.68% of the construction cost can be saved by using low cost housing technologies in comparison with the traditional construction methods in the case studies for walling and roofing respectively. This proves that using low cost housing technologies is a cost effective construction approach for the industry.

According to **Carlos (2011)** housing for refugees and immigrants is increasingly an issue in small- and mid-sized cities in the British Columbia interior (Central Okanagan), where the real estate market is one of the most expensive in Canada. This study examines the housing experiences of immigrants in Vernon, Penticton, and Kelowna, using data from focus groups of new immigrants and interviews with key informants. Respondents encountered discrimination based on country of origin, immigration status, and ethnicity or race, as well as housing affordability problems. Participants cope with the latter barrier by either sharing housing to save money or renting a basement. Key informants suggest that government, especially the federal government, must help address the immigrant housing crisis in Central Okanagan by funding affordable housing construction, regulating and cooperating with developers, facilitating dialog between landlords and renters, and supporting community organizations. Municipal governments lack the resources and the constitutional powers to deal with this issue on their own.

From time to time, various public agencies in Malaysia have developed houses using the public-private partnership (PPP) approach. The few failed housing PPP projects captured by National Audit point to the necessity for proper implementation. **Aziz and Kassim (2011)** examined the objectives of housing PPP, the success and failure factors. All government agencies which had adopted housing PPP were targeted. They ranged from state-owned companies to Islamic religious councils. Data was collected using the mixed method of postal questionnaire survey supplemented by interviews and case studies. It was found that the public agencies desired to fulfill an array of objectives when adopting PPP, the most important being to enhance organizational reputation. The success factor which had the most impact was action against errant developers. The failure factor which had the most influence was absence of robust and clear agreement. Malaysian public agencies could use the findings to ensure that their housing PPP will achieve their desired ends.

The basic aim of the study by **Kapse et al., (2012)** was to assess factors responsible for failure of relocation projects. Factors responsible for failure of relocation projects are loss of livelihood, security of tenure and inefficiency of the Government. These factors are traced out & mapped from the examples of Western & Indian cities. National habitat, Resettlement policy emphasized relationship between shelter and work place, however, further studies are needed to formulate policy guidelines, especially for successful relocation projects.

Schuetz and Meltzer (2012) presented the Inclusionary zoning (IZ), also known as inclusionary housing or incentive zoning, is a class of policies that make use of land-use planning and zoning regimes to mandate or encourage the production of affordable housing from market-rate housing developers. The structure of programmes varies greatly within and across countries. IZ programmes are most common in the United States, but similar types of policies have also been adopted internationally. There exists little systematic research on the impact of these programmes on affordable housing production and local housing markets. Still, IZ has become a well-known and politically viable tool for locally driven social housing production.

Desai (2012) identified some of the major emerging issues related to housing the urban poor in the cities of the South. It traces the major shifts in shelter policy in the global South from the 1960s to the present day and outlines how urbanization and growth in cities affect the availability of affordable housing for the poor. It also outlines some of the challenges faced by the governments of the global South.

Schwartz et al., (2012) reported that Inclusionary zoning (IZ) has become an increasingly popular tool for providing affordable housing in an economically integrative manner. IZ policies typically require developers to set aside a proportion of units in market-rate residential developments to be made affordable for lower-income households in exchange for development rights or zoning variances. These policies are considered "inclusionary" because they are intended to allow lower- and moderate-income households to buy or rent property in middle- and upper-income communities. This report examines 11 IZ programs across the United States to determine the extent to which the policies serve lower-income families and provide IZ recipients with access to low-poverty neighborhoods and residentially assign them to

high-performing schools, thereby promoting the academic achievement and educational attainment of their children. It also considers ways in which IZ policies vary and how different design features might affect the success of the programs in promoting affordable housing and social inclusion for IZ recipients. Finally, it identifies key program-design aspects that shape the potential to meet the goals of providing affordable housing to low-income households and promoting social inclusion for IZ recipients.

Clark (2012) noted that researchers have been following a trend posited by the renowned anthropologist Janet Fitchen, which examines the increasing movement of low-income people to rural communities drawn not necessarily by labor market forces, but by the characteristics and amenities found in rural towns. This study adds to that literature by focusing on the ways in which public housing availability, changes in housing policy, and rural economic restructuring create opportunities for low-income families to relocate from urban to rural communities in search of affordable housing. Data collected from an ethnographic sample addressed the following questions: (1) What motivates individuals and families to leave their urban neighborhoods and relocate to rural towns and (2) What challenges do individuals and families face in sustaining stable housing in rural communities? Two main sets of literature relevant to this discussion include studies of patterns of residential mobility and explanations of rural economic restructuring. Both form the conceptual approach of this article by offering a framework to better understand the housing choices and behaviors of low-income families and the contexts in which these actions are situated.

Oxley (2012) observed that supply-side subsidies for affordable rental housing support dwellings that are allocated according to need rather than ability to pay. Such assistance to housing suppliers reduces costs below what they would otherwise have been. The subsidies can take a number of forms including payments by government, tax concessions, low interest loans, and cross-subsidies from the development process. They are available to a wide range of providers including municipalities, voluntary or nonprofit associations and foundations, public or private nonprofit companies, cooperative organizations, and private investors that build and/or manage affordable housing. Supply-side subsidies for affordable rented housing are intended

to increase the quantity and/or the quality of dwellings; it may also be intended to reduce the rent of such accommodations.

Milligan and Gilmour (2012) observed the institutional context of strategies to provide housing to meet the needs of those whose incomes are insufficient to obtain appropriate housing in the housing market otherwise. It describes a variety of approaches that have been adopted to providing affordable housing and identifies the roles and contributions of different institutions across the housing system, covering government, private agencies, not-for-profit organizations, and intermediaries. Characteristics of the historic and contemporary contributions of each of these institutional groups for the provision of affordable housing are described, with examples from a range of countries and regions.

Ibrahim and Ghazali (2012) stated that “Low-Cost Housing” assumes the challenge to find innovative ways to reduce the cost of building houses making it affordable for every family to own. This paper addresses the problem through a social standpoint by first reviewing this crisis by providing the complexities that leads to concentration of poor families, and then provide a theoretical alternative - the Affordable Mosaic Housing concept, a possible inventive solution. A methodology of testing this concept is then proposed by mirroring closely to the methods and results of University Putra Malaysia's surveys on the perceptions and acceptance of the new Honeycomb houses and apartments.

King (2012) considered reasons for governments subsidizes on housing to ensure that it is affordable. It begins with an argument for the fundamental importance of housing and then extends this by discussing what we mean by good quality housing. The key ideas here concern quality and access. Next, the manner in which states intervene in housing and the implications and assumptions of different forms of intervention are discussed. Finally, the article discusses the use of the term affordability in more detail and questions the manner in which it has come to be used.

Berner (2012) informed that Informal housing provides shelter for the majority of the world’s urban populations and rural–urban migrants in particular. In Asia and elsewhere, formal commercial markets have comprehensively and systematically failed to accommodate low-income groups while governments almost

completely retreated from housing provision. Cases from India and China show comparable outcomes in highly diverse political environments and a prevalent absence of appropriate policy responses. In conclusion it is argued that only an integration of informal settlements into mainstream urban development can lead to inclusive and inhabitable cities.

Contingent aspect associated with the actualization of a neoliberal space. **Kamel (2012)** examined the material, institutional, and economic conditions necessary for a neoliberal agenda to transform its urban policy objectives into a material reality. The study follows changes in housing conditions in Santa Monica, California from 1990 to 2008. During this period, the confluence of three sets of events led to the actualization of a neoliberal space. First, housing damage from the 1994 Northridge earthquake removed “dead capital” from the housing sector. Second, subsequent administrative actions at the local level and more importantly deregulation legislation at the state level eliminated rent control regulations and created market incentives that favored upscale development. Finally, the state’s economic recovery generated a substantial flow of private investments into the real estate market. These combined factors led not only to the dismantling of affordable housing in Santa Monica, but also to the erosion of residents’ and local authorities’ ability to manage housing choices and, consequently, to a historic restructuring of Santa Monica’s physical and social space. These changes had a disproportionate and negative effect on low-income and minority renters.

Wallbaum et al., (2012) reported that with the growing worldwide demand for affordable housing and the importance of supporting and stimulating sustainable development, the need for sustainable solutions in the affordable housing sector is of paramount importance. The present paper screened about 75 construction technologies and assessed 46 of them. The present paper presents the first results of a step wise approach to identify, assess and recommend most promising technologies for affordable housing projects. A database was developed to store detailed technical information about each of the technologies. A grading and ranking scheme was developed to identify the most promising construction technologies from a sustainability perspective. The main challenges for affordable housing production and most relevant assessment indicators were identified from the literature, interviews and

meetings with experts. An indicator based assessment system was developed by cross-referencing the identified eight challenges with ten selected indicators. The final ranking demonstrated that a wide variety of technologies perform strongly overall, and these range from bio-based materials, such as bamboo and timber, to industrialized technologies, such as concrete. Moreover, the possibilities for improvement are vast, and the option of combining different technologies seems to be the most promising approach.

Weinstein (2012) stated that housing is a basic human need and has been recognized as a fundamental human right, yet upwards of a billion people around the world lack access to stable, affordable, and adequate housing. Housing insecurity stems from a complex set of causes that include housing discrimination, inadequate and insufficient housing supply, and displacements and forced evictions due to violent conflict, ecological disasters, and property development. These causes are usually interrelated and layered on top of one another, as marginalized housing groups rarely experience just a single source of vulnerability or marginalization. Although the term ‘marginal’ has come under fire as being both ethnocentric and analytically imprecise, it remains in use to describe those living outside of or on the fringes of formal housing markets and mainstream social and economic institutions. This article discusses the experience of marginalized housing groups, including discriminated populations, labor migrants, refugees, and internally displaced persons.

Gandhi (2012) provided a snapshot view of slums in a few Indian cities for a sense of the magnitude of the problem. Focusing on the case of Mumbai, author has stated only 5–6 per cent of households can afford a house in Mumbai. The study demonstrates that the failure of policies to adhere to basic economic principles results in massive distortions in the land and housing markets, leading to failure in resolving problems of affordable housing and slums. Thus for cities to ameliorate affordable housing delivery whilst keeping a check on the growth of slums it is essential that policies ensure the satisfaction of certain core economic principles—in particular, the household stock and flow principle—that are instrumental in efficient functioning of land and housing markets.

Welch (2013) reported that in the United States, federal agencies are required to work towards providing equal access to resources for minority and low-income

populations. Access to quality public transportation is critical for mobility to many of these populations. Determining how transit service is distributed among vulnerable groups has the potential to significantly enhance policy analysis. While many measures of accessibility exist, due to the complexity of transit networks and the scale of the urban areas, limited research has been conducted on developing a tool to measure how equitable the distribution of transit access is in a region. This paper develops a comprehensive method to quantify the quality of service and accessibility at each transit node in a network, combined with an index to measure the inequity (concentration of quality service) at the micro scale. These measures are applied to the distribution of all residential housing units, a random sampling of units and U.S. Department of Housing and Urban Development subsidized units in Baltimore, Maryland; to determine if the subsidized housing programs are achieving major policy objectives of providing equitable transit access to vulnerable groups. The results show that transit connectivity and accessibility is distributed among some types of subsidized housing units more equitably than can be achieved by random sampling in the general population, but for other types, the distribution is less equitable; indicating some policies to enhance transit access among these units have not been effective. Evidence from this study suggests that developers of affordable housing and transportation planners should work together to find development locations that place more emphasis on transit locations with high connectivity rather than simply reducing distance to any transit.

Affordable construction has identified low embodied energy in materials as key issue. **Cabeza et al., (2013)** showed that even though there is a lack of research on this topic, embodied energy and carbon are studied in the context of buildings and construction materials. Moreover, comparison between studies is not possible due to the different assumptions used by the researchers, due to the fact that most studies are focused in a given location, and also due to the great variation between data presented in the embodied energy databases available. This paper shows different studies published in scientific journal papers and carried out around the world on the accounting of embodied energy in building materials. The paper includes the boundary of each of this study, including the location, type of material or building studied, and the conclusions found. Moreover, the paper discusses the definition of embodied energy and the significance of this concept in buildings.

Tafti and Tomlinson (2013) examined the post-earthquake public policy responses for housing recovery of tenants in cities of Bhuj in India and Bam in Iran that were affected by earthquakes in 2001 and 2003 respectively. The analysis of these two public policy responses is followed by an investigation of their implications for housing recovery of tenant households. It is argued that both recovery programmes favored homeowners in their policy provisions while engaging in a trial and error policy development for housing recovery of non-landowners. The implications of the policies were a lack of affordable rental units in these cities and late recovery and displacement of tenants. In particular public policy responses for housing recovery in these two cities failed to adequately address the housing needs of lower-income tenants.

Moulton (2013) presented that the 1992 Federal Housing Enterprises Financial Safety and Soundness Act (GSE Act) mandated that a specified percentage of Fannie Mae and Freddie Mac purchases come from underserved populations. A number of prominent observers have pointed to the GSE Act as a root cause of the recent housing crisis. This paper evaluates the link between the GSE Act and relaxed mortgage market standards. The loan application-level data was used from the Home Mortgage Disclosure Act and the author analyzed whether the GSE Act's single-family affordable housing goals altered mortgage lending or purchasing decisions of the people. To identify this effect, he used a regression discontinuity design that exploits arbitrary cutoffs used to determine whether a loan satisfies the GSE Act goals. Author found that the GSE Act's single-family affordable housing goals increased GSE purchases from very low-income borrowers by 4.4 percent but had no effect on mortgage lending. These results stand up to a number of specification and robustness checks.

Nandi and Gamkhar (2013) observed that long-term institutional under-investment has resulted in severe infrastructure and service deficits in urban India, with disproportionately higher impacts in small towns and on the urban poor. This paper researches existing policy literature to examine urban governance and civic challenges, and the implementation of urban reforms against the backdrop of two policy initiatives: the 74th Constitutional Amendment Act 1992 that recommends urban governance devolution; and the programmatic Jawaharlal Nehru National

Urban Renewal Mission (JNNURM) that attempts to effect governance reforms, and improve urban infrastructure and basic services, including affordable housing for the poor. However, there has been inadequate governance devolution from states to urban governments, and the pace of decentralization is uneven across states. Also infrastructure projects sanctioned for completion by March 2012 under JNNURM remain incomplete and have been granted a two-year extension until March 2014. Policy assessments point to political economy factors and inadequate management capacity as key institutional challenges impacting effective urban reforms in India.

Mishra and Pandit (2013) evaluated the existing transformation process in three growing cities of Madhya Pradesh. The way of developing process affects urban transformation physically and socio-culturally. Cities should balance its physical growth and socio-cultural development; seek to achieve an optimal relationship among all its growth parameters. Growth should enable all residents to share the fruits of urban development and fully realize their personal growth. Cities should co-ordinate balanced development through the provision of services and infrastructure, should take into consideration the interests of disadvantaged groups. The transformation of cities to sustainable development is critical and challenge in a developing country like India. The author has compared physical, social and infrastructural parameters of Bhopal, Indore and Gwalior cities in Madhya Pradesh, India; analyzing their growth rates and grading them.

Yonghua (2014) reported that though China has achieved great strides in improving housing provision, it is still plagued by a lack of affordable housing. Over the last two decades, China has launched several affordable housing programs to help low- and moderate-income households own or rent decent homes. However, critics argue that those programs increase housing inequality. This research analyzes the contradictions in China's affordable housing policy. Based on a comprehensive and critical assessment of the country's major affordable housing programs, this research finds that the division of powers, incentives, responsibilities, and revenue sources between the central government and local governments has worked against the state's affordable housing goals. This research also examines the innovations that the government has introduced to improve affordable housing policies in recent years.

Conclusions

Literature survey was carried out to know the objectives, methods and findings of the previous researches. It was evident from the review of literature that out of the majority of studies that were conducted throughout the world regarding improvement or development in housing provision facilities or scheme, few were based on provision of housing for economically backward community. Furthermore in India very few such studies were carried out based on discussion of various policies and schemes implemented by Government and other sectors. Hence by identifying the research gap the present topic is selected for the study. The salient findings as revealed by the literature are presented in the following table.

Reference	Salient findings
Soifer (1990)	<ul style="list-style-type: none">• Policy issues regarding affordable housing• Political initiatives for making housing affordable for low and moderate income people.
Afshar (1991)	<ul style="list-style-type: none">• Reported how the design of standards, pricing and finance must be integrated if affordable housing is to be achieved in a sustainable and replicable way.• Identification of basic principles in achieving affordability and applying these principles through a simple, computer-based integrated-design model proposed by the author to a 'model' housing project in Pakistan.• Affordability needs to be combined with cost-recovery if projects are to be sustainable and replicable.
Nyden and Adams(1996)	<ul style="list-style-type: none">• Lackadaisical attitude of Governments is hindrance to effective housing policies, especially for low income population• Need to understand that working poor feel affordable housing as their road to self sufficiency (Psychological attributes).

Reference	Salient findings
Smets (1999)	<ul style="list-style-type: none"> • Formal housing finance is the product of the perceptions that prevail among the middle and upper classes, who as policy-makers, economists and managers, determine how housing finance institutions fix the terms and conditions of housing loans for the urban poor. • Use of affordability criteria is important aspect • Need to link the affordability criteria for the urban poor with practices of incremental building and consequently incremental financing.
Tebbal and Ray (2001)	<ul style="list-style-type: none"> • The problem of homelessness in cities around the world defies generalization, essentially because the growth of every city and the way the authorities attempt to manage its growth are rooted in its history, culture, as well as its local politics. • Hence area based policies should be formulated
Sanyal (2001)	<ul style="list-style-type: none"> • Showed that institutional pluralism in the delivery of housing can evoke major disagreements and ultimately conflict between different stakeholders.
Tiwari (2001)	<ul style="list-style-type: none"> • Reported that India faced the challenge of providing adequate shelter to 18.5 million households in 1991 and employment for its citizens. • Advocated a need to align construction sector's activities for employment generation and meeting housing needs • Affordability of a house and availability of building materials for its construction are the main determinants of access to shelter.
Kumar (2001)	<ul style="list-style-type: none"> • Importance of the social relations in view of housing • Availability of affordable and appropriately located accommodation provides people with the opportunity to pursue urban livelihoods and make plans for the move to ownership.

Reference	Salient findings
Sivam (2002)	<ul style="list-style-type: none"> • In most cities of developing countries, the urban poor and even the middle-income group often have to step outside the formal land market to gain access to land and housing. • Authors found that finance; policies, regulation, laws and other instruments formulated to improve the efficiency of the land market have often themselves become constraints requiring change.
Johnson (2003)	<ul style="list-style-type: none"> • Affordable housing and sustainable education • Privatization is a viable option for affordable student housing
Sivam (2003)	<ul style="list-style-type: none"> • Population growth rate and housing need assessment is necessary • Consequence of rapid increase in population and the changing socio-economic pattern results in an acute shortage of housing and related infrastructure especially for the poor and low-income households.
Crowley (2003)	<ul style="list-style-type: none"> • Housing plays an important role in child and family wellbeing; school performance; minimizes housing problems • However, housing affordability needs to be studied in detail
Mukhija (2004)	<ul style="list-style-type: none"> • Author advocates a need for policy-makers to better understand how the informal and formal sectors can overlap
Mahadeva (2006)	<ul style="list-style-type: none"> • Housing sector in India faced a number of set-backs such as <ul style="list-style-type: none"> — an unorganized market — development disparities — a compartmentalized development approach — deterrent rent control system • hence, it is warranted that a shelter policy be formulated

Reference	Salient findings
Sengupta (2006)	<ul style="list-style-type: none"> • Public–private partnership (PPP) is the most prominent urban housing policy that has emerged in the last decade in India. • However, major bottlenecks for success of such approach are antiquated legislation, high municipal taxes, stamp duties and sanction fees.
Honawar (2006)	<ul style="list-style-type: none"> • Affordable housing for sustainable education • Land acquisition policies for housing projects
Dunn et al., (2006)	<ul style="list-style-type: none"> • Integration and determination of relationships between socio-economic dimensions of housing and health are important. • Lack of data results in less reliable and effective housing policies
Lubell and Brennan (2007)	<ul style="list-style-type: none"> • Providing quality, affordable housing helps to meet families’ fundamental need for shelter • Many experts point to benefits from affordable housing <ul style="list-style-type: none"> — in increasing residential stability, which may lead to improved educational outcomes for children — improved labor market outcomes for adults — contributes to the economic development — economically vibrant and successful communities
Murdei et al., (2007)	<ul style="list-style-type: none"> • Importance of assessing the housing situations and needs of immigrants is necessary for delineation of affordable housing policy • Persistence of affordability problems need to be studied

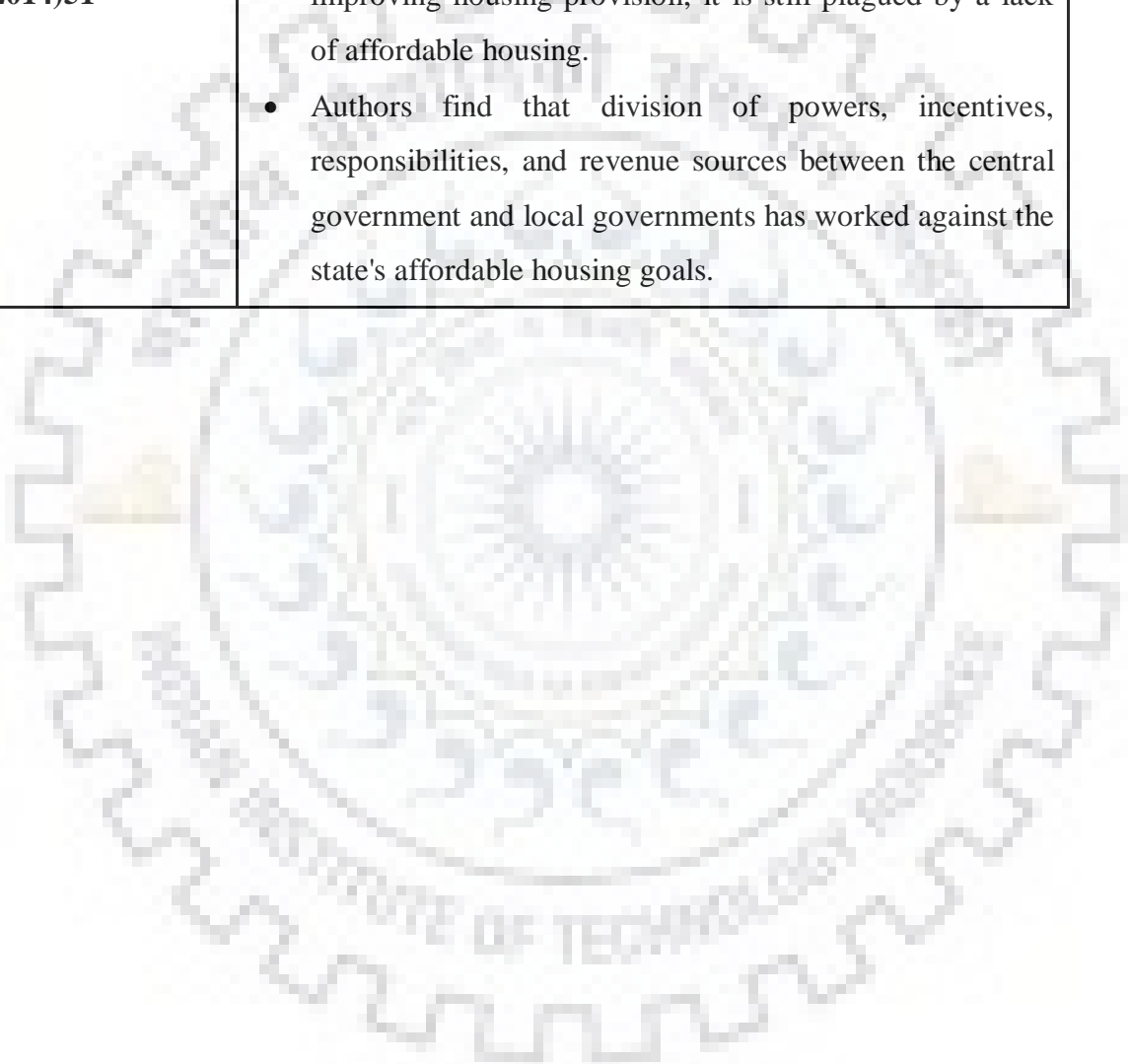
Reference	Salient findings
Sengupta and Tiple (2007)	<ul style="list-style-type: none"> • Public sector has been a prominent actor in the urban housing sector • Concept of private-sector participation in construction and finance has emerged as a natural response to meet the colossal demand. • More targeted programmes are needed to improve the supply, quality and affordability for low-income families in the city.
Nyasulu and Cloete (2007)	<ul style="list-style-type: none"> • Need to investigate the factors responsible for non-affordability of housing • Author demonstrates that the failure of policies to adhere to basic economic principles results in massive distortions in the land and housing markets, leading to failure in resolving problems of affordable housing and slums.
Monk et al., (2007)	<ul style="list-style-type: none"> • Legal framework and the provision of affordable housing • Role of local planning authority • Often the policy is by no means consistent across the country
Arman et al., (2009)	<ul style="list-style-type: none"> • Highlighted the need to focus on the sustainability aspect while developing an affordable housing plan, especially for the weaker sections • This is necessary to ensure the peace or freedom of society.
Carter and Osborne (2009)	<ul style="list-style-type: none"> • Important issues in view of affordable housing are unemployment, poverty, crime, and safety • Author suggests inclusion of all these aspects while delineating a an affordable housing policy
Wright (2009)	<ul style="list-style-type: none"> • Highlighted importance of affordable housing vis-à-vis low income families who are caring for children and adults with disabilities.

Reference	Salient findings
Ganapati (2010)	<ul style="list-style-type: none"> • Role of housing cooperatives in offering sustainable development of population • Author advocated importance of analyzing the evolution of housing cooperatives for outline a robust affordable housing policy. • Also there is a need of embedded autonomy and supportive structures to enable the growth of housing cooperatives in a region.
Meltzer and Schuetz (2010)	<ul style="list-style-type: none"> • Affordable housing policies are often influenced by economic rationalism, political competition or power struggles, and policy imitation of the kind that diffuses across spatially proximate neighbors.
Tam (2011)	<ul style="list-style-type: none"> • Adequate and affordable housing is one of the biggest challenges faced by the developing countries • Author indicated a need to adopt cost effective, innovative and environment-friendly housing technologies for the construction of houses and buildings for enabling the common people to construct houses at affordable cost.
Aziz and Kassim (2011)	<ul style="list-style-type: none"> • Stressed that there is a need to evaluate the public–private partnership approach in case of affordable housing because some of them have failed. • Authors found the success factor to be the action against errant developers and the failure factor which had the most influential impact was absence of robust and clear agreement.
Kapse et al., (2012)	<ul style="list-style-type: none"> • Authors highlighted need of assessing factors that are responsible for failure of relocation projects. • These factors are loss of livelihood, security of tenure and inefficiency of the Government.

Reference	Salient findings
Schuetz and Meltzer (2012)	<ul style="list-style-type: none"> Proposed an inclusionary zoning or inclusionary housing or incentive zoning, land-use planning to encourage the production of affordable housing from market-rate housing developers.
Desai (2012)	<ul style="list-style-type: none"> Evaluation of shifts in shelter policy should be carried out Pace of urbanization is needed to be looked in before finalizing any housing policy
Clark (2012)	<ul style="list-style-type: none"> Anthropometry and human behavior especially related to migration forms a basis for housing conditions of the low-income people This is also a very significant labor market whose housing demands are well justified Important aspects of their lives are motivation to leave their native place and relocation
Oxley (2012)	<ul style="list-style-type: none"> It is stated that supply-side subsidies for affordable rental housing support dwellings that are allocated are based according to need rather than ability to pay. The subsidies could take a number of forms including payments by government, tax concessions, low interest loans, and cross-subsidies from the development process.
Milligan and Gilmour (2012)	<ul style="list-style-type: none"> Institutional context of strategies to provide housing to meet the needs of those whose income was insufficient to obtain appropriate housing in the housing market .
Ibrahim and Ghazali (2012)	<ul style="list-style-type: none"> Proposed the Affordable Mosaic Housing (Honeycomb houses and apartments) concept as a possible inventive solution to meet housing needs.
King(2012)	<ul style="list-style-type: none"> Role of Govt. in providing subsidy for housing schemes to ensure that it is affordable. The key ideas here concern quality and access.

Reference	Salient findings
Weinstein (2012)	<ul style="list-style-type: none"> • Housing insecurity stems from a complex set of causes that include housing discrimination, inadequate and insufficient housing supply, and displacements and forced evictions due to violent conflict, ecological disasters, and property development. • These causes are usually interrelated and layered on top of one another, as marginalized housing groups rarely experience just a single source of vulnerability or marginalization.
Gandhi (2012)	<ul style="list-style-type: none"> • Population pressure and affordable housing demands are to be studied • Author states that the failure of policies to adhere to basic economic principles results in massive distortions in the land and housing markets, leading to failure in resolving problems of affordable housing and slums.
Welch (2013)	<ul style="list-style-type: none"> • Evidence suggests that developers of affordable housing and transportation planners should work together to find development locations that place more emphasis on transit locations with high connectivity rather than simply reducing distance to any transit.
Cabeza et al., (2013)	<ul style="list-style-type: none"> • Affordable construction has identified low embodied energy in materials as key issue. • Authors advocated a need to conduct research on the topics such as building design and construction materials
Tafti and Tomlinson (2013)	<ul style="list-style-type: none"> • Affordable housing and environmental disasters • Govt.'s preparedness to meet housing challenges post environmental disasters especially in case of lower-income population.

Reference	Salient findings
Nandi and Gamkhar (2013)	<ul style="list-style-type: none"> • Long-term institutional under-investment results in severe infrastructure and service deficits in urban areas • Policy assessments point to political economy factors and inadequate management capacity as key institutional challenges impacting effective urban reforms in India.
Yonghua (2014)51	<ul style="list-style-type: none"> • Reported that though China has achieved great strides in improving housing provision, it is still plagued by a lack of affordable housing. • Authors find that division of powers, incentives, responsibilities, and revenue sources between the central government and local governments has worked against the state's affordable housing goals.



Chapter – III

Methodology

The research methodology dealt with in the present chapter is the one followed in the present study. According to the definition of methodology it refers to being more than a simple set of methods; rather it considers the rationale and the philosophical assumptions that underlie a particular study. Methodology is used to apply reason to the the properties of the domain under study. Properly conceived *methodologies*, provide the substantial backing to the applied logic and coherence which will withstand peer review as well as their fundamental approach to reality. Most sciences have their own specific scientific methods, which are supported by methodologies that pertain to the rationale that support the method's validity. Scientific method refers to a body of techniques for investigating phenomena, acquiring new knowledge, or correcting and integrating previous knowledge. To be termed scientific, a method of inquiry must be based on gathering observable, empirical and measurable evidence subject to specific principles of reasoning. A scientific method consists of the collection of data through observation and experimentation and the formulation and testing of hypotheses.

Among other facts shared by the various fields of inquiry is the conviction that the process be objective to reduce a biased interpretation of the results. Another basic expectation is to document, archive and share all data and methodology so they are available for careful scrutiny by other scientists, thereby allowing other researchers the opportunity to verify results by attempting to reproduce them. In the present study, a quantitative method was used in view of the specific objectives of the study. The detailed description of all the methods used for data collection and processing are presented hereunder.

There are many ways of outlining the basic method shared by all fields of scientific inquiry. In the present investigation, the researcher followed a general research method as follows

1. Define the question
2. Gathering information and resources (observe)

3. Form hypothesis
4. Data Collection
5. Analyze data
6. Interpret data and draw conclusions

In the present study, a careful collection of facts was undertaken by the researcher to ensure the validity of the facts. Wherever, possible, the data for the same variable was recorded from more than one source. This allowed the careful scrutiny of the recorded data, which would give more appropriate results. The present study was carried out in three steps involving reconnaissance, sample collection/preparation and analysis, followed by interpretation of statistics.

3.1 Research Design

The present study followed a combination of diagnostic and descriptive research design. Descriptive research designs help provide answers to the questions of who, what, when, where, and how associated with a particular research problem; a descriptive study cannot conclusively ascertain answers to why. Descriptive research is used to obtain information concerning the current status of the phenomena and to describe 'what exists' with respect to variables or conditions in a situation. The benefits of using descriptive design are

1. The subject is being observed in a completely natural and unchanged natural environment.
2. It gives valuable pointers as to what variables are worth testing quantitatively.
3. If the limitations are understood, they can be a useful tool in developing a more focused study.
4. Descriptive studies can yield rich data that lead to important recommendations.
5. Approach collects a large amount of data for detailed analysis.

3.2 Details of the methods used in this study

Survey methodology was used in present study for collection of data. Survey research involves the collection of information from a sample of individuals through their responses to questions. Survey method was adapted in view of its continuing popularity to its versatility, efficiency and generalizing ability. First and foremost is

the versatility of survey methods. Surveys are efficient in that many variables can be measured without substantially increasing the time or cost. Survey data can be collected from many people at relatively low cost and depending on the survey design, relatively quickly. In this study, survey methodology was used to collect the primary data and researcher himself visited all the slum pockets (in the study area) of the city and personally collected the data.

3.3 Primary data collection

The primary data collection in view of the objectives of the study involved preparation of research instruments. Though development and measurement of research constructs is neither simple nor straightforward, instrumentation techniques are available that allows us to construct research instruments that constitute acceptable levels of reliability and validity. The process of developing the research instrument for this study was based on generally accepted principles of instrument design, and was carried out according to the standard methodology.

3.4 Research Instrument

In the present study interview schedule was used as a research instrument. The interview is probably the most widely employed method in qualitative research. To an important extent the effectiveness of the interview depends on the questions, listed in the interview schedule, which the re-searcher will put to the informant. Thus the directness of the questions, the exact wording and the order in which they are put, are all critical issues. In addition the questions asked need to be focused on the research question and its sub-questions. This alignment between the research question and the interview schedule is of considerable importance and thus time needs to be spent by the researcher reflecting on what questions to ask and how these questions may be put to the informant.

3.5 Interview schedule Development

Survey interview schedules are typically used for feedback research to determine the current status or "situation," or to estimate the distribution of characteristics in a population. Writing a survey interview schedule is one of the most critical stages in the survey development process. Much of survey interview schedule construction is common sense, but there are intricacies with which survey authors should be familiar. It is common sense to require that the concepts be clearly defined

and questions unambiguously phrased; otherwise, the resulting data are apt to be seriously misleading. To overcome this problem, a series of draft questions were written covering all the objectives of the study.

Care was taken so that

- Each question was related directly to the study objectives
- Every respondent would be able to answer every question (unless instructed otherwise).
- Each question was phrased so that all respondents interpret it the same way.
- Each question was framed in such a way that it should provide answers to what was needed to be known and not what would be nice to know.

An interview schedule was developed to collect data from the slum dwellers of Nagpur city. The process of developing this interview schedule was carried out under the guidance of the research Supervisor. Also, the views of subject experts as well as slum dwellers were also taken into consideration while delineating the interview schedule. The interview schedule used in the study is presented in the Annexure-I.

Main parts of a survey interview schedule

Invitation

Invitation involved identifying how the respondents would be invited to answer the survey interview schedule. Several ways that are commonly used were personal visits, post, etc. However, the personal interaction was found to be the best method, yielding 100% response. The research objectives were clearly communicated to the respondents prior to their filling of the interview schedules.

There were five main parts of an invitation:

1. Introduction of the topic
2. The reason for the selection of respondents
3. The time duration of the survey interview schedule
4. The benefits for responding
5. The confidentiality and usage of information of the responses of the respondents

Introduction

The beginning of all survey interview schedules included an introduction that was enticing and it clearly stated the purpose of research. The introduction also included instructions about completing the survey interview schedule.

Question types

Based on the objectives, questions/statements were framed such that each statement would yield single response.

Some of the questions from the interview schedule used for collecting data from the beneficiaries are as follows:

- General and Residential Information of Respondent
- Demographic Characteristics of Respondent
- Duration of Stay in Slum
- Previous place of residence/work
- Household income
- Reasons for coming to slum
- Reasons for leaving their place
- Economic conditions of the average family since migration
- Occupation
- Mother Tongue
- Housing Conditions
- Housing Data
- Infrastructure related data
 - Water
 - Electricity
 - Sanitation
 - Solid Waste Disposal
- Community Facilities
- Rank wise infrastructure problem in your area
- Expenditure: (monthly in Rs)
- Savings

- Details of Household Gadgets
- Movement/Travel Chart
- Energy/Fuel Requirement
- Willingness to relocate to other place
- Willingness to pay for Housing Provisions
- Security Status in the locality
- Frequency of burglary in the locality
- Addiction/s
- Playing Facility for Children
- Crime in the locality

Close of interview

Open ended questions were placed at the end that allowed the respondents to communicate their views in relation to the topic of this study. Also the respondents were acknowledged for their support in providing necessary data to fulfill the objectives of the study.

3.6 Selection of measurement scales

In the present study, Fixed Response (Qualitative) Rating scale /Continuum (such as Likert-type scale) was used. This scale was used to prevent the ambiguity with respect to the response of the slum dwellers and also for the reason that fixed response questions are quick to answer. Furthermore, the response obtained after using such scales is relatively easier to analyze and reach to the specific conclusion.

3.7 Reliability estimation

Reliability is a measure of consistency of the results by using a survey interview schedule. Consistent means that the respondents understand the true meaning of the question as it is stated. Reliability is often first determined using a "pilot test" with the proposed survey interview schedule and might also be repeated with the final version. Reliability of the instrument was assessed using the test-retest method, which allowed determining the repeatability of the instrument. In this study high positive correlation coefficients (> 0.700) for different variables displayed the ability of interview schedule to generate consistent responses from the different respondents.

3.8 Final Selection of Items and Development of Instrument

In many areas of research, the precise measurement of hypothesized processes or items (theoretical constructs) poses a challenge by itself. In the present study, the precise measurement of items that are related to different aspects and perception of the people towards residential facilities are critical to understand. A reliable measurement of the perception of respondents towards various general and other housing related aspects, their awareness of the existing systems, etc. is usually a difficult task; yet, it is obviously a necessary precursor to understand the various issues related to affordable housing. Based on the results of the reliability and validity testing, final selection of items (variables) was carried out.

3.9 Instructions for filling responses

The respondents were requested to express their views by putting a tick mark in the appropriate column immediately after reading the statement as generally; the first thought which comes to mind is the correct response.

3.10 Pilot Study

A pilot study was conducted to estimate the reliability and validity of the research instrument. This exercise was carried out to validate and (if needed) improve the research instrument in terms of its format and layout, the wording of statements and also the overall content of items.

3.11 Sample Size for pilot study

It is important to know the nature of the sampling frame. A study that is based completely on a sample drawn from limited area cannot be used to generalize about the complete population. In view of this a sample size of 25 each (beneficiaries) was considered as an appropriate sample size for present pilot study.

3.12 Response Rate

A total of 50 interview schedules were used to collect the response of slum dwellers, after a prior contact, all 50 respondents provided their responses, achieving a 100% response rate. The data was collected twice (since, the test-retest procedure was used for estimating the reliability of interview schedule) and the results of this study were analyzed and evaluated as to whether the purpose and the goals of the study could be achieved. The test items and procedures were revised, modified or

altered as per the needs so as to remove the identified problems and any shortcomings in achieving the goal of the test construction. The data recorded from this study was analyzed to check the reliability and validity of the developed instrument. Previous studies have shown that responses can be dependent on the location of questions in an interview schedule. To keep respondent alert, questions were grouped to get the correct response from the participant and minimum bias in their response. The reliability coefficients ranged from 0.600 to 0.999, indicating satisfactory consistency of developed scales. In addition, it was clear that dropping any item from the constructed scales would not improve the reliability of these scales. Accordingly, the results provide strong evidence that the instruments developed were reliable. Hence, the developed instrument was used for further data collection and to achieve objectives of this study.

3.13 Validity

The validity of a measure refers to the extent to which it measures what it was intended to measure. Three different types of validities are generally considered:

- Content validity
- Construct validity
- Criterion-related validity

3.13.1 Content validity

Content validity depends on how well the researchers created measurement items to cover the content domain of the variable being measured. Hence, care was taken to make sure that the instrument captures a comprehensive picture of the issues pertaining to the affordable housing. The content of instrument was selected on the basis of comprehensive review of recent and related literature as well as reconnaissance survey of the study area.

3.13.2 Construct validation

As construct validity is measurable and applicable, the statistical construct refinement and validation stage represents the central component of the measurement instrument validation process. In this study, convergent validity was checked for validation of the construct.

3.13.3 Criterion Related Validity

Criterion-related validity, sometimes called predictive validity or external validity, is concerned with the extent to which a measuring instrument is related to an independent measure of the relevant criterion. The criterion-related validity of the instrument developed was evaluated by examining the correlation coefficients between the different measures. The positive correlation coefficients obtained for all the variables indicated that the measures have a high degree of criterion-related validity when taken together. The scales proposed in these instruments were evaluated empirically and were found to be of acceptable reliability and validity.

3.14 Universe of the Study

All the people living in the slums of Nagpur City were considered as the universe of the study.

3.15 Study Area

The present study was limited to the Nagpur City. The detailed description of the study is as follows

The town is dominated by the British fort, which was built in 1818 on the twin hills of Sitabuldi in the centre of the city. The surrounding region is an undulating plateau rising northward to the Satpura Range, from 889 to 2,142 feet (271 to 653 m). In the west, the hills are forested. In the northeast are the hills of Ramtek. The region is drained by the Kanhan and Pench Rivers in the center, the Wardha River in the west, and the Wainganga River in the east. Both these last two rivers later merge as tributaries into the Godavari River. The soil in its west and the north region is fertile black (cotton) and that in the east is alluvial in nature.

The climate of Nagpur follows a typical seasonal monsoon weather pattern. The peak temperatures are usually reached in May/June and can be as high as 48⁰ C. The onset of monsoon is usually from July. The season extends up to September with the monsoons peaking during July and August. After monsoons, the average temperature varies between 27⁰ C and approx 6-7⁰ C right through December and January. The average annual rainfall is 45 inches, with more rain in the east than in the west.

Nagpur is located at practically the geographical center of India; in fact, the Zero Milestone of India (a heritage monument) is in this city. (Nagpur is 837 km from Mumbai, 1094 km south of Delhi, 1092 km north of Chennai and 1140 km west of Kolkata). All major highways NH-7 (Varanasi - Kanyakumari) and NH-6 (Mumbai - Sambalpur - Kolkata) and major railway trunk routes (Mumbai, Chennai, Howrah and Delhi) pass through the city. An electrified broad gauge railway track connects Nagpur to the four major metros. Destinations connected include Mumbai, Delhi, Calcutta, Chennai, Kolhapur, Pune, Ahmedabad, Hyderabad, Jammu, Amritsar, Lucknow, Varanasi, Bhubaneswar, Thiruvananthapuram, Cochin, Gorakhpur, Visakhapatnam, Bangalore, Mangalore, Patna and Indore.

The Bharat Ratna Dr. Babasaheb Ambedkar International Airport, at Sonagaon is 7.5 kilometres south of Nagpur city. It is connected to some important Indian cities such as Mumbai, Calcutta, Delhi, Hyderabad, Pune, Raipur, Indore, and international cities such as Singapore, Riyadh and Bangkok. Thus, distance and connectivity with all the important Indian cities gives Nagpur an inherent advantage. In the near future the city of Nagpur is expected to become a mega transport hub, connecting all major Indian cities to each other and international destinations as well. Various IT and ITES national and multinational companies are also viewing this characteristic as a strong positive factor. The city provides access to its own skilled manpower and also to that of the entire region.

The Nagpur district consists of Nagpur Municipal Corporation, 10 municipalities, 13 panchayat samitis and 778 gram panchayats. The total area covered is about 9897 sq. km. of which Nagpur city accounts for 217.65 sq. km. (2.2%). The district population (as per Census of India - 2011) is 46.53 Lakhs of which 24.05 Lakhs (about 50%) are in Nagpur City.

Total Nagpur city area	: 217.56 sq.km
Habitat area	: 83.40 sq. km (38% of total city area)
Population (Census 2001)	: 20,51,320
Population (Census 2011)	: 24,05,421
Density of Population (Person/Sq. km)	: 11,056

Nagpur measures well on various livability indices in comparison with other cities. It has the lowest income inequality among various cities in the country. 'India Today – R K Swamy BBDO Guide to Urban Markets', also ranked the city as the tenth wealthiest, highest consuming and most aware Indian city in 2004. Nagpur's vantage location coupled with growth triggers like the construction of the east-west and north-south corridors, proposed investments in the multimodal transport hub, development of the special economic zone, and revival of industries in the Vidarbha region would stimulate economic growth.

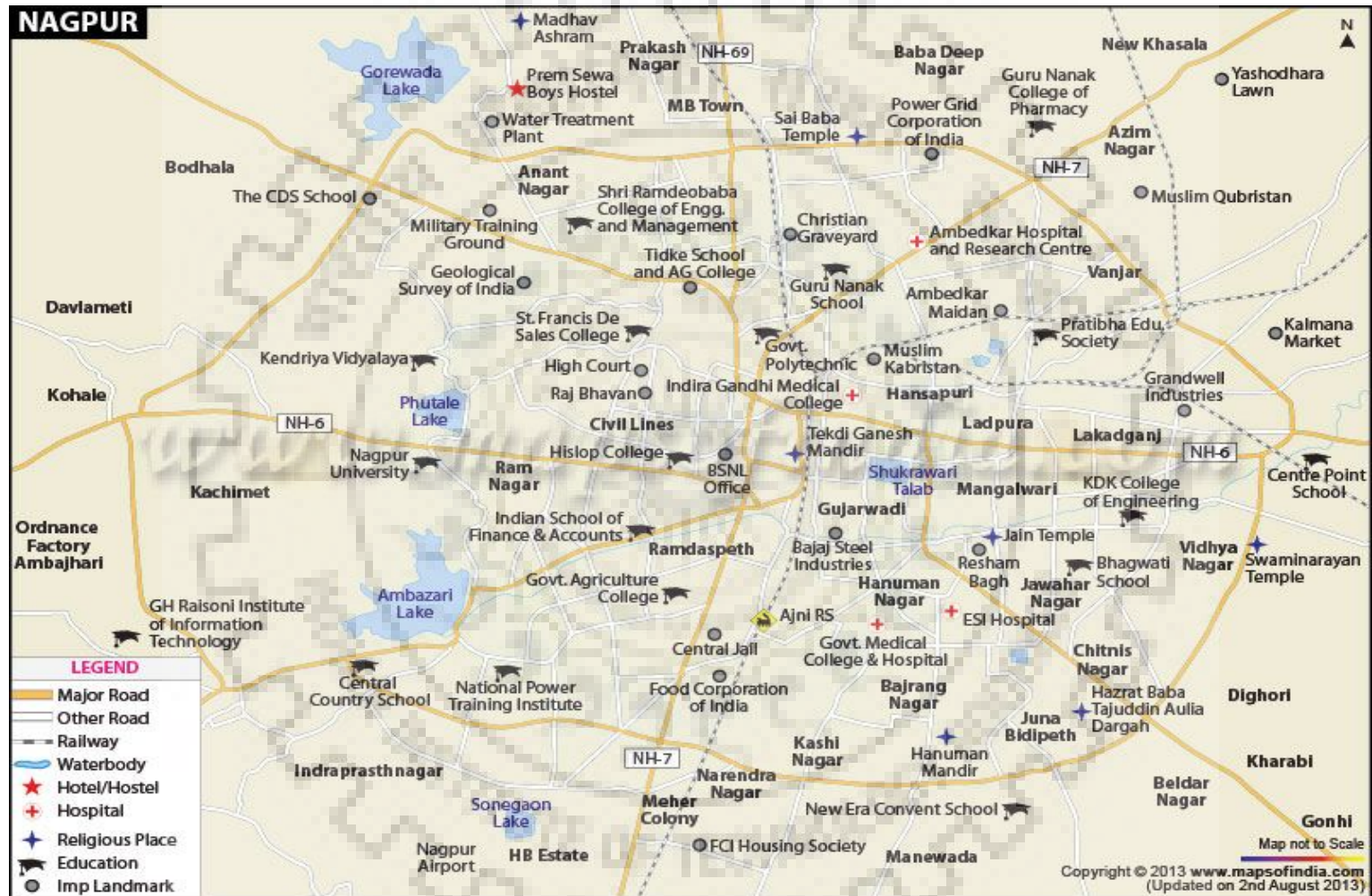
In addition, Nagpur has all the ingredients for emerging as a high quality service centre. IT being a knowledge-based industry, quality human resources are one of its key requirements. The region around Nagpur has 27 engineering colleges with about 8,600 engineering students passing out of these colleges every year. (After the Pune region, Nagpur has the highest number of engineering colleges in the state of Maharashtra.) This would render Nagpur an attractive location for the IT-ITES industry. Low labour cost and the availability of highly skilled manpower would add to Nagpur's attractiveness. Information Technology Enabled Services (ITES) and Business Process Outsourcing (BPO) units would also consider Nagpur as a business destination, as they prefer locations with low cost of living. The figure for Nagpur is substantially lower as compared to most other IT destinations in the country. A Dataquest-IDC study of the top ten IT cites in India ranked Nagpur seventh, based on parameters such as manpower availability, information, communication and technology (ICT) infrastructure availability and usage, lifestyle and environment. Also, as per the KPMG – NASSCOM survey, Nagpur is one of the top four tier II cities that have a huge potential for information technology and IT enabled services. Nagpur holds a strategic position in international aviation routes. Its unique location at the crossing of the air route between Europe and South-East Asia as well as between South Africa and North-East Asia makes it a logical and ideal location for a passenger and cargo hub. Within India also, the fact that the trunk north-south and east-west highways and railways also cross at Nagpur makes it a natural choice as a transport hub based on multimodal transport principles.

Nagpur has adequate reasons to grow at a faster pace than the past. The slowing down in the decadal population growth can be taken as a proxy for decreasing

levels of economic activity in the region. It has been on several occasions stated by various stakeholders that, unlike Pune, Nagpur have not been able to retain the huge graduating pool of engineers and doctors.

This has mainly been attributed to the lack of adequate employment opportunities in the city. What has probably held back economic growth in the past is the lack of priority given to Nagpur (and Vidarbha in general) by successive state governments. It has been well documented by the Dandekar Committee (1984) that at 1982-83 prices, the total developmental backlog in Maharashtra state excluding Mumbai was Rs.3177 crores. Out of which, Vidarbha's share was Rs.1247 crores, about 40% of the state backlog (excluding Mumbai). The developmental backlog for Marathwada and Western Maharashtra was relatively lower at Rs.751 crores and Rs.884 crores. The backlog over the years has increased further while that for the rest of Maharashtra has declined. As of April 2000, the developmental backlog has increased to Rs.9830 crores.

At present, about one million, i.e., 40 per cent of the total 2.42 million population of Nagpur City resides in 446 slum pockets making it India's fourth largest city in terms of slum population and second in Maharashtra State after Mumbai. As per City Development Plan (1971-1991), there were only 47 slums in 1971. The number increased to 326 in 1992, and in 2002, Nagpur Municipal Corporation master list identified 424 slum pockets, of which 289 were notified (legal) slums, and the rest 135 were non-notified (illegal) slums. Approximately 80 per cent of the slum population lives in these notified slums. These slum pockets are plagued with unhealthy environments, poor housing conditions, and lack in basic amenities/services. More recently i.e. in year 2008, CHF International (Cooperative Housing Foundation, 1952) conducted a survey to update the Nagpur Municipal Corporation master list and confirmed 8.58 Lakhs population in 446 slums in the 10 zones of the city, which includes 287 notified, 137 non-notified and 22 new informal settlements (Newly Identified Slum Areas-NISA). Taken together, slums occupy 17 sq. km. out of the total 90 sq. km. of developed land in Nagpur. (Source: Wikipedia 2012, CHF International, 2008)



Nagpur City Map

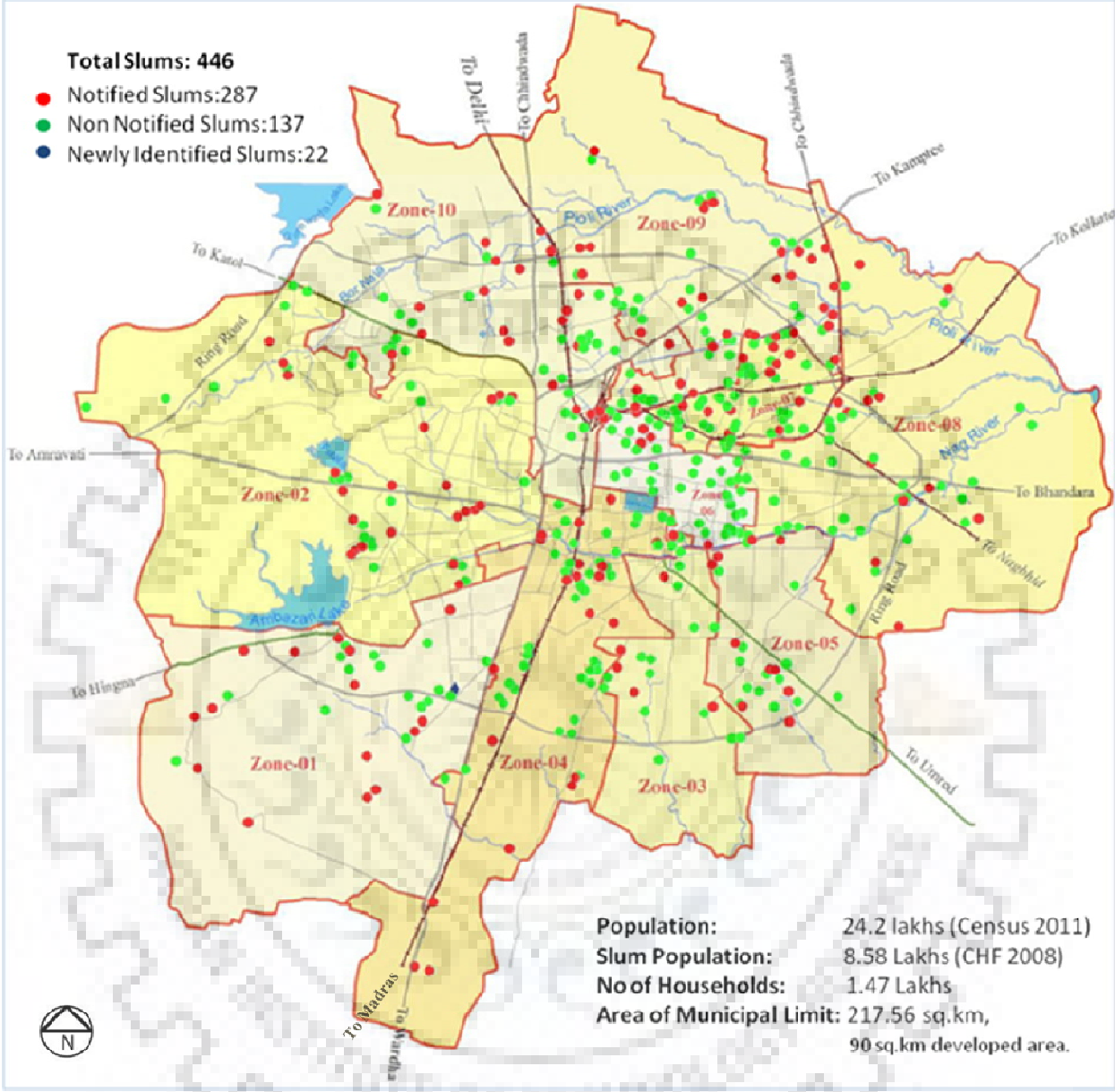
3.16 Sampling Method and Sample Size for Main Study

Nagpur city was considered as a study area for present study, wherein all the slums formed the universe of the study. For administrative work the Nagpur City has been divided in 10 different zones, which have different number of slum pockets. These slum pockets were considered as the universe of this study. Based on the reconnaissance survey, 27 slum pockets were finalized for the purpose of data collection. The number of slum pockets varied between 1 and 5 in different zones. This exercise was carried out to ensure that all the slum pockets are represented in the final sample of the study. From each of the 27 slum pockets, 15 households were selected randomly making the final sample size of households to be 405. However, data was collected from the household members, which were 1647 in all. Thus the final sample size for this study was 405 households and 1647 slum dwellers.

Methodology for HH Survey: Final

Sr. No.	Zone No.	Name of Zone	Number of Slum Pockets		Slum Population (As per 2011 Census)
			Total in 2011	No. of Slum Pockets Selected	
1	Zone 1	Laxmi Nagar	32	1	47696
2	Zone 2	Dharampeth	50	2	86926
3	Zone 3	Hanuman Nagar	19	1	38530
4	Zone 4	Dhantoli	64	5	114119
5	Zone 5	Nehru Nagar	26	1	79990
6	Zone 6	Gandhibagh	38	2	120205
7	Zone 7	Satranjipura	54	4	113382
8	Zone 8	Lakadganj	53	4	97981
9	Zone 9	Aasi Nagar	63	5	96995
10	Zone 10	Mangalwari	47	2	63159
	Zone	Total	446	27 Pockets	858983

Map Showing Slums of Nagpur City



Final List of Slum Surveyed

Sr no	Name of the slum	Prabhag name	Prabhag no	Zone name	Zone no
1	Laxminagar zopadpatti	RPTS	55	Laxminagar	1
2	Futala Basti	Vayusena	24	Dharampeth	2
3	Ambika nagar	Sai mandir	56	Dhantoli	4
4	Dipty Signal	Dipty Signal	33	Lakadganj	8
5	North of Nara-Devinagar	Nara	1	Aasinagar	9
6	Goa colony	Mecosabagh	10	Mangalwari	10
7	Minimata nagar	Bharat nagar	34	Lakadganj	8
8	Imamwada	Rambagh	50	Dhantoli	4
9	Savitribai Phuley nagar	Chandramani nagar	58	Hanuman nagar	3
10	TB ward	Rambagh	50	Dhantoli	4
11	Sanjay gandhi nagar	Rani durgawati Chowk	13	Satranjipura	7
12	Adiwasi Prakash nagar/Pangru	Kalamna	15	Lakadganj	8
13	Rahul gandhi nagar	Kalamna	15	Lakadganj	8
14	Nara village	Nara	1	Aasinagar	9
15	Dobi nagar	Mominpura	28	Gandhibagh	6
16	New Vaishali nagar	Narendra nagar	68	Dhantoli	4
17	New Pandrabodi	Ambazari	53	Dharampeth	2
18	Borkar nagar	Rambagh	50	Dhantoli	4
19	Gaddigudam	Mecosabagh	10	Mangalwari	10
20	Indiramata Nagar	Rani durgawati Chowk	13	Satranjipura	7
21	Mominpura	Mominpura	28	Gandhibagh	6
22	Noga Factory	Lashkaribagh	20	Aasinagar	9
23	South of Dhammadeep	Rani durgawati Chowk	13	Satranjipura	7
24	South of Indiramata Nagar	Rani durgawati Chowk	13	Satranjipura	7
25	Sewadal Nagar	Sakkardara	60	Nehru nagar	5
26	Lashkaribagh	Lashkaribagh	20	Aasinagar	9
27	Shrawasti Nagar	Nara	1	Aasinagar	9









3.17 Secondary Data

According to W.A. Neiswnger “A primary source is a publication in which the data are published by some authority which has been gathered and analyzed by them. A secondary source is a publication reporting data which has been gathered by other authorities and for which others are responsible.”

In this study, the secondary data has been collected from different Scientific Journals (academic articles), Government reports, reports from non-governmental organizations and international agencies.

3.18 Statistical Technique Employed

Analysis of data has been done with the help of suitable statistical tests. The descriptive statistics, such as mode, frequency, percentage, minimum and maximum, etc were determined from the collected data using SPSS 18.0 Software. Furthermore, Pearson Correlation Coefficient Analysis, Regression Analysis and Chi Square (χ^2) were also determined.

3.19 Significance Level

The significance level was chosen to be 0.05 (or equivalently, 5%) by keeping in view the consequences of such an error and to make the significance level as small as possible in order to protect the null hypothesis and to prevent, as far as possible from inadvertently arriving at a false conclusion.

Chapter – IV

Analysis and Interpretation of Data

This chapter of the thesis presents all the results obtained after statistical analysis of collected data. The data collection was done by using a valid and reliable research instrument and the collection of data (from the slum dwellers of Nagpur City vis-à-vis their housing related aspects) was done following survey methodology. All the results obtained after critical analysis of data are presented using appropriate tables and charts. The results are presented in following sub sections such as

- Social Aspects of the slum dwellers
- Physical Aspects of the slum areas
- Economic Aspects of the slum dwellers
- Infrastructure Aspects of the slums
- Environment Aspects of the slums

4.1 Social Aspects of the Slum Dwellers

4.1.1 Household Income of Slum Dwellers

Amongst the many indicators income or household income is a widely used indicator to know state-of-the-art of different individuals. This indicator has been used by many higher authorities to delineate various policies in general and those related to housing in particular. In view of importance of household income the prevailing economic status of slum dwellers vis-à-vis their income has been studied. The distribution of slum dwellers with respect to their income is presented in following table.

Table 4.1 shows information pertaining to the total no. of house hold selected in the study. It was apparent from the information that no. of slum dweller households selected in the study was 405, out of which monthly income of 30.6% household was Rs. 4000-6000 per month; monthly income of 24.4% household was Rs. 6000-8000 per month, whereas monthly income of 20.5% household was Rs. 2000-4000 per month. The detailed information regarding percentage of household and their respective monthly income is shown in **Table 4.31 (Fig.4.31)**. It is evident from the study results that household income of majority of slum dweller household was Rs. 4000-6000 per month.

Table 4.1: Household Income

S.N.	Households		
	Household Income Rs/month	Total Number of Households	Per Cent
1	<2000	13	3.2
2	2000-4000	83	20.5
3	4000-6000	124	30.6
4	6000-8000	99	24.4
5	8000-10000	41	10.1
6	10000-12000	18	4.4
7	12000-14000	7	1.7
8	>14000	20	4.9
	Total	405	100.0

Source: Compiled by the Author based on Household Survey of the Study Area in 2013

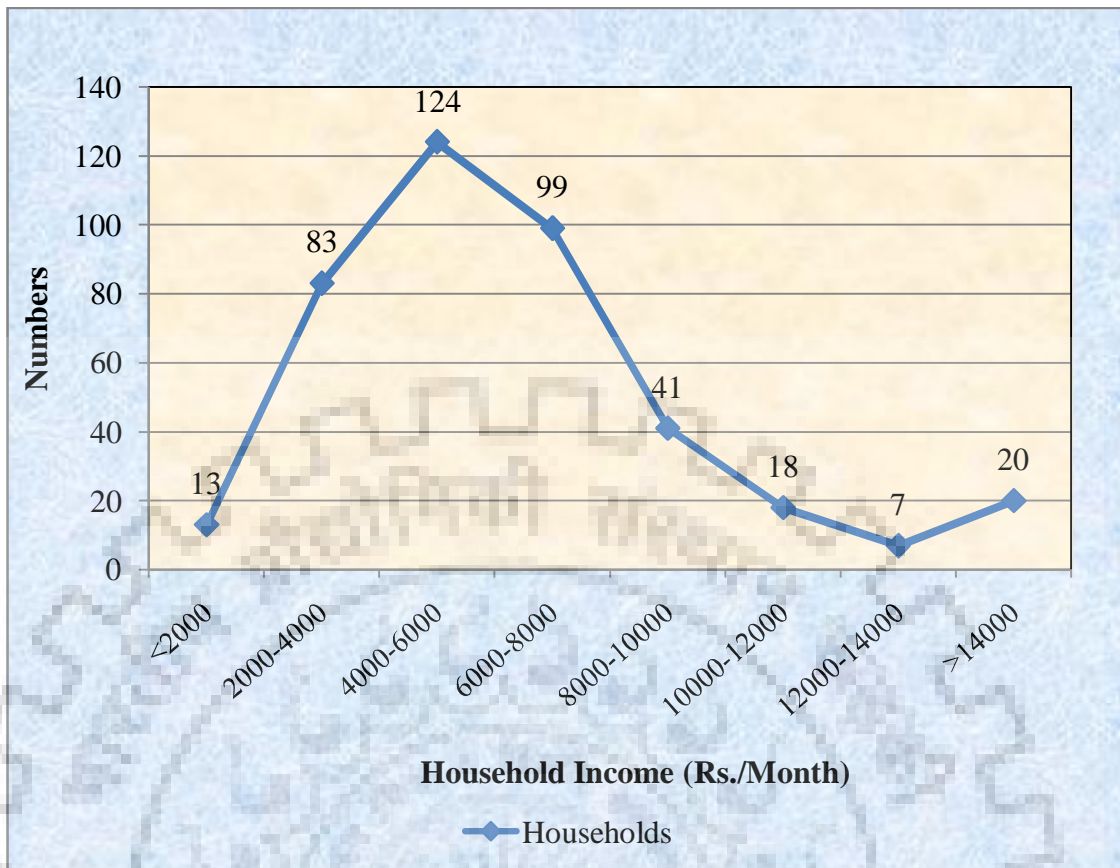


Fig. 4.1: Household Income

Since ages, man has been living with other humans by forming groups of different types. Besides, the individuals belonging to these groups interact with the environment (different physical attributes) as well as other humans (who are part of these groups) and in doing so develop a social fabric, which is peculiar to the specific geographical area. The various social characteristics that are part and parcel of this social system interact in such a way that each individual of this society gets influenced in many different (good or bad) ways. In the backdrop of the above information it is important that the social characteristics, which influence the lifestyle of slum dwellers, be studied in details. Hence the following section of the chapter specifically deals with the social characteristics that are studied (Population, Age, Religion, Caste, Education, Marital Status, No. of family members, Earning Members (of Household), Years of Stay in the Slum , Previous Place of Residence, Reasons for coming to Slum, Reasons for Leaving Native Place – migration, economic conditions of the slum dwellers since migration, occupation, home town, desire to shift for better living, distance affordable and convenient and safety of women in relation to

household income (of slum dwellers).The results obtained for various social characteristics (in relation to household income) are presented here.

4.1.2 Sex ratio

Sex ratio of a population is an indicator of robust cultural practices that determine equal importance to male as well as female individuals of the same (population). Since many slum dwellers are migrated to this locality from other geographical areas a good ratio (1:1) shows that the community is living in a sustainable manner. In view of this the sex ratio amongst slum dwellers of Nagpur City was determined and is presented in relation to household income.

Table 4.2 shows gender wise distribution of slum dwellers of Nagpur city selected in the study. It was apparent from the information that out of total 1647 slum dwellers selected in the study 835 (50.70%) slum dwellers were males whereas 812 (49.30%) slum dwellers were female. It was also evident from the information that household monthly income of 29.70% male and 32.21% female was Rs. 4000-6000, whereas household income of 24.31% male and 24.17% female was Rs. 6000-8000. The detailed information regarding gender of slum dweller and their respective household income is shown in **Table 4.2 (Fig. 4.2)**. Hence from the study results it is apparent that majority of slum dwellers of Nagpur city selected in the study was male.

Table4.2: Sex Ratio of Population

SN	Household Income	Population						Average Family Size
		Male	Per Cent	Female	Per Cent	Total	Per Cent	
1	<2000	8	0.96	6	0.74	14	0.85	1.07
2	2000-4000	160	19.16	170	20.94	330	20.04	3.97
3	4000-6000	248	29.70	266	32.76	514	31.21	4.14
4	6000-8000	203	24.31	195	24.01	398	24.17	4.02
5	8000-10000	103	12.34	81	9.98	184	11.17	4.49
6	10000-12000	37	4.43	36	4.43	73	4.43	4.05
7	12000-14000	18	2.16	18	2.22	36	2.19	5.14
8	>14000	58	6.95	40	4.93	98	5.95	4.90
	Total	835 (50.70)	100.00	812 (49.30)	100.00	1647 (100.00)	100.00	4.06

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.Note: Figure in parenthesis denotes 'row' percentage.

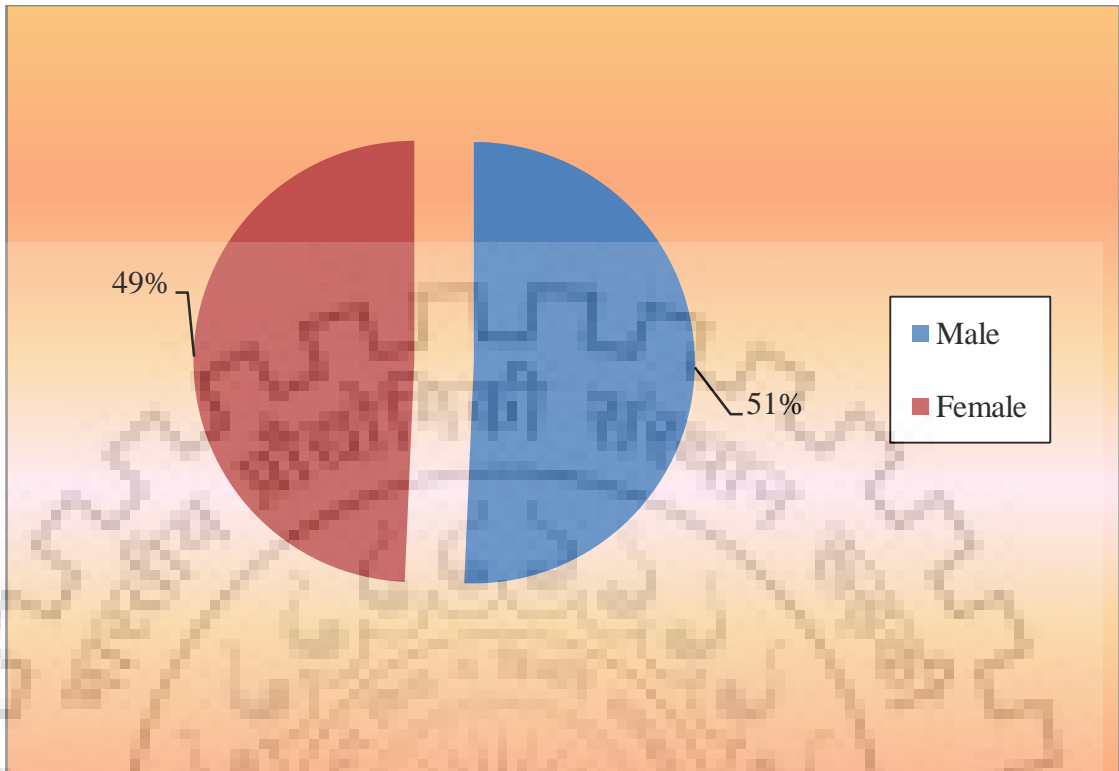


Fig. 4.2-A: Population

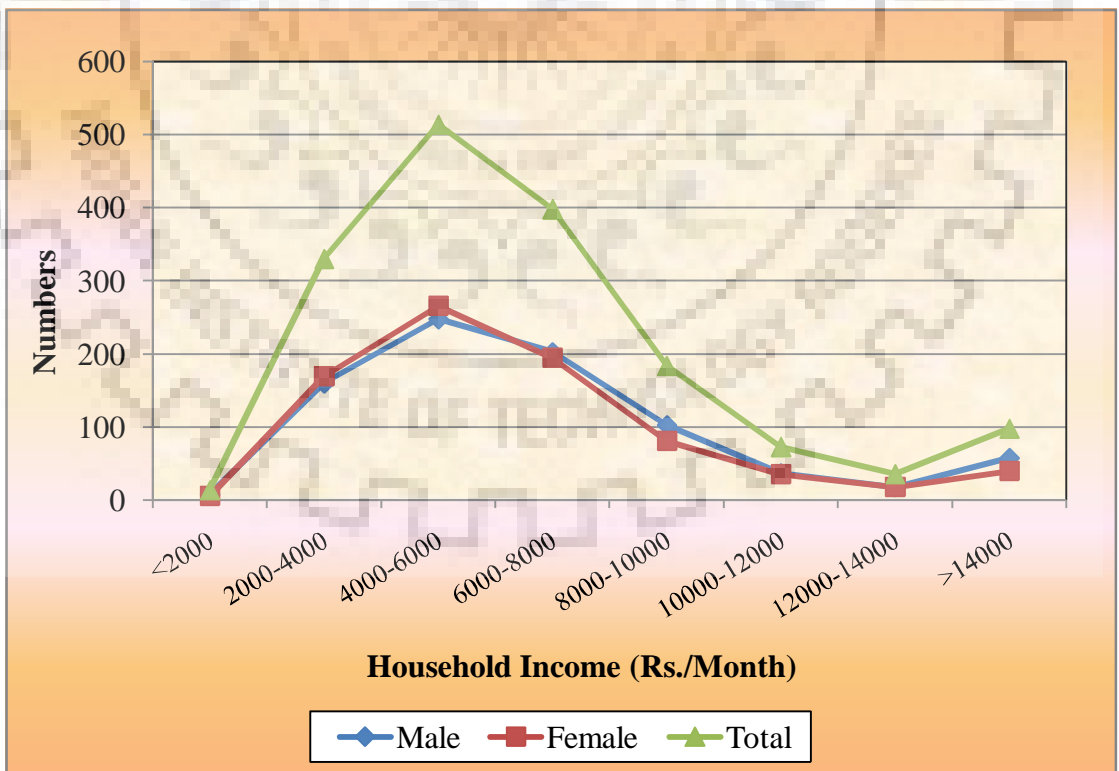


Fig. 4.2-B: Population

4.1.3 Age of Slum Dwellers

Often slum communities are defined by poverty, low income, inadequate living conditions and sub-standard facilities. These aspects determine the social characteristics of the slum dwellings with the slums of Nagpur City being no exception. Moreover, the slum dwelling communities are made up of social disadvantaged people, which makes the study of social characteristics and important aspects that can help the policy makers in formulating pragmatic as well as holistic policies. The social aspirations are influenced by many attributes. One such attribute is age, which is often used as a tool for making distinctions between individuals. The human age is a strong determinant of what a person can achieve socially, professionally, economically etc. and hence this aspect (age) of slum dwellers was studied in detail and the results are presented in this section.

Table 4.3 shows age wise distribution of slum dwellers of Nagpur City selected in the study. It was apparent from the information that 30.96% slum dwellers belong to age group 30 to 45 year, whereas 29.33% slum dwellers belong to age group 15 to 30 year. In addition to this 18.94% slum dwellers belong to less than 15 year age group, 13.90% slum dwellers belong to 45-60 year age group, whereas 6.86% slum dwellers belong to more than 60 year age group. The detailed information pertaining to the age group of slum dwellers and their respective monthly household income is shown in **Table 4.1** and **Fig. 4.1**. Hence it is evident from the study results that majority of slum dweller household in Nagpur city belong to 30 to 45 year age group.

Table 4.3: Age of the slum dwellers

S. N.	Household Income in Rs.	Age										Total	
		< 15 years		15-30 years		30-45 years		45-60 years		>60 years			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	5	1.60	2	0.41	5	0.98	1	0.44	1	0.88	14	0.85
2	2000-4000	75	24.04	89	18.43	103	20.20	40	17.47	23	20.35	330	20.04
3	4000-6000	102	32.69	154	31.88	153	30.00	59	25.76	46	40.71	514	31.21
4	6000-8000	75	24.04	126	26.09	129	25.29	51	22.27	17	15.04	398	24.17
5	8000-10000	30	9.62	53	10.97	62	12.16	26	11.35	13	11.50	184	11.17
6	10000-12000	7	2.24	21	4.35	22	4.31	17	7.42	6	5.31	73	4.43
7	12000-14000	8	2.56	9	1.86	11	2.16	5	2.18	3	2.65	36	2.19
8	>14000	10	3.21	29	6.00	25	4.90	30	13.10	4	3.54	98	5.95
	Total	312 (18.94)	100.00	483 (29.33)	100.00	510 (30.96)	100.00	229 (13.90)	100.00	113 (6.86)	100.00	1647 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. Note: Figure in parenthesis denotes 'row' percentage

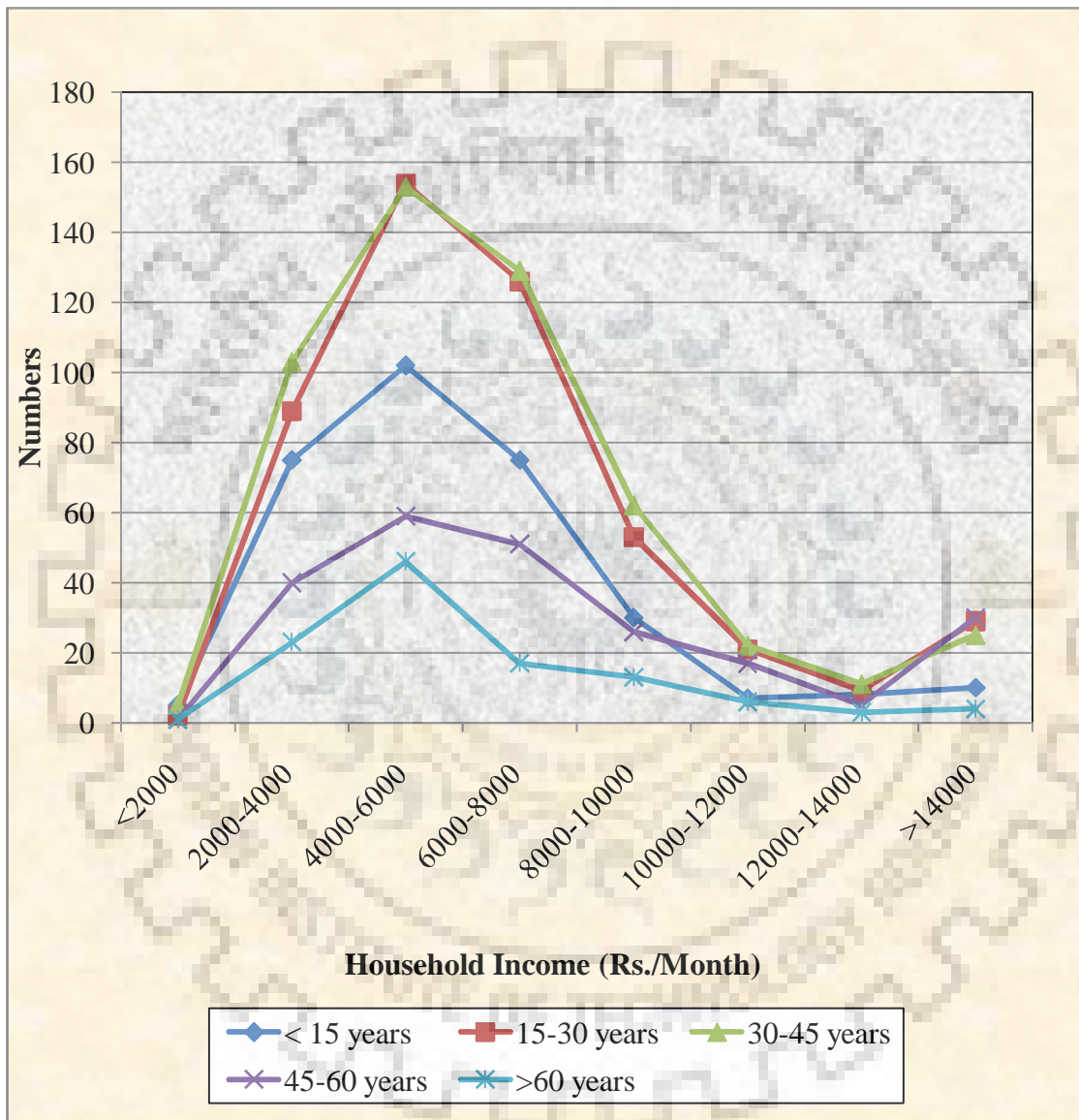


Fig. 4.3: Age of the slum dwellers

4.1.4 Religion

The peculiar aspect of any society or social group can be understood in view of the religious practices followed by the community members. Religion is important because it enhances an individual's self-importance and acts a source of social cohesion. Though religion is a very personal matter, yet it has a social facet and social role to play all over the world with India (or study area) being no exception. Religion is important because it provides a sense of community and comfort and it also defines morality and gives of a set of rules that people are supposed to live by. The religious activities determine the social harmony, security, co-operation etc. amongst the society (slum dwellers). Also the occupation of people (not only slum dwellers but also others) has strong bearing of their religious background. Hence, the distribution of slum dwellers in relation to their household income was studied.

Table 4.4 shows religion wise distribution of slum dwellers of Nagpur City selected in the study. It was apparent from the information that 881 (53.50%) slum dwellers were Hindu, 315 (19.12%) slum dwellers were Muslim whereas 451 (27.38%) slum dwellers were Buddhist. Hence it is evident from the study results that majority of slum dwellers in Nagpur City are Hindu. Furthermore, it is evident from the results that there is difference in household income vis-à-vis religion, which could be explained from the fact that there lies a distinctly different culture in the families belonging to different religion with respect to their attitude towards education as well as their work culture.

Table 4.4: Religion of the slum dwellers

S N	Household Income	Religion						Total	
		Hindu		Muslim		Buddhist			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	5	0.57	9	2.86	0	0.00	14	0.85
2	2000-4000	147	16.69	97	30.79	86	19.07	330	20.04
3	4000-6000	247	28.04	114	36.19	153	33.92	514	31.21
4	6000-8000	247	28.04	54	17.14	97	21.51	398	24.17
5	8000-10000	77	8.74	24	7.62	83	18.40	184	11.17
6	10000-12000	63	7.15	0	0.00	10	2.22	73	4.43
7	12000-14000	23	2.61	6	1.90	7	1.55	36	2.19
8	>14000	72	8.17	11	3.49	15	3.33	98	5.95
	Total	881 (53.50)	100.00	315 (19.12)	100.00	451 (27.38)	100.00	1647 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. Note: Figure in parenthesis denotes 'row' percentage.

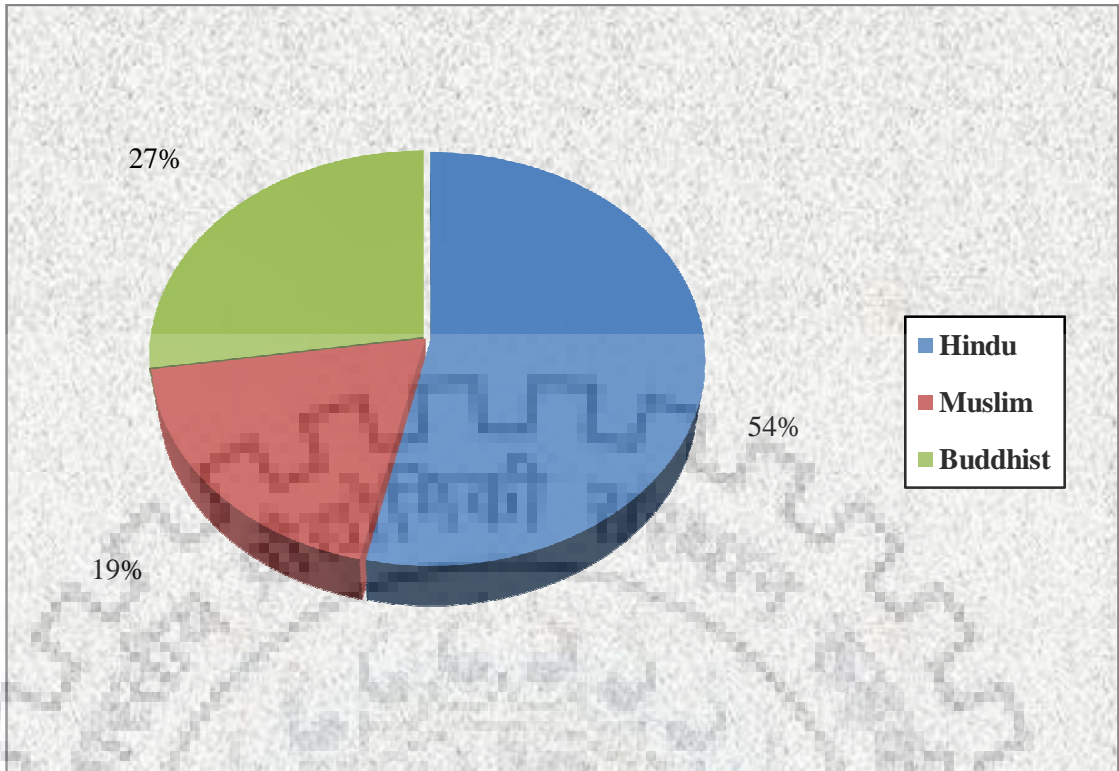


Fig.4.4-A: Religion of the slum dwellers

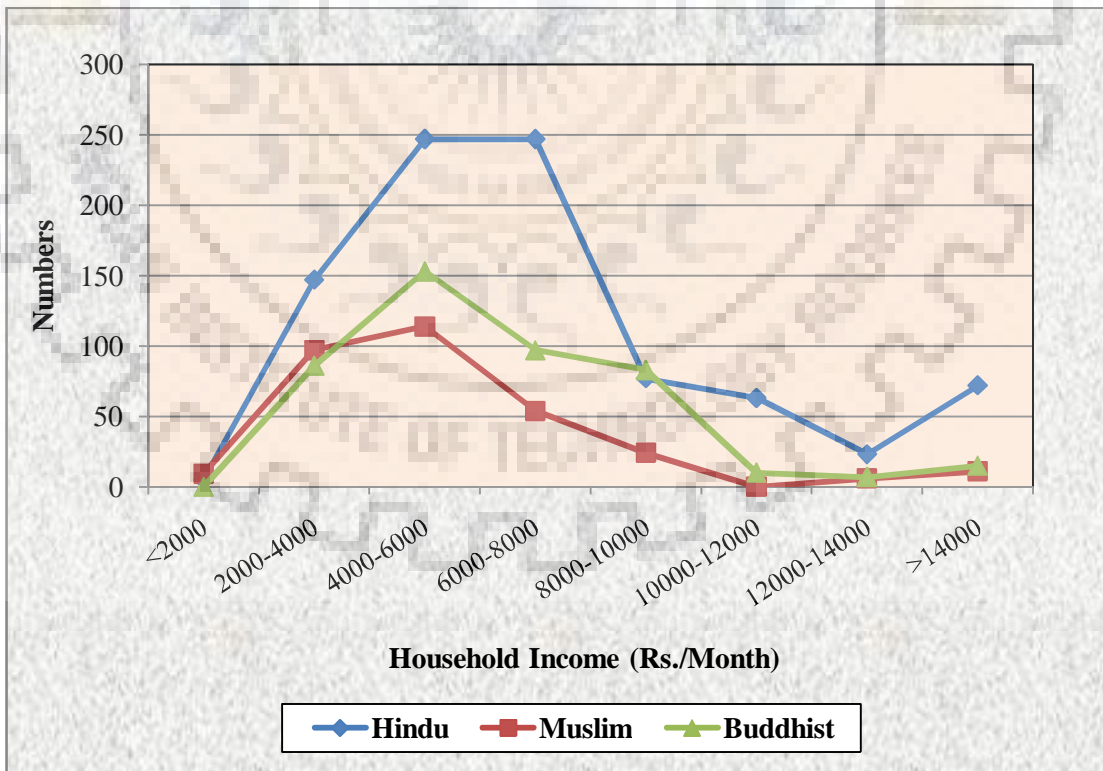


Fig.4.4-B: Religion of the slum dwellers

4.1.5 Caste

Apart from religion, caste of an individual also specifically affects his day today activities and decides his progress in life. Furthermore, the interaction of people having similar caste also decides his social, economic and related progress. Besides, caste is often used as a pressure group within different societies/communities to derived political benefits that have noticeable impact on the life of individuals. Hence the distribution of slum dwellers with respect to their caste has been studied in detailed and results are presented in view of household income.

Table 4.5 shows caste wise distribution of slum dwellers in Nagpur city selected in the study. It was apparent from the information that 39.28% slum dwellers belong to schedule caste, 34.67% slum dwellers belong to other backward class and nomadic tribe caste, whereas percentage of slum dwellers belonging to general and schedule tribe caste were 15.97% and 10.08% respectively. Hence it is apparent from the study results that majority of slum dwellers belong to schedule caste. Like, religion, the caste also plays an important role in the educational, professional and social development of the slum dwellers. All these aspect subsequently determine their ability to earn and lead a decent lifestyle. Hence, the data obtained in this study shows that caste does play a noticeable role in the household income.

Table 4.5: Caste of the slum dwellers

S N	Household Income	Caste								Total	
		General		SC		ST		OBC/NT			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	4	1.52	5	0.77	0	0.00	5	0.88	14	0.85
2	2000-4000	65	24.71	121	18.70	10	6.02	134	23.47	330	20.04
3	4000-6000	92	34.98	202	31.22	48	28.92	172	30.12	514	31.21
4	6000-8000	44	16.73	138	21.33	65	39.16	151	26.44	398	24.17
5	8000-10000	22	8.37	101	15.61	7	4.22	54	9.46	184	11.17
6	10000-12000	14	5.32	29	4.48	9	5.42	21	3.68	73	4.43
7	12000-14000	6	2.28	12	1.85	0	0.00	18	3.15	36	2.19
8	>14000	16	6.08	39	6.03	27	16.27	16	2.80	98	5.95
	Total	263 (15.97)	100.00	647 (39.28)	100.00	166 (10.08)	100.00	571 (34.67)	100.00	1647 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

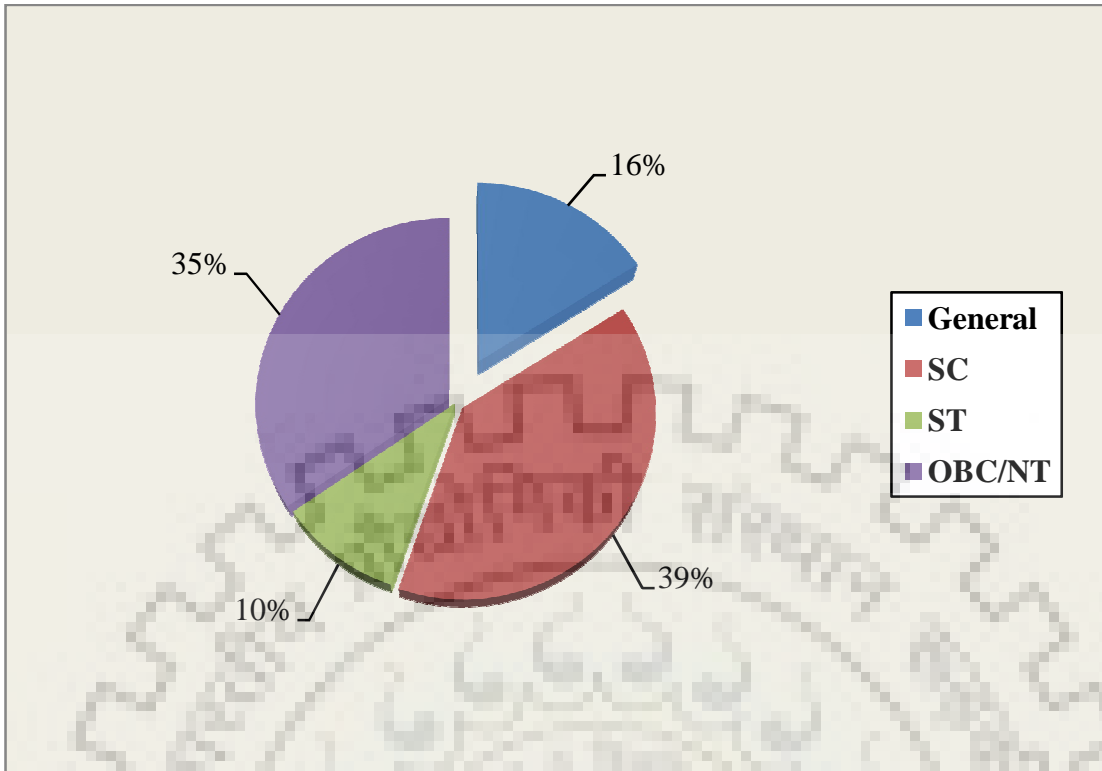


Fig.4.5-A: Caste of the slum dwellers

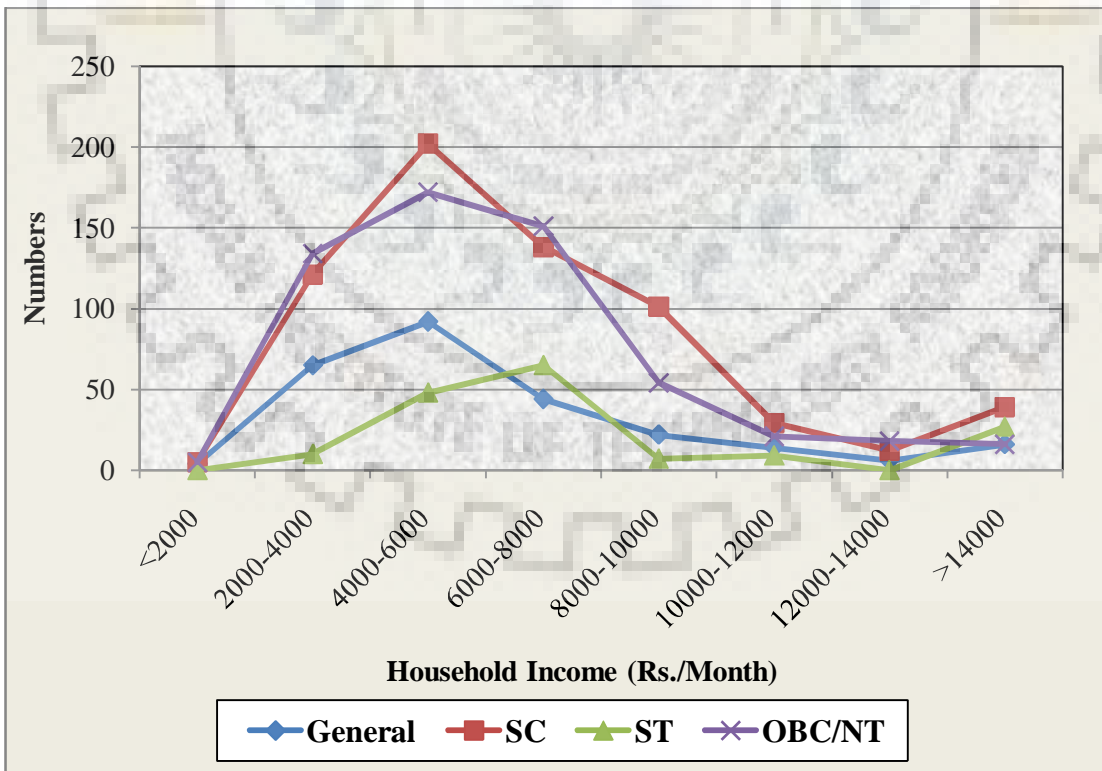


Fig.4.5-B: Caste of the slum dwellers

4.1.6 Education

The importance of education is undeniable for every single person. It goes without saying that education has a positive effect on human life. Education gives an individual capability to carry out certain tasks in an efficient way. Also, the educational qualification often is an apt indicator of probable economic benefit an individual can achieve in his professional life. Furthermore, the type of education received by individual affects his way of leading personal, social and professional life. Since this study has been carried out with the focus on affordable housing and the weaker sections of the society knowing educational background of the slum dwellers was necessary.

Table 4.6 provides information pertaining to educational qualification of slum dwellers in Nagpur City selected in study. It was evident from the information that 30.42% slum dwellers were SSC passed, 22.71% slum dwellers were educated up to primary level, whereas 20.52% slum dwellers were educated up to middle school level. Furthermore, 16.88% slum dwellers were illiterate and percentage of slum dwellers completed HSSC, Graduate or engineering, diploma and post-graduation was 6.92%, 2.12%, 0.24% and 0.06% respectively. It was apparent from the study results that majority of slum dwellers in Nagpur City were educated up to SSC level.

Table 4.6: Education of the slum dwellers

S N	Household Income in Rs	Education																Total		
		Illiterate		Primary School		Middle School		SSC		HSSC		Diploma		Graduate/ Engg		Post Graduate				
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
1	<2000	3	1.08	5	1.34	6	1.78	-	-	-	-	-	-	-	-	-	-	-	14	0.85
2	2000-4000	59	21.22	93	24.87	72	21.30	81	16.17	21	18.42	-	-	4	11.43	1	100.00	330	20.04	
3	4000-6000	78	28.06	112	29.95	128	37.87	165	32.93	17	14.91	3	75.00	10	28.57	-	-	514	31.21	
4	6000-8000	64	23.02	89	23.80	59	17.46	135	26.95	41	35.96	-	-	9	25.71	-	-	398	24.17	
5	8000-10000	33	11.87	35	9.36	33	9.76	59	11.78	19	16.67	1	25.00	4	11.43	-	-	184	11.17	
6	10000-12000	12	4.32	18	4.81	9	2.66	26	5.19	6	5.26	-	-	2	5.71	-	-	73	4.43	
7	12000-14000	9	3.24	11	2.94	10	2.96	4	0.80	2	1.75	-	-	-	-	-	-	36	2.19	
8	>14000	21	7.55	11	2.94	21	6.21	31	6.19	8	7.02	-	-	6	17.14	-	-	98	5.95	
	Total	278 (16.88)	100.00	374 (22.71)	100.00	338 (20.52)	100.00	501 (30.42)	100.00	114 (6.92)	100.00	4 (0.24)	100.00	35 (2.12)	100.00	1 (0.06)	100.00	1647 (100)	100.00	

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage. **N-** Number; **%** - Percentage

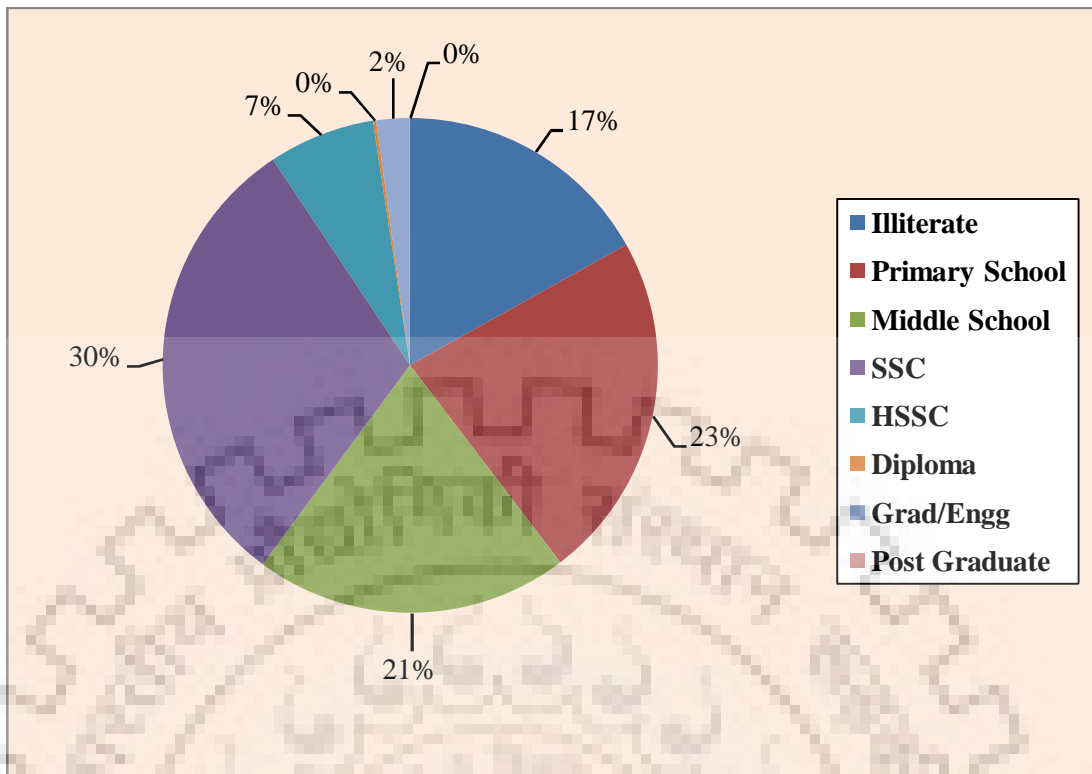


Fig.4.6-A: Education of the slum dwellers

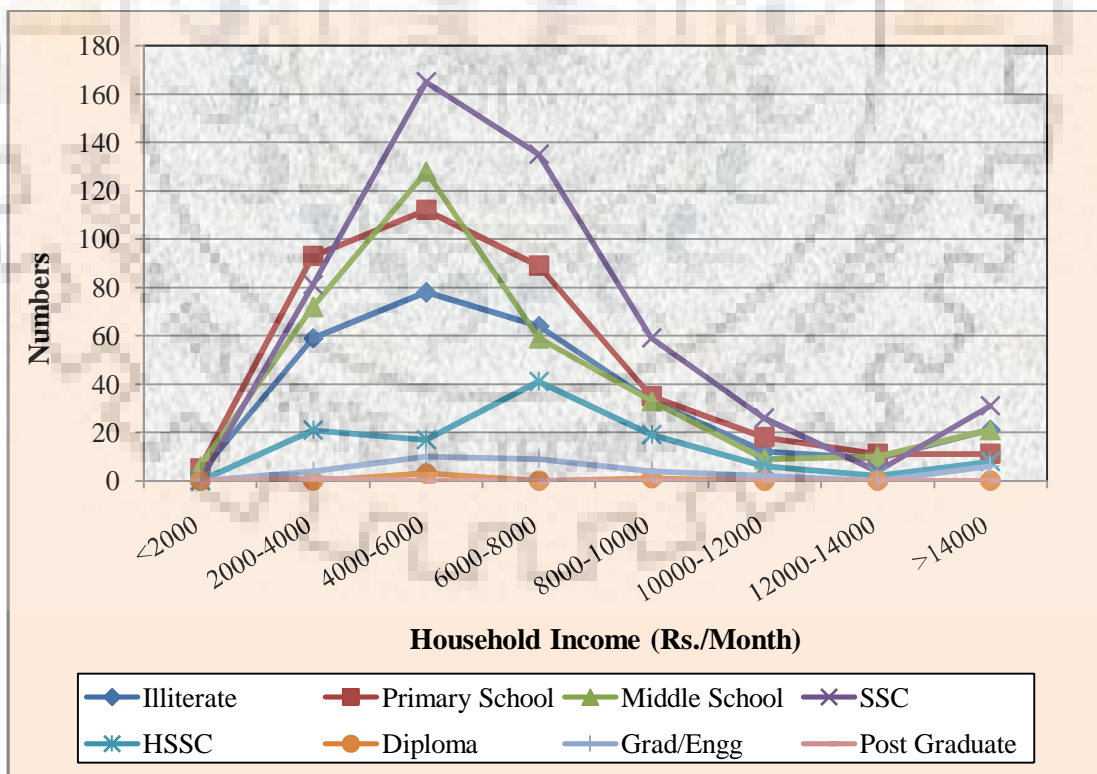


Fig.4.6-B: Education of the slum dwellers

4.1.7 Marital Status

Marital status of an individual indicates his or her social standing with respect to the number of liabilities. Since the weaker sections faced difficult situation in meeting their needs it is important to know how many contributors are present in a single household. Furthermore, the economic issues also greatly vary in the households where there are married or unmarried individuals. In view of this distribution of slum dwellers with respect to their marital status was studied.

Table 4.7 illustrates information pertaining to the marital status of slum dwellers in Nagpur City selected in the study. It was apparent from the information that 48.57% slum dwellers were married whereas 44.14% slum dwellers were unmarried. Furthermore, 4.49% slum dwellers were widow whereas 2.80% slum dwellers were divorcee. It was evident from the study results that majority of slum dwellers in Nagpur City were married.

Table 4.7: Marital Status of the slum dwellers

SN	Household Income Rs/month	Marital Status								Total	
		Married		Unmarried		Widow		Divorcee/Other			
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	<2000	7	0.88	7	0.96	0	0.00	0	0.00	14	0.85
2	2000-4000	154	19.25	147	20.22	18	24.32	11	23.91	330	20.04
3	4000-6000	248	31.00	232	31.91	26	35.14	8	17.40	514	31.21
4	6000-8000	186	23.25	183	25.17	16	21.62	13	28.26	398	24.17
5	8000-10000	93	11.63	76	10.45	4	5.41	11	23.91	184	11.17
6	10000-12000	41	5.13	27	3.71	4	5.41	1	2.17	73	4.43
7	12000-14000	18	2.25	16	2.20	2	2.70	0	0.00	36	2.19
8	>14000	53	6.63	39	5.36	4	5.41	2	4.35	98	5.95
	Total	800 (48.57)	100.00	727 (44.14)	100.00	74 (4.49)	100.00	46 (2.80)	100.00	1647 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

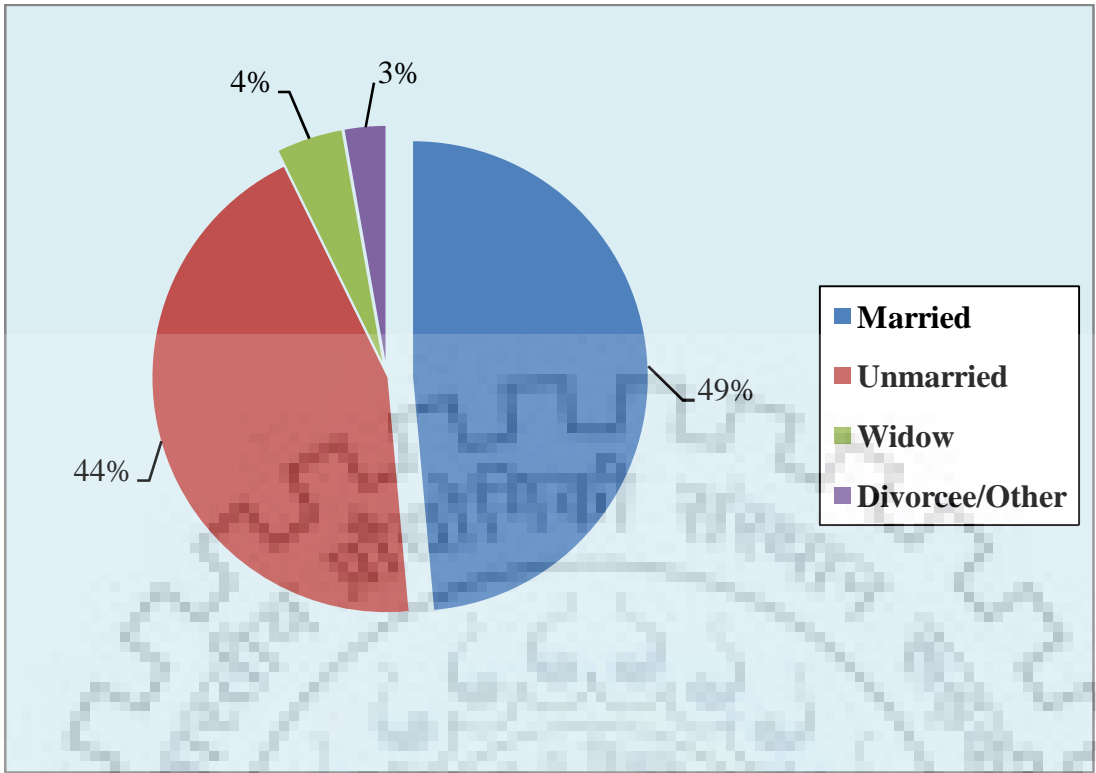


Fig. 4.7-A: Marital Status of the slum dwellers



Fig. 4.7-B: Marital Status of the slum dwellers

4.1.8 Earning Members

Household income not only depends on the education of the slum dwellers but also on the number of earning members present in a household. This is particularly important as all the members of household have cumulative positive impact on the wellbeing of all members and hence this aspect was also studied.

Table 4.8 provides information pertaining to gender of earning member in the family of slum dwellers in Nagpur City, selected in the study. It was evident from the information that earning member in the family of 63.30% slum dwellers was male whereas earning member in the family of 36.70% slum dweller was female. Hence it is apparent from the study results that earning member in family of significantly ($P < 0.05$) high percentage of slum dwellers was male.

Table 4.8: Earning Members (of Household)

SN	Household Income (in Rs.)	Earning Members (of Household)				Total	
		Male		Female			
		Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	3	0.61	-	-	3	0.38
2	2000-4000	86	17.37	24	8.36	110	14.07
3	4000-6000	132	26.67	92	32.06	224	28.64
4	6000-8000	127	25.66	91	31.71	218	27.88
5	8000-10000	66	13.33	29	10.10	95	12.15
6	10000-12000	28	5.66	23	8.01	51	6.52
7	12000-14000	11	2.22	8	2.79	19	2.43
8	>14000	42	8.48	20	6.97	62	7.93
	Total	495 (63.30)	100.00	287 (36.70)	100.00	782 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

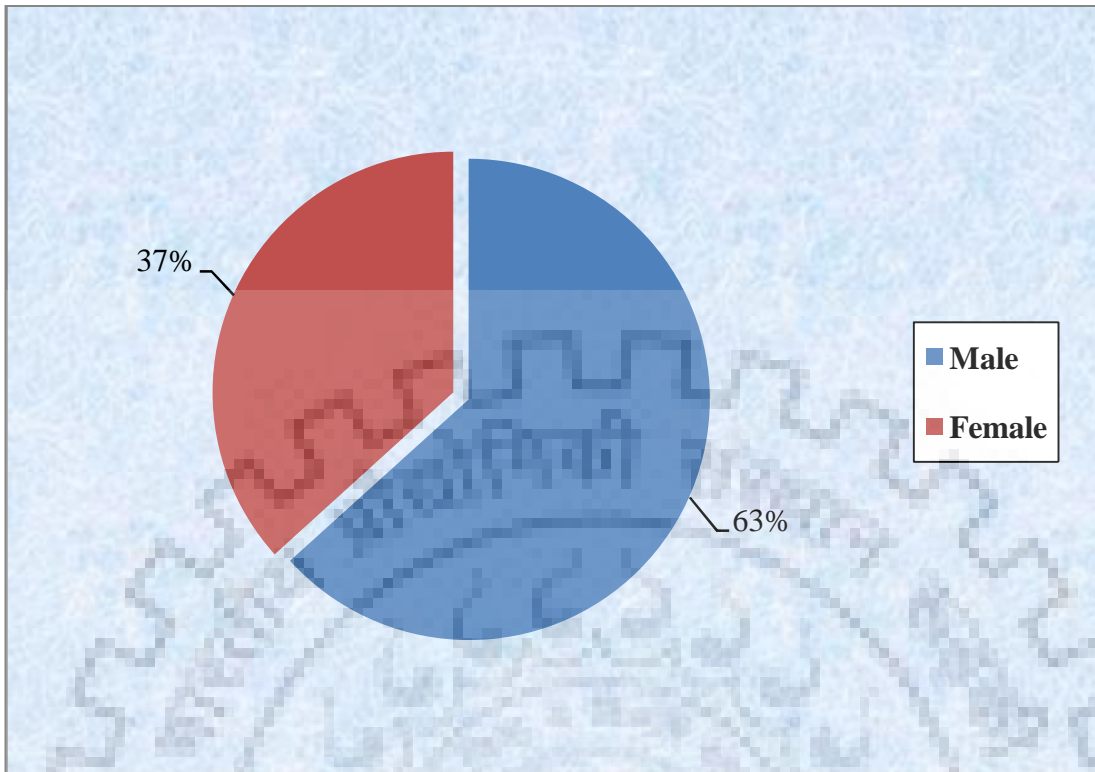


Fig. 4.8-A: Earning Members (of Household)

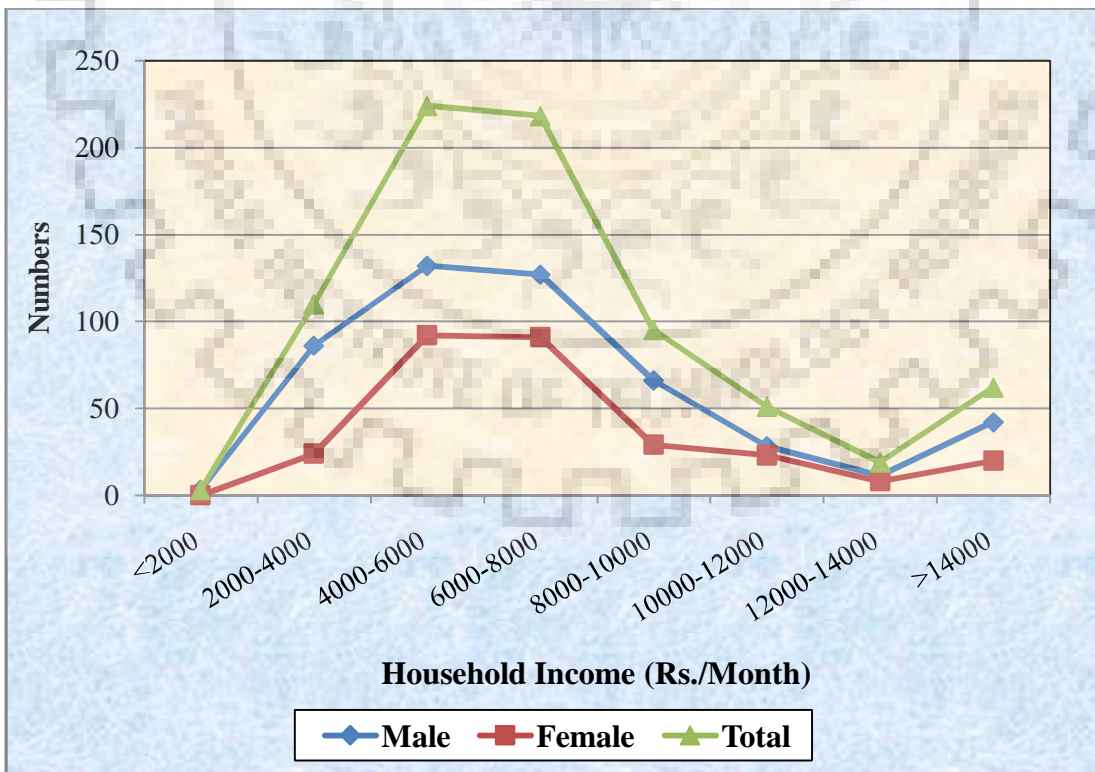


Fig. 4.8-B: Earning Members (of Household)

4.1.9 Total Years of Stay in the Slum

As our towns and cities grow at unprecedented rates setting the social, political, cultural and environmental trends of the world, sustainable urbanization is one of the most critical challenges facing the developing countries in the 21st century. Most of the migrated population often end living in a slum area. This slum area has its peculiar characteristics where the slum dwellers live in situations that are very challenging as well as demanding. This slum environment strongly affects the personality of slum dwellers. The inadequacy or lack of facilities affects the lifestyle of slum dwellers wherein their character is tested quite often. In addition to this the social behavior also changes with respect to total stay of slum dwellers in such community.

Table 4.9 illustrates information regarding duration of stay of slum dwellers of Nagpur City in slums. It was apparent from the information that 43.70% slum dwellers stay from more than 30 year in a slum, 32.10% slum dweller households stay in slum from 20-30 years, whereas 17.03% slum dweller households stay from 10 to 20 years in the slum. Furthermore, percentage of slum dwellers stay from 5 to 10 years and 0 to 5 years in slum was 3.95% and 3.21% respectively (**Fig. 4.9**). Hence it was apparent from the information that majority of slum dweller households stay in the slum from more than 30 years.

Table 4.9: Years of Stay in the Slum

SN	Household Income Rs/month	Years of Stay in the Slum										Total	
		0-5		5-10		10-20		20-30		30 above			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	7.69	-	-	3	4.35	3	2.31	6	3.39	13	3.21
2	2000-4000	2	15.38	-	-	10	14.49	24	18.46	47	26.55	83	20.49
3	4000-6000	6	46.15	11	68.75	18	26.09	33	25.38	56	31.64	124	30.62
4	6000-8000	2	15.38	3	18.75	23	33.33	35	26.92	36	20.34	99	24.44
5	8000-10000	1	7.69	2	12.50	6	8.70	15	11.54	17	9.60	41	10.12
6	10000-12000	-	-	-	-	5	7.25	8	6.15	5	2.82	18	4.44
7	12000-14000	-	-	-	-	3	4.35	3	2.31	1	0.56	7	1.73
8	>14000	1	7.69	-	-	1	1.45	9	6.92	9	5.08	20	4.94
	Total	13 (3.21)	100.00	16 (3.95)	100.00	69 (17.03)	100.00	130 (32.10)	100.00	177 (43.70)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

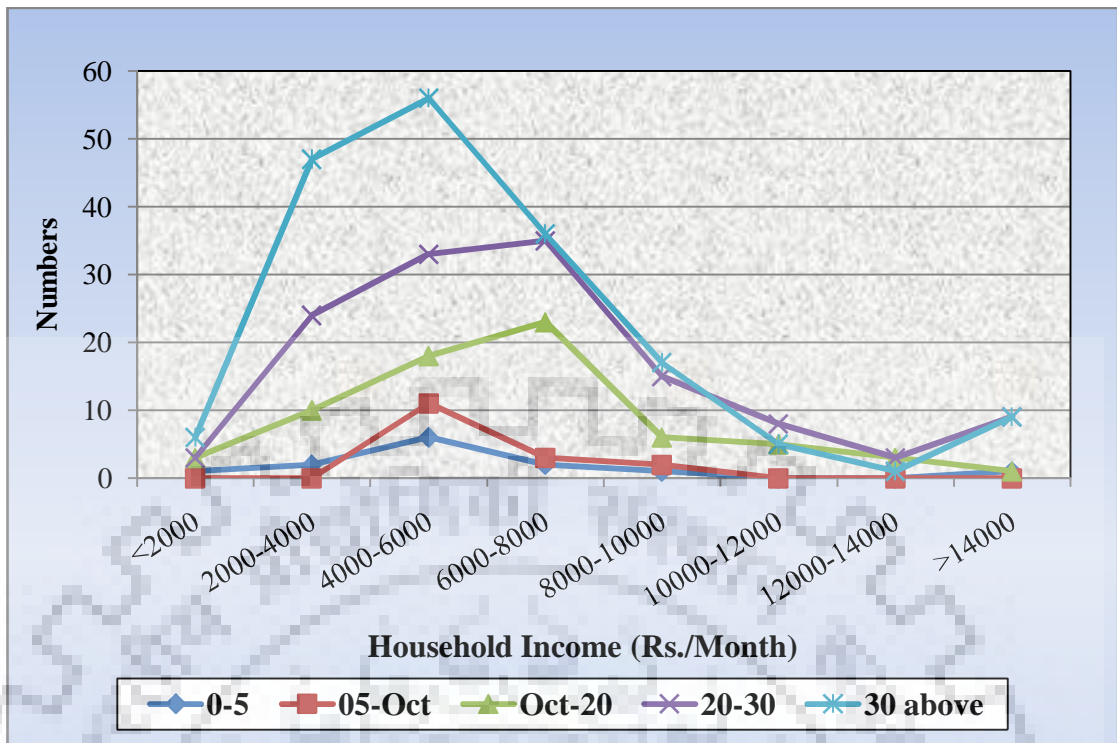


Fig. 4.9: Years of Stay in the Slum

4.1.10 Previous Place of Residence

Most people residing in the slums have usually migrated from near-by villages and sub urban localities of the city. Unavailability of jobs, non-productive farms, and lack of rains are the most common reasons for the relocation of majority of poor people. The basic needs of human race, food, clothes and shelter cause these people to migrate to new and bigger places. Hence it was important to know about the previous place of residence of the slum dwellers. The results obtained for this aspect are also presented in relation to the household income of the slum dwellers.

Table 4.10 shows information pertaining to the previous residence place of slum dwellers of Nagpur City, selected in the study. It was apparent from the information that 89.63% slum dweller households were resident of Maharashtra State, whereas 5.68% slum dweller households were resident of Chhattisgarh state. In addition to this the percentage of slum dweller households previously resided in Madhya Pradesh and Other States of India were 3.21% and 1.48% respectively (**Fig. 4.10**). Hence it was evident from the study results that previous place of residence of significantly ($P < 0.05$) high percentage of slum dweller households is Maharashtra State itself.

Table 4.10: Previous Place of Residence of the slum dwellers

SN	Household Income Rs/month	Previous Place of Residence								Total	
		Maharashtra		Madhya Pradesh		Chhattisgarh		Other			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	13	3.58	-	-	-	-	-	-	13	3.21
2	2000-4000	78	21.49	2	15.38	3	13.04	-	-	83	20.49
3	4000-6000	105	28.93	5	38.46	11	47.83	3	50.00	124	30.62
4	6000-8000	92	25.34	-	-	6	26.09	1	16.67	99	24.44
5	8000-10000	37	10.19	3	23.08	-	-	1	16.67	41	10.12
6	10000-12000	15	4.13	1	7.69	1	4.35	1	16.67	18	4.44
7	12000-14000	5	1.38	-	-	2	8.70	-	-	7	1.73
8	>14000	18	4.96	2	15.38	-	-	-	-	20	4.94
	Total	363 (89.63)	100.00	13 (3.21)	100.00	23 (5.68)	100.00	6 (1.48)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

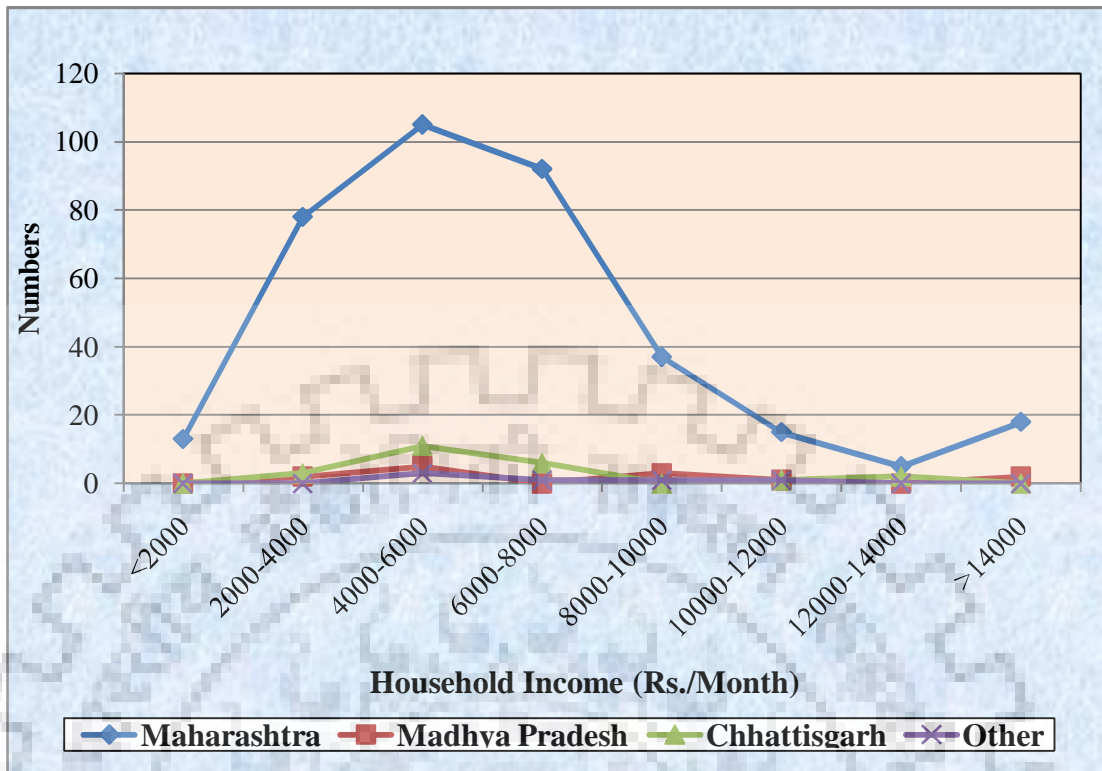


Fig. 4.10: Previous Place of Residence of the slum dwellers

4.1.11 Reasons for coming to Slums

The slum dwellers are generally the people belonging to the poor economic class and amongst them many are generally daily wagers. The need to earn more and the hope for better living standards are the major reasons for the slums in such bigger cities. Moreover, the pinch that they feel in meeting both the ends in day to day life brings them to the decision of coming to the slums.

Table 4.11 demonstrates information pertaining to the reasons provided by slum dweller households for coming to the slum. It was apparent from the information that 57.04% slum dweller households stayed in slum by birth, whereas 31.60% slum dweller households stayed in the slum with their spouse. In addition to this 10.62% slum dweller households stayed in the slum due to their employment, whereas 0.74% slum dweller households stayed in the slum due to other reasons. Hence it was evident from the information that majority of slum dweller households stayed in the slum from the time of their birth.

Table 4.11: Reasons for coming to Slum

SN	Household Income Rs/month	Reasons for coming to Slum								Total	
		By Birth		Stay with Spouse		Employment		Others			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	9	3.90	1	0.78	2	4.65	1	33.33	13	3.21
2	2000-4000	59	25.54	18	14.06	5	11.63	1	33.33	83	20.49
3	4000-6000	76	32.90	36	28.13	12	27.91	-	-	124	30.62
4	6000-8000	45	19.48	39	30.47	15	34.88	-	-	99	24.44
5	8000-10000	19	8.23	20	15.63	2	4.65	-	-	41	10.12
6	10000-12000	9	3.90	5	3.91	3	6.98	1	33.33	18	4.44
7	12000-14000	2	0.87	3	2.34	2	4.65	-	-	7	1.73
8	>14000	12	5.19	6	4.69	2	4.65	-	-	20	4.94
	Total	231 (57.04)	100.00	128 (31.60)	100.00	43 (10.62)	100.00	3 (0.74)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

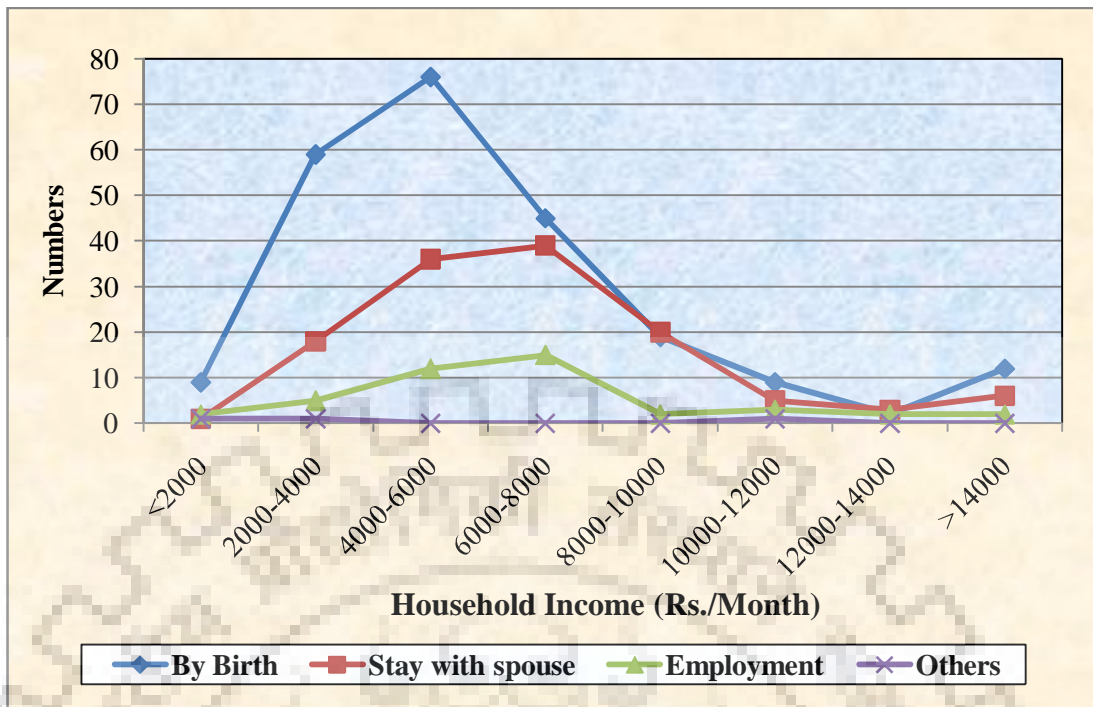


Fig. 4.11: Reasons for coming to Slum

4.1.12 Reasons for Leaving Native Place –Migration

The major occupation of the villages in India is farming .Farming has become highly unpredictable today. The primary reasons for this unpredictability are lack of rains, improper climate conditions like floods, drought, lack of capital etc. Also the city has better job offerings for these poor people. The dreams of providing sufficient food, education and basic amities to the family attract these people to the cities. These are the major reasons of the slum people to leave their native place. However, not all have same reasons to leave their native place so this attribute was also given due importance and the following results were obtained.

Table 4.12 demonstrates information pertaining to the reason of slum dweller households for leaving their native place. It was apparent from the information that 52.34% slum dweller households leave their native place because of inadequate living, whereas 15.31% slum dweller households leave their native place due to other reasons (Loss of Assets, Stay near work place, For Social function etc). In addition to this 12.84% slum dwellers left their native place in search of better employment, 10.62% slum dweller households left their native place due to bad agriculture and 8.89% slum dweller households left their native place because of unemployment. Thus it was apparent from the study results that majority of slum dweller households left their native place due to inadequate living.

Table 4.12: Reasons for Leaving Native Place – Migration

SN	Household Income Rs/month	Reasons for Leaving Native Place										Total	
		Inadequate Living		Bad Agriculture		Better Employment		Unemployment		Others*		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	6	2.83	1	2.33	4	7.69	1	2.78	1	1.61	13	3.21
2	2000-4000	46	21.70	7	16.28	5	9.62	2	5.56	23	37.09	83	20.49
3	4000-6000	64	30.19	13	30.23	17	32.69	6	16.67	24	38.71	124	30.62
4	6000-8000	51	24.06	12	27.91	12	23.08	15	41.67	9	14.52	99	24.44
5	8000-10000	22	10.38	7	16.28	4	7.69	5	13.89	3	4.84	41	10.12
6	10000-12000	12	5.66	1	2.33	3	5.77	2	5.56	-	-	18	4.44
7	12000-14000	4	1.89	-	-	2	3.85	1	2.78	-	-	7	1.73
8	>14000	7	3.30	2	4.65	5	9.62	4	11.11	2	3.23	20	4.94
	Total	212 (52.34)	100.00	43 (10.62)	100.00	52 (12.84)	100.00	36 (8.89)	100.00	62 (15.31)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. ***Others=** Loss of Assets + Stay near work place + For Social function etc.**Note:** Figure in parenthesis denotes 'row' percentage

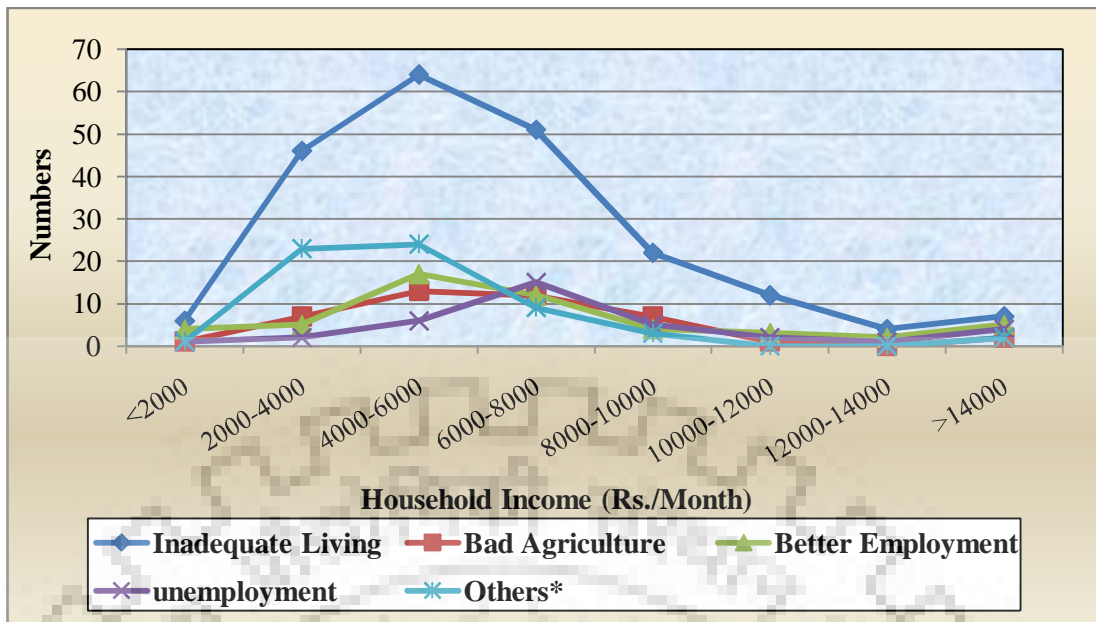


Fig. 4.12: Reasons for Leaving Native Place – Migration

4.1.13 Economic Condition of the slum dwellers since migration

The cities and urban areas offer a job guarantee to every person who is migrating to the city. As many types of jobs are available to the people, the people are sure of getting some or other kind of job. The various options available are work of a construction site workers, taxi drivers, auto rickshaw driver, domestic maid etc. Hence, the ability to secure job often results in the improvement in economic condition (after migration) of the people residing in the cities or slum area. Also here most of the people of the family including the children are involved in some kind of work. As the number of working members also increases the economic condition of the slum dwellers most often improves after migration. Since, the economic condition is an important indicator of the sustainability one has in his life, this aspect related to the slum dwellers was also studied.

Table 4.13 presents data pertaining to the economic condition of slum dwellers since their migration from their native place. On the basis of the data it was observed that economic condition of 78.02% slum dwellers improved after migration, whereas 15.06% slum dwellers are unsure whether their economic condition has really improved or not. Furthermore, 6.92% respondents indicated that their economic condition is same since migration. Hence, it is clear from the study results that economic condition of majority of slum dwellers has improved since migration.

Table 4.13: Economic Condition of the slum dwellers since migration

SN	Household Income Rs/month	Economic Condition since Migration						Total	
		Improved		Same		Don't Know			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	8	2.53	4	14.28	1	1.64	13	3.21
2	2000-4000	55	17.41	4	14.28	24	39.34	83	20.49
3	4000-6000	97	30.70	3	10.72	24	39.34	124	30.62
4	6000-8000	83	26.27	7	25.00	9	14.75	99	24.44
5	8000-10000	33	10.44	5	17.86	3	4.92	41	10.12
6	10000-12000	13	4.11	5	17.86	-	-	18	4.44
7	12000-14000	7	2.22	-	-	-	-	7	1.73
8	>14000	20	6.33	-	-	-	-	20	4.94
	Total	316 (78.02)	100.00	28 (6.92)	100.00	61 (15.06)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

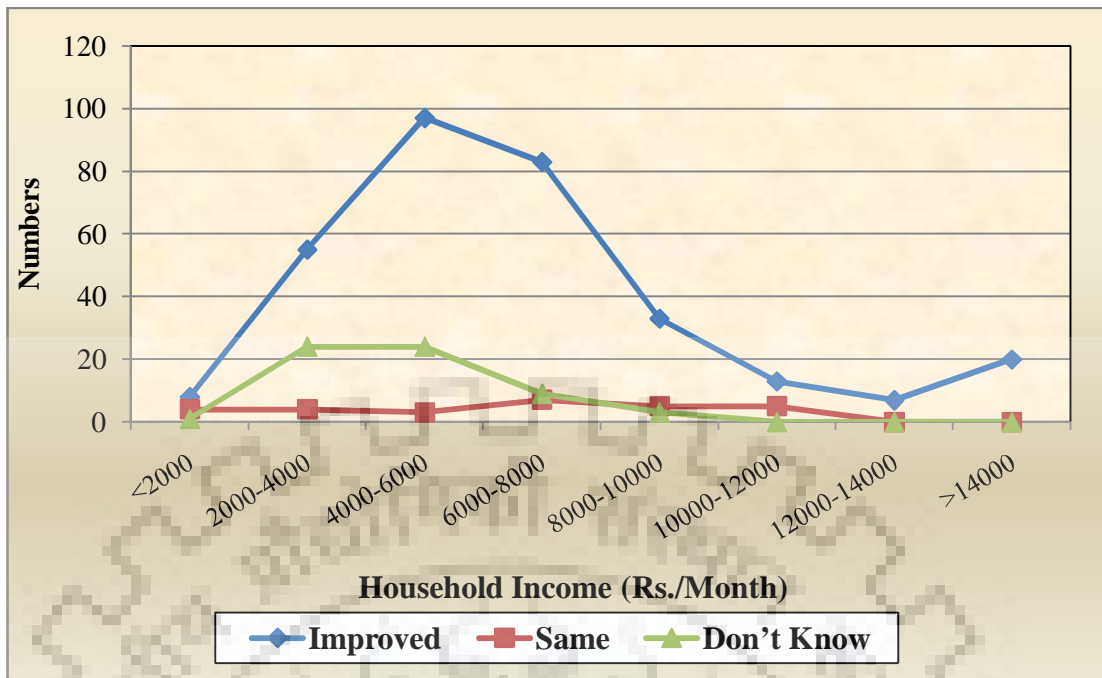


Fig. 4.13: Economic Condition of the slum dwellers since migration

4.1.14 Occupation of the slum dwellers

Most of the slum dwellers are people who have migrated from the villages and have very less formal education. These people get involved in a multiple type of occupations as the city offers a number of job resources to them. The slum dwellers do a different types of work like working on construction site as laborer (daily wagers), Electricians, Repair works, Auto Mechanics, Mason, Carpenter, Painter, Rag Picker. Many work as taxi, auto rickshaw, cycle rickshaw drivers. Many are self-employed as they own a small shop or a cycle repair shop etc. Since occupation has direct influence on the economic condition and subsequently the housing condition of slum dwellers this aspect was also studied in detail.

Table 4.14 shows information pertaining to the occupation of slum dwellers in Nagpur City. It was apparent from the information that 60.61% slum dwellers were working on daily wages, whereas 30.31% slum dwellers were self-employed. Furthermore, 3.71% slum dwellers were driving auto rickshaw, 2.94% slum dwellers were hawkers whereas 1.15% slum dwellers were carrying cycle rickshaw. In addition to this 1.28% slum dwellers engaged in other occupations such as Rag Picker, Electricians, Repair works, Auto Mechanic, Mason, Carpenter, Painter etc. Hence it was apparent from the information that significantly ($P < 0.05$) high percentage of slum dwellers were working on daily wages.

Table 4.14: Occupation of the slum dwellers

SN	Household Income Rs/month	Occupation												Total	
		Daily wage		Self Employed		Hawker		Cycle Rickshaw		Auto Rickshaw		Others*			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	0.21	-	-	-	-	1	11.11	-	-	1	10.00	3	0.38
2	2000-4000	70	14.77	24	10.13	5	21.74	2	22.22	13	44.83	1	10.00	115	14.71
3	4000-6000	131	27.64	64	27.00	6	26.09	1	11.11	7	24.14	-	-	209	26.73
4	6000-8000	134	28.27	67	28.27	6	26.09	4	44.44	4	13.79	3	30.00	218	27.88
5	8000-10000	57	12.03	26	10.97	4	17.39	1	11.11	3	10.34	2	20.00	93	11.89
6	10000-12000	32	6.75	25	10.55	-	-	-	-	1	3.45	-	-	58	7.42
7	12000-14000	14	2.95	3	1.27	1	4.35	-	-	-	-	-	-	18	2.30
8	>14000	35	7.38	28	11.81	1	4.35	-	-	1	3.45	3	30.00	68	8.70
	Total	474 (60.61)	100.00	237 (30.31)	100.00	23 (2.94)	100.00	9 (1.15)	100.00	29 (3.71)	100.00	10 (1.28)	100.00	782 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

Note: *Others=Rag Picker +Elec. Repair +Auto Mech.+Mason +Carpenter +Painter etc

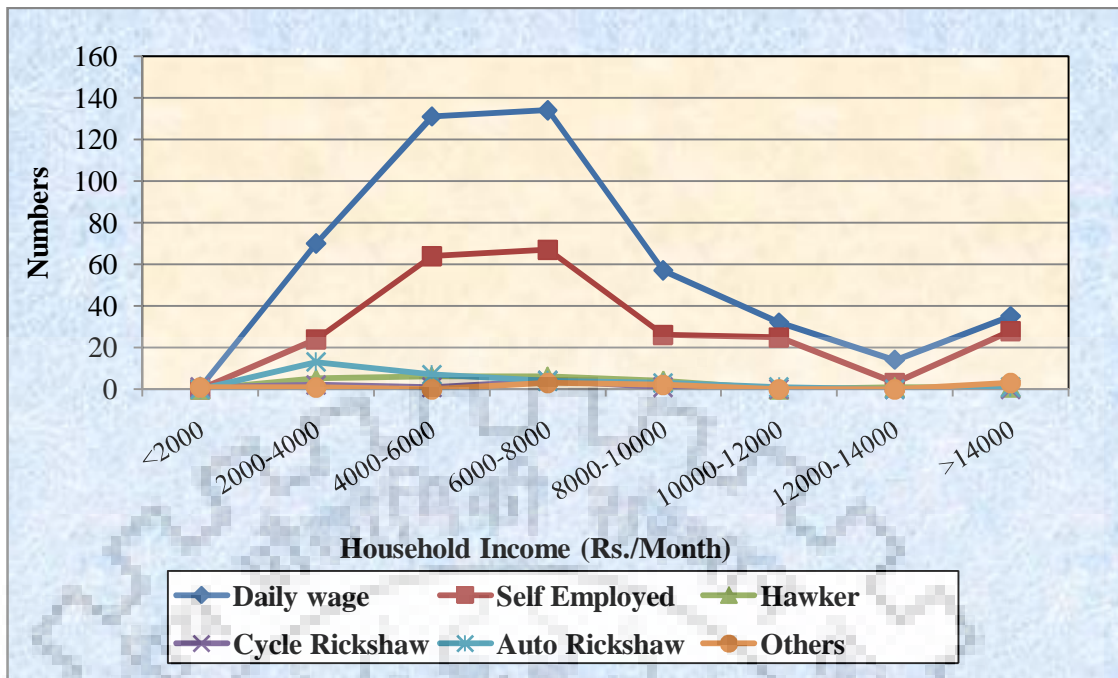


Fig. 4.14: Occupation of the slum dwellers

4.1.15 Mother Tongue

Religion and language are more significant factors than caste diversity in determining slums' social and economic characteristics, and neither religion/language, nor caste can be shown to have a stronger influence on the physical structure of slums. The significance of language, religion, and caste in the slums' social, economic, and physical features is an important aspect that governs professional development of the slum dwellers. In the backdrop of this the knowledge about slum dweller's mother tongue was determined.

Table 4.15 shows results pertaining to the mother tongue of slum dwellers of Nagpur City. It was observed from the data that mother tongue of 67.90% slum dwellers was Marathi, whereas Hindi was mother tongue of 22.47% slum dwellers. In addition to this mother tongue of 6.67% slum dweller households was Urdu whereas 2.96% slum dwellers have other languages as their mother tongue. Thus, from the data it is apparent that Marathi is the mother tongue of significantly ($P < 0.05$) high percentage of slum dwellers.

Table 4.15: Mother Tongue of slum dwellers

SN	Household Income Rs/month	Mother Tongue								Total	
		Marathi		Hindi		Urdu		Others			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	8	2.91	4	4.40	1	3.70	-	-	13	3.21
2	2000-4000	56	20.36	20	21.98	7	25.93	-	-	83	20.49
3	4000-6000	87	31.64	25	27.47	9	33.33	3	25.00	124	30.62
4	6000-8000	70	25.45	18	19.78	4	14.81	7	58.33	99	24.44
5	8000-10000	28	10.18	9	9.89	3	11.11	1	8.33	41	10.12
6	10000-12000	10	3.64	8	8.79	-	-	-	-	18	4.44
7	12000-14000	3	1.09	3	3.30	1	3.70	-	-	7	1.73
8	>14000	13	4.73	4	4.40	2	7.41	1	8.33	20	4.94
	Total	275 (67.90)	100.00	91 (22.47)	100.00	27 (6.67)	100.00	12 (2.96)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

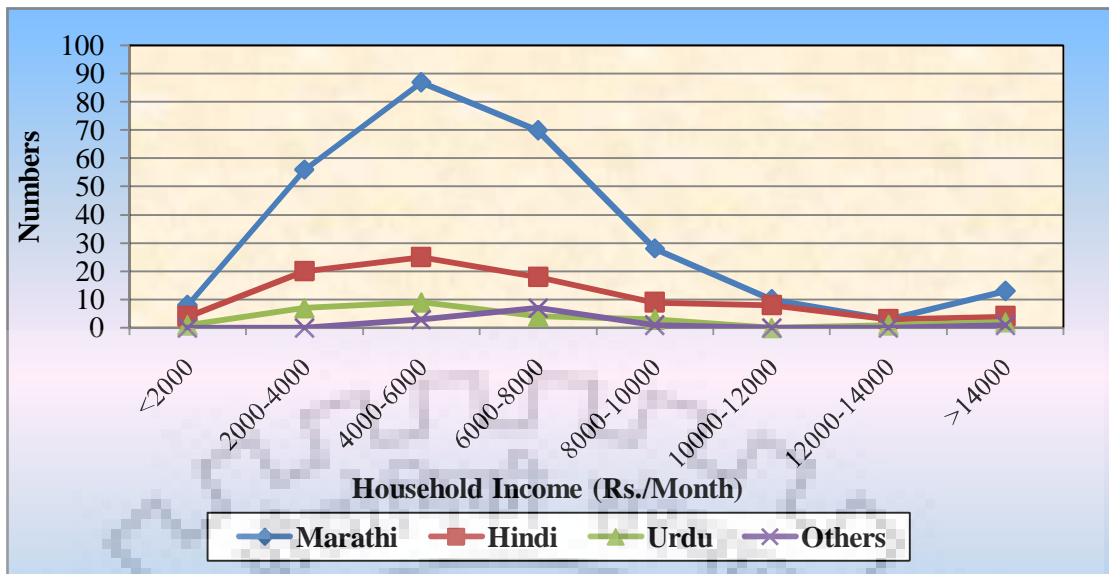


Fig. 4.15: Mother Tongue of slum dwellers

4.1.16 Desire to Shift for Better Living

All slums are not the same, and some provide better living conditions than others. Likewise, slum dwellers are not a homogeneous population, but a diverse group of people with different interests, means and backgrounds. Slums are also a significant economic force. In many cities, as much as 60 percent of employment is in the informal sector of the urban population. In the developing world, one out of every three people living in cities lives in slums. The slum dwellers not only desire the upgrading of water supply or drainage or housing but also think about putting into motion the economic, social, institutional and community activities that are needed to turn around downward trends in an area. In addition to this the policy makers from local governing bodies, state and central governments also need the information regarding desire of slum dwellers to shift for better living, which would facilitate smooth implementation of urban housing policy. Hence, feedback from slum dwellers was collected in this regard.

Table 4.16 shows responses of slum dwellers of Nagpur City regarding their desire to shift for better living. It was apparent from the information that 55.06% slum dweller households did not desire to shift for better living, whereas 44.94% slum dweller households desired to shift for better living. Hence it was apparent from the study results that majority of slum dwellers of Nagpur city did not desire to shift for better living. Based on the informal interaction with the slum dwellers, it was found that the primary reason for slum dwellers low or no desire to shift is the availability of the amenities like, market, schools, hospitals, etc. in the vicinity of these slums.

Table 4.16: Desire to Shift for Better Living

SN	Household Income Rs/month	Desire to Shift for Better Living				Total	
		Yes		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	8	4.40	5	2.24	13	3.21
2	2000-4000	49	26.92	34	15.25	83	20.49
3	4000-6000	55	30.22	69	30.94	124	30.62
4	6000-8000	35	19.23	64	28.70	99	24.44
5	8000-10000	19	10.44	22	9.87	41	10.12
6	10000-12000	7	3.85	11	4.93	18	4.44
7	12000-14000	4	2.20	3	1.35	7	1.73
8	>14000	5	2.75	15	6.73	20	4.94
	Total	182 (44.94)	100.00	223 (55.06)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

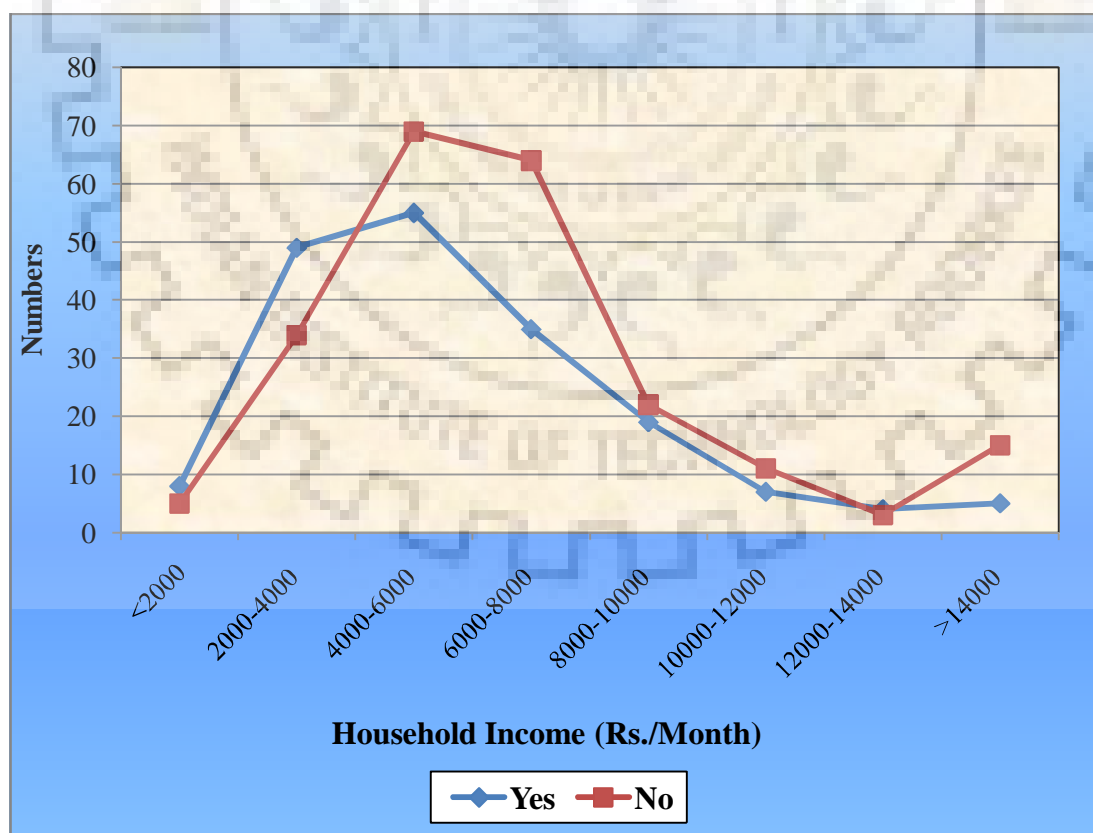


Fig. 4.16: Desire to Shift for Better Living

4.1.17 Distance willing to Move

Most of the people would like the idea of moving to places with better living conditions than the given conditions of the slums. However, the distance to which slum dwellers are willing to is often dependent on their nature of job or their working pattern. For example, people can think of moving to new places within a distance of 2-4 kilometres from their places of work but beyond certain distance they may not have advantage with respect to securing or hanging on to their jobs. This is because they would not want most of their day's income to be spent in transportation. Since, urban transportation has a big role in economic condition of the slum dwellers it was necessary to know the willingness of slum dwellers to move from their current residence.

Table 4.17 provides information regarding distance willing to move by slum dwellers of Nagpur City for better living. It was apparent from the information that 53.09% slum dweller households were willing to move less than 1 Km distance for better living, whereas 28.88% slum dweller households were willing to move 2-3 Km distance for better living. It was also evident from the information that 9.63% slum dweller households willing to move 1-2Km distance for better living and 8.40% slum dweller households willing to move more than 3 Km distance for better living. Hence it was apparent from the study results that majority of slum dwellers of Nagpur city were willing to move less than 1 Km distance for better living.

Table 4.17: Distance willing to Move

SN	Household Income Rs/month	Distance willing to Move								Total	
		<1 Km		1-2 Km		2-3 Km		> 3 Km			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	5	2.33	0	0.00	7	5.98	1	2.94	13	3.21
2	2000-4000	31	14.42	3	7.69	38	32.48	11	32.35	83	20.49
3	4000-6000	66	30.70	12	30.77	36	30.77	10	29.41	124	30.62
4	6000-8000	64	29.77	12	30.77	19	16.24	4	11.76	99	24.44
5	8000-10000	20	9.30	6	15.38	9	7.69	6	17.65	41	10.12
6	10000-12000	11	5.12	3	7.69	2	1.71	2	5.88	18	4.44
7	12000-14000	3	1.40	1	2.56	3	2.56	0	0.00	7	1.73
8	>14000	15	6.98	2	5.13	3	2.56	0	0.00	20	4.94
	Total	215 (53.09)	100.00	39 (9.63)	100.00	117 (28.88)	100.00	34 (8.40)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

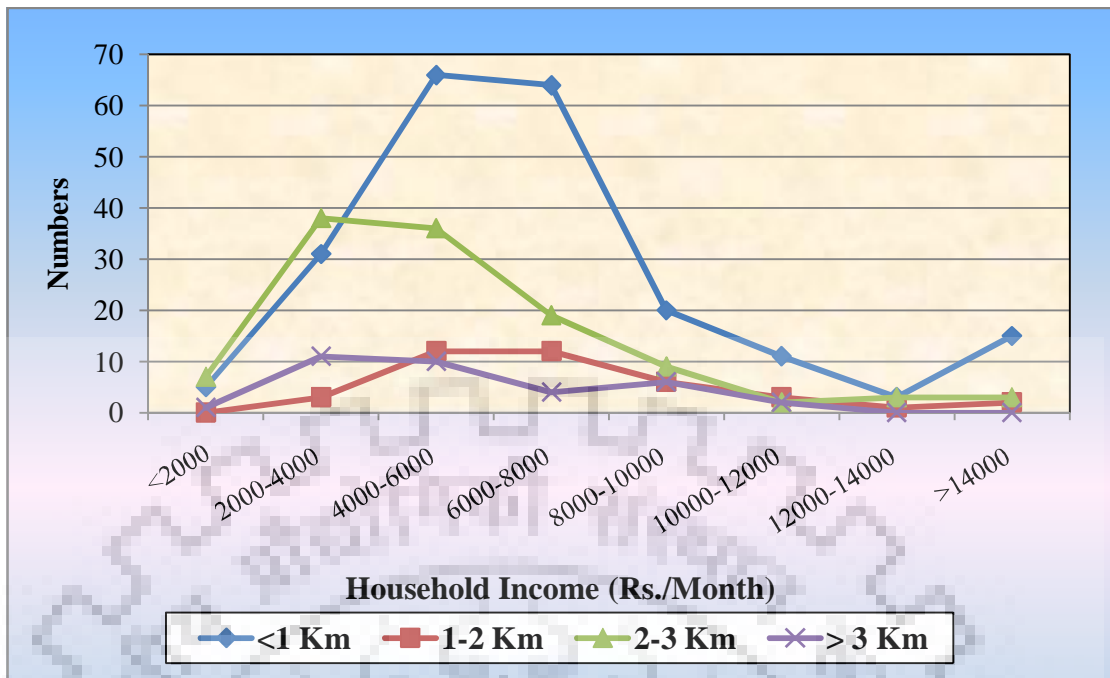


Fig. 4.17: Distance willing to Move

4.1.18 Safety of Women

Everyday life in urban slums is difficult for women. Shacks are inadequately equipped for daily needs, forcing women and girls to make early morning and late night travel to collect water or use the public toilet. Also, many women work at shopping malls and other offices, which are operational till late nights. These women have to travel in late evenings or night to reach to their shacks. These seemingly innocuous events become sources of great risk and anxiety for urban poor women who fear for their safety both inside and outside of the home. Violence against women has become pervasive in slums: for example, a 2010 Amnesty International report revealed that in the slums—where recent violence has been highly publicized—perpetrators range from spouses to family members to youth gangs to even government security personnel. There, more than half of women have experienced abuse and violence. In view of this the response of slum dwellers regarding safety of women was sought.

Table 4.18 illustrates information regarding safety of women walking after 7p.m. in the area of slum dwellers of Nagpur City. It was apparent from the information that it was safe for women walking after 7 p.m. in the area of 69.88% slum dweller households, whereas it was not safe for walking after 7p.m. for women in the area of 30.12% slum dweller households. Hence it was evident from the study results that it was safe for the women to walk after 7 p.m. in the area of significantly ($P < 0.05$) high percentage of slum dwellers of Nagpur city.

Table 4.18: Safety of women walking after 7 pm

S N	Household Income Rs/month	Safety of women walking after 7 p.m.				Total	
		Yes		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	9	3.18	4	3.28	13	3.21
2	2000-4000	51	18.02	32	26.23	83	20.49
3	4000-6000	91	32.16	33	27.05	124	30.62
4	6000-8000	77	27.21	22	18.03	99	24.44
5	8000-10000	25	8.83	16	13.11	41	10.12
6	10000-12000	14	4.95	4	3.28	18	4.44
7	12000-14000	4	1.41	3	2.46	7	1.73
8	>14000	12	4.24	8	6.56	20	4.94
	Total	283 (69.88)	100.00	122 (30.12)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

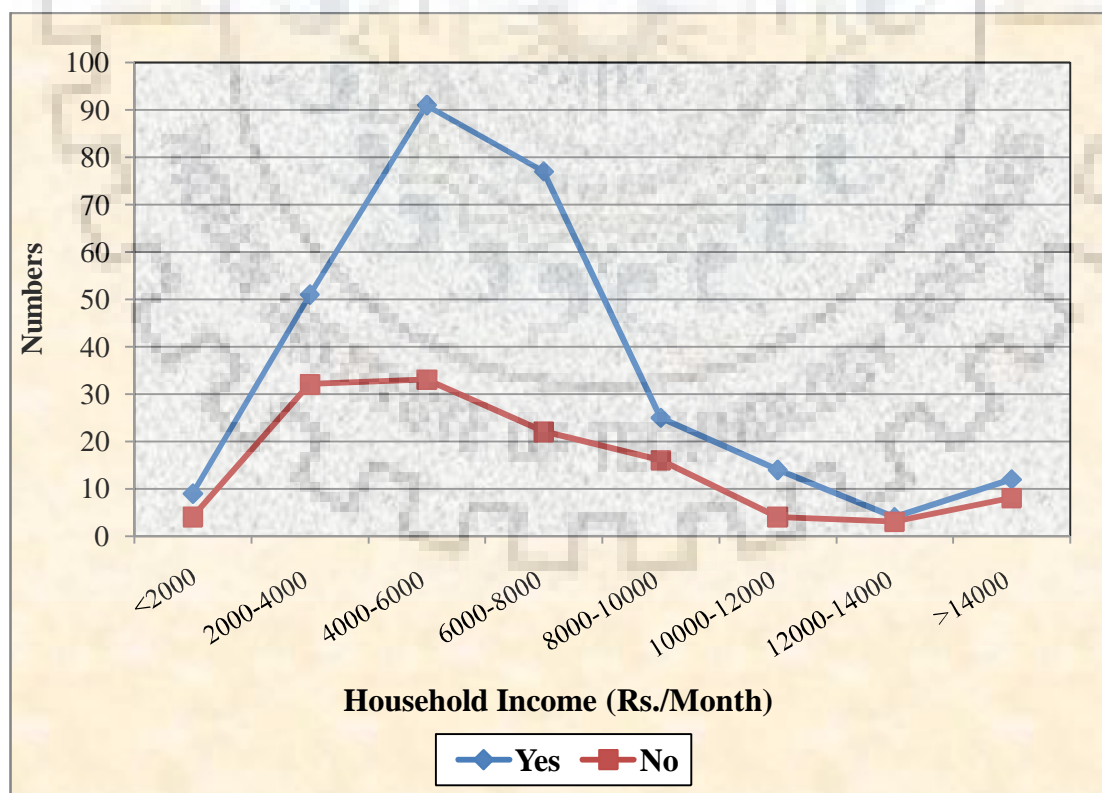


Fig. 4.18: Safety of women walking after 7 pm

4.2 Physical Aspects

Man has been living in systematic formed groups with an eye on sustainable future for which he has developed shelters as well as other physical infrastructure. Since ages these physical attributes have seen influence in their evolution pattern, which is in line with their basic requirements. In today's world people, are located in overcrowded towns where most residents are illegal occupants and many have little access to even basic sanitation. Residents live in urban slums with unhygienic conditions that are unfit for human habitation like open sewers and abject poverty. In view of importance of physical aspects an attempt has been made to know details of various physical aspects related to slums of Nagpur City. These Physical aspects are as follows

- Housing Conditions
- Plot area (in sq. ft.) of the house
- Built up area in sq. ft. of the house
- Floor/Storey of the house
- Number of Rooms in the house
- Materials of Walls of the house
- Materials of Roof of the house
- Doors of the house
- Windows of the house

4.2.1 Housing Conditions

Housing forms arguably the most important aspects of human life. Also, the housing conditions determine the sense of security and well being of people. It has been widely reported that slum dwellers throughout their life live in cramped up shelters. Furthermore in adequacy of space as well as capital often force these slum dwellers to live in semi pakka or make shift type of houses. This housing condition does not allow them to think beyond housing related needs, which affects their personal, professional as well as social life. Hence, data related to housing condition of slum dwellers living in Nagpur City was collected and the distribution of people in relation to housing condition and their household income is presented in following table.

Table 4.19: Housing Conditions

SN	Household Income Rs/month	Housing Conditions						Total	
		Good (Pakka)		Moderate (Semi-Pakka)		Dilapidated (Katcha)			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	3.85	11	3.91	1	1.02	13	3.21
2	2000-4000	3	11.54	52	18.51	28	28.57	83	20.49
3	4000-6000	2	7.69	98	34.88	24	24.49	124	30.62
4	6000-8000	8	30.77	75	26.69	16	16.33	99	24.44
5	8000-10000	4	15.38	20	7.12	17	17.35	41	10.12
6	10000-12000	2	7.69	9	3.20	7	7.14	18	4.44
7	12000-14000	1	3.85	5	1.78	1	1.02	7	1.73
8	>14000	5	19.23	11	3.91	4	4.08	20	4.94
	Total	26 (6.42)	100.00	281 (69.38)	100.00	98 (24.20)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

Table 4.19 presents data pertaining to the condition of households of the slum dweller of Nagpur city. It was observed that the condition of 69.38% households was moderate (semi-Pakka), whereas that of 24.20% households were in dilapidated (Katcha) condition. Moreover, condition of 6.42% households was good (Pakka). Thus, it was evident from the study results that housing condition of the households of majority of slum dweller of Nagpur city was of moderate nature. The results are based on the assessment made by the researcher himself.

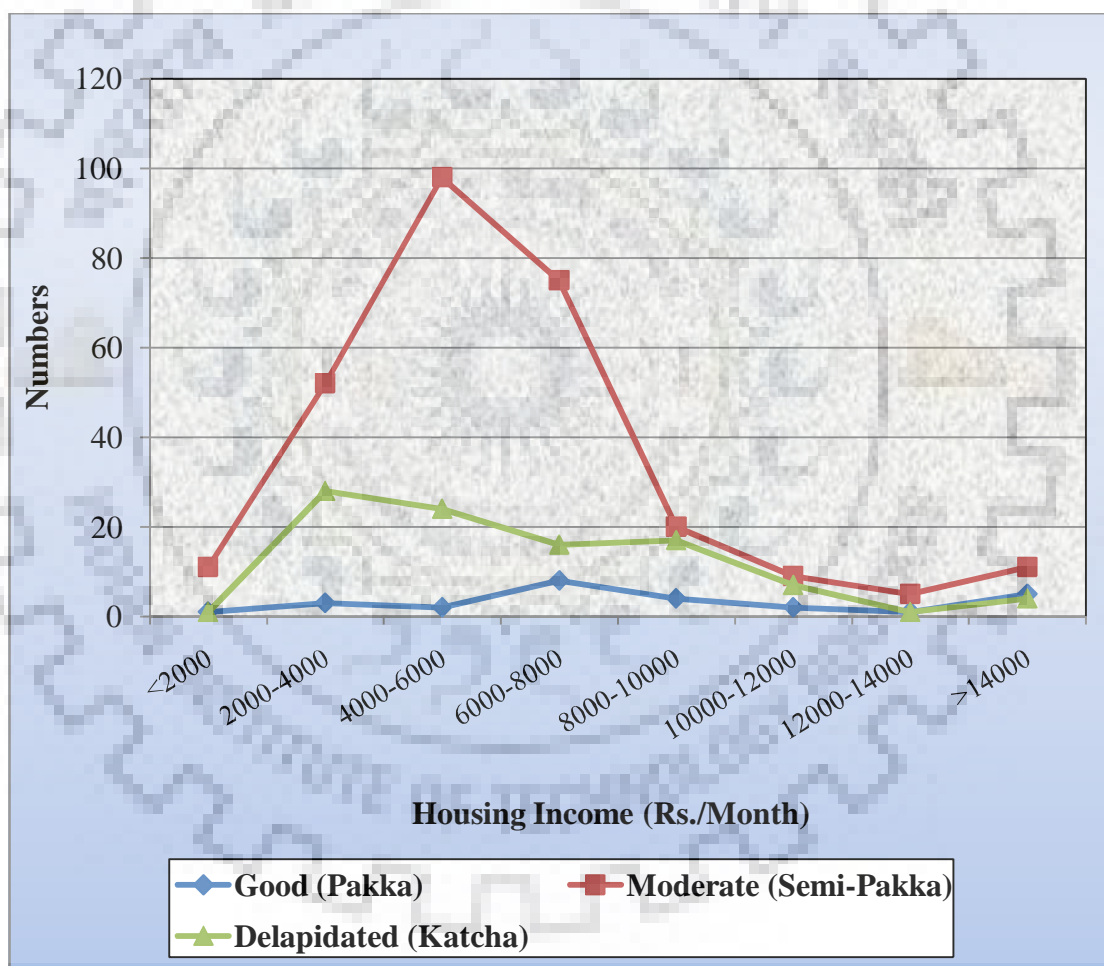


Fig. 4.19: Housing Conditions

4.2.2 Plot area (in sq. ft.) of the house

The plot area of the house (dwelling) determines the amenities that can be had and also the kind of activities a person could perform. Since, the land rates in a city like Nagpur are very high the plot area becomes an important metric with respect to housing. Hence, distribution of slum dwellers with respect to total plot area has been studied. Furthermore, the distribution of people with respect to ownership of plot area and their household income is presented.

Table 4.20 shows results regarding the plot area of slum dweller households of Nagpur City. It was observed from the data that plot area of 39.01% slum dweller households was 300-400 sq. ft., whereas plot area of 24.44% slum dwellers is 400-500 sq. ft. Furthermore, percentage of slum dweller households having 200-300 sq. ft. plot area was 23.70 and percentage of slum dweller households having 500-700 sq. ft., 100-200 sq. ft., 700-1000 sq. ft. and 1000-1500 sq. ft. plot area was 5.93%, 4.94%, 1.73% and 0.25% respectively. Hence, it was apparent from the information that majority of slum dweller households in Nagpur city have 300-400 sq. ft. plot area.

Table 4.20: Plot area (in sq. ft.) of the house

SN	Household Income Rs/month	Plot area in Sq. Ft.														Total	
		100-200 sq.ft.		200-300 sq.ft.		300-400 sq.ft.		400-500 sq.ft.		500-700 sq.ft.		700-1000 sq.ft.		1000-1500 sq.ft.			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	5.00	4	4.17	5	3.16	2	2.02	-	-	1	14.29	-	-	13	3.21
2	2000-4000	3	15.00	25	26.04	28	17.72	22	22.22	3	12.50	2	28.57	-	-	83	20.49
3	4000-6000	10	50.00	27	28.13	53	33.54	29	29.29	2	8.33	2	28.57	1	100.00	124	30.62
4	6000-8000	3	15.00	23	23.96	43	27.22	17	17.17	11	45.83	2	28.57	-	-	99	24.44
5	8000-10000	2	10.00	10	10.42	13	8.23	15	15.15	1	4.17	-	-	-	-	41	10.12
6	10000-12000	1	5.00	6	6.25	3	1.90	7	7.07	1	4.17	-	-	-	-	18	4.44
7	12000-14000	-	-	-	-	4	2.53	2	2.02	1	4.17	-	-	-	-	7	1.73
8	>14000	-	-	1	1.04	9	5.70	5	5.05	5	20.83	-	-	-	-	20	4.94
	Total	20 (4.94)	100.00	96 (23.70)	100.00	158 (39.01)	100.00	99 (24.44)	100.00	24 (5.93)	100.00	7 (1.73)	100.00	1 (0.25)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

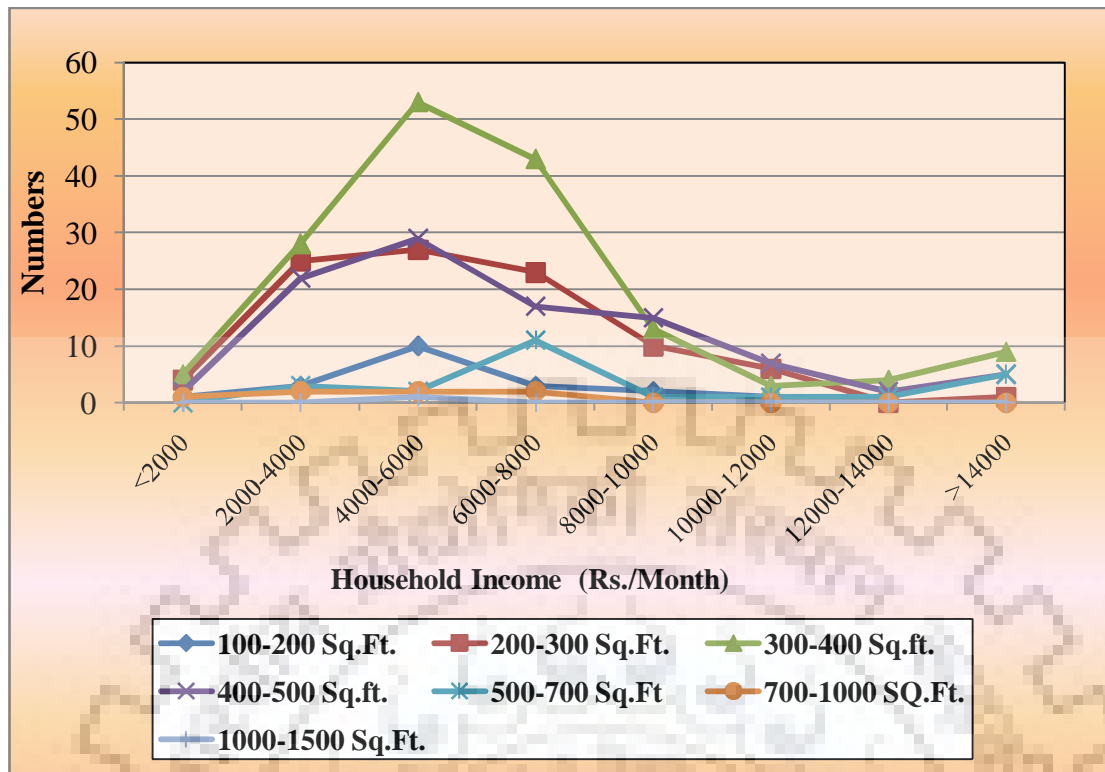


Fig. 4.20: Plot area (in sq. ft.) of the house

4.2.3 Built up area in sq.ft. of the house

Apart from plot area the area of actual construction is also important. Since, the slum dwellers live in different type of dwellings such as pakka, semi pakka and kachha the built up area also differs greatly. In view of the value of asset i.e. total built up area of the dwelling distribution of slum dwellers was assessed and the results are presented in relation to their household income.

Table 4.21 demonstrates information pertaining to the built up area of houses of slum dwellerhouseholds in Nagpur city. It was apparent from the information that 42.96% slum dwellerhouseholds have 500-700sq. ft. build up area, whereas 25.43% slum dwellerhouseholds have 300-500 sq. ft. build up area. In addition to this 21.23% slum dwellerhouseholds have 700-1000 sq. ft. build up area, whereas percentage of slum dwellerhouseholds having 1000-1500 sq. ft., less than 300 sq. ft. and above 1500 sq. ft. build up area was 4.69%, 4.94% and 0.74% respectively. Hence it was evident from the study results that majority of slum dweller households in Nagpur city have 500-700 sq. ft. build up area.

Table 4.21: Built up area in sq.ft. of the house

S N	Household Income Rs/month	Built up area in sq.ft.												Total	
		<300 sq.ft.		300-500 sq.ft.		500-700 sq.ft.		700-1000 sq.ft.		1000-1500 sq.ft.		1500 sq.ft. above			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	5.00	5	4.85	5	2.87	1	1.16	1	5.26	-	-	13	3.21
2	2000-4000	5	25.00	25	24.27	32	18.39	17	19.77	3	15.79	1	33.33	83	20.49
3	4000-6000	8	40.00	31	30.10	58	33.33	22	25.58	4	21.05	1	33.33	124	30.62
4	6000-8000	3	15.00	23	22.33	47	27.01	18	20.93	7	36.84	1	33.33	99	24.44
5	8000-10000	2	10.00	11	10.68	15	8.62	13	15.12	-	-	-	-	41	10.12
6	10000-12000	1	5.00	6	5.83	4	2.30	6	6.98	1	5.26	-	-	18	4.44
7	12000-14000	-	-	-	-	4	2.30	3	3.49	-	-	-	-	7	1.73
8	>14000	-	-	2	1.94	9	5.17	6	6.98	3	15.79	-	-	20	4.94
	Total	20 (4.94)	100.00	103 (25.43)	100.00	174 (42.96)	100.00	86 (21.23)	100.00	19 (4.69)	100.00	3 (0.74)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.
Note: Most occupants have built house without leaving margins and equal to the plot area, so the built area and plot area are same in most cases.

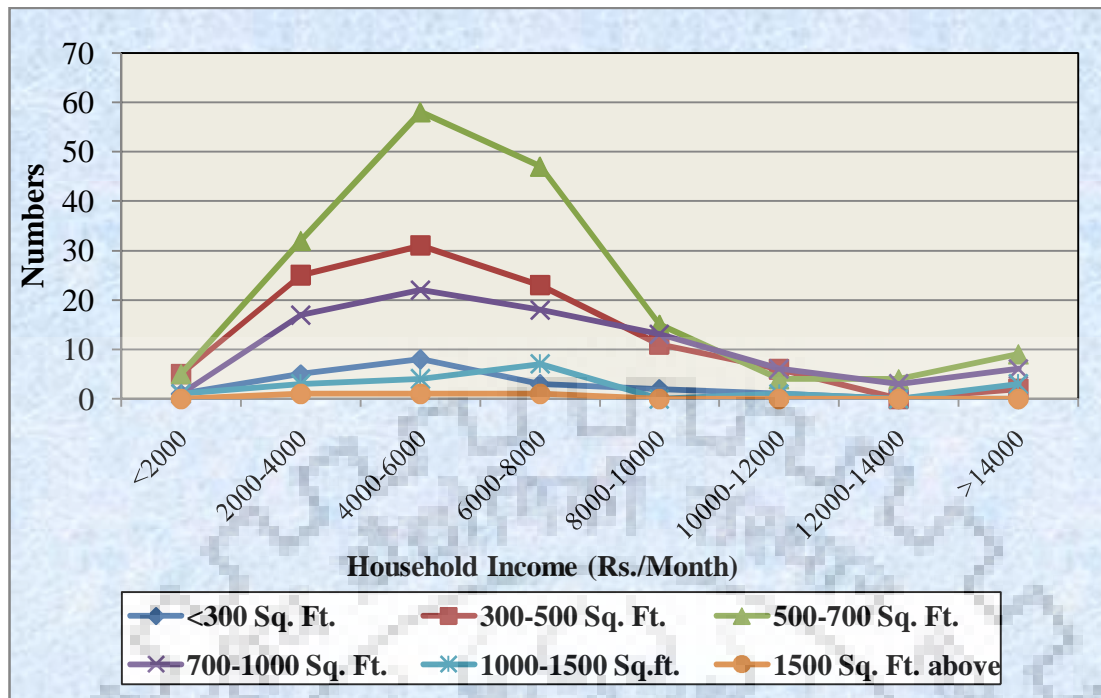


Fig. 4.21: Built up area in sq.ft.

4.2.4 Floor/Storey of the house

The conventional slum settlements in India are fragile and exposed to nature's fury because they are largely constructed with mud walls, dirt or concrete floors, and recycled tin rooftops. Urban slums are settlements, neighborhoods, or city regions that cannot provide the basic living conditions necessary for its inhabitants, or slum dwellers, to live in a safe and healthy environment. Slums cannot provide durable housing of a permanent nature that protects against extreme climate conditions. And also don't provide sufficient living space. The number of floors present in a dwelling is an indicator of type of material used by the slum dweller. Hence, information related to number of floors present in a living unit was collected and the distribution of people with respect to number of floors and their household income is presented in this section.

Table 4.22 shows information pertaining to the floors/storey of the house of slum dweller households in Nagpur City. It was evident from the information that 95.80% slum dwellers have single floor/storey (G) house, whereas 2.97% slum dweller households have double floor/storey house (G+1). In addition to this 1.23% slum dweller households have house with additional two floors with ground floor (G+2). It was evident from the study results that significantly ($P < 0.05$) high percentage of slum dweller households have houses having ground floor only.

Table 4.22: Floor/Storey of the house

SN	Household Income Rs/month	Floor/Storey						Total	
		G		G+1		G+2			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	13	3.35	-	-	-	-	13	3.21
2	2000-4000	79	20.36	2	16.67	2	40.00	83	20.49
3	4000-6000	121	31.19	1	8.33	2	40.00	124	30.62
4	6000-8000	95	24.48	4	33.33	-	-	99	24.44
5	8000-10000	38	9.79	3	25.00	-	-	41	10.12
6	10000-12000	17	4.38	1	8.33	-	-	18	4.44
7	12000-14000	7	1.80	-	-	-	-	7	1.73
8	>14000	18	4.64	1	8.33	1	20.00	20	4.94
	Total	388 (95.80)	100.00	12 (2.97)	100.00	5 (1.23)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.

Note: Figure in parenthesis denotes 'row' percentage.

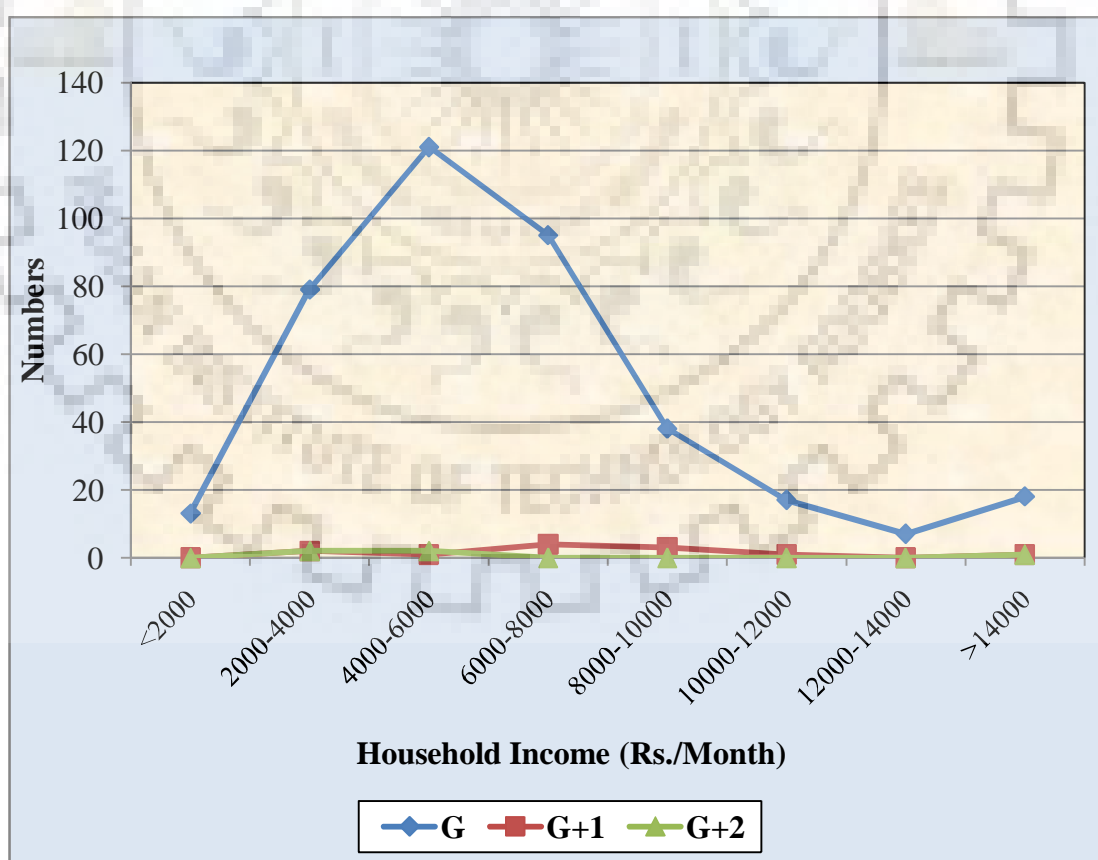


Fig. 4.22: Floor/Storey of the house

4.2.5 Number of Rooms in the house

In Indian slums, 6-7 members of a family live in one room, the size in which a rich person's child sleeps. The lack of space often prevents the slum dwellers to have more number of rooms. Different rooms in a house are necessary as these rooms impart a sense of privacy to the inhabitant. In view of the importance of number of rooms in a house data was collected from the slum dwellers to know this aspect.

Table 4.23 provides information regarding number of rooms available in the house of slum dweller households in Nagpur City. It was apparent from the information that 61.72% slum dweller households have two rooms in their house, whereas 20.49% slum dweller households have three rooms in their house. Furthermore percentage of slum dweller households having one, four and more than four rooms in their house was 10.37%, 5.20% and 2.22% respectively.

Table 4.23: Number of Rooms in the house

SN	Household Income Rs/month	Number of Rooms										Total	
		One		Two		Three		Four		>than Four			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	4	9.52	5	2.00	3	3.61	1	4.76	-	-	13	3.21
2	2000-4000	12	28.57	49	19.60	18	21.69	4	19.05	-	-	83	20.49
3	4000-6000	7	16.67	88	35.20	25	30.12	3	14.29	1	11.11	124	30.62
4	6000-8000	11	26.19	64	25.60	15	18.07	6	28.57	3	33.33	99	24.44
5	8000-10000	5	11.90	23	9.20	9	10.84	2	9.52	2	22.22	41	10.12
6	10000-12000	-	-	10	4.00	5	6.02	2	9.52	1	11.11	18	4.44
7	12000-14000	1	2.38	2	0.80	4	4.82	-	-	-	-	7	1.73
8	>14000	2	4.76	9	3.60	4	4.82	3	14.29	2	22.22	20	4.94
	Total	42 (10.37)	100.00	250 (61.72)	100.00	83 (20.49)	100.00	21 (5.20)	100.00	9 (2.22)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

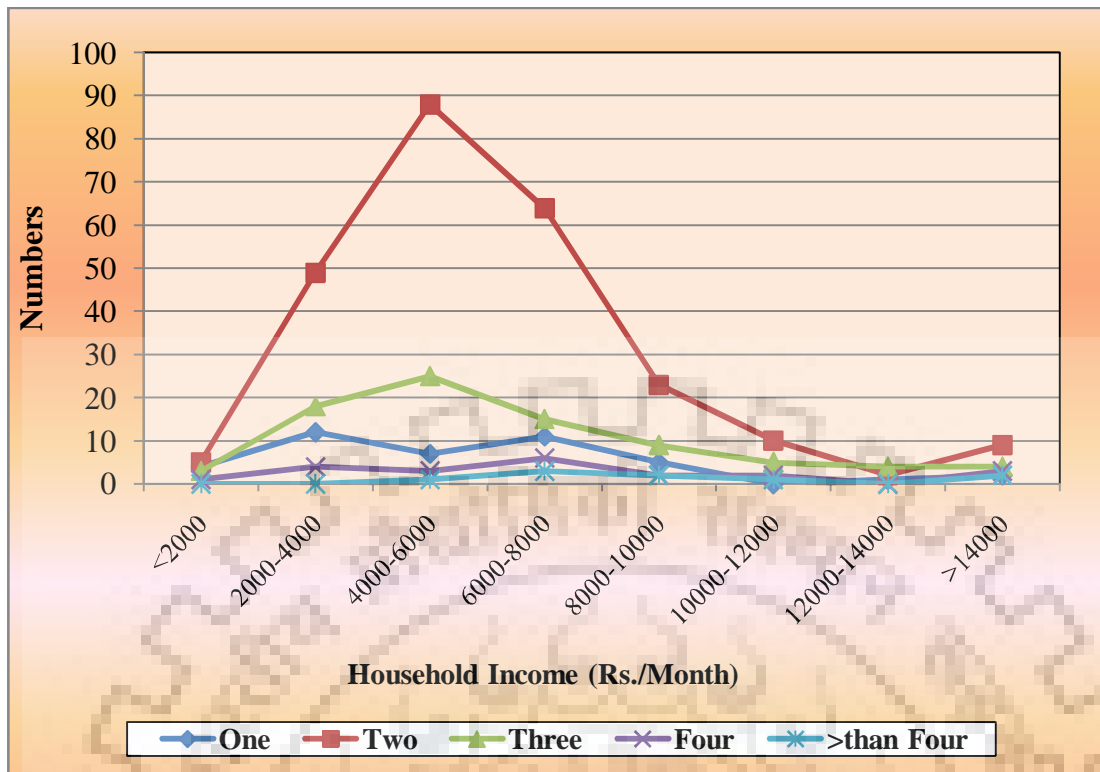


Fig. 4.23: Number of Rooms in the house

4.2.6 Materials of Walls of the house

The slum houses are largely constructed with mud walls, dirt or concrete floors, and recycled tin rooftops. Often many of the slum dwellers are rag pickers and scrap sellers they utilize anything that can be erected as a wall for example a tin sheet, plastic sheet, bamboo mats which can be coated with mud and cow dung etc. The durability of house primarily depends on the material used for construction of house. Since, affordability has strong relationship with cost materials used by the slum dwellers to construct their homes was assessed.

Table 4.24 shows results regarding material used for preparing walls of the house by slum dweller households in Nagpur City. Data showed that walls of house of 48.39% slum dweller households was prepared from cement and brick, whereas that of 36.30% slum dwellers, they were made up of mud and brick. In addition to this walls of houses of 14.57% slum dweller households and 0.74% slum dweller households were made up of mud and bamboo and mud only. It was apparent from the information that the walls of houses of majority of slum dweller households was prepared by cement and brick.

Table 4.24: Materials of Walls of the house

SN	Household Income Rs/month	Materials of Walls								Total	
		Mud		Mud +Bamboo		Mud + Brick		Cement + Brick			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	-	-	1	1.69	6	4.08	6	3.06	13	3.21
2	2000-4000	1	33.33	4	6.78	36	24.49	42	21.43	83	20.49
3	4000-6000	2	66.67	24	40.68	45	30.61	53	27.04	124	30.62
4	6000-8000	-	-	19	32.20	31	21.09	49	25.00	99	24.44
5	8000-10000	-	-	4	6.78	16	10.88	21	10.71	41	10.12
6	10000-12000	-	-	2	3.39	4	2.72	12	6.12	18	4.44
7	12000-14000	-	-	2	3.39	1	0.68	4	2.04	7	1.73
8	>14000	-	-	3	5.08	8	5.44	9	4.59	20	4.94
	Total	3 (0.74)	100.00	59 (14.57)	100.00	147 (36.30)	100.00	196 (48.39)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.**Note:** Figure in parenthesis denotes 'row' percentage

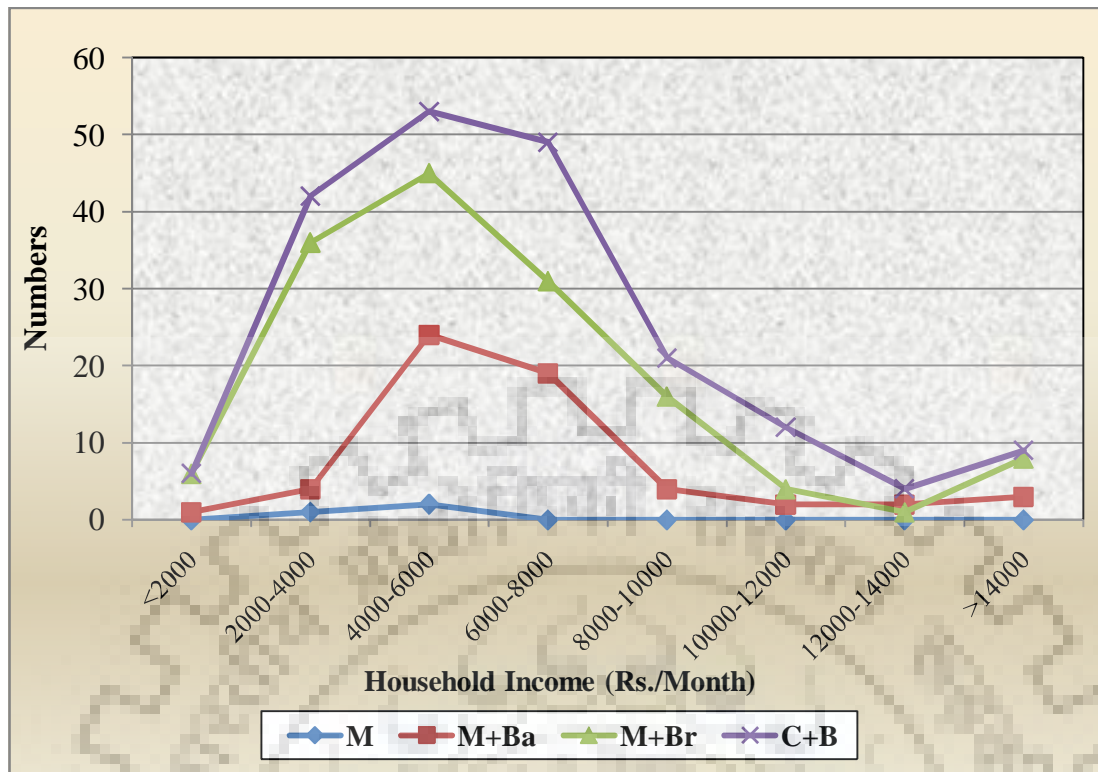


Fig. 4.24: Materials of Walls of the house

4.2.7 Materials of Roof of the house

The houses in slums usually are devoid of proper roof and instead they are covered by tins, cardboard, wooden plates, plastic sheets etc. This type of roofing does not protect the interior from the extreme climates, resulting in the roof often caving in or leaking during monsoon or extreme climates. The height of the houses is very low as a result it is difficult for most of the slum houses to have even a single window and these houses are packed so close together that there is no way for sunlight to enter. Thus, in order to know the type of material used to construct the roof was determined in this study.

Table 4.25 provides information pertaining to the material used for preparing the roof of house by slum dweller households in Nagpur City. It was apparent from the information that roof of the house of 40.99% slum dweller households was made up of AC sheets, whereas roof of the house of 29.38% slum dweller households was made up of tiles. Moreover, the percentage of slum dweller households having roof of their houses made up of thatch and slab were 24.69% and 4.94% respectively. It was apparent from the study results that the roof of houses of majority of slum dweller was made up of AC sheets.

Table 4.25: Materials of Roof of the house

S N	Household Income Rs/month	Materials of Roof								Total	
		Thatch		Tiles		AC Sheets		Slab			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	2	2.00	2	1.68	9	5.42	-	-	13	3.21
2	2000-4000	21	21.00	20	16.81	38	22.89	4	20.00	83	20.49
3	4000-6000	30	30.00	39	32.77	55	33.13	-	-	124	30.62
4	6000-8000	25	25.00	28	23.53	39	23.49	7	35.00	99	24.44
5	8000-10000	8	8.00	19	15.97	11	6.63	3	15.00	41	10.12
6	10000-12000	6	6.00	4	3.36	6	3.61	2	10.00	18	4.44
7	12000-14000	2	2.00	2	1.68	2	1.20	1	5.00	7	1.73
8	>14000	6	6.00	5	4.20	6	3.61	3	15.00	20	4.94
	Total	100 (24.69)	100.00	119 (29.38)	100.00	166 (40.99)	100.00	20 (4.94)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

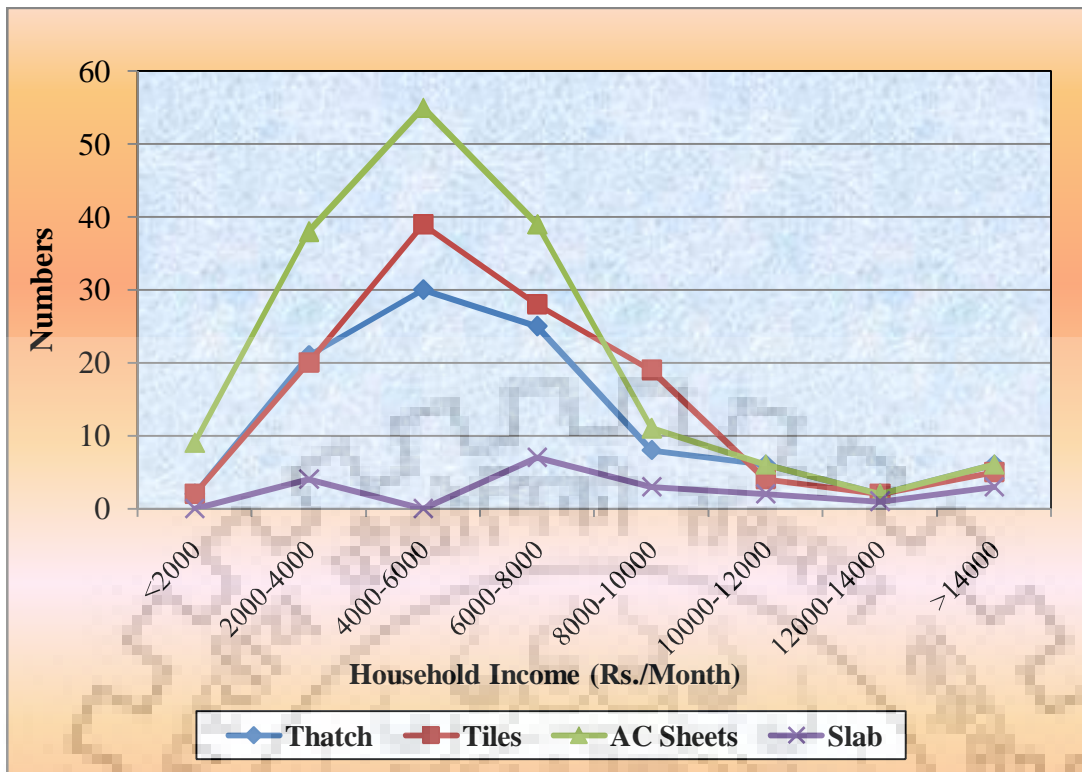


Fig. 4.25: Materials of Roof of the house

4.2.8 Doors of the house

Most of the houses in the slum area have doors that are made of tin or plastic sheets. Most of the houses do not have doors they just have some arrangements made to fulfil their requirement of the doors. Furthermore many just use a curtain on the door. The door provides security to the inhabitant and hence is a vital part of the household. Hence, data was collected regarding presence/nature of doors and is presented in relation to monthly household income of the inhabitants.

Table 4.26 provides information pertaining to the type of doors in the house of slum dweller households in Nagpur City. It was apparent from the information that 59.26% slum dweller households have small doors to their houses, whereas 37.04% slum dweller households have large doors to their houses. However 3.70% slum dweller households have no doors to their houses. Hence it was evident from the study results that majority of slum dweller households have small doors to their houses.

Table 4.26: Doors of the house

SN	Household Income Rs/month	Doors						Total	
		Large		Small		No Door		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	7	4.67	6	2.50	-	-	13	3.21
2	2000-4000	34	22.67	48	20.00	1	6.67	83	20.49
3	4000-6000	50	33.33	72	30.00	2	13.33	124	30.62
4	6000-8000	31	20.67	62	25.83	6	40.00	99	24.44
5	8000-10000	9	6.00	27	11.25	5	33.33	41	10.12
6	10000-12000	8	5.33	10	4.17	-	-	18	4.44
7	12000-14000	2	1.33	5	2.08	-	-	7	1.73
8	>14000	9	6.00	10	4.17	1	6.67	20	4.94
	Total	150 (37.04)	100.00	240 (59.26)	100.00	15 (3.70)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

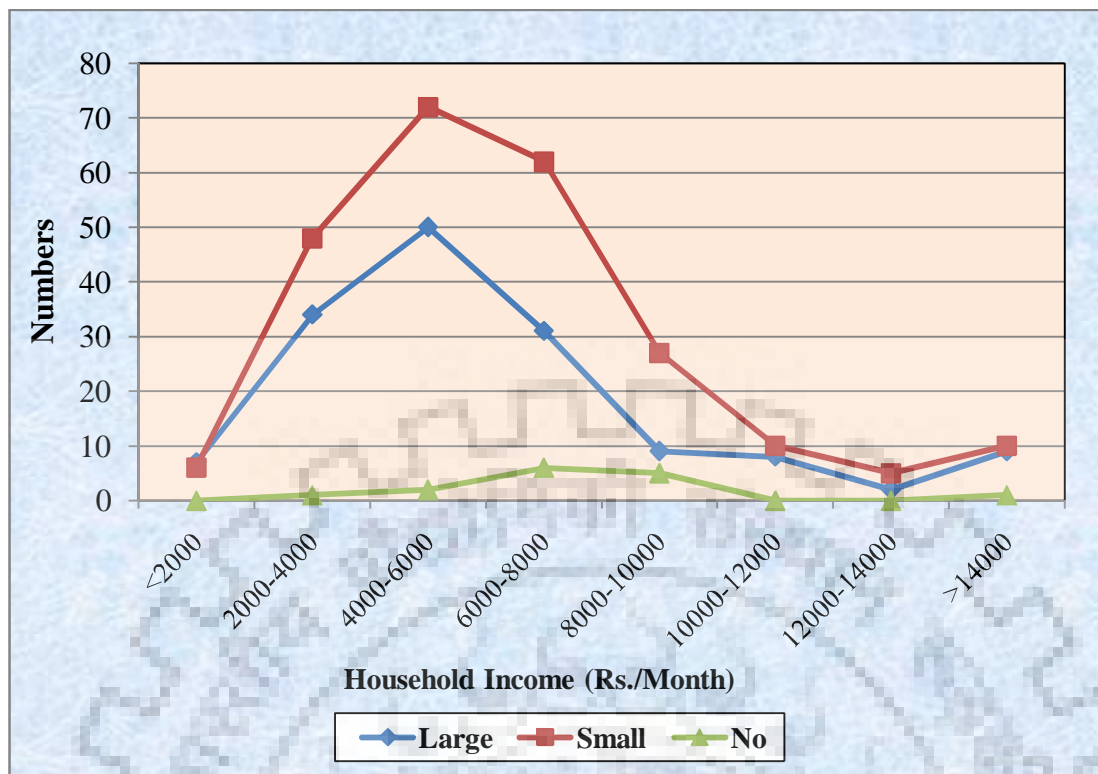


Fig. 4.26: Doors of the house

4.2.9 Windows of the house

Generally the height of the house is very low as a result it is difficult for most of the slum houses to have even a single window and these houses are packed so close together that there is no way for sunlight to enter the houses. The houses are very small and the slum dwellers do not have enough space to install a separate kitchen, so in most of the houses, the members of a house cook, eat and live in the same room. The harmful gases that are emitted from the ‘chulha’ (traditional oven) while cooking leads to many respiratory problems, especially in the children. In view of importance of the windows in household the presence/nature of the windows was determined and is presented in relation to monthly household income of the slum dwellers.

Table 4.27 provides information pertaining to the type of windows in the house of slum dweller households in Nagpur City. It was apparent from the information that 78.27% slum dweller households have small windows to their houses, whereas 13.33% slum dweller households have large windows to their houses. However 8.40% slum dweller households have no windows to their houses. Hence it was evident from the study results that significantly ($P < 0.05$) high percentage of slum dweller households have small windows to their houses.

Table 4.27: Windows of the house

SN	Household Income Rs/month	Windows						Total	
		Large		Small		No Window		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	3	5.56	9	2.84	1	2.94	13	3.21
2	2000-4000	9	16.67	65	20.50	9	26.47	83	20.49
3	4000-6000	14	25.93	103	32.49	7	20.59	124	30.62
4	6000-8000	17	31.48	71	22.40	11	32.35	99	24.44
5	8000-10000	3	5.56	36	11.36	2	5.88	41	10.12
6	10000-12000	2	3.70	15	4.73	1	2.94	18	4.44
7	12000-14000	1	1.85	5	1.58	1	2.94	7	1.73
8	>14000	5	9.26	13	4.10	2	5.88	20	4.94
	Total	54 (13.33)	100.00	317 (78.27)	100.00	34 (8.40)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

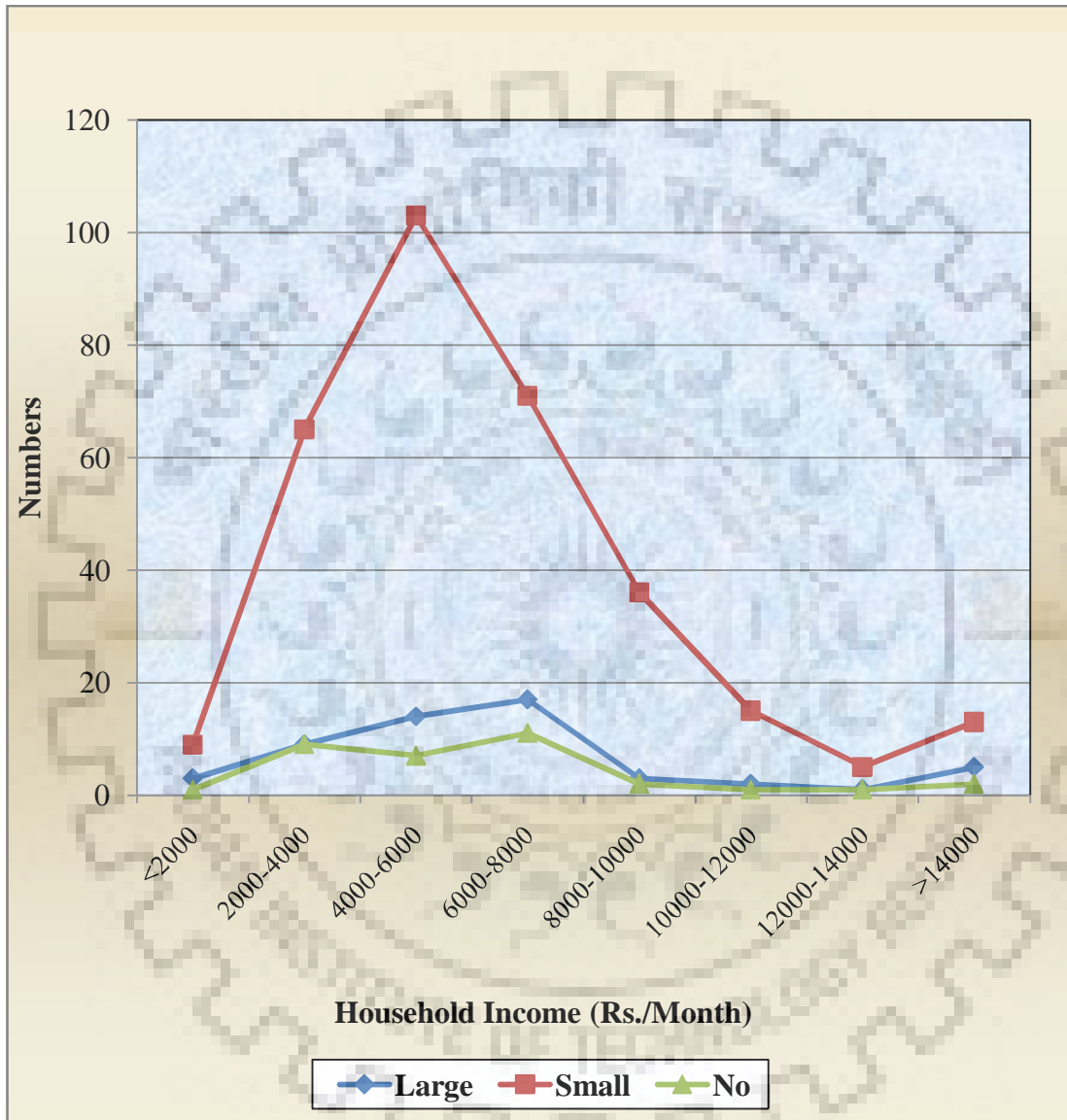


Fig. 4.27: Windows of the house

4.3 Economical Aspects

Like all other human beings economical assistance is vital for slum dwellers as well. Since, the major aim of the study is to delineate an affordable housing related policy for the weaker sections or people living in the slums, it was necessary to determine the state-of-art pertaining to different variables that are directly related to economical requirements. In order to know the following aspects associated to economic condition of slum dwellers, the study was carried out. These are as follows

- Expenditure on
 - Food,
 - Clothes,
 - Education,
 - Health,
 - Recreation,
 - Electricity,
 - Water,
 - Transportation,
 - Domestic Water (Drinking),
 - Telephone/Mobile,
 - Cooking and
 - Other/Miscellaneous Items,
- Savings in LIC and Banks,
- Willingness to pay for Housing Provisions,
- Household Gadgets and Vehicles, Types of Fuel Consumed)

4.3.1 Expenditure on Food

India is home to 1.1 billion people. Out of these, an estimated 340 million people reside in urban areas (Office of Registrar General and Census Commissioner of India 2006). Though urban areas are identified as centers for economic development, wealth co-exists with deprivation. Nearly one-third of India's urban population i.e., 100 million out of 340 million, live in extreme poverty (Ministry of

Health and Family Welfare 2000), in slums and squatters. One in every two (54.2%) poor urban children under 5 years of age are stunted, an indicator of chronic under nutrition and 38.5% of poor urban women of reproductive age suffer from acute under nutrition, i.e., body mass index less than 18.5 kg/m² (Urban Health Resource Center 2008). A household is considered insecure with respect to food when it faces problems such as limited or uncertain availability of nutritionally adequate and safe food or limited or uncertain ability to acquire food in socially acceptable ways due to lack of economic resources. Thus, the concept of household food insecurity includes not only poor nutrition and hunger but also householders' perceptions of problems with the quantity and quality of food available, uncertainty of food supply and experiences of going hungry. Hence, the expenditure by slum dwellers in meeting their food related requirements was studied.

Table 4.28 illustrates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on food per month. It was apparent from the information that 33.09% slum dweller household spent Rs. 500-1000 on food, whereas 29.87% slum dweller household spent Rs. 1500-2000 on food per month. Moreover, 13.58% slum dweller household spent Rs. 2500-3000 on food and 13.09% slum dweller household spent Rs. 1000-1500 on food per month. Furthermore, expenditure on food of 5.68% slum dweller household was more than Rs. 3000 and percentage of slum dweller household incurred Rs.2000-2500 and less than Rs.500 on food per month was 3.21% and 1.48% respectively. Hence it was apparent from the study results that majority of slum dweller household spent Rs.500-1000 on food.

Table 4.28: Expenditure on Food

SN	Household Income Rs/month	Expenditure on Food (in Rs/month)															
		<500		500-1000		1000-1500		1500-2000		2000-2500		2500-3000		>3000		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	0	0.00	9	6.72	2	3.77	0	0.00	0	0.00	1	1.82	0	0.00	12	2.96
2	2000-4000	1	16.67	35	26.12	12	22.64	21	17.36	2	15.38	11	20.00	1	4.35	83	20.49
3	4000-6000	3	50.00	44	32.84	12	22.64	43	35.54	3	23.08	15	27.27	4	17.39	124	30.62
4	6000-8000	2	33.33	31	23.13	14	26.42	30	24.79	3	23.08	9	16.36	10	43.48	99	24.44
5	8000-10000	0	0.00	8	5.97	9	16.98	12	9.92	1	7.69	9	16.36	2	8.70	41	10.12
6	10000-12000	0	0.00	4	2.99	1	1.89	7	5.79	2	15.38	3	5.45	1	4.35	18	4.44
7	12000-14000	0	0.00	0	0.00	0	0.00	2	1.65	1	7.69	2	3.64	2	8.70	7	1.73
8	>14000	0	0.00	3	2.24	3	5.66	5	4.13	1	7.69	5	9.09	3	13.04	20	4.94
	Total	6 (1.48)	100.00	134 (33.09)	100.00	53 (13.09)	100.00	121 (29.87)	100.00	13 (3.21)	100.00	55 (13.58)	100.00	23 (5.68)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

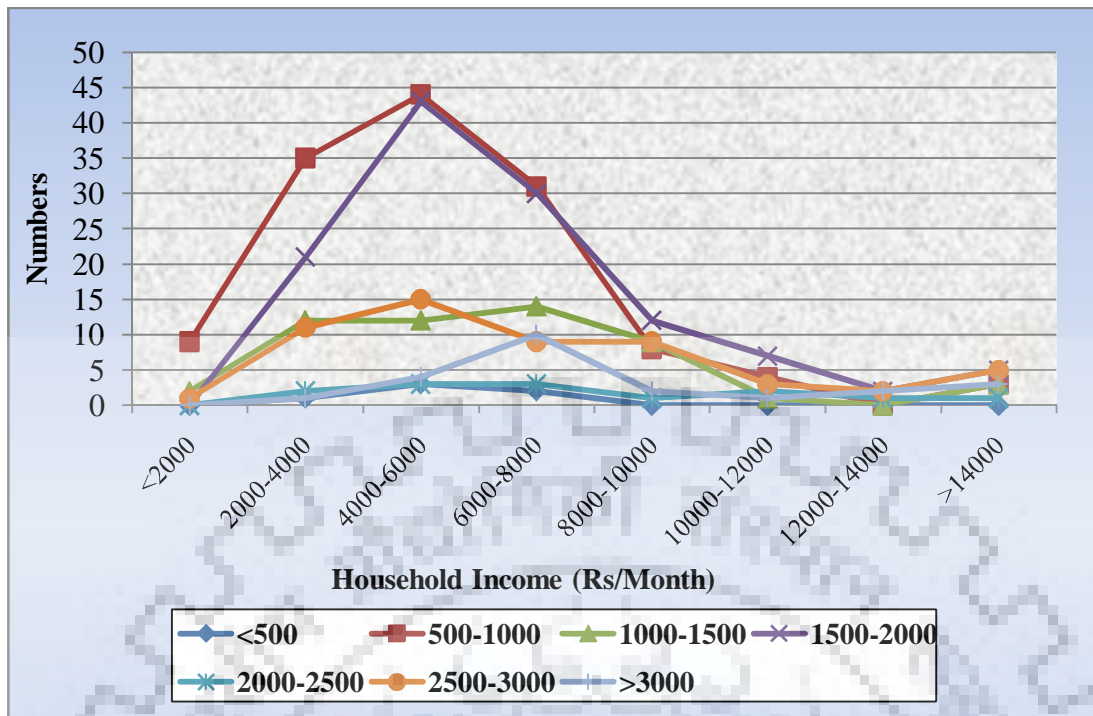


Fig. 4.28: Expenditure on Food

4.3.2 Expenditure on Clothes

An average slum dweller earns about Rs 80-200 a day and can't afford a proper diet for his family. Besides they can't even afford new clothes for family members even during festivals. Expenditure on food and living take a lion's share of their expenditure leaving little money for clothing, treatment etc. Purchasing power of households as found reflected in monthly per capita expenditure (MPCE), has shown a slower rise compared to the country as a whole, whether it is rural areas or urban areas. Since, clothing helps a person to display confidence and to become part of many affluent areas of the city it was important to determine the expenditure done by slum dwellers on clothes. The results are presented in relation their household income.

Table 4.29 elucidates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on cloths per month. It was apparent from the information that 67.41% slum dweller household spent less than Rs.500 on cloths, whereas 14.07% slum dweller household spent Rs.200-400 on cloths per month. Moreover, 11.60% slum dweller household spent Rs.400-600 on cloths and 5.43% slum dweller household spent Rs.600-800 on cloths per month. Furthermore, expenditure on cloths of 1.48% slum dweller household was Rs.800-1000 per month. Hence it was apparent from the study results that majority of slum dweller household spent less than Rs.200 on cloths.

Table 4.29: Expenditure on Clothes

SN	Household Income Rs/month	Expenditure on Clothes(in Rs/month)													
		<200		200-400		400-600		600-800		800-1000		>1000		TOTAL	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	9	3.30	3	5.26	0	0.00	1	4.55	0	0.00	0	0.00	13	3.21
2	2000-4000	60	21.98	13	22.81	5	10.64	4	18.18	1	16.67	0	0.00	83	20.49
3	4000-6000	78	28.57	19	33.33	16	34.04	11	50.00	0	0.00	0	0.00	124	30.62
4	6000-8000	68	24.91	14	24.56	11	23.40	4	18.18	2	33.33	0	0.00	99	24.44
5	8000-10000	31	11.36	4	7.02	5	10.64	1	4.55	0	0.00	0	0.00	41	10.12
6	10000-12000	10	3.66	1	1.75	4	8.51	1	4.55	2	33.33	0	0.00	18	4.44
7	12000-14000	4	1.47	2	3.51	1	2.13	0	0.00	0	0.00	0	0.00	7	1.73
8	>14000	13	4.76	1	1.75	5	10.64	0	0.00	1	16.67	0	0.00	20	4.94
	Total	273 (67.41)	100.00	57 (14.07)	100.00	47 (11.60)	100.00	22 (5.43)	100.00	6 (1.48)	100.00	0	0.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

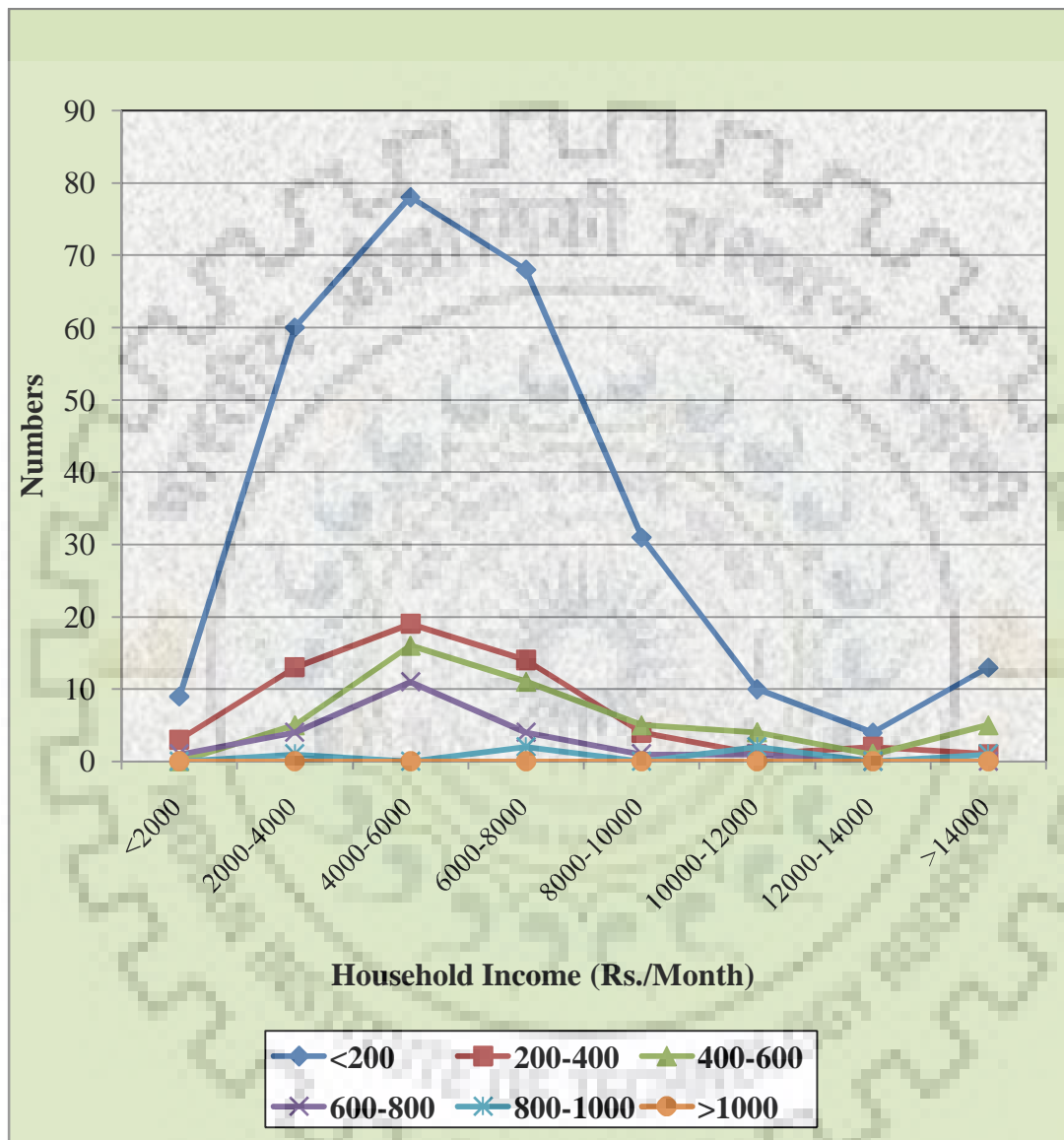


Fig. 4.29: Expenditure on Clothes

4.3.3 Expenditure on Education by the slum dwellers

Education for All is still an uncompleted task, since approximately 17% of children aged 5 to 14 are still out of the school, and 36% of the total population of India were illiterate in 2004/05 (Government of India, 2006)². This overall picture of education in India implies that educational opportunities and attainment for the urban deprived are much lower than for the affluent sections of the population. Although the population of slums accounted for 24.1% of urban cities with a population above one million in India, the limited number of previous studies of education in slum areas in India is further confined mainly to analyses based on school surveys in slum areas or slum children's survey which focus on a few slums. There is huge amount of disparity amongst children living in slums and those living in posh areas of the city with respect to education. Since, education helps people in living better quality life's the expenditure done on it determines attitude of people towards education. In view of this information related to expenditure on education was collected and distribution of slum dwellers with respect their household income was carried out and the results are as follows.

Table 4.30 demonstrates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on education per month. It was apparent from the information that 51.60% slum dweller household spent less than Rs.200 on education, whereas 17.53% slum dweller household spent Rs.200-400 on education per month. Moreover, 17.53% slum dweller household spent Rs.200-400 on education and 15.06% slum dweller household spent Rs.400-600 on education per month. Furthermore, expenditure on education of 8.15% slum dweller household was 800-1000 and percentage of slum dweller household incurred Rs.600-800 and more than Rs.1000 on education per month was 6.67% and 0.99% respectively. Hence it was apparent from the study results that majority of slum dweller household spent less than Rs.200 on education.

Table 4.30: Expenditure on Education by the slum dwellers

S N	Household Income Rs/month	Expenditure on Education(in Rs/month)													
		<200		200-400		400-600		600-800		800-1000		>1000		TOTAL	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	7	3.35	2	2.82	2	3.28	1	3.70	1	3.03	0	0	13	3.21
2	2000-4000	46	22.01	17	23.94	11	18.03	7	25.93	1	3.03	1	25.00	83	20.49
3	4000-6000	65	31.10	21	29.58	20	32.79	7	25.93	10	30.30	1	25.00	124	30.62
4	6000-8000	47	22.49	17	23.94	15	24.59	9	33.33	9	27.27	2	50.00	99	24.44
5	8000-10000	24	11.48	5	7.04	7	11.48	0	0.00	5	15.15	0	0	41	10.12
6	10000-12000	8	3.83	5	7.04	2	3.28	2	7.41	1	3.03	0	0	18	4.44
7	12000-14000	4	1.91	1	1.41	1	1.64	0	0.00	1	3.03	0	0	7	1.73
8	>14000	8	3.83	3	4.23	3	4.92	1	3.70	5	15.15	0	0	20	4.94
	Total	209 (51.60)	100.00	71 (17.53)	100.00	61 (15.06)	100.00	27 (6.67)	100.00	33 (8.15)	100.00	4 (0.99)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

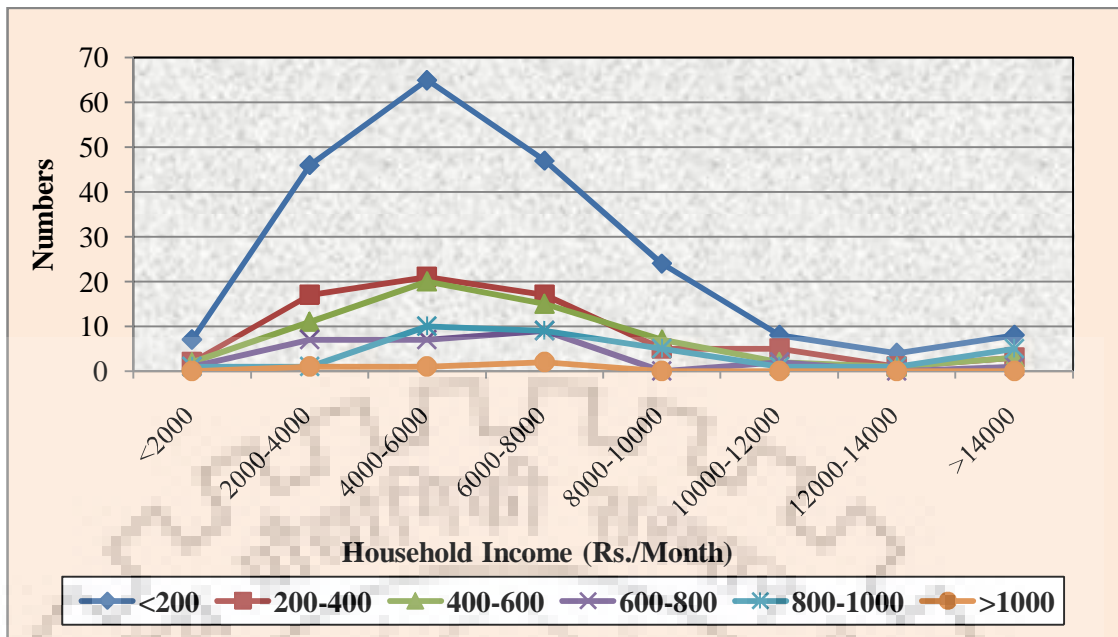


Fig. 4.30: Expenditure on Education by the slum dwellers

4.3.4 Expenditure on Health

A rich person may identify a relatively minor indisposition as ailment and go for treatment, while the poor might perceive an ailment only when it is work-disabling in nature. Their subsequent choice of service providers is often inconformity with their respective financial status. The resultant burden of illness therefore is inherently asymmetrical as far as its nature and origins are concerned. Since majority of slum dwellers are daily wagers, they cannot afford to remain ill. This requires that they keep provision for meeting their health related expenditure. This not only affects their day to day activities but also acts as a regression in view of their plans for availing decent housing. Thus, the expenditure of the slum dwellers with respect to their health case was assessed and the results are presented in relation to their household income.

Table 4.31 demonstrates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on health per month. It was apparent from the information that 37.28% slum dweller household spent less than Rs.100 on health, whereas 34.07% slum dweller household spent Rs.100-200 on health per month. Moreover, 11.35% slum dweller household spent Rs.400-600 on health and 10.37% slum dweller household spent Rs.200-400 on health per month. Furthermore, 5.93% slum dweller household were not incurred any expenditure on health and percentage of slum dweller household incurred Rs.600-800 and more than Rs.1000 on health per month was 0.25% each. Hence it was apparent from the study results that majority of slum dweller household spent less than Rs.100 on health.

Table 4.31: Expenditure on Health

SN	Household Income Rs/month	Expenditure on Health(in Rs/month)																	
		<100		100-200		200-400		400-600		600-800		800-1000		>1000		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	10	6.62	1	0.72	0	0.00	1	2.17	0	0.00	0	0.00	0	0.00	1	4.17	13	3.21
2	2000-4000	19	12.58	41	29.71	10	23.81	9	19.57	1	100.00	0	0.00	0	0.00	3	12.50	83	20.49
3	4000-6000	49	32.45	40	28.99	10	23.81	12	26.09	0	0.00	0	0.00	0	0.00	13	54.17	124	30.62
4	6000-8000	45	29.80	25	18.12	11	26.19	15	32.61	0	0.00	0	0.00	0	0.00	3	12.50	99	24.44
5	8000-10000	14	9.27	12	8.70	8	19.05	5	10.87	0	0.00	1	50.00	0	0.00	1	4.17	41	10.12
6	10000-12000	4	2.65	7	5.07	3	7.14	1	2.17	0	0.00	0	0.00	1	100.00	2	8.33	18	4.44
7	12000-14000	2	1.32	4	2.90	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	4.17	7	1.73
8	>14000	8	5.30	8	5.80	0	0.00	3	6.52	0	0.00	1	50.00	0	0.00	0	0.00	20	4.94
	Total	151 (37.28)	100.00	138 (34.07)	100.00	42 (10.37)	100.00	46 (11.35)	100.00	1 (0.25)	100.00	2 (0.50)	100.00	1 (0.25)	100.00	24 (5.93)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.**Note:** Figure in parenthesis denotes 'row' percentage.

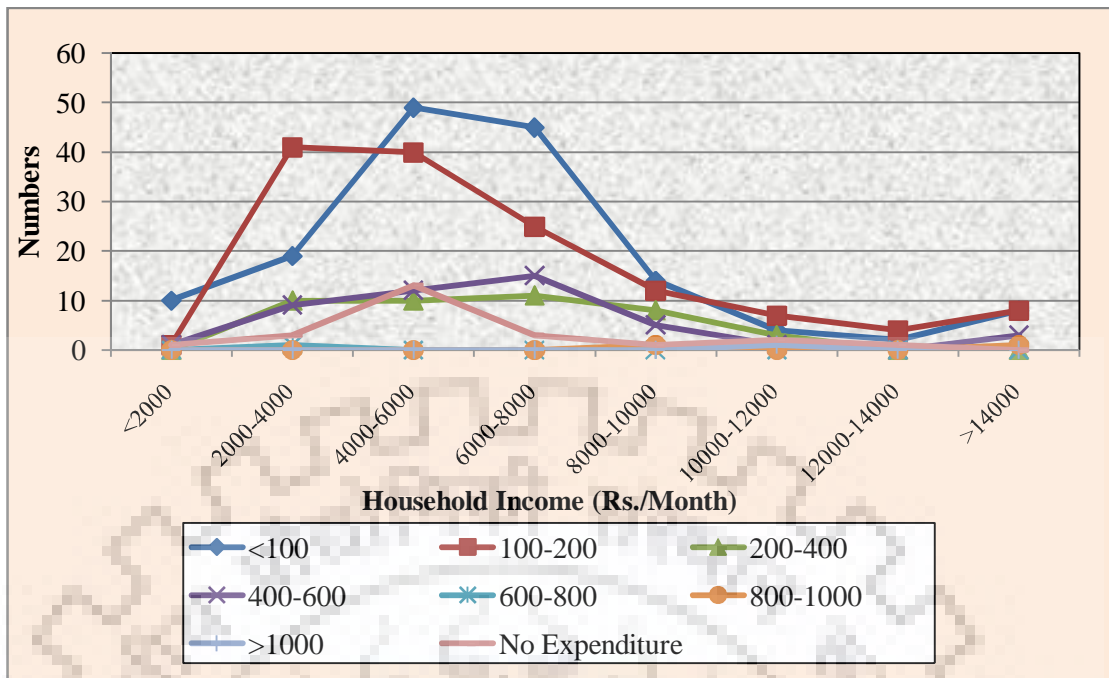


Fig. 4.31: Expenditure on Health

4.3.5 Expenditure on Recreation

Many current day health problems are associated with lifestyle changes and people living in slums are no exceptions. Also, because of rising urban population, the number of slum dwellers is rising. This rise in population corresponds to the lack of availability of means for recreation, which are necessary to lower stress and to lead good quality life. Since, expenditure on recreation (movies, DVD/VCR, Films, Sports clubs, etc.) is a good indicator of overall societal culture data pertaining to it was collected, which is presented in relation to household income of the slum dwellers.

Table 4.32 illustrates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on recreation per month. It was apparent from the information that 60.99% slum dweller household spent Rs.200-400 on recreation, whereas 26.91% slum dweller household spent less than Rs.100 on recreation per month. Moreover, 8.64% slum dweller household did not spent on recreation and 3.46% slum dweller household spent more than Rs.400 on recreation per month. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household spent Rs.200-400 per month on recreation.

Table 4.32: Expenditure on Recreation

SN	Household Income Rs/month	Expenditure on Recreation(in Rs/month)									
		<200		200-400		>400		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	2	1.83	9	3.64	0	0.00	2	5.71	13	3.21
2	2000-4000	33	30.28	38	15.38	1	7.14	11	31.43	83	20.49
3	4000-6000	32	29.36	74	29.96	5	35.71	13	37.14	124	30.62
4	6000-8000	20	18.35	71	28.74	3	21.43	5	14.29	99	24.44
5	8000-10000	8	7.34	31	12.55	1	7.14	1	2.86	41	10.12
6	10000-12000	5	4.59	9	3.64	2	14.29	2	5.71	18	4.44
7	12000-14000	3	2.75	4	1.62	0	0.00	0	0.00	7	1.73
8	>14000	6	5.50	11	4.45	2	14.29	1	2.86	20	4.94
	Total	109 (26.91)	100.00	247 (60.99)	100.00	14 (3.46)	100.00	35 (8.64)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

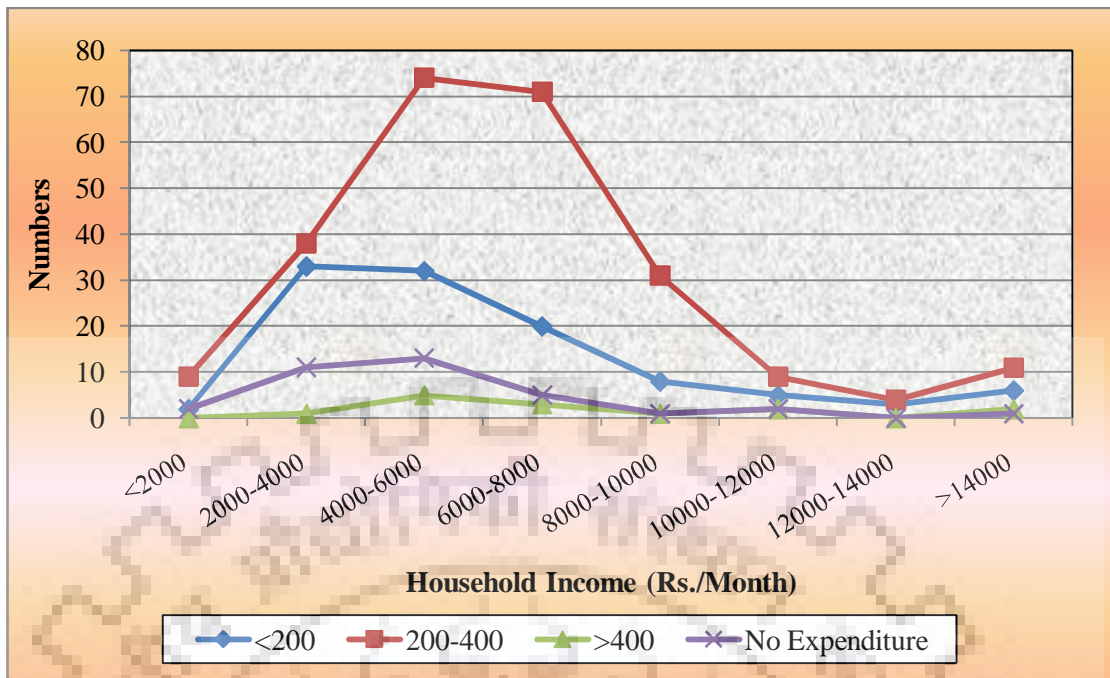


Fig. 4.32: Expenditure on Recreation

4.3.6 Expenditure on Electricity

Electricity is the most used modern energy source used by the Slum dwellers. Though many households have acquired their electricity connection from the Electricity Company and thus have electric meters, still a substantial number of households do not enjoy a regular electricity connection. Often, these people have to depend on private electricity suppliers (those using Diesel Generators). Besides this recurring expenditure has direct influence on the economic condition of slum dwellers, which in turn affects their ability to afford a decent house. Hence, data pertaining to expenditure on electricity by the slum dwellers was collected and is presented in relation to their household income.

Table 4.33 elucidates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on electricity per month. It was apparent from the information that 61.48% slum dweller household spent Rs.200-400 per month on electricity, whereas 24.45% slum dweller household spent more than Rs.400 per month on electricity. Moreover, 10.12% slum dweller household incurred less than Rs.200 per month on electricity and 3.95% slum dweller household did not spent on electricity. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household spent Rs.200-400 per month on electricity.

Table 4.33: Expenditure on Electricity

SN	Household Income Rs/month	Expenditure on Electricity(in Rs/month)									
		<200		200-400		>400		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	2.44	7	2.81	4	4.04	1	6.25	13	3.21
2	2000-4000	9	21.95	61	24.50	10	10.10	3	18.75	83	20.49
3	4000-6000	8	19.51	84	33.73	27	27.27	5	31.25	124	30.62
4	6000-8000	14	34.15	55	22.09	28	28.28	2	12.50	99	24.44
5	8000-10000	5	12.20	21	8.43	12	12.12	3	18.75	41	10.12
6	10000-12000	2	4.88	10	4.02	6	6.06	0	0.00	18	4.44
7	12000-14000	2	4.88	2	0.80	2	2.02	1	6.25	7	1.73
8	>14000	0	0.00	9	3.61	10	10.10	1	6.25	20	4.94
	Total	41 (10.12)	100.00	249 (61.48)	100.00	99 (24.45)	100.00	16 (3.95)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

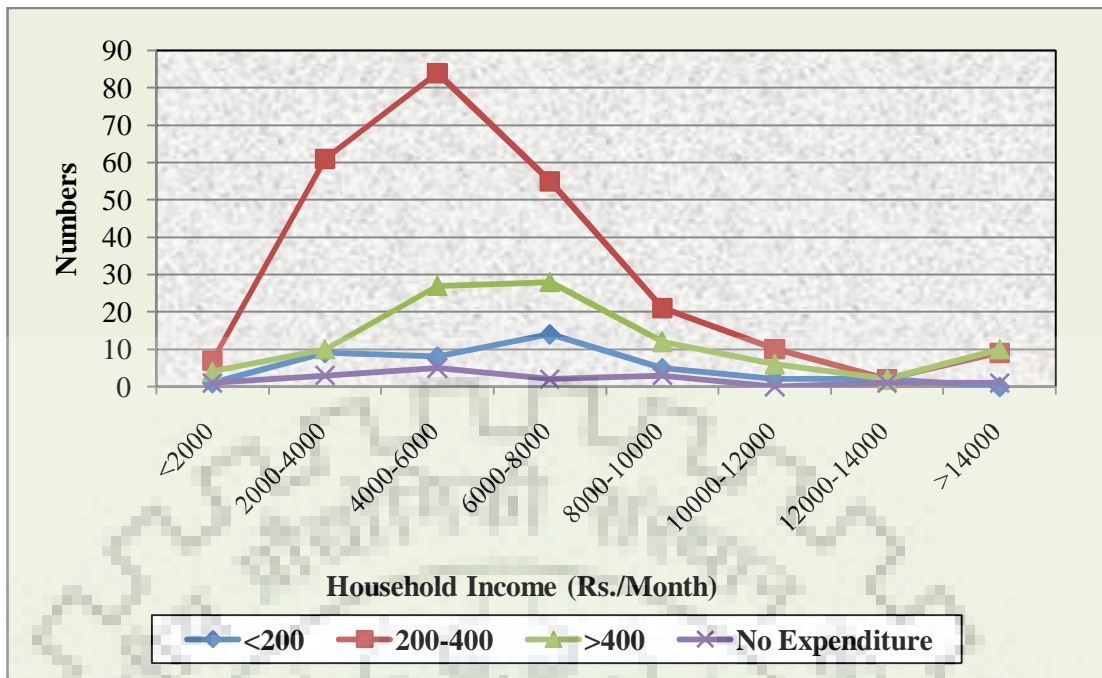


Fig. 4.33: Expenditure on Electricity

4.3.7 Expenditure on Water (required for cleaning, washing and hygiene)

It has been widely reported that the slums face a huge water scarcity as there are less water connections. Most of the people use tube wells or nearby water wells for their water needs. Many people have to spend a large amount of time in the collection of water apart from encouraging water mafias in the slums. Not all residents can afford a legal connection and are forced to depend on those who can incur such costs. Having incurred these high expenses, these ‘tap-owner’ residents then sell water at high prices to others in their neighborhood in order to recover their investment, pay the water bill, as well as make some cash for themselves. In view of this the slum dwellers expenditure on water was determined and their distribution with respect to their household income is presented here.

Table 4.34 illustrates results regarding expenditure incurred by slum dweller households in Nagpur City on water per month. It was apparent from the information that 83.21% slum dweller household spent Rs.200-400 per month on water, whereas 9.63% slum dweller household spent less than Rs.200 per month on water. Moreover, 2.72% slum dweller household incurred more than Rs.400 per month on water and 4.44% slum dweller household did not spent on water. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household spent Rs.200-400 per month on water.

Table 4.34: Expenditure on Water

SN	Household Income Rs/month	Expenditure on Water(in Rs/month)									
		<200		200-400		>400		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	2.56	9	2.67	2	18.18	1	5.56	13	3.21
2	2000-4000	6	15.38	74	21.96	0	0.00	3	16.67	83	20.49
3	4000-6000	7	17.95	105	31.16	6	54.55	6	33.33	124	30.62
4	6000-8000	15	38.46	78	23.15	3	27.27	3	16.67	99	24.44
5	8000-10000	2	5.13	37	10.98	0	0.00	2	11.11	41	10.12
6	10000-12000	2	5.13	16	4.75	0	0.00	0	0.00	18	4.44
7	12000-14000	1	2.56	5	1.48	0	0.00	1	5.56	7	1.73
8	>14000	5	12.82	13	3.86	0	0.00	2	11.11	20	4.94
	Total	39 (9.63)	100.00	337 (83.21)	100.00	11 (2.72)	100.00	18 (4.44)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

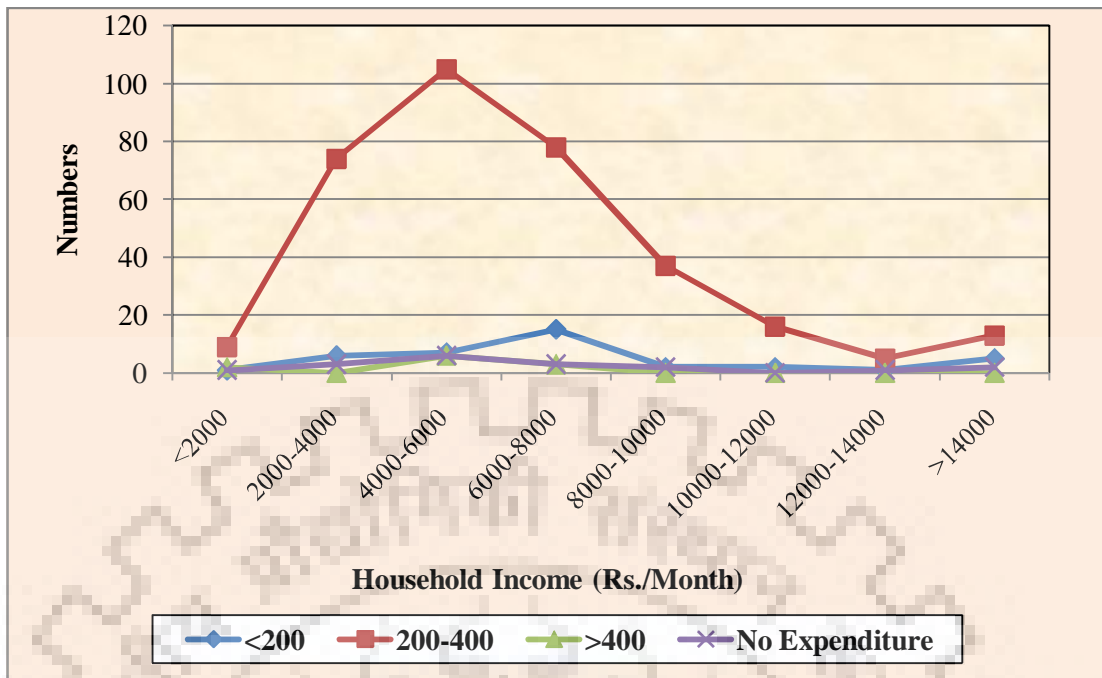


Fig. 4.34: Expenditure on Water

4.3.8 Expenditure on Domestic Water (Drinking)

Expenditure on domestic water is a recurring cost, which is variable with respect to many factors, notable amongst them being season, water scarcity, etc. Since there is a high cost associated with in-home water access it is expected that this expenditure may affect the economic status of the slum dwellers, hence, the data pertaining to this aspect was collected and the results are presented.

Table 4.35 illustrates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on domestic water per month. It was apparent from the information that 85.93% slum dweller household spent Rs.200-400 per month on domestic water, whereas 7.90% slum dweller household spent less than Rs.200 per month on domestic water. Moreover, 2.96% slum dweller household incurred more than Rs.400 per month on domestic water and 3.21% slum dweller household did not spent on domestic water. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household spent Rs.200-400 per month on domestic water.

Table 4.35: Expenditure on Domestic Water (Drinking)

SN	Household Income Rs/month	Expenditure on Domestic Water (in Rs/month)									
		<200		200-400		>400		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	3.13	11	3.16	0	0.00	1	7.69	13	3.21
2	2000-4000	5	15.63	73	20.98	2	16.67	3	23.08	83	20.49
3	4000-6000	9	28.13	109	31.32	3	25.00	3	23.08	124	30.62
4	6000-8000	10	31.25	83	23.85	5	41.67	1	7.69	99	24.44
5	8000-10000	3	9.38	35	10.06	1	8.33	2	15.38	41	10.12
6	10000-12000	0	0.00	18	5.17	0	0.00	0	0.00	18	4.44
7	12000-14000	1	3.13	5	1.44	0	0.00	1	7.69	7	1.73
8	>14000	3	9.38	14	4.02	1	8.33	2	15.38	20	4.94
	Total	32 (7.90)	100.00	348 (85.93)	100.00	12 (2.96)	100.00	13 (3.21)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

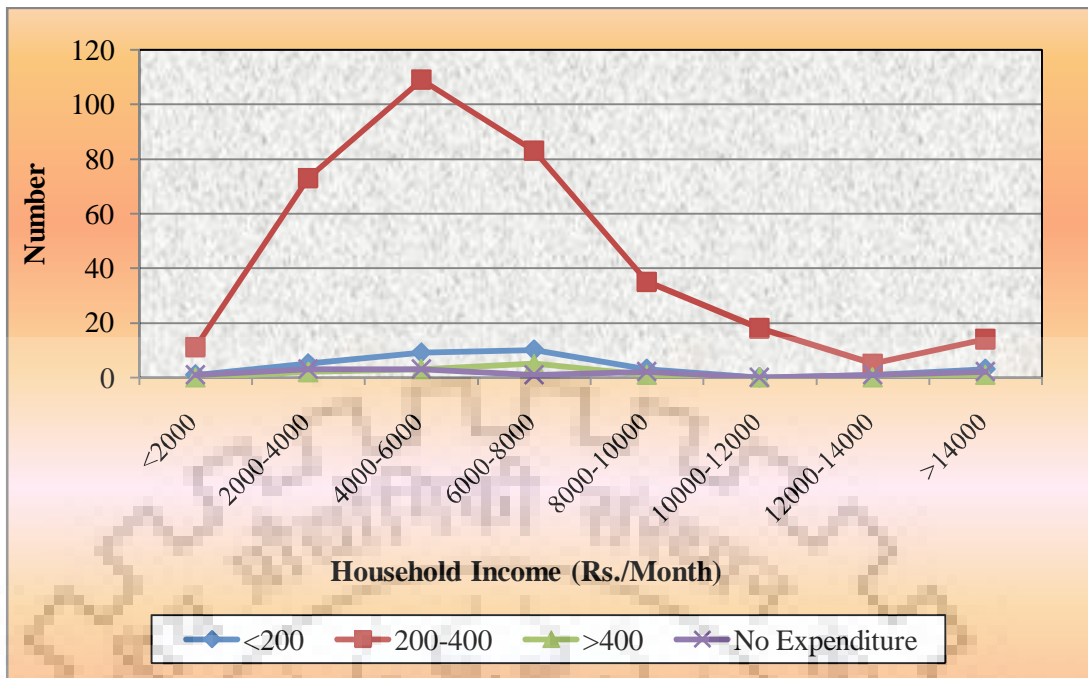


Fig. 4.35: Expenditure on Domestic Water (Drinking)

4.3.9 Expenditure on Transportation

Since the slum populations reside near their work places, they normally travel either by foot or by bicycle. Occasionally they travel by public transport. Also, like many other attributes expenditure on transportation is also a recurring expenditure, which does affect their economic status and their ability to afford many other attributes with house being one of them. The uncertainty regarding fuel price and public transport fares has large influence on the living of slum dwellers. Hence, data pertaining to their expenditure on transportation was collected and these presented in view of their household income.

Table 4.36 shows information pertaining to the expenditure incurred by slum dweller households in Nagpur City on transportation per month. It was apparent from the information that 69.38% slum dweller household spent Rs.200-400 per month on transportation, whereas 14.32% slum dweller household spent more than Rs.400 per month on transportation. Moreover, 13.58% slum dweller household incurred less than Rs.200 per month on transportation and 2.72% slum dweller household did not spend on transportation. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household spent Rs.200-400 per month on transportation.

Table 4.36: Expenditure on Transportation

SN	Household Income Rs/month	Expenditure on Transportation(in Rs/month)									
		<200		200-400		>400		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	1.82	10	3.56	1	1.72	1	9.09	13	3.21
2	2000-4000	12	21.82	58	20.64	9	15.52	4	36.36	83	20.49
3	4000-6000	18	32.73	90	32.03	14	24.14	2	18.18	124	30.62
4	6000-8000	16	29.09	65	23.13	18	31.03	0	0.00	99	24.44
5	8000-10000	2	3.64	32	11.39	6	10.35	1	9.09	41	10.12
6	10000-12000	1	1.82	13	4.63	4	6.90	0	0.00	18	4.44
7	12000-14000	1	1.82	4	1.42	1	1.72	1	9.09	7	1.73
8	>14000	4	7.27	9	3.20	5	8.62	2	18.18	20	4.94
	Total	55 (13.58)	100.00	281 (69.38)	100.00	58 (14.32)	100.00	11 (2.72)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

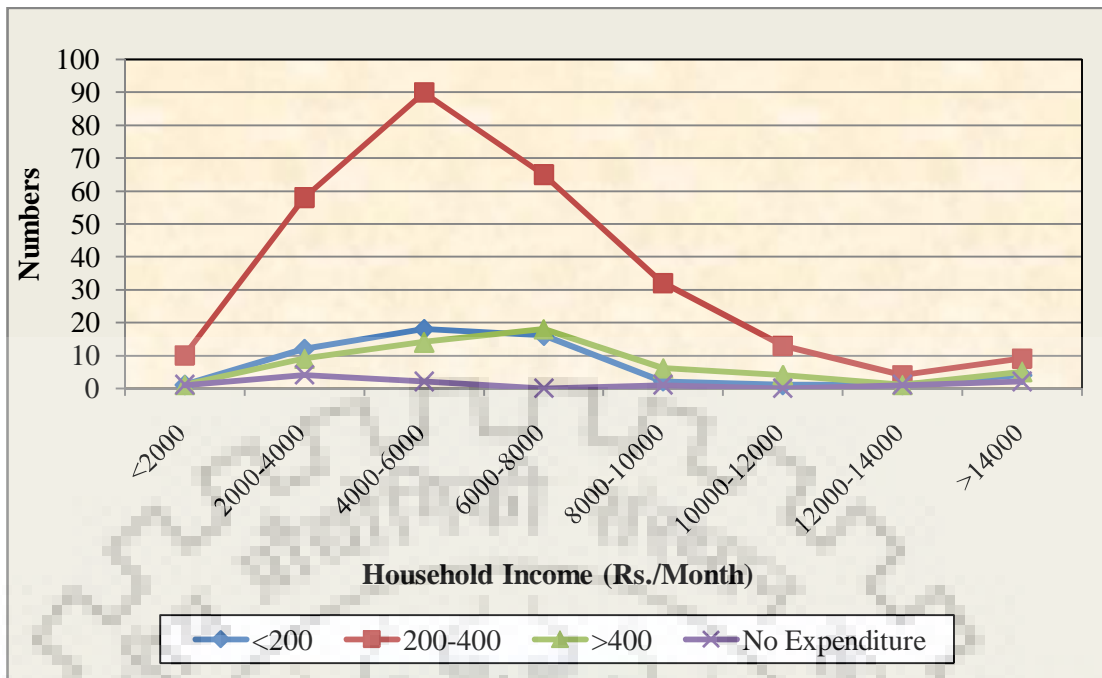


Fig. 4.36:Expenditure on Transportation

4.3.10 Expenditure on Telephone/Mobile

Communication as well as dependency on information has increased manifold during last two decades. Apart from basic needs food, shelter and clothes, telephone or mobile has become fourth basic need. Not only personal but professional life of slum dwellers has been transformed due to advent of mobile communication. In view of importance of communication the data pertaining to their expenditure on the same has been collected and analyzed relation to their household income and the results are presented hereunder.

Table 4.37 demonstrates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on telephone/mobile per month. It was apparent from the information that 59.75% slum dweller household spent less than Rs.200 per month on telephone/mobile, whereas 21.24% slum dweller household spent Rs.200-400 per month on telephone/mobile. Moreover, 4.44% slum dweller household incurred more than Rs.400 per month on telephone/mobile and 3.21% slum dweller household did not spent on telephone/mobile. Hence it was apparent from the study results that significantly ($P<0.05$) high percentage of slum dweller household spent less than Rs.200 per month on telephone/mobile.

Table 4.37: Expenditure on Telephone/Mobile

SN	Household Income Rs/month	Expenditure on Telephone/Mobile(in Rs/month)									
		<200		200-400		>400		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	7	2.89	4	4.65	0	00.00	2	3.39	13	3.21
2	2000-4000	57	23.55	10	11.63	3	16.67	13	22.03	83	20.49
3	4000-6000	87	35.95	18	20.93	3	16.67	16	27.12	124	30.62
4	6000-8000	54	22.31	24	27.91	5	27.78	16	27.12	99	24.44
5	8000-10000	18	7.44	16	18.60	3	16.67	4	6.78	41	10.12
6	10000-12000	9	3.72	5	5.81	2	11.11	2	3.39	18	4.44
7	12000-14000	3	1.24	1	1.16	0	00.00	3	5.08	7	1.73
8	>14000	7	2.89	8	9.30	2	11.11	3	5.08	20	4.94
	Total	242 (59.75)	100.00	86 (21.24)	100.00	18 (4.44)	100.00	59 (14.57)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

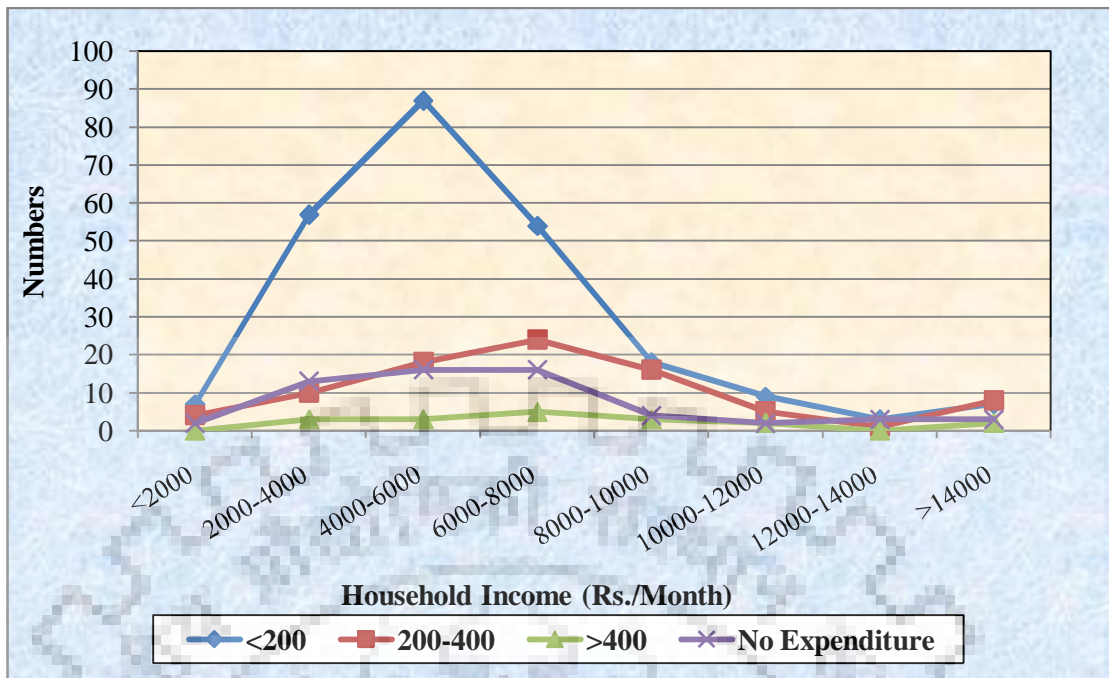


Fig. 4.37: Expenditure on Telephone/Mobile

4.3.11 Expenditure on Cooking (cost of fuel)

An important interconnection between poor health conditions and the standard of living is low nutrition and it is quite visible that a large percentage of the slum households are located in low/moderate expenditure classes. Nutrition is a key health determinant and expenditure on cooking forms an important aspect of overall expenditure made by slum dwellers. In view of above data pertaining to expenditure made by slum dwellers on cooking, data has been collected and the results are presented as follows.

Table 4.38 presents results pertaining to the monthly expenditure incurred by slum dwellers of Nagpur City on cooking. It was apparent from the data that 92.10% slum dweller household spend more than Rs.400 per month on cooking, whereas 3.70% slum dweller household each were spent Rs.200-400 and less than Rs. 200 per month on cooking. Moreover, 0.50% slum dweller household did not spent on cooking. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household spent more than Rs.400 per month on cooking.

Table 4.38: Expenditure on Cooking

SN	Household Income Rs/month	Expenditure on Cooking (in Rs/month)									
		<200		200-400		>400		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	0	0.00	1	6.67	12	3.22	0	0.00	13	3.21
2	2000-4000	1	6.67	0	0.00	81	21.72	1	50.00	83	20.49
3	4000-6000	2	13.33	1	6.67	121	32.44	0	0.00	124	30.62
4	6000-8000	7	46.67	7	46.67	85	22.79	0	0.00	99	24.44
5	8000-10000	5	33.33	3	20.00	32	8.57	1	50.00	41	10.12
6	10000-12000	0	0.00	1	6.67	17	4.56	0	0.00	18	4.44
7	12000-14000	0	0.00	0	0.00	7	1.88	0	0.00	7	1.73
8	>14000	0	0.00	2	13.33	18	4.82	0	0.00	20	4.94
	Total	15 (3.70)	100.00	15 (3.70)	100.00	373 (92.10)	100.00	2 (0.50)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

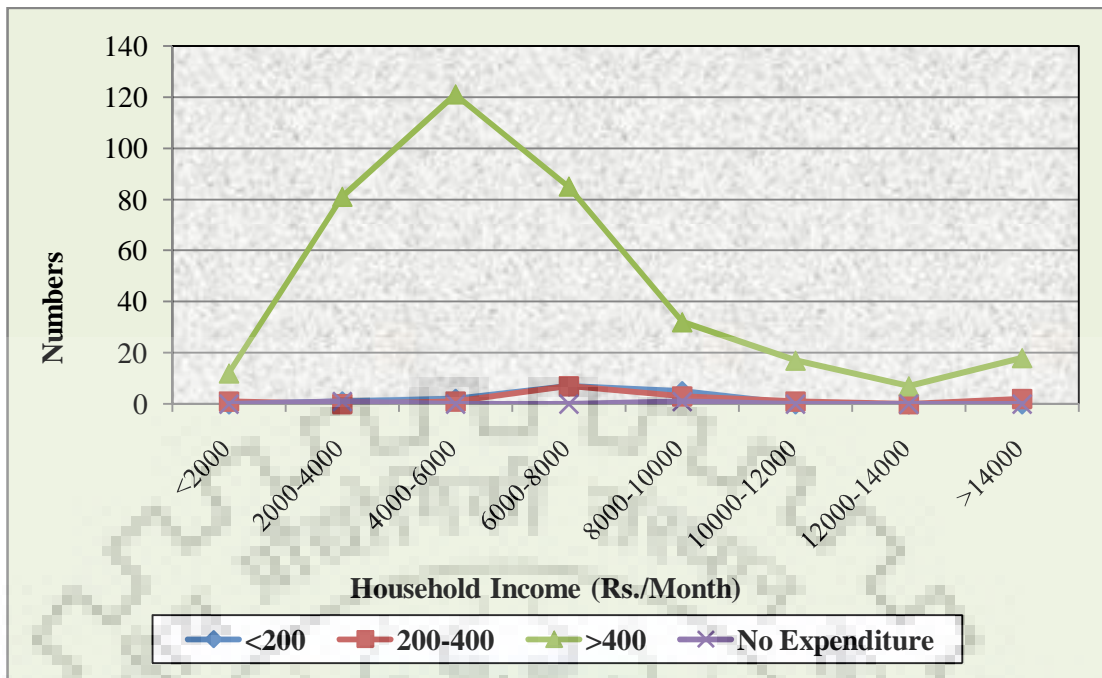


Fig. 4.38: Expenditure on Cooking

4.3.12 Expenditure on Other/Miscellaneous

Apart from above mentioned expenditures, there are many more areas that result in unexpected expenses. Since, there is no certainty with respect to this type of expenses; generalizing these expenses may not be prudent. Hence, the data pertaining to same (expenditure on other/miscellaneous items) was collected and the results are presented.

Table 4.39 elucidates information pertaining to the expenditure incurred by slum dweller households in Nagpur City on other/miscellaneous per month. It was apparent from the information that 28.40% slum dweller household spent more than Rs.400 per month on other/miscellaneous, whereas 6.17% slum dweller household were spent Rs.200-400 per month on other/miscellaneous. Moreover, 2.22% slum dweller household spent less than Rs.200 per month on other/miscellaneous and 63.21% slum dweller household did not spent on other/miscellaneous. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household did not spent on other/miscellaneous.

Table 4.39: Expenditure on Other/Miscellaneous

S N	Household Income Rs/month	Expenditure on Other/Miscellaneous(in Rs/month)									
		<200		200-400		>400		No Expenditure		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	2	22.22	0	0.00	4	3.48	7	2.73	13	3.21
2	2000-4000	1	11.11	3	12.00	13	11.30	66	25.78	83	20.49
3	4000-6000	3	33.33	5	20.00	30	26.09	86	33.59	124	30.62
4	6000-8000	3	33.33	12	48.00	34	29.57	50	19.53	99	24.44
5	8000-10000	0	0.00	3	12.00	16	13.91	22	8.59	41	10.12
6	10000-12000	0	0.00	1	4.00	4	3.48	13	5.08	18	4.44
7	12000-14000	0	0.00	0	0.00	2	1.74	5	1.95	7	1.73
8	>14000	0	0.00	1	4.00	12	10.43	7	2.73	20	4.94
	Total	9 (2.22)	100.00	25 (6.17)	100.00	115 (28.40)	100.00	256 (63.21)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

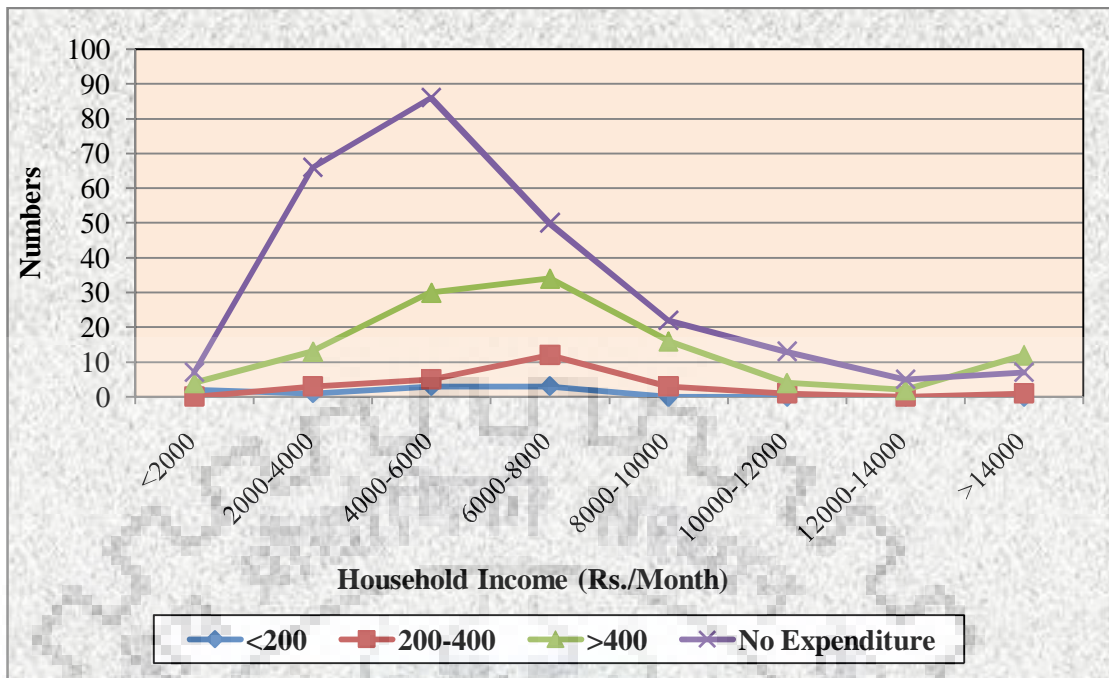


Fig. 4.39: Expenditure on Other/Miscellaneous

4.3.13 Savings on LIC by the slum dwellers

The slum thrives on the nearby industries that barely pay the workers a few thousand rupees as wages per month. Low income and lack of access to social security and options of financial assistance make the slum-bank the best option for most of them when they are in need. Saving money in the self-help-group has helped them in various ways. Storing surplus or savings in cash is only one of several options open to poor people in cities and villages. Other options include investing in working stock as a small business, purchasing live stock or jewelry and lending out money to trusted friends and relatives. In the backdrop of aim of this study, the savings made by slum dwellers forms an important attribute that can indicate the economic status as well as sustainability of slum dwellers. Hence, the data pertaining to savings made by slum dwellers has been collected and its relationship with household income was determined. The results are presented as follows.

Table 4.40 shows information pertaining to the savings of slum dweller households in Nagpur City on LIC. It was apparent from the information that 80.25% slum dweller household did not make any savings on LIC, whereas 19.75% slum dweller households made savings on LIC. Thus it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household did not make savings on LIC.

Table 4.40: Savings on LIC by the slum dwellers

SN	Household Income Rs/month	Savings on LIC				Total	
		Yes		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	2	2.50	11	3.38	13	3.21
2	2000-4000	5	6.25	78	24.00	83	20.49
3	4000-6000	18	22.50	106	32.62	124	30.62
4	6000-8000	22	27.50	77	23.69	99	24.44
5	8000-10000	17	21.25	24	7.38	41	10.12
6	10000-12000	7	8.75	11	3.38	18	4.44
7	12000-14000	2	2.50	5	1.54	7	1.73
8	>14000	7	8.75	13	4.00	20	4.94
	Total	80 (19.75)	100.00	325 (80.25)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.

Note: Figure in parenthesis denotes 'row' percentage.

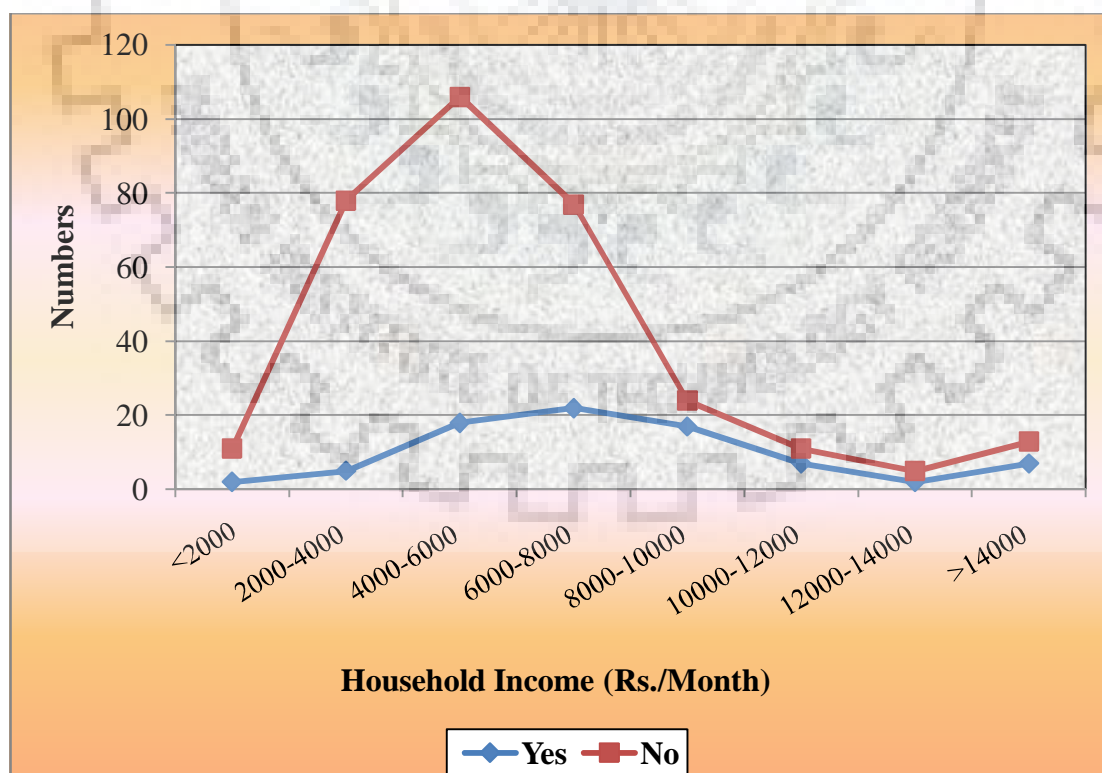


Fig. 4.40: Savings on LIC by the slum dwellers

4.3.14 Savings on Other/Bank of the slum dwellers

The banks avoid or reject the poor due to their mobile habitat, unstable livelihoods, uneven income flow and lack of means for achieving financial stability. Consequently, the poor rely on a number of informal mechanisms and social arrangements that are costly (in both financial and social terms) but more convenient. For instance in a recent study document about the cycle rickshaw pullers—a sizeable segment of urban migrants living on Delhi streets, public spaces, and slum settlements—use ingenious saving and storing practices. These include keeping cash on person, at place of stay, with neighborhood shopkeepers, with wife or rickshaw owners and/or concealing money. Since, financial inclusion gives stability to the people, data pertaining to the savings made by the slum dwellers was collected and the results in view of their monthly income are presented.

Table 4.41 indicates information pertaining to the savings of slum dweller households in Nagpur City on other/bank. It was apparent from the information that 61.97% slum dweller household made savings on other sources or bank, whereas 38.03% slum dweller households did not make any savings in other sources or bank. Thus it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household made savings on other sources or bank.

Table 4.41: Savings on Other/Bank of the slum dwellers

SN	Household Income Rs/month	Savings on Other/Bank				Total	
		Yes		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	4	1.59	9	5.84	13	3.21
2	2000-4000	58	23.11	25	16.23	83	20.49
3	4000-6000	75	29.88	49	31.82	124	30.62
4	6000-8000	56	22.31	43	27.92	99	24.44
5	8000-10000	23	9.16	18	11.69	41	10.12
6	10000-12000	13	5.18	5	3.25	18	4.44
7	12000-14000	6	2.39	1	0.65	7	1.73
8	>14000	16	6.37	4	2.60	20	4.94
	Total	251 (61.97)	100.00	154 (38.03)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.

Note: Figure in parenthesis denotes 'row' percentage.

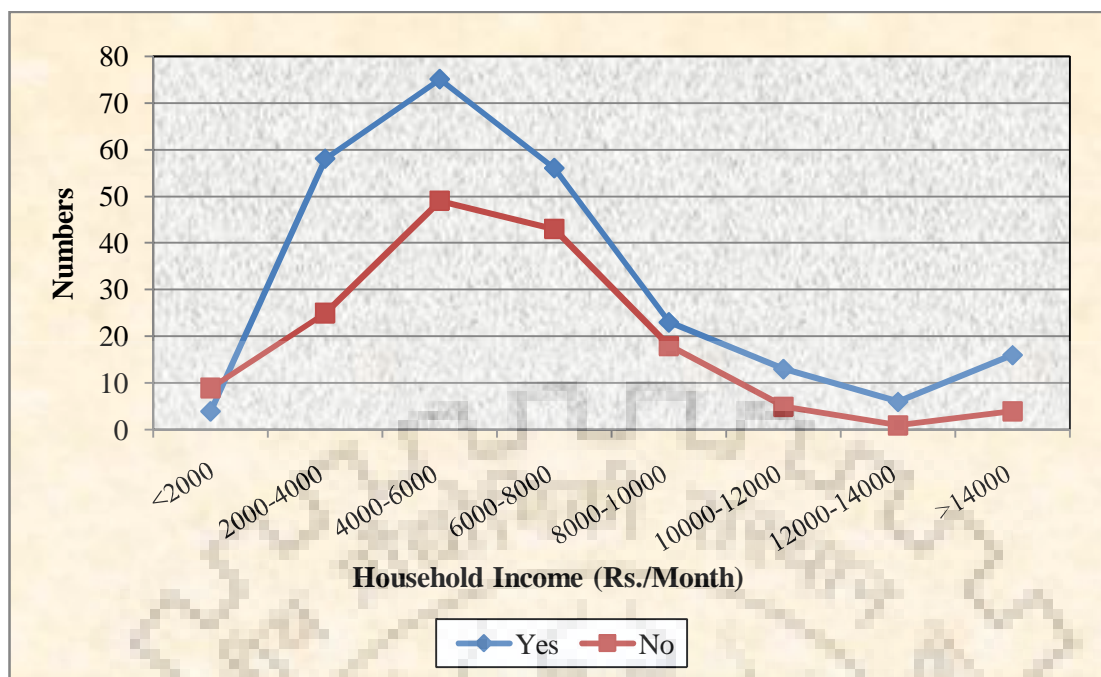


Fig. 4.41: Savings on Other/Bank of the slum dwellers

4.3.15 Willingness to pay for Housing Provisions

Safe and healthy living conditions with basic amenities are a basic need for the urban poor. However in slums as in many developing country cities, the public sector is unable to finance the provision of drinking water and other basic requirements because the prices charged are not sufficient to cover the costs. The decent housing conditions can be availed by slum dwellers only if they are willing to relocate as well as pay for the new house. Since there are many aspects that actually force them to live in slums, it was necessary to know their willingness to pay for new housing provisions. In addition to this it was also expected that such data can help the policy makers in formulating affordable housing policies, especially for the weaker sections. The results obtained with respect to above mentioned attribute are presented as follows.

Table 4.42 shows information pertaining to the willingness of slum dweller households in Nagpur City to pay for housing provisions for better living. It was apparent from the information that 59.51% slum dweller households were willing to pay Rs.500-100 per month for housing provisions, whereas 3.21% slum dweller households were willing to pay more than Rs.1000 for housing provisions. Furthermore 0.74% slum dweller households were willing to pay less than Rs.500 for housing provisions, however; 36.54% slum dweller households did not provided response regarding their willingness to pay for housing provisions.

Table 4.42: Willingness to pay for Housing Provisions

S N	Household Income Rs/month	Willingness to pay for Housing Provisions (in Rs.)									
		<500		500-1000		>1000		No Response		Total	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	0	0.00	9	3.73	0	0.00	4	2.80	13	3.22
2	2000-4000	2	66.66	49	20.33	2	15.38	30	20.98	83	20.54
3	4000-6000	1	33.33	74	30.71	2	15.38	47	31.47	124	30.69
4	6000-8000	0	0.00	60	24.90	2	15.38	37	24.48	99	24.50
5	8000-10000	0	0.00	22	9.13	3	23.08	16	10.49	41	10.15
6	10000-12000	0	0.00	10	4.15	1	7.70	7	4.90	18	4.46
7	12000-14000	0	0.00	4	1.66	2	15.38	1	0.70	7	1.73
8	>14000	0	0.00	13	5.39	1	7.70	6	4.20	20	4.95
	Total	3 (0.74)	100.00	241 (59.51)	100.00	13 (3.21)	100.00	148 (36.54)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

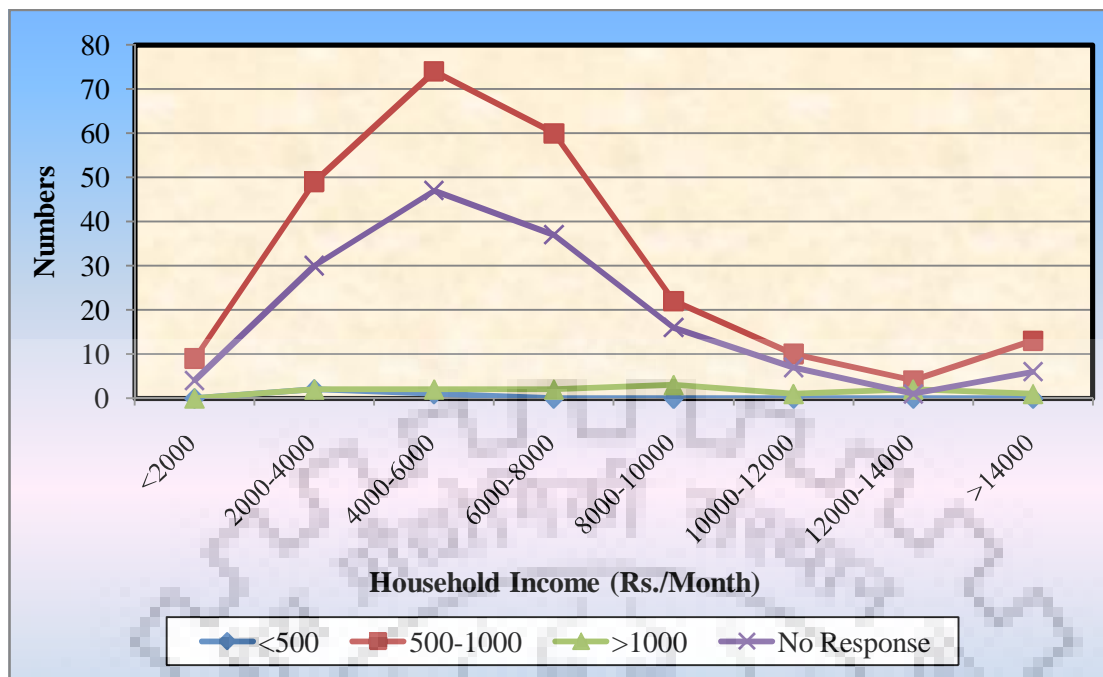


Fig. 4.42:Willingness to pay for Housing Provisions

4.3.16 Household Gadgets

Urban slums present in different part of India seem to show resemblance. Most offer not just good living conditions but the households possess luxuries ranging from personal vehicle to laptops and cell phones and landline phone connections. The extremely cheap black market electronic gadget in an average slum household is a common scene. Slum dwellers normally have TVs but nearly all the electric cables, TVs are illegal. Hence information pertaining to household gadgets was collected and the results are presented in relation to household income of the slum dwellers.

Table 4.43 provides information pertaining to availability of household gadgets at slum dweller household in Nagpur City. It was apparent from the information that 90.10% slum dweller household have mobile phone, whereas 86.42% slum dweller household have Television. In addition to this gadget such as FM radio, fridge, sewing machine and landline phones were available at 34.32%, 31.36%, 26.17% and 2.47% respectively. Hence it was apparent from the study results that significantly ($P<0.05$) high percentage of slum dweller household have gadgets such as mobile and television.

Table 4.43: Household Gadgets

S N	Household Income Rs/month	Household Gadgets											
		Mobile phone		Landline Phone		FM Radio		TV		Fridge		Sewing Machine	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1	<2000	12	3.22	0	0.00	1	0.72	7	2.00	2	1.57	1	0.94
2	2000-4000	78	20.91	1	10.00	27	19.42	72	20.57	14	11.02	19	17.92
3	4000-6000	115	30.83	0	0.00	43	30.94	115	32.86	27	21.26	31	29.25
4	6000-8000	88	23.59	4	40.00	32	23.02	82	23.43	38	29.92	30	28.30
5	8000-10000	39	10.46	4	40.00	17	12.23	33	9.43	21	16.54	14	13.21
6	10000-12000	16	4.29	0	0.00	7	5.04	17	4.86	9	6.30	3	2.83
7	12000-14000	6	1.61	1	10.00	3	2.16	7	2.00	4	3.15	1	0.94
8	>14000	19	5.09	0	0.00	9	6.47	17	4.86	13	10.24	7	6.60
	Total	373 (90.10)	100.00	10 (2.47)	100.00	139 (34.32)	100.00	350 (86.42)	100.00	127 (31.36)	100.00	106 (26.17)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage with 405 households

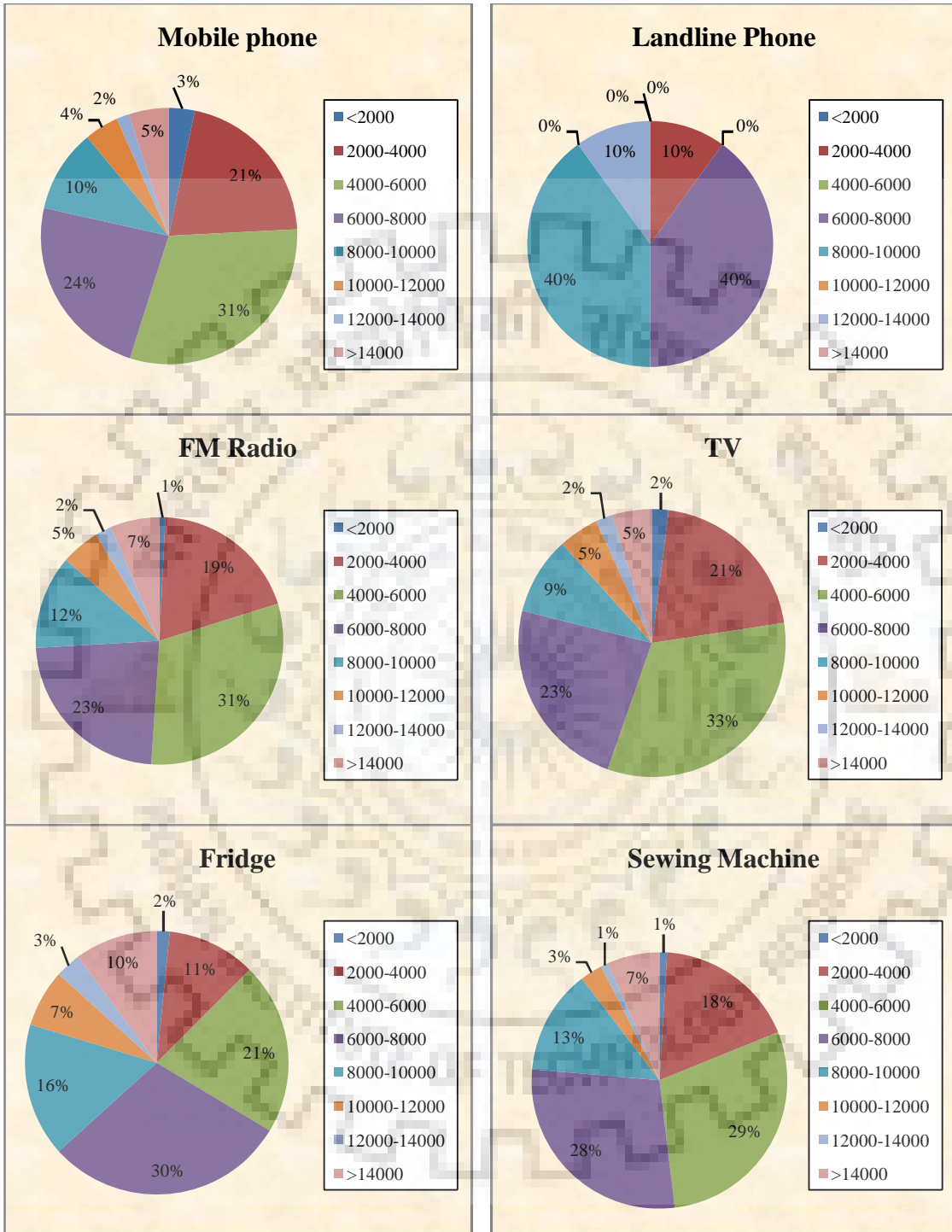


Fig. 4.43: Household Gadgets

4.3.17 Household Vehicles

Availability of vehicles helps slum dwellers to commute that helps him to avail different kinds of opportunities. Hence it is evident that having or owning a vehicle determines what kind of economic development can happen to a person. In view of this information pertaining to ownership of vehicles by slum dwellers was collected and the results are presented as follows.

Table 4.44 illustrates information pertaining to availability of type of vehicle at slum dweller household in Nagpur City. It was apparent from the information that 62.96% slum dweller household have bicycle, whereas 25.18% slum dweller household have two-wheeler. In addition to this vehicle such as auto rickshaw was available at 11.36%. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household have vehicle such as bicycle.

Table 4.44: Household Vehicles

SN	Household Income Rs/month	Household Vehicles					
		Bicycle		2-Wheeler		Auto Rickshaw	
		Number	Percent	Number	Percent	Number	Percent
1	<2000	6	2.35	0	0.00	0	0.00
2	2000-4000	54	21.18	8	7.84	12	26.09
3	4000-6000	72	28.24	30	29.41	13	28.26
4	6000-8000	65	25.49	29	28.43	11	23.91
5	8000-10000	26	10.20	12	11.76	6	13.04
6	10000-12000	13	5.10	8	7.84	1	2.17
7	12000-14000	6	2.35	4	3.92	0	0.00
8	>14000	13	5.10	11	10.78	3	6.52
	Total	255 (62.96)	100.00	102 (25.18)	100.00	46 (11.36)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage with 405 households

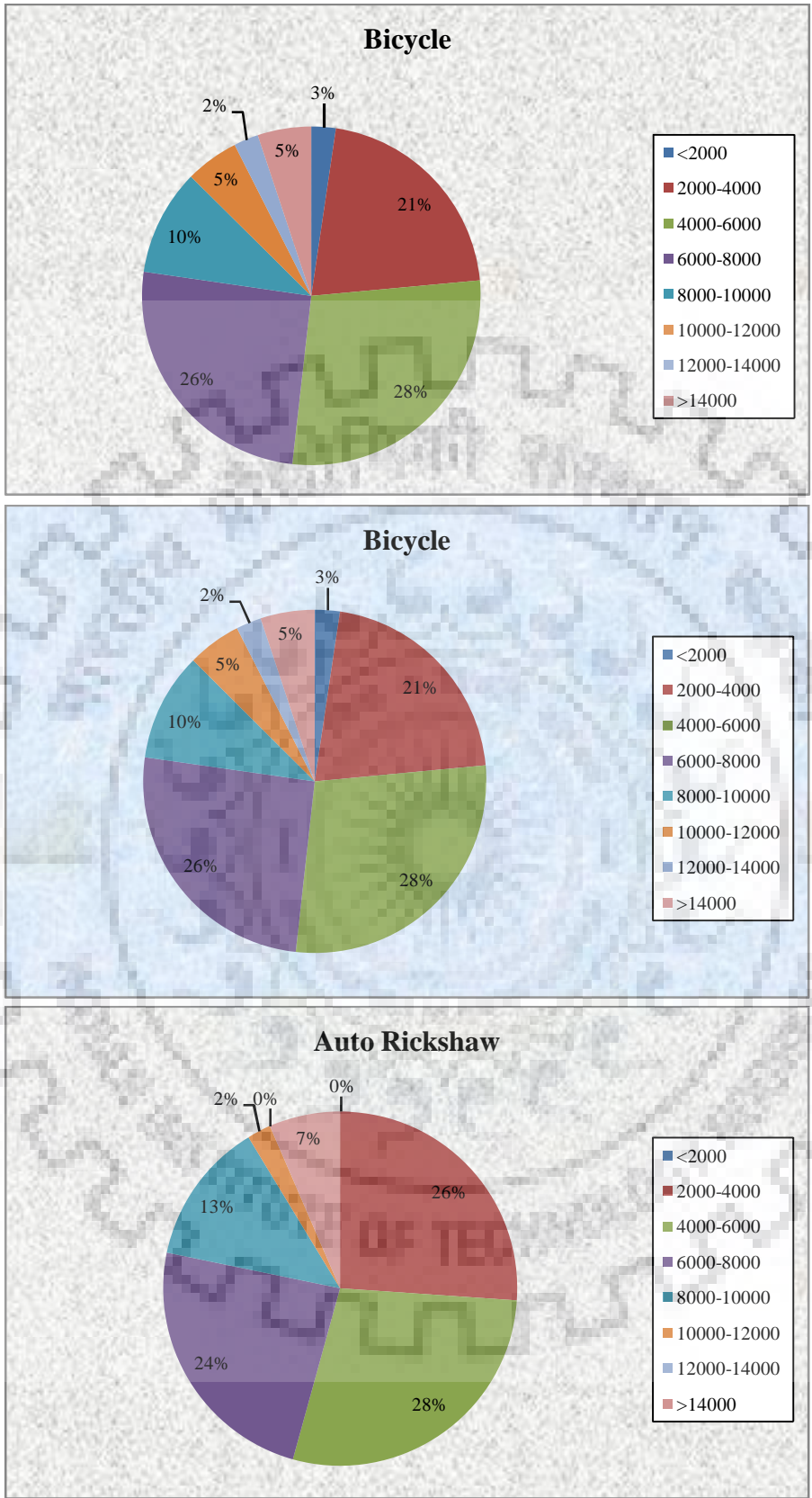


Fig. 4.44: Household Vehicles

4.3.18 Types of Fuel Consumed by the slum dwellers

Fuel or energy requirement in a typical household demands that certain options like LPG, Kerosene, Firewood, Electricity, Charcoal/Koyla and Sawdust/Bhusa etc. be available. Since all the above mentioned options require different amount of expenditure the data pertaining to types of fuel consumed by the slum dwellers was collected and the results are presented as follows.

Table 4.45 provides information pertaining to the type of fuel consumption made by slum dweller households in Nagpur City. It was evident from the information that 69.38% slum dweller households used LPG as a source of fuel, whereas 63.46% slum dweller households used fire wood as a source of fuel. Furthermore, electricity, kerosene, sawdust/bhusa and charcoal/koyla were used as a fuel source by 22.22%, 14.32%, 10.86% and 6.67% slum dweller households. It was evident from the study results that significantly ($P < 0.05$) high percentage of slum dweller households in Nagpur city used LPG and fire wood as a source of fuel.

Table 4.45: Types of Fuel Consumed by the slum dwellers

SN	Household Income in Rs./month	Types of Fuel Consumption												Total	
		LPG		Kerosene		Firewood		Electricity		Charcoal/Koyla		Sawdust/Bhusa			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	2	0.71	1	1.11	2	0.78	0	0.00	2	7.41	1	2.27	8	1.06
2	2000-4000	51	18.15	13	14.44	61	23.74	8	13.79	2	7.41	6	13.64	141	18.63
3	4000-6000	85	30.25	30	33.33	82	31.91	16	27.59	7	25.93	15	34.09	235	31.04
4	6000-8000	74	26.33	23	25.56	64	24.90	12	20.69	8	29.63	11	25.00	192	25.36
5	8000-10000	34	12.10	13	14.44	21	8.17	13	22.41	4	14.81	2	4.55	87	11.49
6	10000-12000	11	3.91	2	2.22	13	5.06	5	8.62	4	14.81	4	9.09	39	5.15
7	12000-14000	4	1.42	1	1.11	4	1.56	1	1.72	0	0.00	2	4.55	12	1.59
8	>14000	20	7.12	7	7.78	10	3.89	3	5.17	0	0.00	3	6.82	43	5.68
	Total	281 (69.38)	100.00	90 (22.22)	100.00	257 (63.46)	100.00	58 (14.32)	100.00	27 (6.67)	100.00	44 (10.86)	100.00	757	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage with 405 households

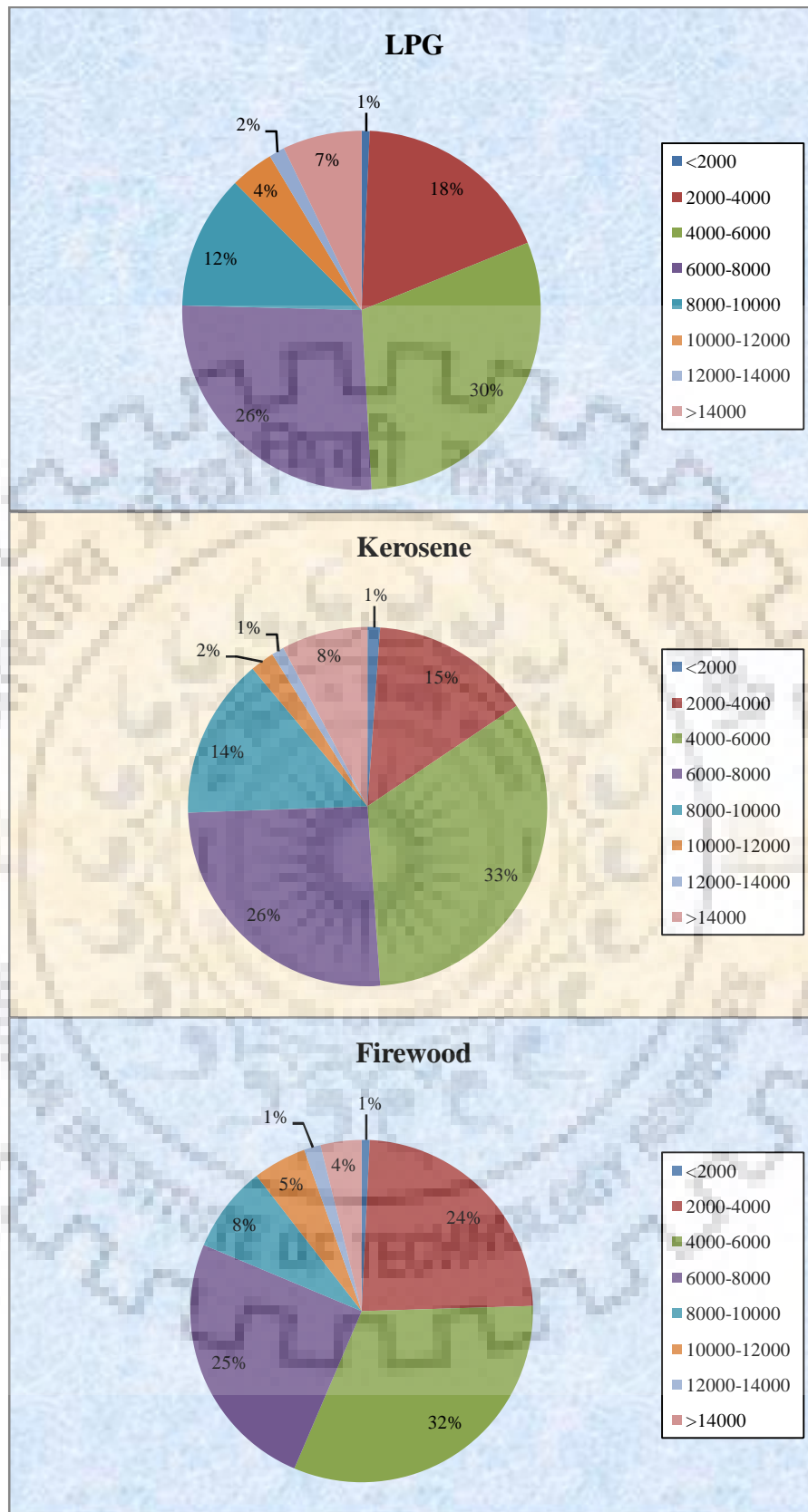


Fig. 4.45: Types of Fuel Consumed by the slum dwellers

4.4 Infrastructure Aspects

Sustainability in a society is dependent on many aspects and infrastructure is one amongst them. In view of the limited availability of physical space in the slum area different aspects that are part of basic infrastructure are often under pressure. Also the local and state government faces many hurdles while implementing schemes oriented towards infrastructure development in slum areas. In view of the importance of basic infrastructure the aspects that are directly related to the affordable housing issue are studied in detail. These aspects are as follows.

- Distance covered from House to Work by the slum dwellers
- Approach to House of the slum dwellers
- Water Supply
- Domestic Water Supply System
- Water Supply Hrs in the slums
- Water Supply Problems in the slums
- Electricity Availability
- Electricity Tariff
- Power Cuts in summer
- Power Cuts in winter
- Voltage Fluctuation
- Washing Space in the House
- Availability of Toilets
- Presence of Manholes
- Drains
- Garbage Disposal Problems in the slums
- Solid Waste - Garbage Collection
- Availability of Street Lighting in the slums
- Distance of Bus stop
- Distance of Primary School
- Distance of Secondary School
- Distance of Dispensary
- Distance of Hospital
- Water Supply Problem Rank

- Solid Waste Management Problem Rank
- Sewerage Problem Rank
- Drainage Problem Rank
- Communication Problem Rank
- Electricity Problem Rank
- Transportation Problem Rank
- Problem Ranking

4.4.1 Distance covered from House to Work

Commuting (Journey to Work) refers to a worker's travel from home to work. Place of work refers to the geographic location of the worker's job. There are several surveys conducted by other researchers regarding commuting including means of transportation, time of departure, mean travel time to work, vehicles available, distance traveled, and expenses associated with commuting. The results of such surveys indicated that there are large variations in the distance covered by slum dwellers, hence, this aspect was studied for the slum dwellers of Nagpur City and the results are present in relation to their monthly household income.

Table 4.46 demonstrates information pertaining to the distance covered by slum dwellers in Nagpur city from house to place of work. It was apparent from the information that 39.13% slum dwellers covered 1-3Km distance to reach at their working place, 32.6% slum dwellers covered 3 to 5 Km distance to reach at their working place from their house, whereas 13.04% slum dwellers covered 5 to 10 Km distance to reach at their working place. In addition to this percentage of slum dwellers covered less than 1 Km, 10 to 20Km and more than 20Km distance to reach their working place was 10.61%, 2.04% and 2.56% respectively. Hence from the study results it is apparent that majority of slum dwellers have to cover 1-3Km distance to reach at their working place from their home.

Table 4.46: Distance covered from House to Work by the slum dwellers

SN	Household Income Rs/month	Distance covered from House to Work												Total	
		<1 km		1-3 Km		3 -5 Km		5 - 10 Km		10 - 20 Km		>20 Km			
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
1	<2000	-	-	-	-	1	0.39	2	1.96	-	-	-	-	3	0.38
2	2000-4000	12	14.46	29	9.48	40	15.69	20	19.61	3	18.75	7	35.00	111	14.19
3	4000-6000	22	26.51	85	27.78	64	25.10	27	26.47	4	25.00	6	30.00	208	26.60
4	6000-8000	22	26.51	91	29.74	68	26.67	26	25.49	3	18.75	3	15.00	213	27.24
5	8000-10000	8	9.64	30	9.80	40	15.69	13	12.75	5	31.25	3	15.00	99	12.66
6	10000-12000	9	10.84	34	11.11	10	3.92	3	2.94	-	-	1	5.00	57	7.29
7	12000-14000	5	6.02	9	2.94	6	2.35	4	3.92	-	-	-	-	24	3.07
8	>14000	5	6.02	28	9.15	26	10.20	7	6.86	1	6.25	-	-	67	8.57
	Total	83 (10.61)	100.00	306 (39.13)	100.00	255 (32.60)	100.00	102 (13.04)	100.00	16 (2.04)	100.00	20 (2.56)	100.00	782 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage. **N-** Number; **P-** Percentage

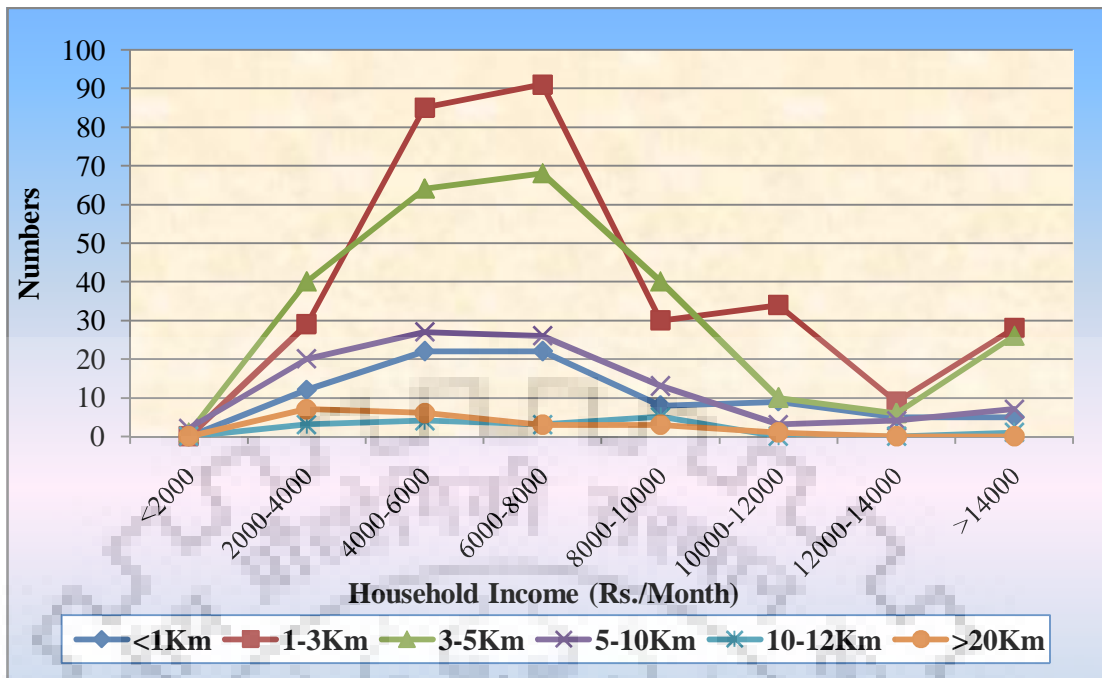


Fig. 4.46: Distance covered from House to Work by the slum dwellers

4.4.2 Approach to House of the slum dwellers

A slum generally lacks access to public services such as roads, street lamps etc. or even if they have them, and they are often in poor condition. Generally slums have poor quality, unpaved streets or dirt streets, narrow and dark street lanes as approach to houses. In the process of informal occupation of slums, the streets and alleys which resulted from this process are too narrow and do not obey the urban layout of formal city. Narrow alleys restrict the quality of the built environment and also create an unhealthy climate, by not allowing sunlight and ventilation into the houses, hence, data regarding this aspect was collected from the study area and the results are presented.

Table 4.47 shows information pertaining to the condition of approach to house of slum dweller households in Nagpur City. The data showed that approach to the house of 50.12% slum dweller households was congested, whereas for 45.68% households it was good. Furthermore, the percentage of slum dweller households having paved and unpaved approach to the house was 2.22% and 1.98% respectively. Hence, it was apparent from the information that approach to the house of majority of slum dweller households was congested.

Table 4.47: Approach to House of the slum dwellers

SN	Household Income Rs/month	Approach to House								Total	
		Good		Congested		Paved		Unpaved			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	9	4.86	3	1.48	1	11.11	-	-	13	3.21
2	2000-4000	22	11.89	53	26.11	6	66.67	2	25.00	83	20.49
3	4000-6000	60	32.43	63	31.03	1	11.11	-	-	124	30.62
4	6000-8000	55	29.73	41	20.20	1	11.11	2	25.00	99	24.44
5	8000-10000	20	10.81	20	9.85	-	-	1	12.50	41	10.12
6	10000-12000	7	3.78	10	4.93	-	-	1	12.50	18	4.44
7	12000-14000	2	1.08	5	2.46	-	-	-	-	7	1.73
8	>14000	10	5.41	8	3.94	-	-	2	25.00	20	4.94
	Total	185 (45.68)	100.00	203 (50.12)	100.00	9 (2.22)	100.00	8 (1.98)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

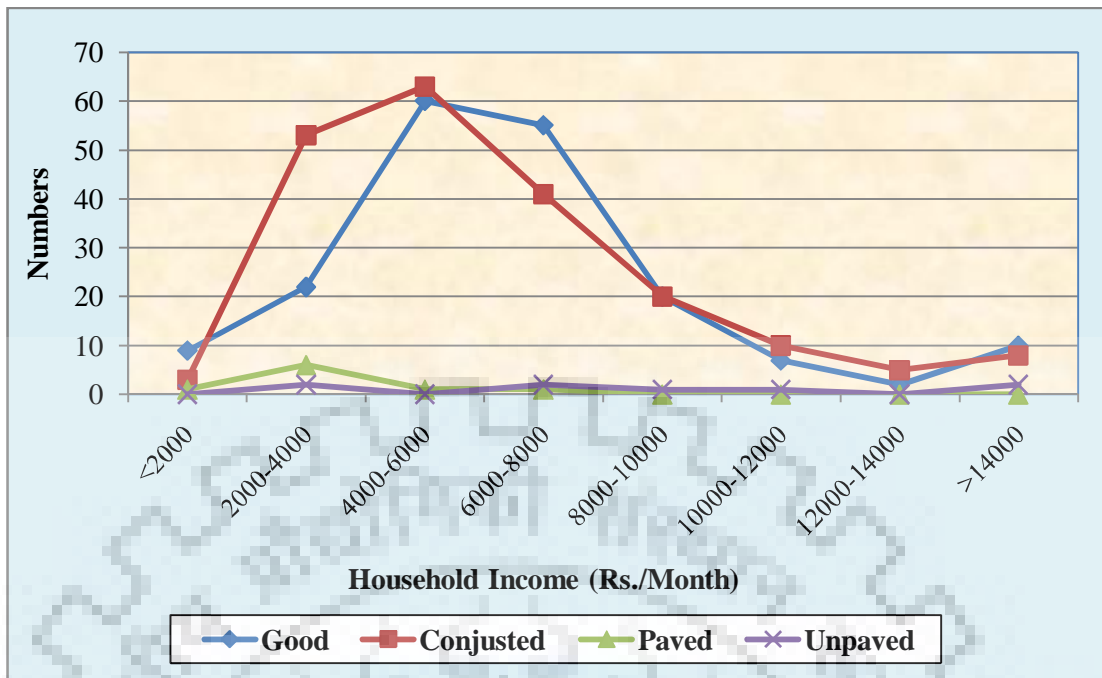


Fig. 4.47: Approach to House of the slum dwellers

4.4.3 Water Supply

Poor people in slums and squatter settlements are generally deprived of these basic amenities of drinking water. For majority of slums, the chief source of drinking water is either tap or tube well. They may draw domestic water from nearby wells. However overcrowding in slums limits the adequate distance between wells and pit latrines so that micro-organisms migrate from latrines to water sources. Sanitary practices in these overcrowded slums are also poor, leading to contamination of these wells. In the backdrop of above information the water supply available to the slum dwellers has been studied and the results are presented here.

Table 4.48 provides information pertaining to the source of water supply for slum dweller households in Nagpur City. It was apparent from the information that Tap water was available to 74.07% slum dweller households, whereas 13.58% slum dweller households used open well as a source of water. In addition to this 9.88% slum dweller households used hand pump as a source of water and 2.47% slum dweller households used other sources of water supply as a source of water. Thus it was apparent from the study result that majority of slum dweller households in Nagpur city used Tap as a source of water supply.

Table 4.48: Water Supply

SN	Household Income Rs/month	Water Supply								Total	
		Tap		Open Well		Hand Pump		Others		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	11	3.67	1	1.82	1	2.50			13	3.21
2	2000-4000	57	19.00	14	25.45	7	17.50	5	50.00	83	20.49
3	4000-6000	90	30.00	21	38.18	11	27.50	2	20.00	124	30.62
4	6000-8000	76	25.33	13	23.64	7	17.50	3	30.00	99	24.44
5	8000-10000	33	11.00	2	3.64	6	15.00	-	-	41	10.12
6	10000-12000	14	4.67	2	3.64	2	5.00	-	-	18	4.44
7	12000-14000	5	1.67	-	-	2	5.00	-	-	7	1.73
8	>14000	14	4.67	2	3.64	4	10.00	-	-	20	4.94
	Total	300 (74.07)	100.00	55 (13.58)	100.00	40 (9.88)	100.00	10 (2.47)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

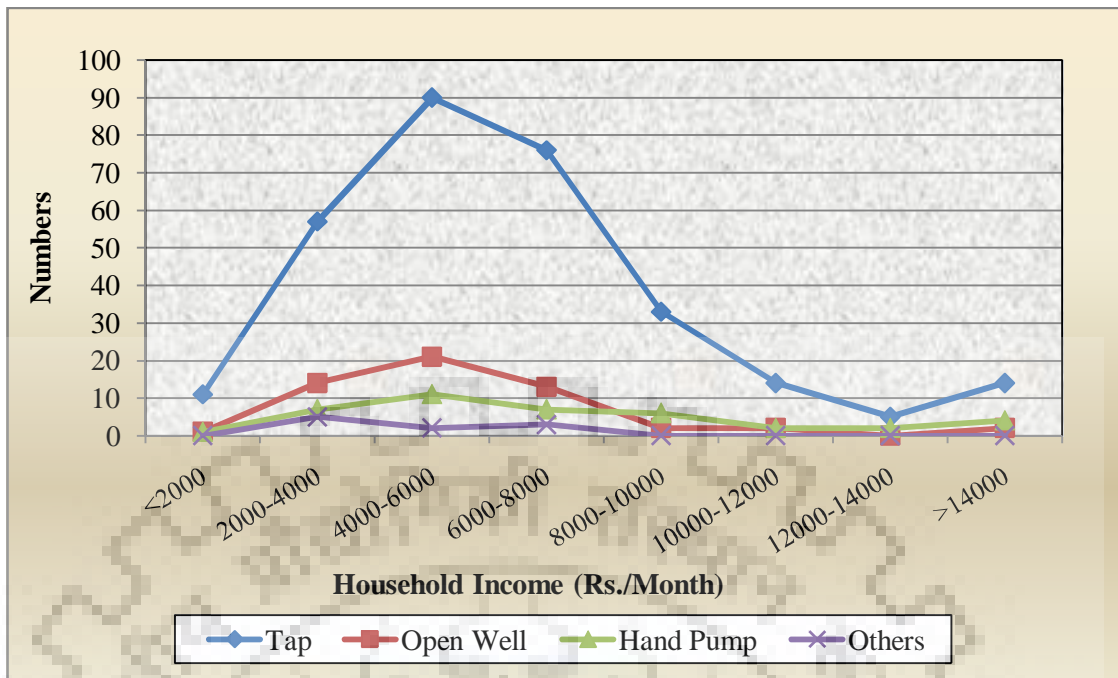


Fig. 4.48: Water Supply

4.4.4 Domestic water Supply System

According to the findings of previous surveys conducted in different slums, more than 90 per cent of the residents are denied of piped drinking water supply and are forced to depend on public taps or bore wells to meet their water needs. Majority of the areas receive water once in five or seven days. Like any other household the slum dwellers also need clean and save water for domestic use. Hence, the source of domestic water availed by the slum dwellers was determined and the results are presented as follows.

Table 4.49 shows information pertaining to the type of domestic water supply system used by slum dweller households in Nagpur City. It was evident from the information that public/ NMC water supply system was available in the slums of 57.04% slum dweller households, whereas 41.48% slum dweller households received domestic water supply from private sources. However; 1.48% slum dweller households received domestic water from both public and private sources. It was apparent from the study results that public/ NMC water supply system was available in the slums of majority of slum dweller households in Nagpur City.

Table 4.49: Domestic Water Supply System

SN	Household Income Rs/month	Domestic Water Supply System						Total	
		Public/NMC		Private		Both			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	9	3.90	4	2.38	-	-	13	3.21
2	2000-4000	51	22.08	32	19.05	-	-	83	20.49
3	4000-6000	68	29.44	52	30.95	4	66.67	124	30.62
4	6000-8000	55	23.81	42	25.00	2	33.33	99	24.44
5	8000-10000	23	9.96	18	10.71	-	-	41	10.12
6	10000-12000	9	3.90	9	5.36	-	-	18	4.44
7	12000-14000	5	2.16	2	1.19	-	-	7	1.73
8	>14000	11	4.76	9	5.36	-	-	20	4.94
	Total	231 (57.04)	100.00	168 (41.48)	100.00	6 (1.48)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

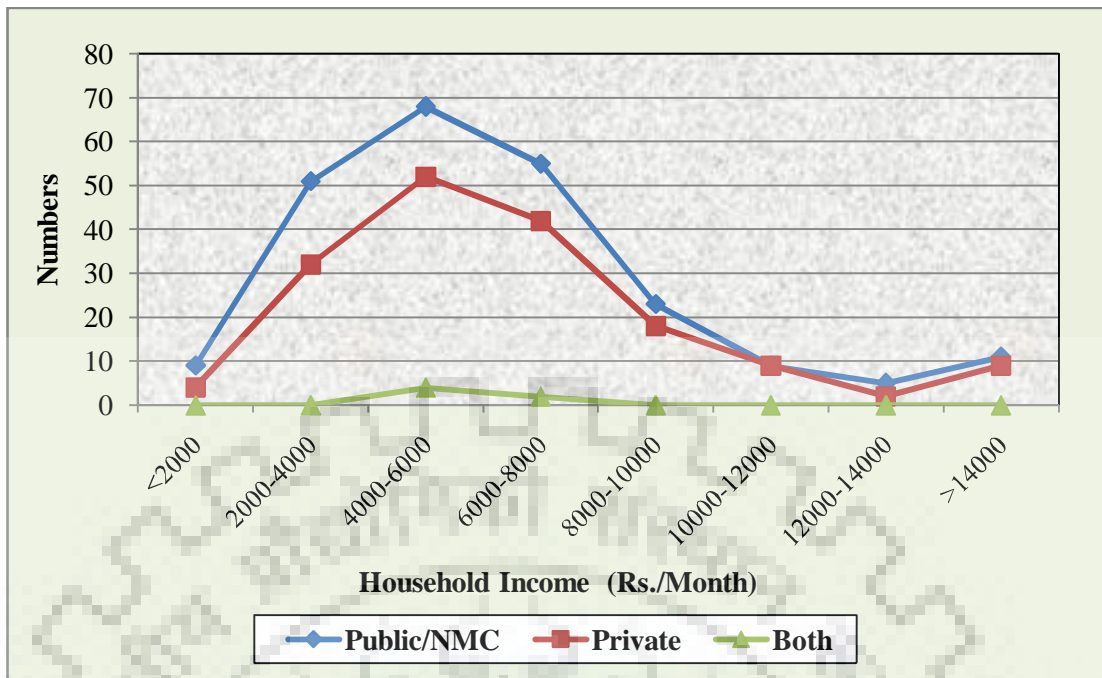


Fig. 4.49: Domestic Water Supply System

4.4.5 Water Supply Hrs in the slums

Majority of the areas received water once in five or seven days. The Municipal Corporations per the rules, should supply water through tankers to areas that lack access to water. The concerned organisations have many times failed in providing water to many such areas thus denying slum dwellers the right to water. Besides the water supply at odd hours robs the residents of their sleep and affects the studies of children. A number of students either bunk or attend classes late, as they are assigned the task of filling water at home. In the daily struggle for water, the residents lose out on daily wages. Hence the water supply related information was collected and the results are presented.

Table 4.50 illustrates information pertaining to the water supply hours in the slums of slum dweller household in Nagpur City. It was apparent from the information that there was 24 hr water supply in the slums of 46.42%, whereas water supply was made during morning hours in slums of 46.17% slum dweller household. In addition to this water supply was made during evening hours and regular hours in area of 4.44% and 1.98% slum dweller household respectively, however, the water supply hours were not regular in the area of 0.99% slum dweller household. Hence, it was apparent from the information that water supply was available for 24hr in the area of majority of slum dweller household in Nagpur City.

Table 4.50: Water Supply Hrs in the slums

SN	Household Income Rs/month	Water Supply Hrs										Total	
		24 Hrs		Morning		Evening		Regular		Irregular			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	6	3.19	5	2.67	1	5.56	1	12.50	-	-	13	3.21
2	2000-4000	32	17.02	45	24.06	4	22.22	1	12.50	1	25.00	83	20.49
3	4000-6000	52	27.66	64	34.22	4	22.22	4	50.00	-	-	124	30.62
4	6000-8000	58	30.85	35	18.72	4	22.22	1	12.50	1	25.00	99	24.44
5	8000-10000	18	9.57	19	10.16	2	11.11	-	-	2	50.00	41	10.12
6	10000-12000	7	3.72	10	5.35	1	5.56	-	-	-	-	18	4.44
7	12000-14000	2	1.06	4	2.14	1	5.56	-	-	-	-	7	1.73
8	>14000	13	6.91	5	2.67	1	5.56	1	12.50	-	-	20	4.94
	Total	188 (46.42)	100.00	187 (46.17)	100.00	18 (4.44)	100.00	8 (1.98)	100.00	4 (0.99)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Most Study Area Pockets are located at lower elevation and hence get 24 hrs. water as the supply lines always full with water. **Note:** Figure in parenthesis denotes 'row' percentage.

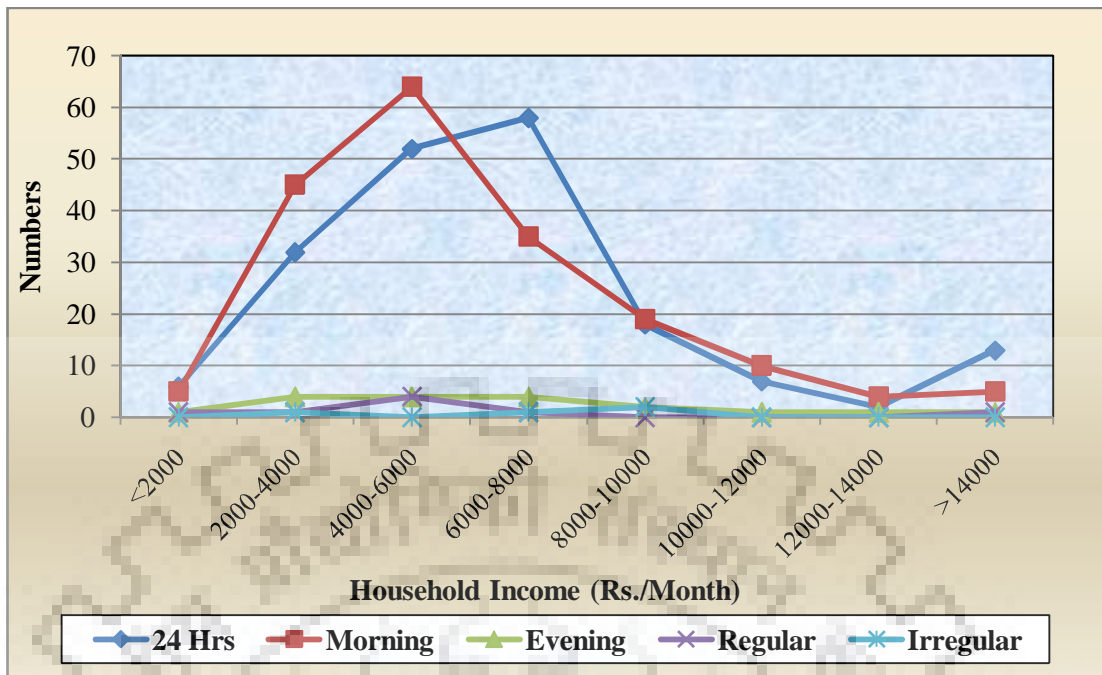


Fig. 4.50: Water Supply Hrs in the slums

4.4.6 Water Supply Problems in the slums

In urban India, the segment of the population that is acutely affected by water shortages is slum-dwellers. When even legal residents of a city can experience infrequent access to water, the non-legitimized status of slum-dwellers worsens their access to the basic services that other urban citizens are privy to. Typically, there is a set time every day when water can be collected by all slum-dwellers, usually in buckets and pots filled from community taps. However, there are many problems related to water supply that plague the slum dwellers. In view of this data pertaining to problems faced by slum dwellers of study area were studied in detailed are presented.

Table 4.51 elucidates information regarding the problems faced by slum dweller household in Nagpur city with respect to water supply. It was apparent from the information that 41.73% slum dweller household did not face any problem regarding water supply, whereas 24.69% slum dweller household faced problem of coloured water from water supply. Moreover percentage of slum dweller household facing problem of smell and presence of particle in water received from water supply was 23.21% and 10.37% respectively. Hence it was apparent from the study results that majority of slum dweller household in Nagpur city faced no problem with the water supply.

Table 4.51: Water Supply Problems in the slums

SN	Household Income Rs/month	Water Supply Problems								Total	
		Colour		Smell		Presence of Particles		No Problem			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	1.00	0	0.00	2	4.76	10	5.92	13	3.21
2	2000-4000	10	10.00	31	32.98	7	16.67	35	20.71	83	20.49
3	4000-6000	29	29.00	30	31.91	14	33.33	51	30.18	124	30.62
4	6000-8000	29	29.00	14	14.89	10	23.81	46	27.22	99	24.44
5	8000-10000	15	15.00	9	9.57	5	11.90	12	7.10	41	10.12
6	10000-12000	5	5.00	5	5.32	1	2.38	7	4.14	18	4.44
7	12000-14000	1	1.00	3	3.19	0	0.00	3	1.78	7	1.73
8	>14000	10	10.00	2	2.13	3	7.14	5	2.96	20	4.94
	Total	100 (24.69)	100.00	94 (23.21)	100.00	42 (10.37)	100.00	169 (41.73)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Most Study Area Pockets are located at lower elevation and hence get continuous supply of water as the supply lines are always full of water and are prone to get contaminated with open drains and due to leakages, the water quality deteriorate. This problem is more serious in monsoon season due to water logging in the study area mostly. **Note:** Figure in parenthesis denotes 'row' percentage

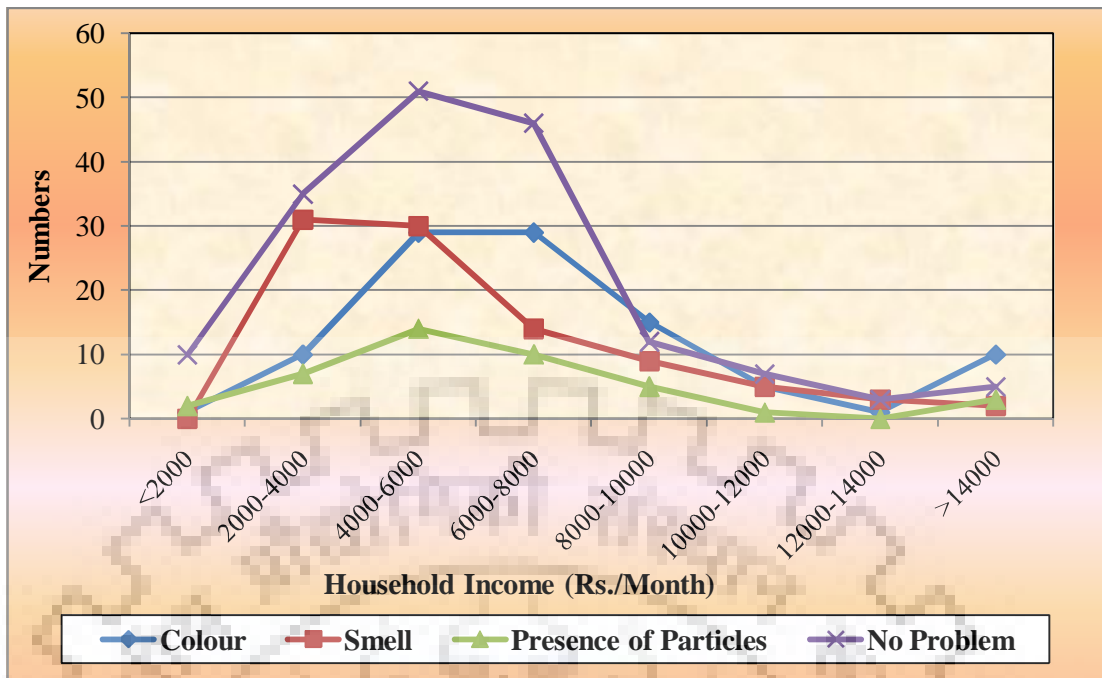


Fig. 4.51: Water Supply Problems in the slums

4.4.7 Electricity Availability

In present times many slum households do not have access to safe and reliable electricity. One of the challenges identified by the experts is that there is no support beyond the regulated point of supply (the metering point). Arrangements are informal and the lack of an institutional framework to support the financing of connections for the poorest leads to bottlenecks in connection investment. The availability of electricity not only provides a comfortable life, but also helps in excelling in the education and subsequently professional life. Since the availability of electricity is pre-requisite to any housing, the data pertaining to this aspect was collected and the results are presented.

Table 4.52 shows information pertaining to the availability of electricity in the house of slum dweller household in Nagpur City. It was apparent from the information that electricity was available with electric meter and monthly billing in the house of 90.87% slum dweller household, whereas electricity was available without meter and without bill in house of 5.18% slum dweller household. However, there was no electricity available in the house of 3.95% slum dweller household. Hence it was evident from the study results that electricity was available with meter and monthly billing in the house of majority of slum dweller household in Nagpur city.

Table 4.52: Electricity Availability

SN	Household Income Rs/month	Electricity						Total	
		Available with Meter & Monthly Billing		Available Without Meter Without Billing		Not Available NA			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	12	3.26	0	0.00	1	6.25	13	3.21
2	2000-4000	75	20.38	5	23.81	3	18.75	83	20.49
3	4000-6000	111	30.16	8	38.10	5	31.25	124	30.62
4	6000-8000	93	25.27	4	19.05	2	12.50	99	24.44
5	8000-10000	36	9.78	2	9.52	3	18.75	41	10.12
6	10000-12000	17	4.62	1	4.76	0	0.00	18	4.44
7	12000-14000	6	1.63	0	0.00	1	6.25	7	1.73
8	>14000	18	4.89	1	4.76	1	6.25	20	4.94
	Total	368 (90.87)	100.00	21 (5.18)	100.00	16 (3.95)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

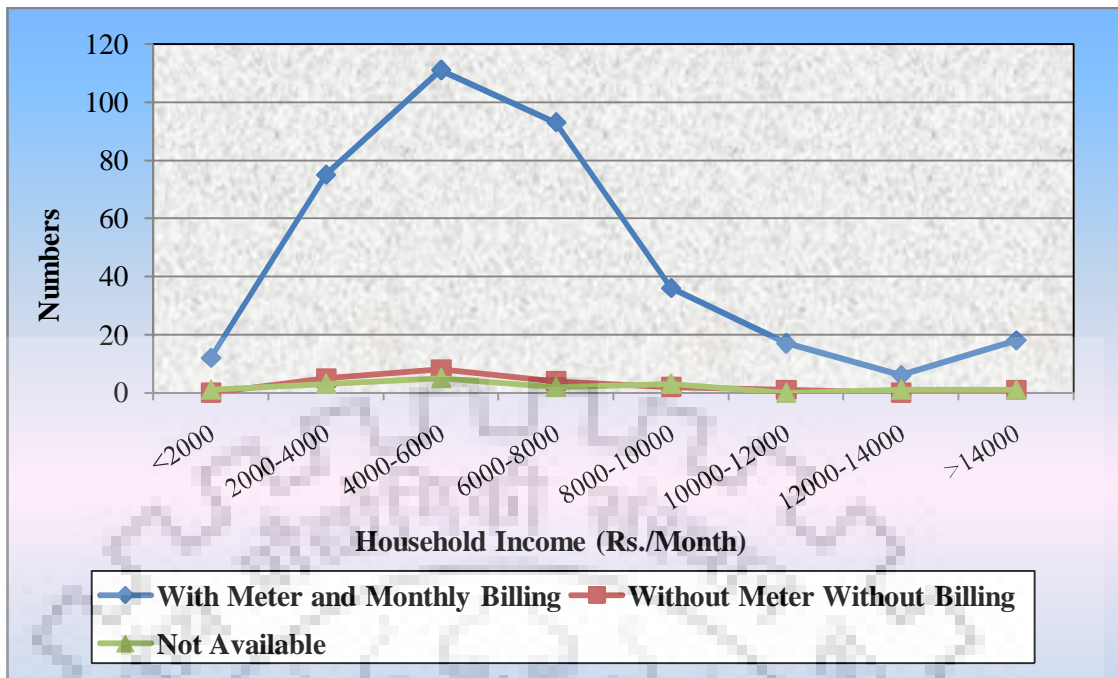


Fig. 4.52: Electricity Availability

4.4.8 Electricity Tariff

Since, Electricity Tariff has direct influence on the economic situation of slum dwellers it is important to know the perception of these slum dwellers with respect to same (Electricity Tariff). Furthermore, it (Electricity Tariff) being a recurring expenditure as well as savings of the slum dwellers. Hence, data pertaining to the electricity tariff applicable to the slum dwellers of Nagpur City was collected and the results are presented.

Table 4.53 presents results regarding the tariff drawn for the electricity consumed by slum dweller household in Nagpur City. The electricity tariff depends on the electricity usage, and higher tariff is generally applicable to high electricity users i.e. beyond certain reading (per month), the tariff changes. It was clear from the data that 52.60% slum dweller household paid very high tariff for electricity, whereas 38.27% slum dweller household paid moderate tariff for electricity. Moreover, 5.18% slum dweller household paid very low tariff, however; electricity was not available at 3.95% slum dweller household. Hence it was evident from the study results that majority of slum dweller household paid very high tariff for electricity consumed by them.

Table 4.53: Electricity Tariff

SN	Household Income Rs/month	Tariff								Total	
		Very High		Moderate		Low/Free		NA			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	5	2.35	7	4.52	0	0.00	1	6.25	13	3.21
2	2000-4000	35	16.43	40	25.81	5	23.81	3	18.75	83	20.49
3	4000-6000	55	25.82	56	36.13	8	38.10	5	31.25	124	30.62
4	6000-8000	63	29.58	30	19.35	4	19.05	2	12.5	99	24.44
5	8000-10000	27	12.68	9	5.81	2	9.52	3	18.75	41	10.12
6	10000-12000	10	4.69	7	4.52	1	4.76	0	0	18	4.44
7	12000-14000	4	1.88	2	1.29	0	0.00	1	6.25	7	1.73
8	>14000	14	6.57	4	2.58	1	4.76	1	6.25	20	4.94
	Total	213 (52.60)	100.00	155 (38.27)	100.00	21 (5.18)	100.00	16 (3.95)	100	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

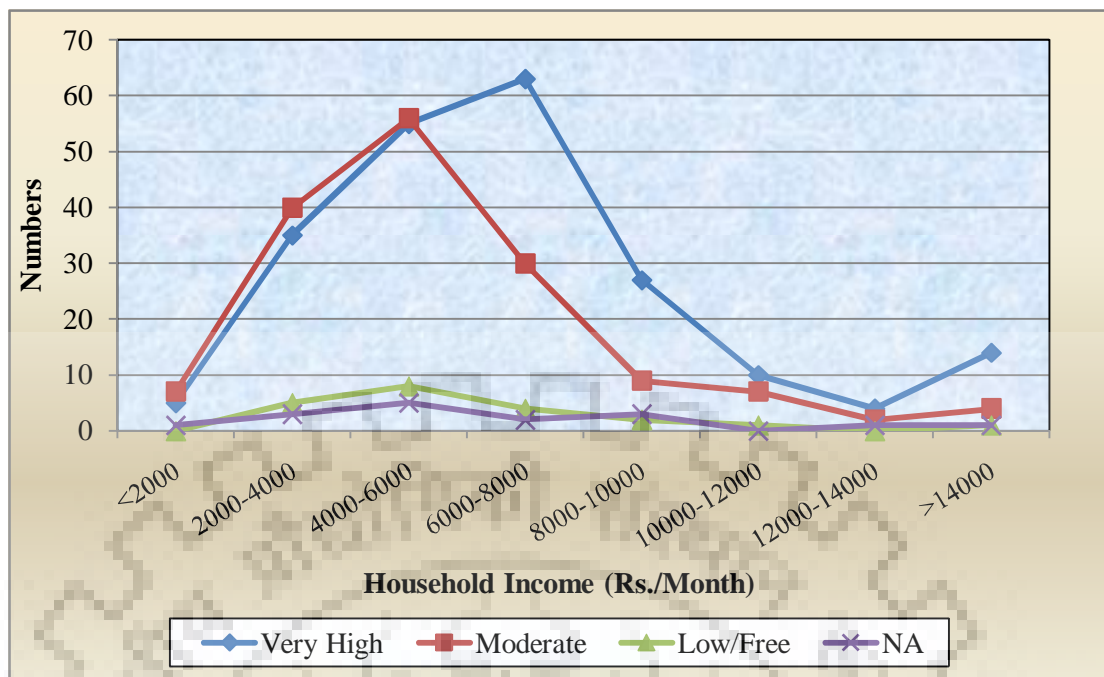


Fig. 4.53: Electricity Tariff

4.4.9 Power cuts in Slum Area

It has been observed that there are frequent power cuts in the slum area and even when electricity supply is normal, voltage keeps fluctuating or is nil. Moreover, heavy generators of bigger shops create a lot of pollution which leads to health problems like headaches. There have been frequent power cuts for at least two hours daily on an average. These power cuts, especially in summer and winter season severely affect day to day activities of slum dwellers. Hence, data related to this aspect and results are presented as follows.

4.4.9.1 During Summer Season

Table 4.54 provides information pertaining to the problem of power cuts faced by the slum dweller household in Nagpur City. It was apparent from the information that 61.98% slum dweller household faced problem of power cuts in summer season whereas 38.02% slum dweller household did not faced problem of power cut during summer season. Thus it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household faced problem of power cuts during summer season.

Table 4.54: Power Cuts in summer

S N	Household Income Rs/month	Power Cuts in Summer				Total	
		Yes		No/NA		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	5	1.99	8	5.19	13	3.21
2	2000-4000	51	20.32	32	20.78	83	20.49
3	4000-6000	76	30.28	48	31.17	124	30.62
4	6000-8000	65	25.90	34	22.08	99	24.44
5	8000-10000	26	10.36	15	9.74	41	10.12
6	10000-12000	13	5.18	5	3.25	18	4.44
7	12000-14000	4	1.59	3	1.95	7	1.73
8	>14000	11	4.38	9	5.84	20	4.94
	Total	251 (61.98)	100.00	154 (38.02)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

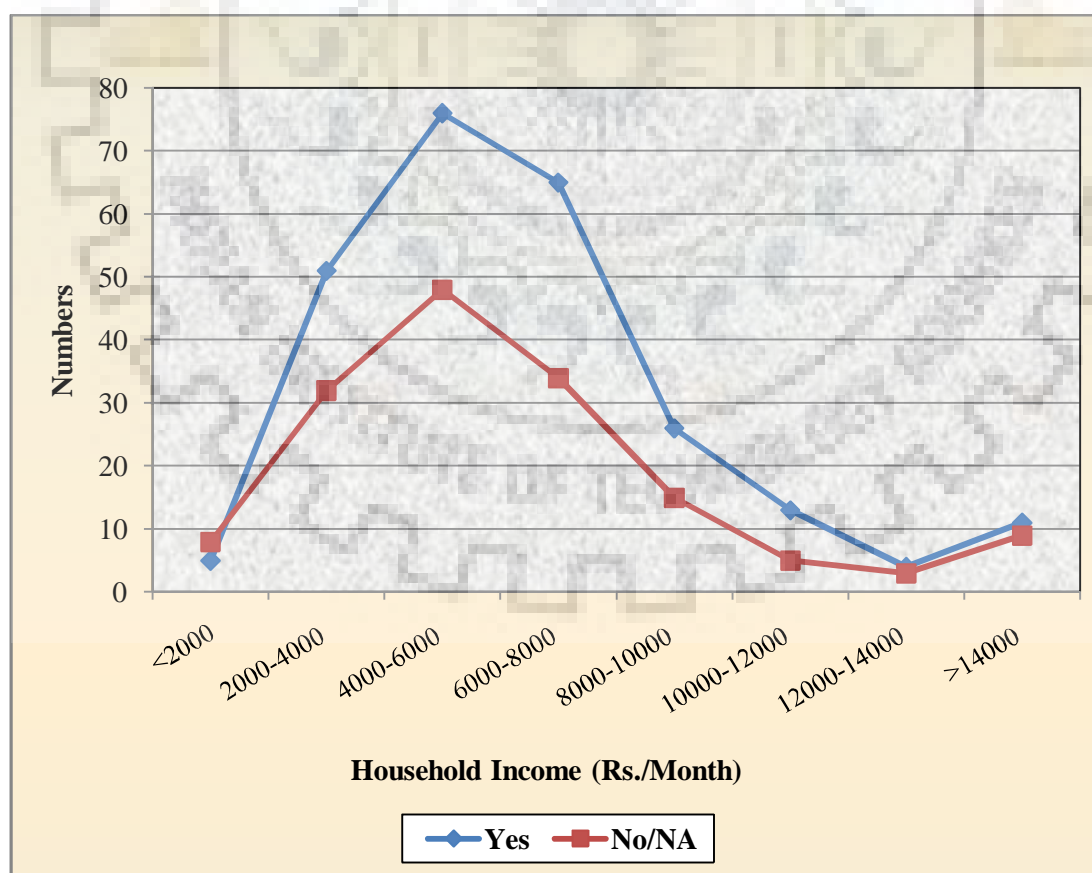


Fig. 4.54: Power Cuts in Summer Season

4.4.9.2 During Winter Season

Table 4.55 shows information regarding problem of power cuts faced by slum dweller household in Nagpur city during winter season. It was apparent from the information that 81.98% slum dweller household did not face problem of power cut during winter season, whereas 18.02% slum dweller household faced problem of power cuts during winter seasons. Hence it was apparent from the study result that significantly ($P < 0.05$) high percentage of slum dweller household did not face problem of power cuts during winter season.

Table 4.55: Power Cuts in Winter Season

SN	Household Income Rs/month	Power Cuts in Winter				Total	
		Yes		No/ NA		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	2	2.7	11	3.3	13	3.2
2	2000-4000	11	15.1	72	21.7	83	20.5
3	4000-6000	25	34.2	99	29.8	124	30.6
4	6000-8000	21	28.8	78	23.5	99	24.4
5	8000-10000	5	6.8	36	10.8	41	10.1
6	10000-12000	3	4.1	15	4.5	18	4.4
7	12000-14000	2	2.7	5	1.5	7	1.7
8	>14000	4	5.5	16	4.8	20	4.9
	Total	73 (18.02)	100.0	332 (81.98)	100.0	405 (100.00)	100.0

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.

Note: Figure in parenthesis denotes 'row' percentage.

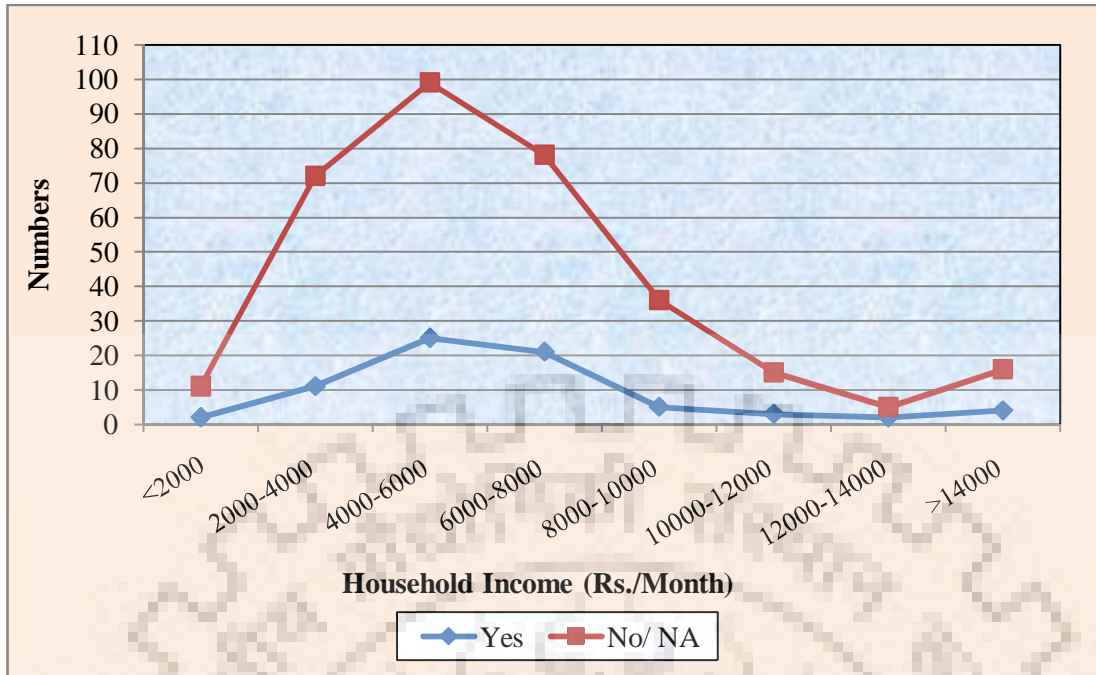


Fig.4.55: Power Cuts in Winter Season

4.4.10 Voltage Fluctuation

Since, modern day living is dependent on electrical gadgets (Mixer, Grinder, Iron, Fan, Television etc.) to perform day to day activities, it is necessary that a fluctuation free voltage be available in all households. Hence, data pertaining to this attributes was collected and the results are presented.

Table 4.56 illustrates information regarding problem of voltage fluctuation faced by slum dweller household in Nagpur City. It was apparent from the information that 81.23% slum dweller household did not face problem of voltage fluctuation whereas, 18.77% slum dweller household faced problem of voltage fluctuation it was apparent from the study results that significantly high percentage of slum dweller household in Nagpur City did not face problem of voltage fluctuation

Table 4.56: Voltage Fluctuation

SN	Household Income Rs/month	Voltage Fluctuation				Total	
		Yes		No / NA		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	2	2.63	11	3.34	13	3.21
2	2000-4000	11	14.47	72	21.88	83	20.49
3	4000-6000	26	34.21	98	29.79	124	30.62
4	6000-8000	22	28.95	77	23.40	99	24.44
5	8000-10000	5	6.58	36	10.94	41	10.12
6	10000-12000	3	3.95	15	4.56	18	4.44
7	12000-14000	2	2.63	5	1.52	7	1.73
8	>14000	5	6.58	15	4.56	20	4.94
	Total	76 (18.77)	100.00	329 (81.23)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.

Note: Figure in parenthesis denotes 'row' percentage.

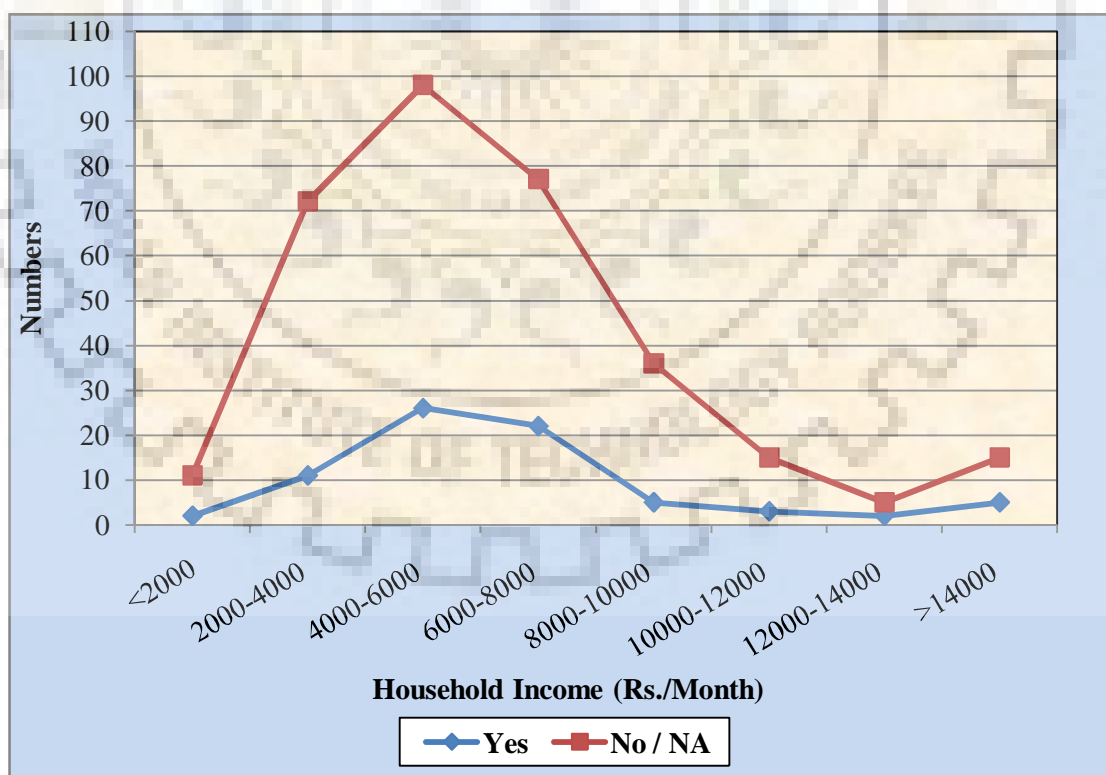


Fig. 4.56: Voltage Fluctuation

4.4.11 Washing Space in the House

The houses in slums have the bare minimum washing area. Sometimes there is no washing area or it is so small that only one person can crawl in and wash or bathe. Since the hygiene of household has direct relationship with the availability of adequate washing space data pertaining to same (Washing Space) was also collected from the slum dwellers and the results are presented.

Table 4.57 shows information pertaining to the availability of washing space in the house of slum dweller households in Nagpur City. It was apparent from the information that washing space was available in the house of 88.15% slum dweller households whereas it was not available in house of 11.85% slum dweller households. It was apparent from the study results that washing space was available in the house of significantly ($P < 0.05$) high percentage of slum dweller households in Nagpur City.

Table 4.57: Washing Space in the House

SN	Household Income Rs/month	Washing Space in the House				Total	
		Yes		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	6	1.68	7	14.58	13	3.21
2	2000-4000	72	20.17	11	22.92	83	20.49
3	4000-6000	116	32.49	8	16.67	124	30.62
4	6000-8000	88	24.65	11	22.92	99	24.44
5	8000-10000	37	10.36	4	8.33	41	10.12
6	10000-12000	15	4.20	3	6.25	18	4.44
7	12000-14000	5	1.40	2	4.17	7	1.73
8	>14000	18	5.04	2	4.17	20	4.94
	Total	357 (88.15)	100.00	48 (11.85)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013.

Note: Figure in parenthesis denotes 'row' percentage.

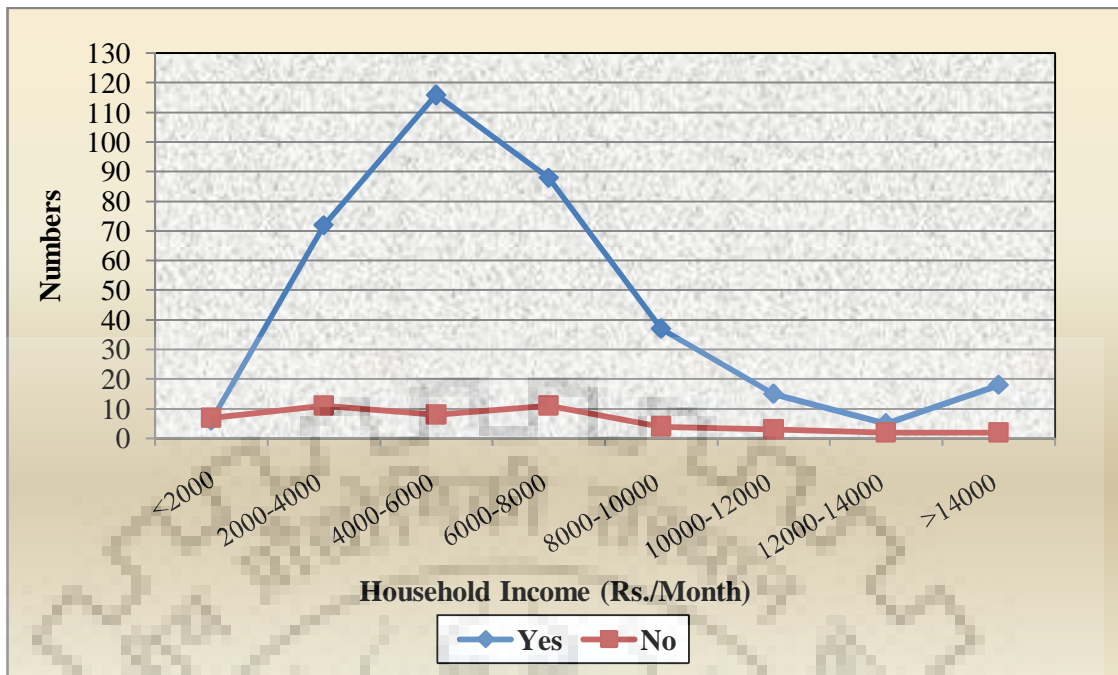


Fig. 4.57: Washing Space in the House

4.4.12 Availability of Toilets

It has been reported by many NGOs as well as other researchers that one third of total slums in India do not have toilets. Since this is an absolutely necessary requirement for living healthy life it was necessary to collect data pertaining to this aspect. Moreover, any new housing related policy would have focus on the availability of toilets in the households. Hence, data pertaining to this aspect was collected and the results are presented in view of total monthly house hold income of slum dwellers of Nagpur City.

Table 4.58 indicates information pertaining to the availability of toilets in the house of slum dweller households in Nagpur City. It was apparent from the information that individual toilet was available in the house of 85.19% slum dweller households whereas public toilets was available for 11.85% slum dweller households. However 11.11% slum dweller household followed open defecation. It was apparent from the study results that individual toilet was available at significantly ($P < 0.05$) high percentage of slum dweller households in Nagpur City.

Table 4.58: Availability of Toilets

SN	Household Income Rs/month	Toilets						Total	
		Individual		Public		Open Defecation		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	10	2.90	0	0.00	3	6.67	13	3.21
2	2000-4000	70	20.29	3	20.00	10	22.22	83	20.49
3	4000-6000	109	31.59	5	33.33	10	22.22	124	30.62
4	6000-8000	86	24.93	5	33.33	8	17.78	99	24.44
5	8000-10000	34	9.86	1	6.67	6	13.33	41	10.12
6	10000-12000	16	4.64	0	0.00	2	4.44	18	4.44
7	12000-14000	4	1.16	0	0.00	3	6.67	7	1.73
8	>14000	16	4.64	1	6.67	3	6.67	20	4.94
	Total	345 (85.19)	100.00	15 (3.70)	100.00	45 (11.11)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

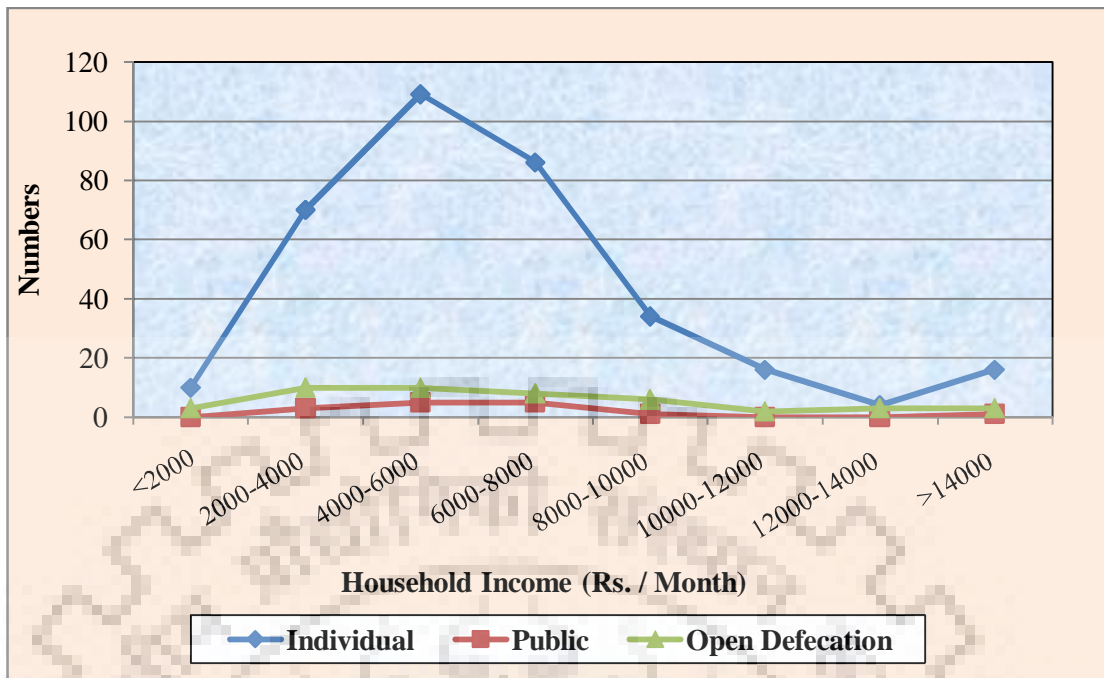


Fig. 4.58: Availability of Toilets

4.4.13 Presence of Manholes

The main feature the squatter settlements have in common is that the land is usually low-lying and even tidal. Drainage is normally non-existent; many times roads are built above the level of the housing land. On some places there exists an almost non-functional drainage system with manholes. But most of the times these sewerage lines or drainage lines are clogged with rubbish and plastics, causing the sewer water to flow on the roads. Many manholes are uncovered and cause a threat to the lives of the occupants of the slums. In view of this data regarding the manholes in the locality was collected and the results are presented.

Table 4.59 provides results pertaining to the availability of manholes in the area of slum dweller households in Nagpur City. It was apparent from the information that manholes were available in the area of 84.70% slum dweller households whereas it was not available in area of 15.30% slum dweller households. It was apparent from the study results that manholes were available in the area of significantly ($P < 0.05$) high percentage of slum dweller households in Nagpur City. However, most of them remain clogged, which is a big concern.

Table 4.59: Presence of Manholes

SN	Household Income Rs/month	Presence of Manholes				Total	
		Yes		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	6	1.75	7	11.29	13	3.21
2	2000-4000	79	23.03	4	6.45	83	20.49
3	4000-6000	107	31.20	17	27.42	124	30.62
4	6000-8000	82	23.91	17	27.42	99	24.44
5	8000-10000	32	9.33	9	14.52	41	10.12
6	10000-12000	13	3.79	5	8.06	18	4.44
7	12000-14000	6	1.75	1	1.61	7	1.73
8	>14000	18	5.25	2	3.23	20	4.94
	Total	343 (84.70)	100.00	62 (15.30)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013

Note: Figure in parenthesis denotes 'row' percentage.

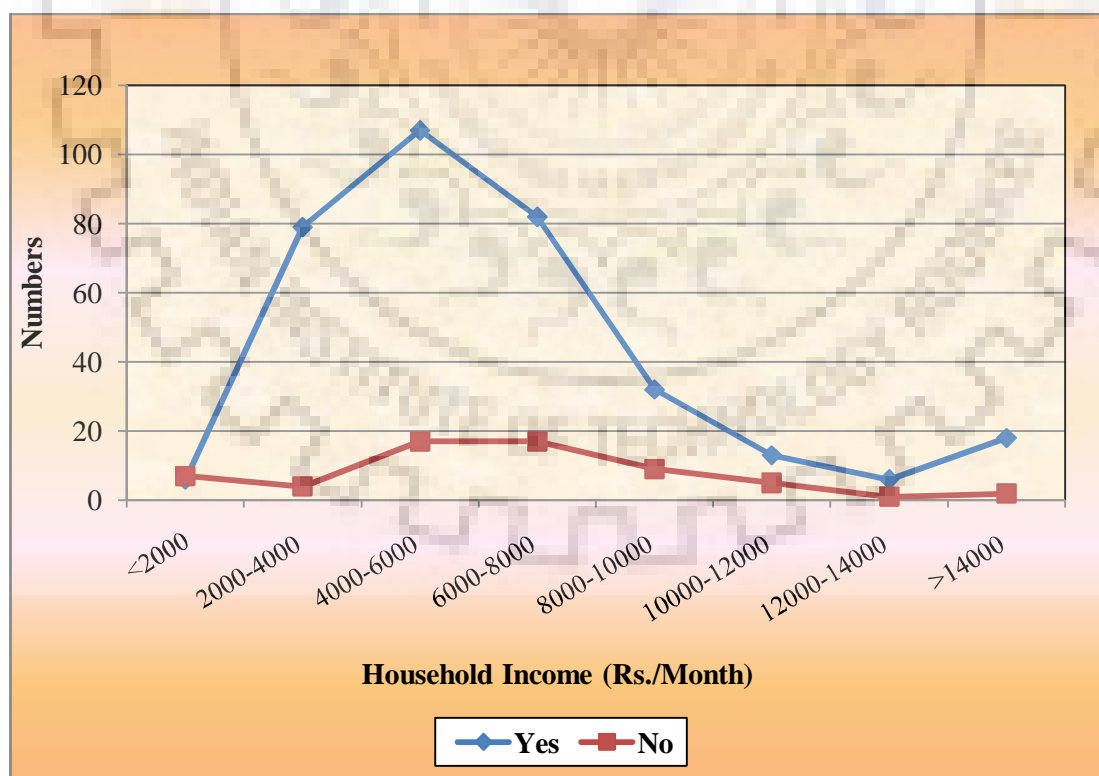


Fig.4.59: Presence of Manholes

4.4.14 Drains

As India's cities have expanded, their drainage systems have neither kept pace with building growth nor with the provision of water supply. Encroachment on floodplains as well as inadequate sewerage systems flows into storm drains proving that these drains cannot cope with monsoon runoff. Most slum households do not have connections for water supply and drainage, individual toilets, slum level storm water drainage, paving of internal roads and street lighting. In view of the data related to nature of drains available in the slum areas of Nagpur City, the results are presented.

Table 4.60 indicates information pertaining to the availability of type of drains in the area of slum dweller households in Nagpur City. It was apparent from the information that open drains were available in the area of 40.49% slum dweller households whereas covered drains were available in the area of 22.22% slum dweller households. In addition to this underground drain were available in the area of 15.30% slum dweller households. However temporary (Katcha) and permanent (Pakka) drains were available in the area of 11.11% and 10.86% slum dweller household respectively. It was apparent from the study results that open drains were available in the area of significantly ($P < 0.05$) high percentage of slum dweller households in Nagpur City.

Table 4.60:Drains

SN	Household Income Rs/month	Drains										Total	
		Open		Covered		Permanent (Pakka)		Temporary (Katcha)		Under Ground		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	3	1.83	4	4.44	2	4.55	2	4.44	2	3.23	13	3.21
2	2000-4000	27	16.46	21	23.33	15	34.09	7	15.56	13	20.97	83	20.49
3	4000-6000	46	28.05	28	31.11	10	22.73	16	35.56	24	38.71	124	30.62
4	6000-8000	49	29.88	21	23.33	6	13.64	10	22.22	13	20.97	99	24.44
5	8000-10000	17	10.37	11	12.22	5	11.36	4	8.89	4	6.45	41	10.12
6	10000-12000	7	4.27	3	3.33	3	6.82	2	4.44	3	4.84	18	4.44
7	12000-14000	4	2.44	1	1.11	0	0.00	1	2.22	1	1.61	7	1.73
8	>14000	11	6.71	1	1.11	3	6.82	3	6.67	2	3.23	20	4.94
	Total	164 (40.49)	100.00	90 (22.22)	100.00	44 (10.86)	100.00	45 (11.11)	100.00	62 (15.30)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

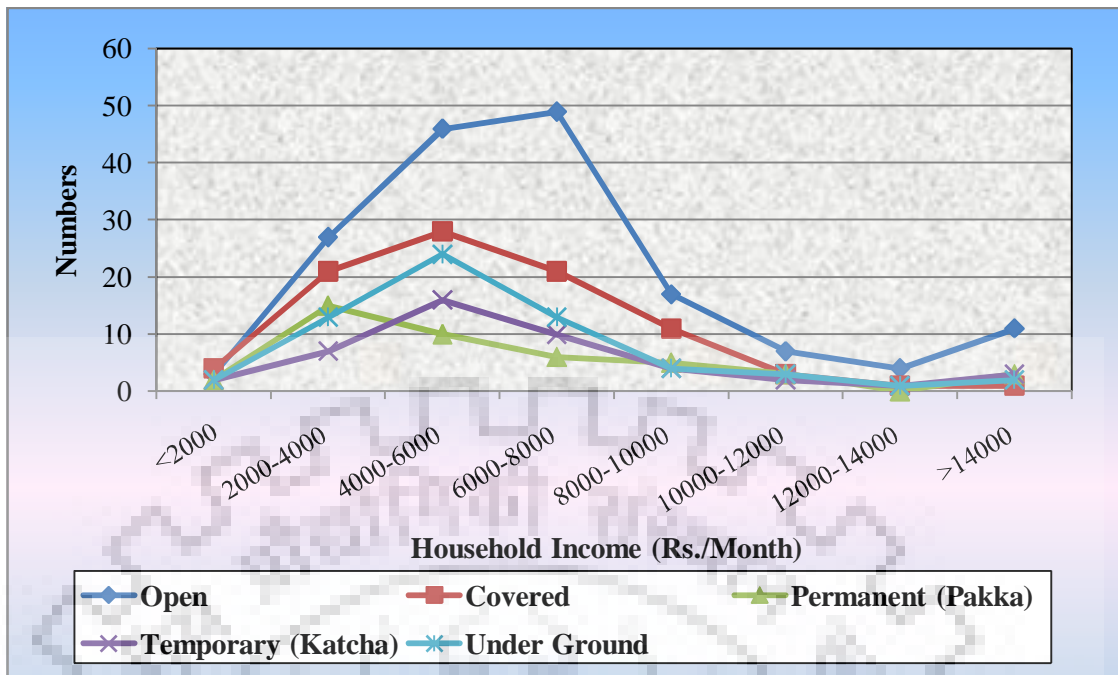


Fig. 4.60:Drains

4.4.15 Garbage Disposal Problems in the slums

Solid waste management is one of the most challenging issues in urban cities, which are facing a serious pollution problem due to the generation of huge quantities of solid waste. It has been reported by Government Agencies that the existing situation of municipal solid waste management in major cities in India is not proper. Since, sustainable development of any society is dependent on efficient garbage disposal system data pertaining to problems related to same (Garbage disposal) in the slums of Nagpur City was collected and results are present.

Table 4.61 illustrates information pertaining to the garbage disposal strategy adopted by slum dweller household in Nagpur City. It was apparent from the information that 68.89% slum dweller households thrown garbage on the street, whereas 29.63% slum dweller households keep garbage in the Municipal bins. However 1.48% slum dweller household burnt garbage openly. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller households thrown garbage on the street.

Table 4.61: Garbage Disposal Problems in the slums

SN	Household Income Rs/month	Solid Waste - Garbage Disposal						Total	
		Thrown on the Street		Municipal Bins		Burnt Openly		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	7	2.51	6	5.00	0	0.00	13	3.21
2	2000-4000	57	20.43	22	18.33	4	66.67	83	20.49
3	4000-6000	82	29.39	42	35.00	0	0.00	124	30.62
4	6000-8000	67	24.01	31	25.83	1	16.67	99	24.44
5	8000-10000	29	10.39	11	9.17	1	16.67	41	10.12
6	10000-12000	16	5.73	2	1.67	0	0.00	18	4.44
7	12000-14000	6	2.15	1	0.83	0	0.00	7	1.73
8	>14000	15	5.38	5	4.17	0	0.00	20	4.94
	Total	279 (68.89)	100.00	120 (29.63)	100.00	6 (1.48)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

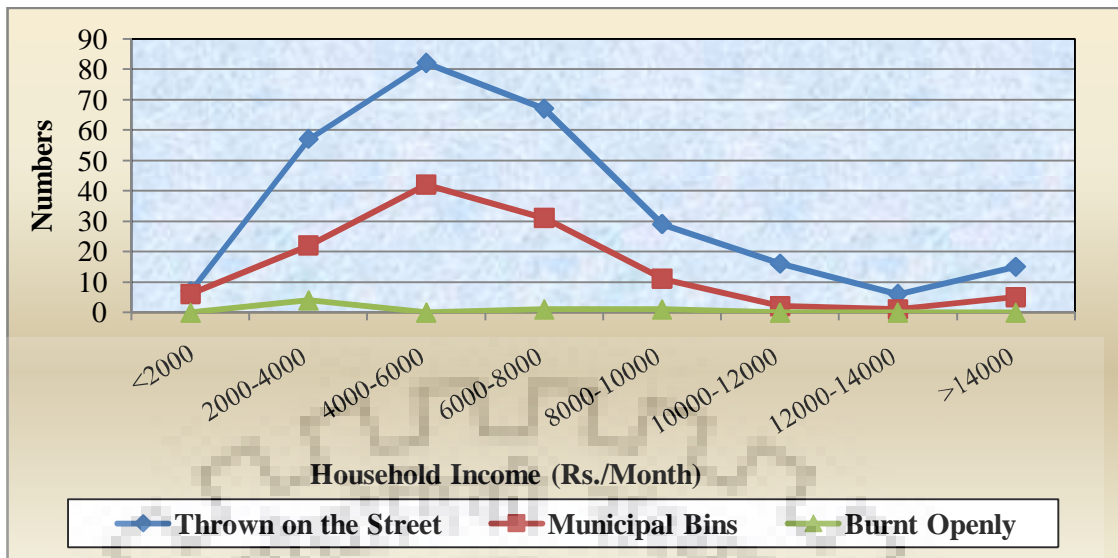


Fig. 4.61: Garbage Disposal Problems in the slums

4.4.16 Solid Waste - Garbage Collection

Human activities create waste. The way the waste is handled, stored, collected and disposed off poses risk to the environment and public health. Where intense human activities concentrate, such as in urban centers, appropriate and safe solid waste management are of utmost importance to allow healthy living conditions for the population. Typically one to two third of the solid waste generated is not collected. As a result, the uncollected waste, which is often also mixed with human and animal excreta, is dumped indiscriminately in the streets and in drains, so contributing to flooding, breeding of insect and rodent vectors and the spread of diseases. Most of the municipal solid waste in low-income Asian countries which is collected is dumped on land in a more or less uncontrolled manner. Such inadequate waste disposal creates serious environmental problems that affect health of humans and animals and cause serious economic and other welfare losses garbage recycling is one of the only disposal options. Since affordable housing policies have to be delineated with solid waste management as an important aspect, data related to it was collected and the results are presented.

Table 4.62 demonstrates information pertaining to the garbage collection schedule in the area of slum dweller household in Nagpur City. It was apparent from the information that garbage was collected alternately in the area of 48.64% slum dweller households, whereas it was collected daily in the area of 31.61% slum dweller households. Furthermore, garbage was collected weekly in the area of 6.17% slum dweller households, however; garbage was not collected in the area of 13.58% slum dweller households. It was evident from the study results that garbage was collected alternately in the area of majority of slum dweller household in Nagpur City.

Table 4.62: Solid Waste - Garbage Collection

S N	Household Income Rs/month	Solid Waste - Garbage Collection								Total	
		Daily		Alternately		Weekly		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	8	6.25	5	2.54	0	0.00	0	0.00	13	3.21
2	2000-4000	14	10.94	41	20.81	8	32.00	20	36.36	83	20.49
3	4000-6000	32	25.00	66	33.50	6	24.00	20	36.36	124	30.62
4	6000-8000	37	28.91	50	25.38	6	24.00	6	10.91	99	24.44
5	8000-10000	13	10.16	21	10.66	2	8.00	5	9.09	41	10.12
6	10000-12000	11	8.59	6	3.05	0	0.00	1	1.82	18	4.44
7	12000-14000	2	1.56	2	1.02	2	8.00	1	1.82	7	1.73
8	>14000	11	8.59	6	3.05	1	4.00	2	3.64	20	4.94
	Total	128 (31.61)	100.00	197 (48.64)	100.00	25 (6.17)	100.00	55 (13.58)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage

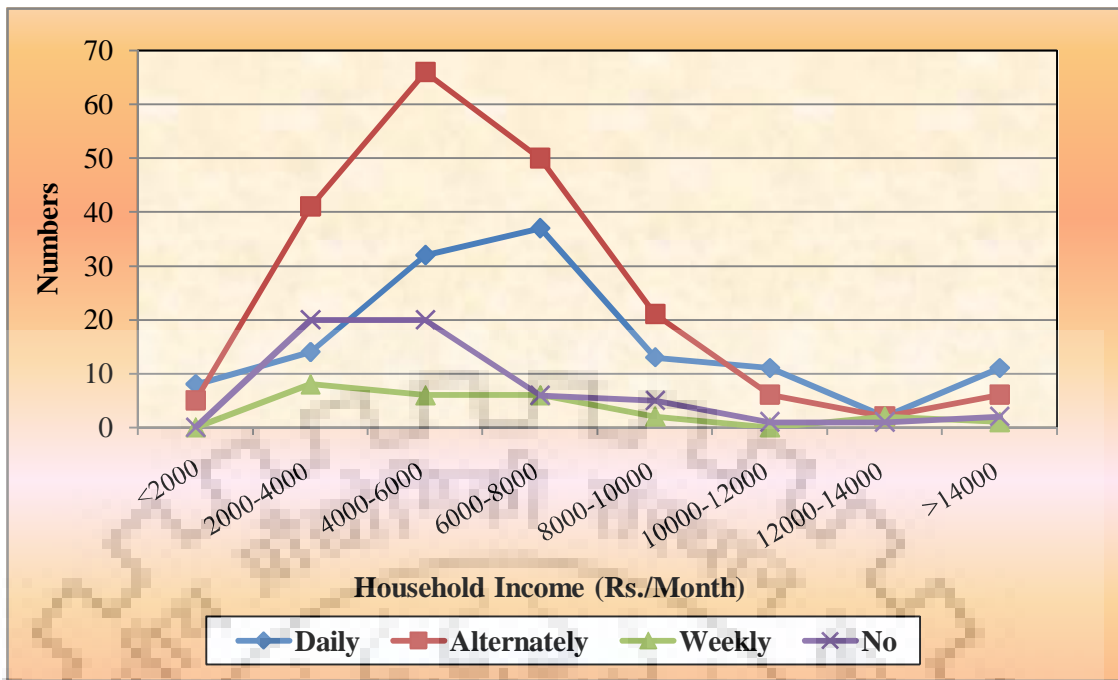


Fig. 4.62: Solid Waste - Garbage Collection

4.4.17 Availability of Street Lighting in the slums

The lack of infrastructure affects all aspects of life, including waste collection and sewers, public transportation, policing, education, and electricity supply. Violence associated with drug traffic between gangs or with the police creates unsafe conditions for all residents and pose a major barrier to provision of public health interventions. Violence towards women is also associated with the absence of basic services like street lighting. Hence data pertaining to street lighting in the slum areas of Nagpur City was collected and the results are presented.

Table 4.63 demonstrates information pertaining to the availability of street lights in the area of slum dweller household in the Nagpur city. It was apparent from the information that street lights were available in the area of 74.07% slum dweller household, whereas street lights were not available in the area of 25.39% slum dweller household. It was apparent from the study results that street lights were available in the area of significantly ($P < 0.05$) high percentage of slum dweller household.

Table 4.63: Availability of Street Lighting in the slums

SN	Household Income Rs/month	Availability of Street Lighting				Total	
		Yes		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	9	3.00	4	3.81	13	3.21
2	2000-4000	62	20.67	21	20.00	83	20.49
3	4000-6000	93	31.00	31	29.52	124	30.62
4	6000-8000	77	25.67	22	20.95	99	24.44
5	8000-10000	27	9.00	14	13.33	41	10.12
6	10000-12000	14	4.67	4	3.81	18	4.44
7	12000-14000	6	2.00	1	0.95	7	1.73
8	>14000	12	4.00	8	7.62	20	4.94
	Total	300 (74.07)	100.00	105 (25.93)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013

Note: Figure in parenthesis denotes 'row' percentage.

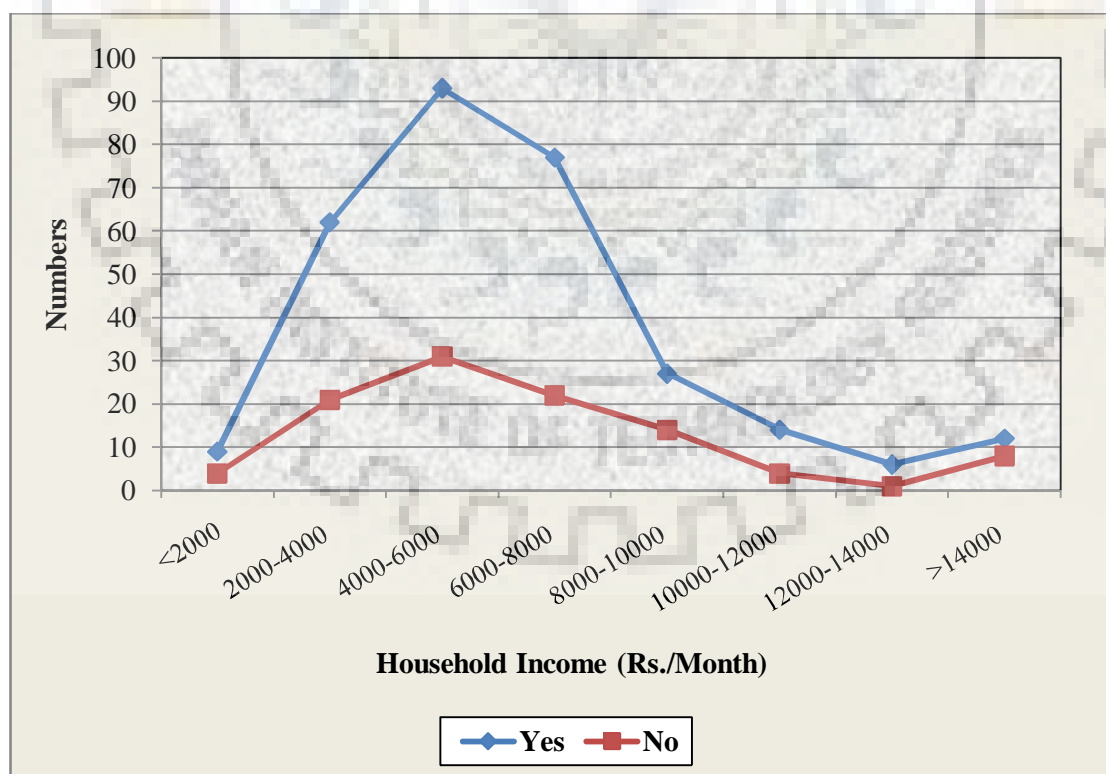


Fig. 4.63: Availability of Street Lighting in the slums

4.4.18 Distance of Bus stop

The rapid growth of India's urban population has put enormous strains on all transport systems. Burgeoning travel demand far exceeds the limited supply of transport infrastructure and services. Public transport, in particular, has been completely overwhelmed. Most bus and train services are overcrowded, undependable, slow, inconvenient, uncoordinated, and dangerous. Moreover, the public ownership and operation of most public transport services has greatly reduced productivity and inflated costs. Since, the economic development of slum dwellers is dependent on the ability to work at places that are not particularly very close to their residence, they are often required to travel by using public transport such as City Bus. Hence, the distance of bus stop from their household is an important characteristic, which was given due importance and the data in this regard was collected and the results are presented.

Table 4.64 provides information pertaining to the distance of bus stop from the area of slum dweller household in Nagpur City. It was apparent from the information that bus stop was less than 1 Km away from the area of 64.19% slum dweller households, whereas it was 1-2 Km away from the area of 26.67% slum dweller household. Furthermore bus stop was 2-3Km away from the area of 9.14% slum dweller household. It was apparent from the study results that bus stop was less than 1 Km away from the area of significantly ($P < 0.05$) high percentage of slum dweller household.

Table 4.64: Distance of Bus stop

SN	Household Income Rs/month	Bus stop						Total	
		<1 Km		1-2 Km		2-3 Km		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	8	3.08	3	2.78	2	5.41	13	3.21
2	2000-4000	54	20.77	21	19.44	8	21.62	83	20.49
3	4000-6000	84	32.31	31	28.70	9	24.32	124	30.62
4	6000-8000	68	26.15	23	21.30	8	21.62	99	24.44
5	8000-10000	22	8.46	14	12.96	5	13.51	41	10.12
6	10000-12000	11	4.23	6	5.56	1	2.70	18	4.44
7	12000-14000	4	1.54	2	1.85	1	2.70	7	1.73
8	>14000	9	3.46	8	7.41	3	8.11	20	4.94
	Total	260 (64.19)	100.00	108 (26.67)	100.00	37 (9.14)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

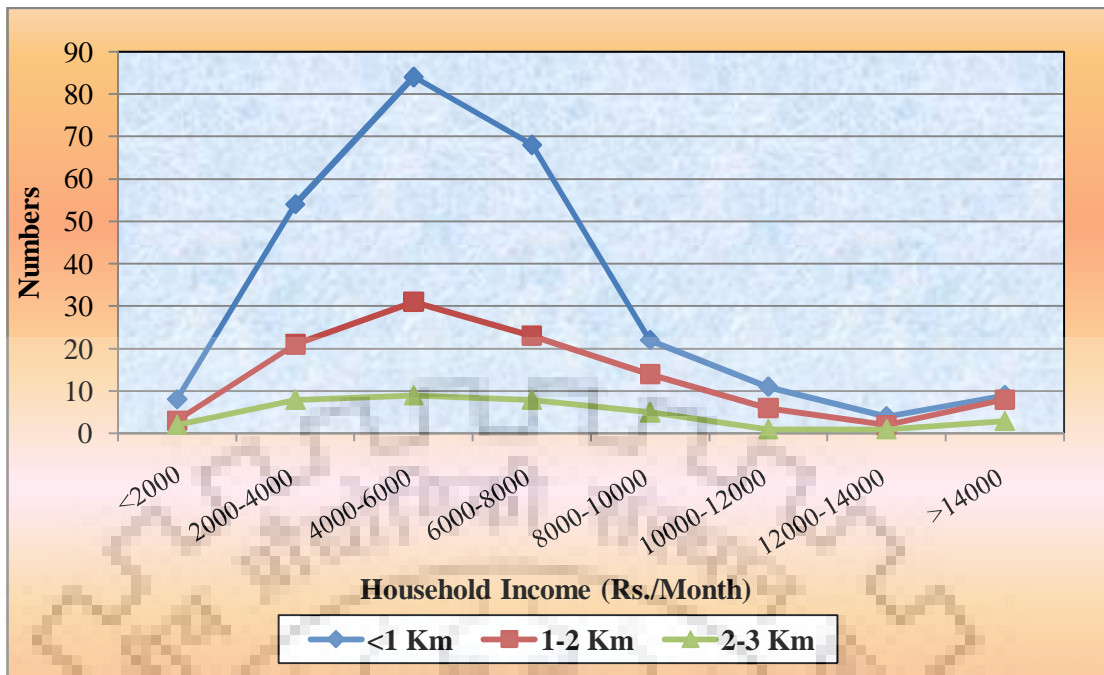


Fig. 4.64: Distance of Bus stop

4.4.19 Distance of Primary School

While compulsory education for children up to the age of 14 is enshrined as a directive principle in the Indian Constitution, the reality is abysmally different. A child in the slums often ends up as a labourer in joints such as tea shops, restaurants, private offices etc., which is due to non availability of primary school near the slum areas. In view of importance of education in general and distance of primary school in particular data related to this aspect was collected from the slum areas of Nagpur city and is presented.

Table 4.65 provides information pertaining to the distance of primary school from the area of slum dweller household in Nagpur City. It was apparent from the information that primary school was less than 1 Km away from the area of 72.35% slum dweller households, whereas it was 1-2 Km away from the area of 18.76% slum dweller household. Furthermore primary school was 2-3Km away from the area of 8.89% slum dweller household. It was apparent from the study results that primary school was less than 1 Km away from the area of significantly ($P < 0.05$) high percentage of slum dweller household.

Table 4.65: Distance of Primary School

SN	Household Income Rs/month	Primary school						Total	
		<1 Km		1-2 Km		2-3 Km		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	8	2.73	3	3.95	2	5.56	13	3.21
2	2000-4000	69	23.55	7	9.21	7	19.44	83	20.49
3	4000-6000	86	29.35	32	42.11	6	16.67	124	30.62
4	6000-8000	73	24.91	21	27.63	5	13.89	99	24.44
5	8000-10000	30	10.24	3	3.95	8	22.22	41	10.12
6	10000-12000	14	4.78	2	2.63	2	5.56	18	4.44
7	12000-14000	4	1.37	2	2.63	1	2.78	7	1.73
8	>14000	9	3.07	6	7.89	5	13.89	20	4.94
	Total	293 (72.35)	100.00	76 (18.76)	100.00	36 (8.89)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

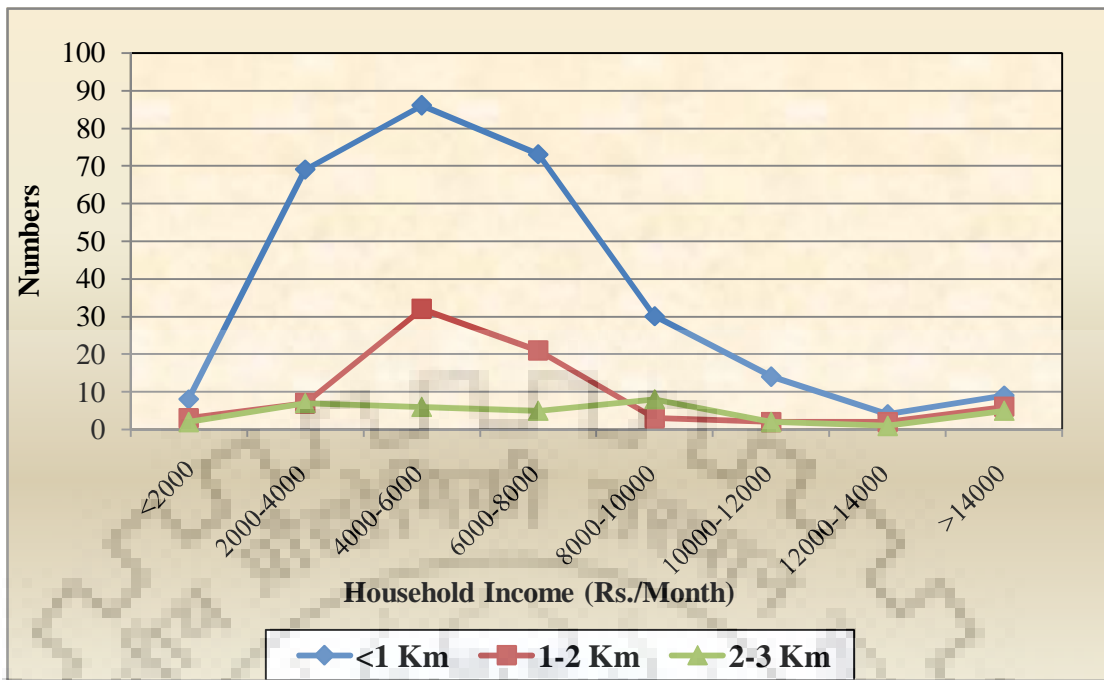


Fig. 4.65: Distance of Primary School

4.4.20 Distance of Secondary School

Factors contributing to the depressing results point to the poor quality of primary schools in slums and limited access to secondary school for slum children. Since education is an important parameter that indicates ability of a person to carry out certain tasks the availability as well as distance of an educational institute like Secondary School from the household was determined and the results are presented.

Table 4.66 illustrates information pertaining to the distance of secondary school from the area of slum dweller household in Nagpur City. It was apparent from the information that secondary school was less than 1 Km away from the area of 71.11% slum dweller households, whereas it was 1-2 Km away from the area of 16.79% slum dweller household. Furthermore secondary school was 2-3Km away from the area of 10.73% slum dweller household and it was more than 3 Km away from the area of 1.73% slum dweller households. It was apparent from the study results that secondary school was less than 1 Km away from the area of significantly ($P < 0.05$) high percentage of slum dweller household.

Table 4.66: Distance of Secondary School

SN	Household Income Rs/month	Secondary School								Total	
		<1 Km		1-2 Km		2-3 Km		> 3 Km			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	6	2.08	5	7.35	2	4.76	0	0.00	13	3.21
2	2000-4000	67	23.26	8	11.76	5	11.90	3	42.86	83	20.49
3	4000-6000	88	30.56	28	41.18	7	16.67	1	14.29	124	30.62
4	6000-8000	71	24.65	16	23.53	10	23.81	2	28.57	99	24.44
5	8000-10000	30	10.42	3	4.41	7	16.67	1	14.29	41	10.12
6	10000-12000	13	4.51	3	4.41	2	4.76	0	0.00	18	4.44
7	12000-14000	4	1.39	1	1.47	2	4.76	0	0.00	7	1.73
8	>14000	9	3.13	4	5.88	7	16.67	0	0.00	20	4.94
	Total	288 (71.11)	100.00	68 (16.79)	100.00	42 (10.37)	100.00	7 (1.73)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

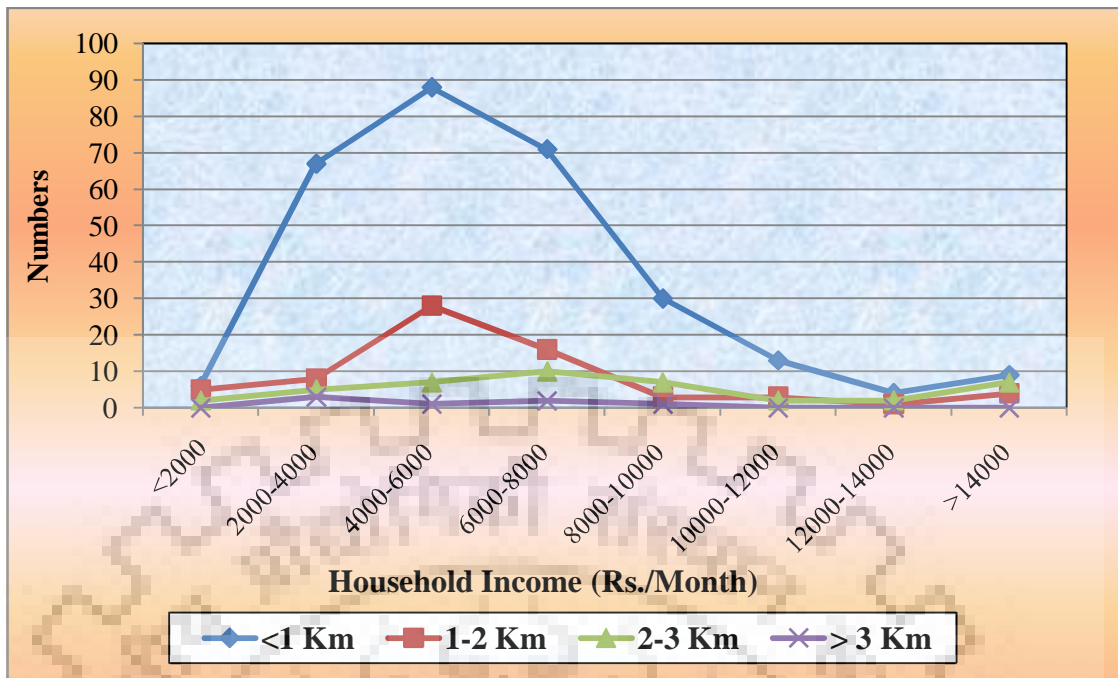


Fig. 4.66: Distance of Secondary School

4.4.21 Distance of Dispensary

Since, the slum areas have less than desired hygienic conditions there is always a risk, which is related to health of slum dwellers. In view of this the distance of dispensary from their household is critical. Hence, data pertaining to this aspect was collected from the slum dwellers and the results are presented.

Table 4.67 illustrates information pertaining to the distance of dispensary from the area of slum dweller household in Nagpur City. It was apparent from the information that dispensary was less than 1 Km away from the area of 66.67% slum dweller households, whereas it was 1-2 Km away from the area of 11.60% slum dweller household. Furthermore dispensary was 2-3Km away from the area of 19.75% slum dweller household and it was more than 3 Km away from the area of 1.98% slum dweller households. It was apparent from the study results that dispensary was less than 1 Km away from the area of significantly ($P < 0.05$) high percentage of slum dweller household.

Table 4.67:Distance of Dispensary

SN	Household Income Rs/month	Dispensary								Total	
		<1 Km		1-2 Km		2-3 Km		> 3 Km		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	7	2.59	2	4.26	4	5.00	0	0.00	13	3.21
2	2000-4000	53	19.63	6	12.77	20	25.00	4	50.00	83	20.49
3	4000-6000	80	29.63	20	42.55	22	27.50	2	25.00	124	30.62
4	6000-8000	74	27.41	10	21.28	14	17.50	1	12.50	99	24.44
5	8000-10000	25	9.26	5	10.64	10	12.50	1	12.50	41	10.12
6	10000-12000	14	5.19	1	2.13	3	3.75	0	0.00	18	4.44
7	12000-14000	4	1.48	2	4.26	1	1.25	0	0.00	7	1.73
8	>14000	13	4.81	1	2.13	6	7.50	0	0.00	20	4.94
	Total	270 (66.67)	100.00	47 (11.60)	100.00	80 (19.75)	100.00	8 (1.98)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

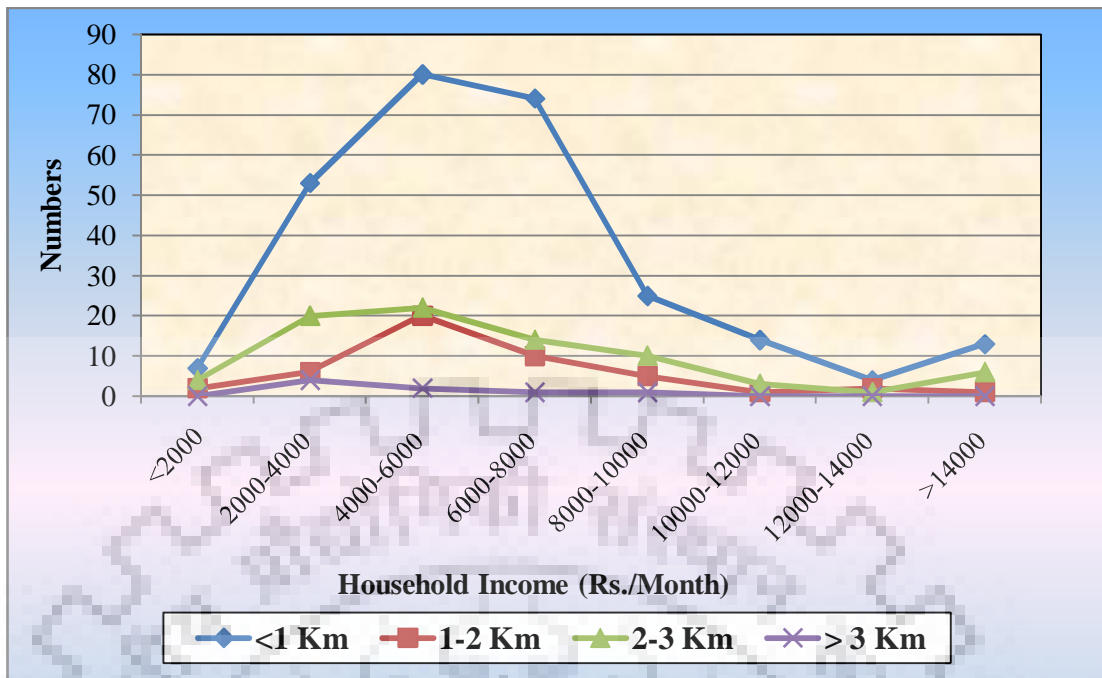


Fig.4.67: Distance of Dispensary

4.4.22 Distance of Hospital

A hospital offers Medical facilities that are needed by a people suffering from different ailments. During a medical emergency distance of hospital from the household is critical. In view of the above data pertaining to these aspects was also collected and is presented in relation to the household income of the slum dwellers.

Table 4.68 shows information pertaining to the distance of hospital from the area of slum dweller household in Nagpur City. It was apparent from the information that hospital was less than 1 Km away from the area of 53.09% slum dweller households, whereas it was 1-2 Km away from the area of 14.81% slum dweller household. Furthermore hospital was 2-3Km away from the area of 21.48% slum dweller household and it was more than 3 Km away from the area of 10.62% slum dweller households. It was apparent from the study results that hospital was less than 1 Km away from the area of majority of slum dweller household.

Table 4.68: Distance of Hospital

SN	Household Income Rs/month	Hospital								Total	
		<1 Km		1-2 Km		2-3 Km		>3 Km		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	5	2.33	2	3.33	5	5.75	1	2.33	13	3.21
2	2000-4000	51	23.72	9	15.00	20	22.99	3	6.98	83	20.49
3	4000-6000	69	32.09	21	35.00	24	27.59	10	23.26	124	30.62
4	6000-8000	52	24.19	17	28.33	16	18.39	14	32.56	99	24.44
5	8000-10000	19	8.84	4	6.67	10	11.49	8	18.60	41	10.12
6	10000-12000	8	3.72	3	5.00	3	3.45	4	9.30	18	4.44
7	12000-14000	4	1.86	1	1.67	1	1.15	1	2.33	7	1.73
8	>14000	7	3.26	3	5.00	8	9.20	2	4.65	20	4.94
	Total	215 (53.09)	100.00	60 (14.81)	100.00	87 (21.48)	100.00	43 (10.62)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

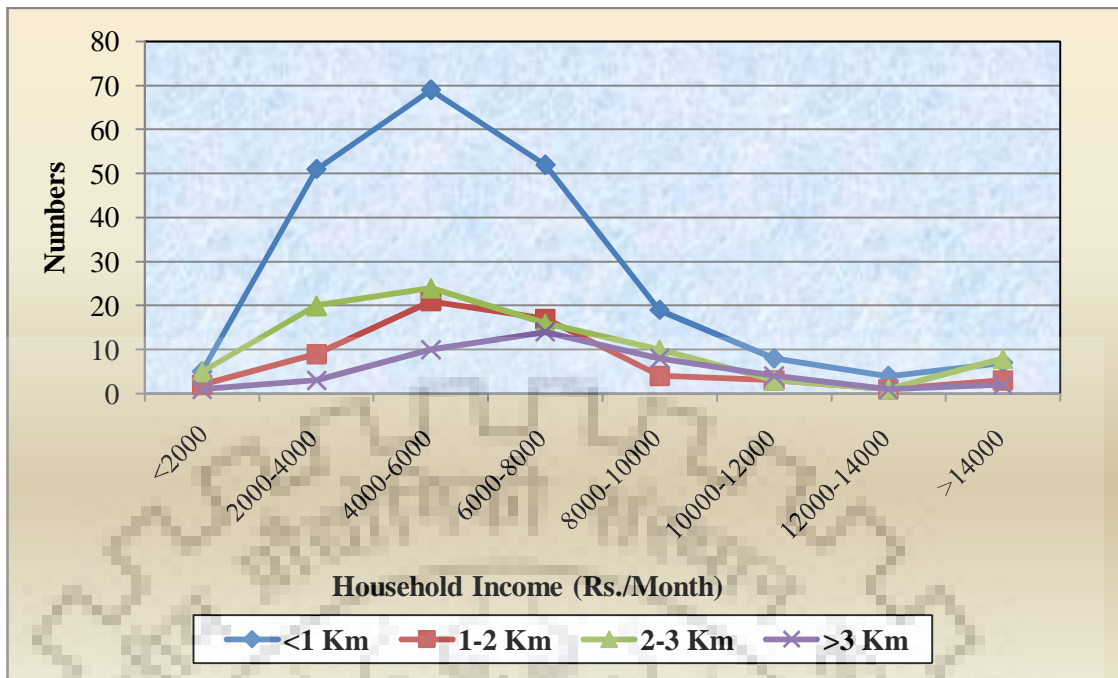


Fig. 4.68: Distance of Hospital

4.4.23 Ranking of Problems faced by the slum dwellers

Most slums exist in countries struggling to emerge from colonial exploitation, economic isolation, political anarchy, sectarian violence, and a host of other conditions that do not effect more developed countries, or not so drastically. Poverty is the main cause that affects overall lifestyle of the slum dwellers, which subsequently results in prevalence of many problems. However, the slum dwellers do not perceive all the problems in similar severity and hence, the different types of problems were studied in detail. The results obtained are presented in view of their monthly household income. The specific problems considered in this study include: 1) Solid Waste Management Problem; 2) Sewerage Problem; 3) Drainage Problem; 4) Communication Problem; 5) Electricity Problem; 6) Transportation Problem.

Table 4.69 shows the rank provided by slum dweller household in Nagpur city with respect to water supply problem. It was observed that 43.70% slum dweller households provide rank-1 to water supply problem, whereas 19.26% slum dweller households provided rank-7 to water supply problem. Furthermore rank-2, rank-3, rank-5, rank-4 and rank-6 was provided to water supply problem by 14.07%, 8.40%, 8.15%, 5.43% and 0.99% slum dweller households respectively. Thus it was apparent from the study results that water supply problem was ranked- 1 by majority of slum dweller households in Nagpur city.

Table 4.69: Water Supply Problem Rank

SN	Household Income Rs/month	Water Supply Problem Rank														Total	
		Rank 1.00		Rank 2.00		Rank 3.00		Rank 4.00		Rank 5.00		Rank 6.00		Rank 7.00			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	8	4.52	1	1.75	1	2.94	1	4.55	1	3.03	1	25.00	0	0.00	13	3.21
2	2000-4000	36	20.34	14	24.56	9	26.47	8	36.36	11	33.33	2	50.00	3	3.85	83	20.49
3	4000-6000	53	29.94	20	35.09	6	17.65	3	13.64	16	48.48	0	0.00	26	33.33	124	30.62
4	6000-8000	36	20.34	13	22.81	8	23.53	5	22.73	3	9.09	1	25.00	33	42.31	99	24.44
5	8000-10000	25	14.12	5	8.77	3	8.82	1	4.55	1	3.03	0	0.00	6	7.69	41	10.12
6	10000-12000	8	4.52	2	3.51	4	11.76	2	9.09	0	0.00	0	0.00	2	2.56	18	4.44
7	12000-14000	3	1.69	0	0.00	0	0.00	1	4.55	1	3.03	0	0.00	2	2.56	7	1.73
8	>14000	8	4.52	2	3.51	3	8.82	1	4.55	0	0.00	0	0.00	6	7.69	20	4.94
	Total	177 (43.70)	100.00	57 (14.07)	100.00	34 (8.40)	100.00	22 (5.43)	100.00	33 (8.15)	100.00	4 (0.99)	100.00	78 (19.26)	100.00	405 (100.00)	100.00

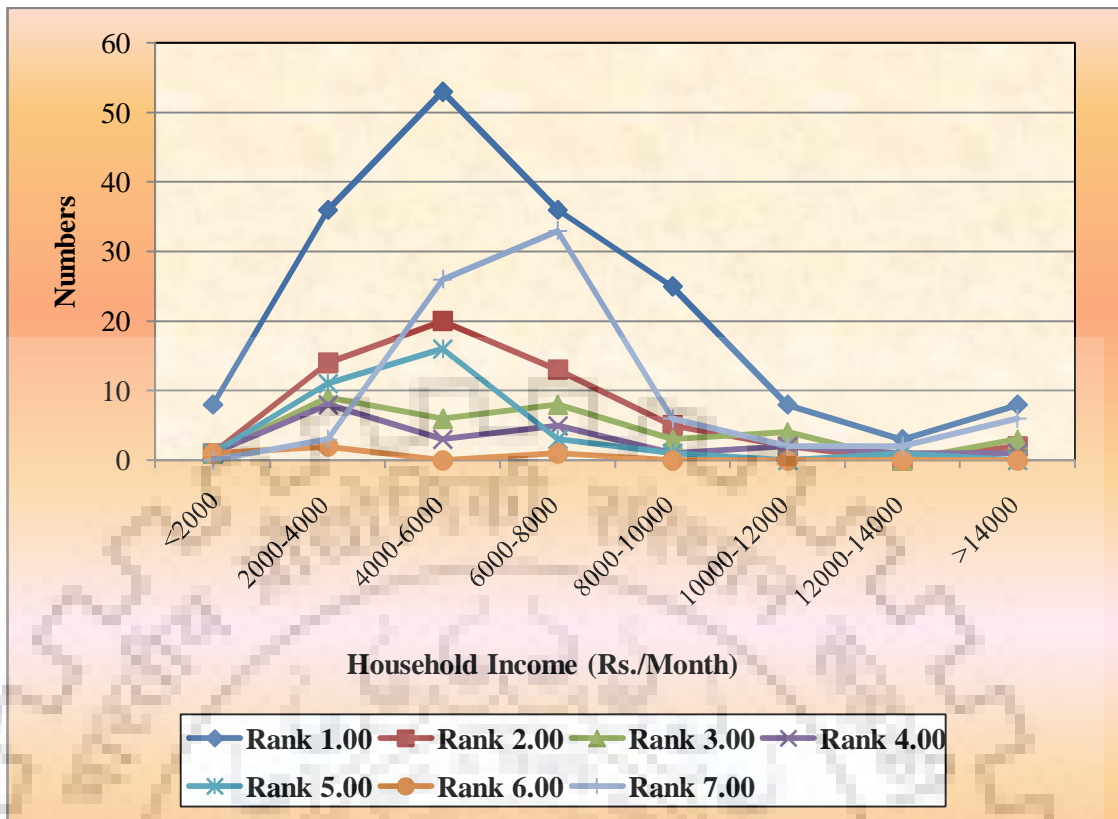


Fig. 4.69: Water Supply Problem Rank

4.4.24 Solid Waste Management Problem Rank

Table 4.70 shows the rank provided by slum dweller household in Nagpur city with respect to solid waste management problem. It was observed that 30.62% slum dweller households provide rank-3 to solid waste management problem, whereas 17.28% slum dweller households provided rank-4 to solid waste management problem. Furthermore rank-2, rank-6, rank-1, rank-5 and rank-7 was provided to solid waste management problem by 16.80%, 11.60%, 10.86%, 10.86% and 1.98% slum dweller households respectively. Thus it was apparent from the study results that solid waste management problem was ranked- 3 by majority of slum dweller households in Nagpur city

Table 4.70: Solid Waste Management Problem Rank

SN	Household Income Rs/month	Solid Waste Management Problem Rank														Total	
		Rank 1.00		Rank 2.00		Rank 3.00		Rank 4.00		Rank 5.00		Rank 6.00		Rank 7.00			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	2.27	3	4.41	5	4.03	2	2.86	2	4.55	0	0.00	0	0.00	13	3.21
2	2000-4000	7	15.91	16	23.53	16	12.90	14	20.00	21	47.73	6	12.77	3	37.50	83	20.49
3	4000-6000	10	22.73	20	29.41	41	33.06	25	35.71	11	25.00	16	34.04	1	12.50	124	30.62
4	6000-8000	9	20.45	17	25.00	38	30.65	19	27.14	3	6.82	11	23.40	2	25.00	99	24.44
5	8000-10000	8	18.18	5	7.35	12	9.68	5	7.14	4	9.09	5	10.64	2	25.00	41	10.12
6	10000-12000	4	9.09	4	5.88	3	2.42	2	2.86	2	4.55	3	6.38	0	0.00	18	4.44
7	12000-14000	1	2.27	1	1.47	2	1.61	1	1.43	0	0.00	2	4.26	0	0.00	7	1.73
8	>14000	4	9.09	2	2.94	7	5.65	2	2.86	1	2.27	4	8.51	0	0.00	20	4.94
	Total	44 (10.86)	100.00	68 (16.80)	100.00	124 (30.62)	100.00	70 (17.28)	100.00	44 (10.86)	100.00	47 (11.60)	100.00	8 (1.98)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

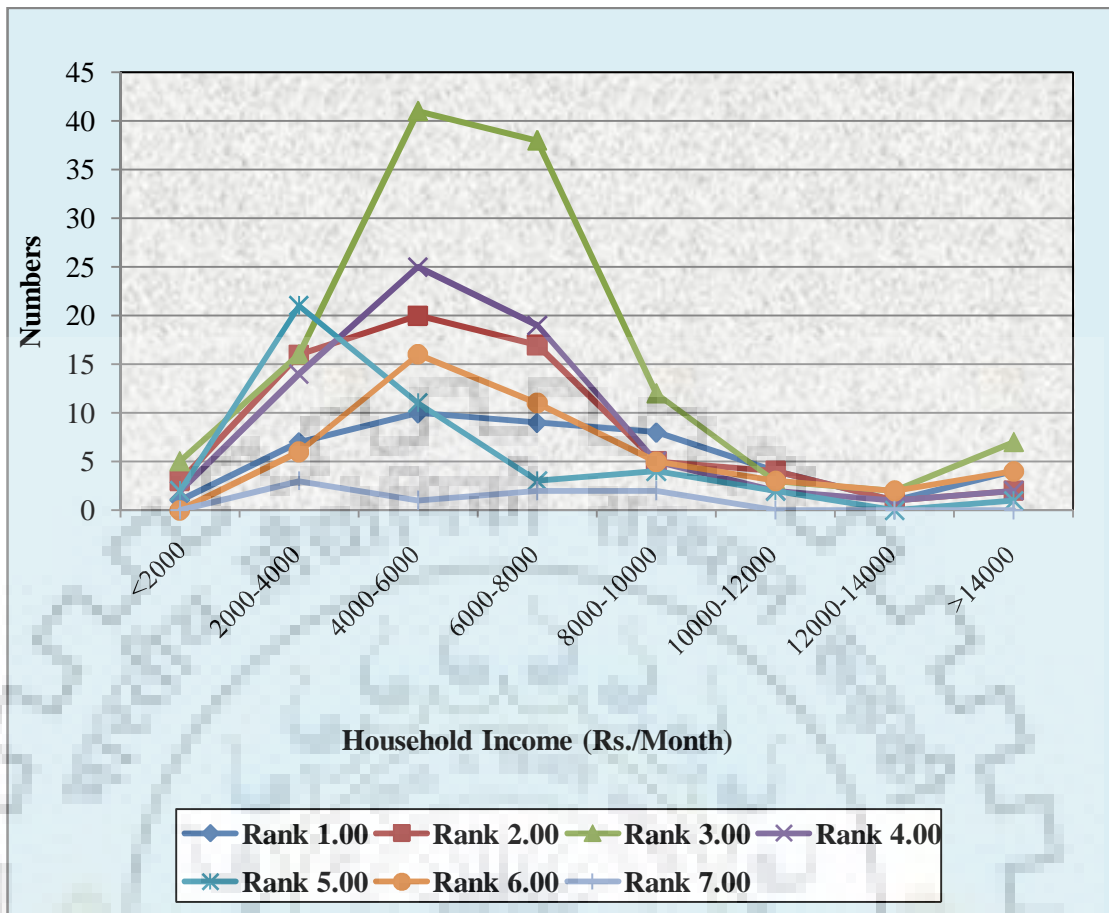


Fig. 4.70: Solid Waste Management Problem Rank

4.4.25 Sewerage Problem Rank

Table 4.71 shows the rank provided by slum dweller household in Nagpur city with respect to sewerage problem. It was observed that 25.92% slum dweller households provide rank-3 to sewerage problem, whereas 22.72% slum dweller households provided rank-1 and rank-2 to sewerage problem. Furthermore rank-4, rank-5, rank-6 and rank-7 was provided to sewerage problem by 14.81%, 8.89%, 4.69%, and 0.25% slum dweller households respectively. Thus it was apparent from the study results that sewerage problem was ranked- 3 by majority of slum dweller households in Nagpur city.

Table 4.71: Sewerage Problem Rank

SN	Household Income Rs/month	Sewerage Problem Rank														Total	
		Rank 1.00		Rank 2.00		Rank 3.00		Rank 4.00		Rank 5.00		Rank 6.00		Rank 7.00		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	1	1.09	4	4.35	2	1.90	3	5.00	2	5.56	1	5.26	0	0.00	13	3.21
2	2000-4000	13	14.13	15	16.30	26	24.76	12	20.00	14	38.89	2	10.53	1	100.00	83	20.49
3	4000-6000	32	34.78	23	25.00	35	33.33	21	35.00	9	25.00	4	21.05	0	0.00	124	30.62
4	6000-8000	29	31.52	18	19.57	23	21.90	17	28.33	6	16.67	6	31.58	0	0.00	99	24.44
5	8000-10000	5	5.43	13	14.13	13	12.38	4	6.67	3	8.33	3	15.79	0	0.00	41	10.12
6	10000-12000	3	3.26	7	7.61	3	2.86	2	3.33	2	5.56	1	5.26	0	0.00	18	4.44
7	12000-14000	3	3.26	2	2.17	0	0.00	1	1.67	0	0.00	1	5.26	0	0.00	7	1.73
8	>14000	6	6.52	10	10.87	3	2.86	0	0.00	0	0.00	1	5.26	0	0.00	20	4.94
	Total	92 (22.72)	100.00	92 (22.72)	100.00	105 (25.92)	100.00	60 (14.81)	100.00	36 (8.89)	100.00	19 (4.69)	100.00	1 (0.25)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

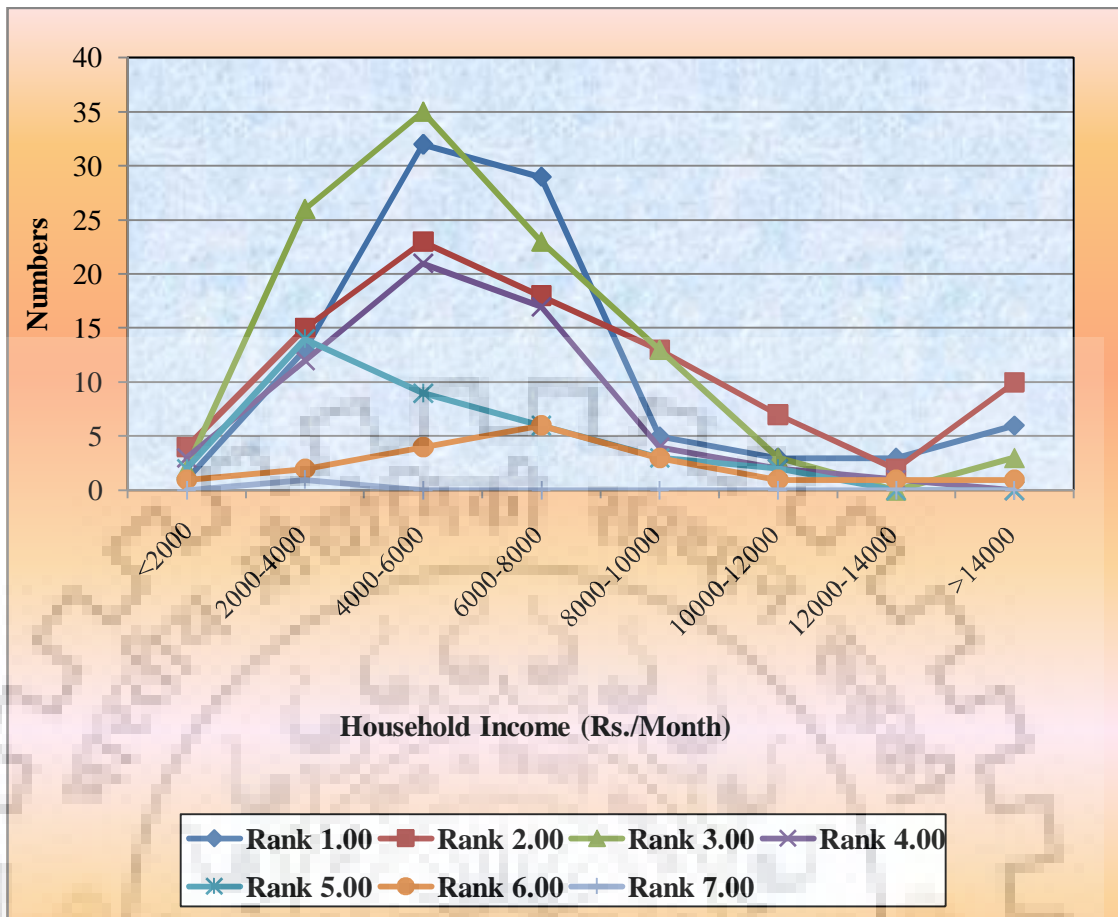


Fig. 4.71: Sewerage Problem Rank

4.4.26 Drainage Problem Rank

Table 4.72 shows the rank provided by slum dweller household in Nagpur city with respect to drainage problem. It was observed that 26.42% slum dweller households provide rank-4 to drainage problem, whereas 21.98% slum dweller households provided rank-5 to drainage problem. Furthermore rank-2, rank-6, rank-3, rank-7 and rank-1 was provided to drainage problem by 14.81%, 10.86%, 10.62%, 9.63% and 5.68% slum dweller households respectively. Thus it was apparent from the study results that drainage problem was ranked- 4 by majority of slum dweller households in Nagpur city.

Table 4.72: Drainage Problem Rank

SN	Household Income Rs/month	Drainage problem rank														Total	
		Rank 1.00		Rank 2.00		Rank 3.00		Rank 4.00		Rank 5.00		Rank 6.00		Rank 7.00			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	1	4.35	2	3.33	1	2.33	3	2.80	3	3.37	3	6.82	0	0.00	13	3.21
2	2000-4000	3	13.04	14	23.33	10	23.26	9	8.41	12	13.48	13	29.55	22	56.41	83	20.49
3	4000-6000	3	13.04	19	31.67	10	23.26	34	31.78	33	37.08	16	36.36	9	23.08	124	30.62
4	6000-8000	10	43.48	15	25.00	12	27.91	35	32.71	21	23.60	5	11.36	1	2.56	99	24.44
5	8000-10000	5	21.74	3	5.00	3	6.98	12	11.21	12	13.48	3	6.82	3	7.69	41	10.12
6	10000-12000	0	0.00	2	3.33	3	6.98	6	5.61	3	3.37	2	4.55	2	5.13	18	4.44
7	12000-14000	0	0.00	2	3.33	3	6.98	1	0.93	1	1.12	0	0.00	0	0.00	7	1.73
8	>14000	1	4.35	3	5.00	1	2.33	7	6.54	4	4.49	2	4.55	2	5.13	20	4.94
	Total	23 (5.68)	100.00	60 (14.81)	100.00	43 (10.62)	100.00	107 (26.42)	100.00	89 (21.98)	100.00	44 (10.86)	100.00	39 (9.63)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

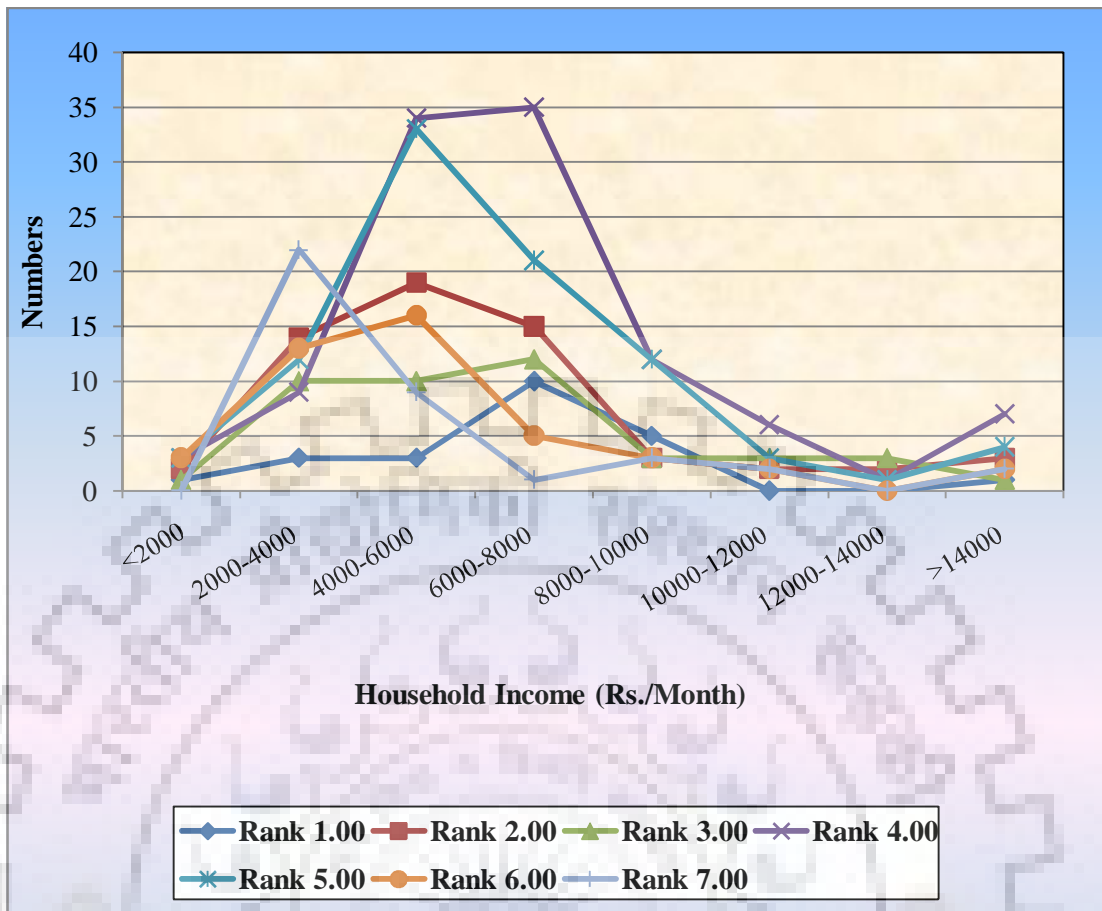


Fig. 4.72: Drainage Problem Rank

4.4.27 Communication Problem Rank

Table 4.73 shows the rank provided by slum dweller household in Nagpur city with respect to communication problem. It was observed that 25.43% slum dweller households provide rank-6 to communication problem, whereas 21.73% slum dweller households provided rank-5 to communication problem. Furthermore rank-7, rank-4, rank-2, rank-3 and rank-1 was provided to communication problem by 21.48%, 9.38%, 8.89%, 8.15%, and 4.94% slum dweller households respectively. Thus it was apparent from the study results that communication problem was ranked- 6 by majority of slum dweller households in Nagpur city.

Table 4.73: Communication Problem Rank

SN	Household Income Rs/month	Communication Problem Rank														Total	
		Rank 1.00		Rank 2.00		Rank 3.00		Rank 4.00		Rank 5.00		Rank 6.00		Rank 7.00		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	1	5.00	0	0.00	1	3.03	0	0.00	2	2.27	3	2.91	6	6.90	13	3.21
2	2000-4000	4	20.00	9	25.00	8	24.24	8	21.05	10	11.36	31	30.10	13	14.94	83	20.49
3	4000-6000	10	50.00	9	25.00	14	42.42	14	36.84	23	26.14	32	31.07	22	25.29	124	30.62
4	6000-8000	3	15.00	13	36.11	4	12.12	10	26.32	34	38.64	19	18.45	16	18.39	99	24.44
5	8000-10000	0	0.00	5	13.89	1	3.03	2	5.26	6	6.82	11	10.68	16	18.39	41	10.12
6	10000-12000	1	5.00	0	0.00	4	12.12	0	0.00	5	5.68	4	3.88	4	4.60	18	4.44
7	12000-14000	0	0.00	0	0.00	1	3.03	1	2.63	1	1.14	1	0.97	3	3.45	7	1.73
8	>14000	1	5.00	0	0.00	0	0.00	3	7.89	7	7.95	2	1.94	7	8.05	20	4.94
	Total	20 (4.94)	100.00	36 (8.89)	100.00	33 (8.15)	100.00	38 (9.38)	100.00	88 (21.73)	100.00	103 (25.43)	100.00	87 (21.48)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

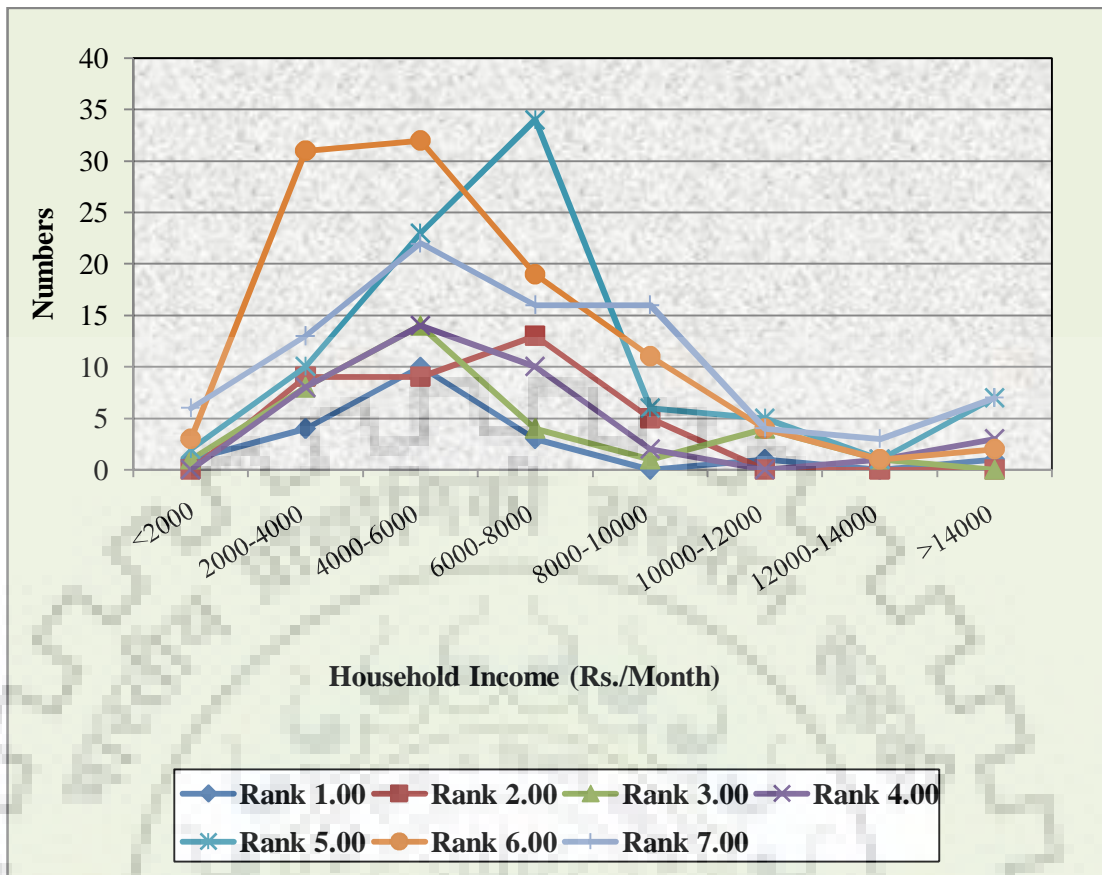


Fig. 4.73: Communication Problem Rank

4.4.28 Electricity Problem Rank

Table 4.74 shows the rank provided by slum dweller household in Nagpur city with respect to electricity problem. It was observed that 25.46% slum dweller households provide rank-7 to electricity problem, whereas 18.02% slum dweller households provided rank-5 to electricity problem. Furthermore rank-6, rank-4, rank-2, rank-3 and rank-1 was provided to electricity problem by 17.78%, 16.05%, 13.58%, 6.42%, and 4.69% slum dweller households respectively. Thus it was apparent from the study results that electricity problem was ranked- 7 by majority of slum dweller households in Nagpur city.

Table 4.74: Electricity Problem Rank

SN	Household Income Rs/month	Electricity Problem Rank														Total	
		Rank 1.00		Rank 2.00		Rank 3.00		Rank 4.00		Rank 5.00		Rank 6.00		Rank 7.00		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	1	5.26	3	5.45	0	0.00	3	4.62	0	0.00	3	4.17	3	3.16	13	3.21
2	2000-4000	0	0.00	13	23.64	9	34.62	11	16.92	17	23.29	13	18.06	20	21.05	83	20.49
3	4000-6000	6	31.58	20	36.36	9	34.62	14	21.54	13	17.81	23	31.94	39	41.05	124	30.62
4	6000-8000	10	52.63	12	21.82	3	11.54	12	18.46	22	30.14	19	26.39	21	22.11	99	24.44
5	8000-10000	1	5.26	3	5.45	2	7.69	13	20.00	9	12.33	7	9.72	6	6.32	41	10.12
6	10000-12000	0	0.00	1	1.82	1	3.85	5	7.69	6	8.22	4	5.56	1	1.05	18	4.44
7	12000-14000	0	0.00	0	0.00	0	0.00	2	3.08	3	4.11	1	1.39	1	1.05	7	1.73
8	>14000	1	5.26	3	5.45	2	7.69	5	7.69	3	4.11	2	2.78	4	4.21	20	4.94
	Total	19 (4.69)	100.00	55 (13.58)	100.00	26 (6.42)	100.00	65 (16.05)	100.00	73 (18.02)	100.00	72 (17.78)	100.00	95 (23.46)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

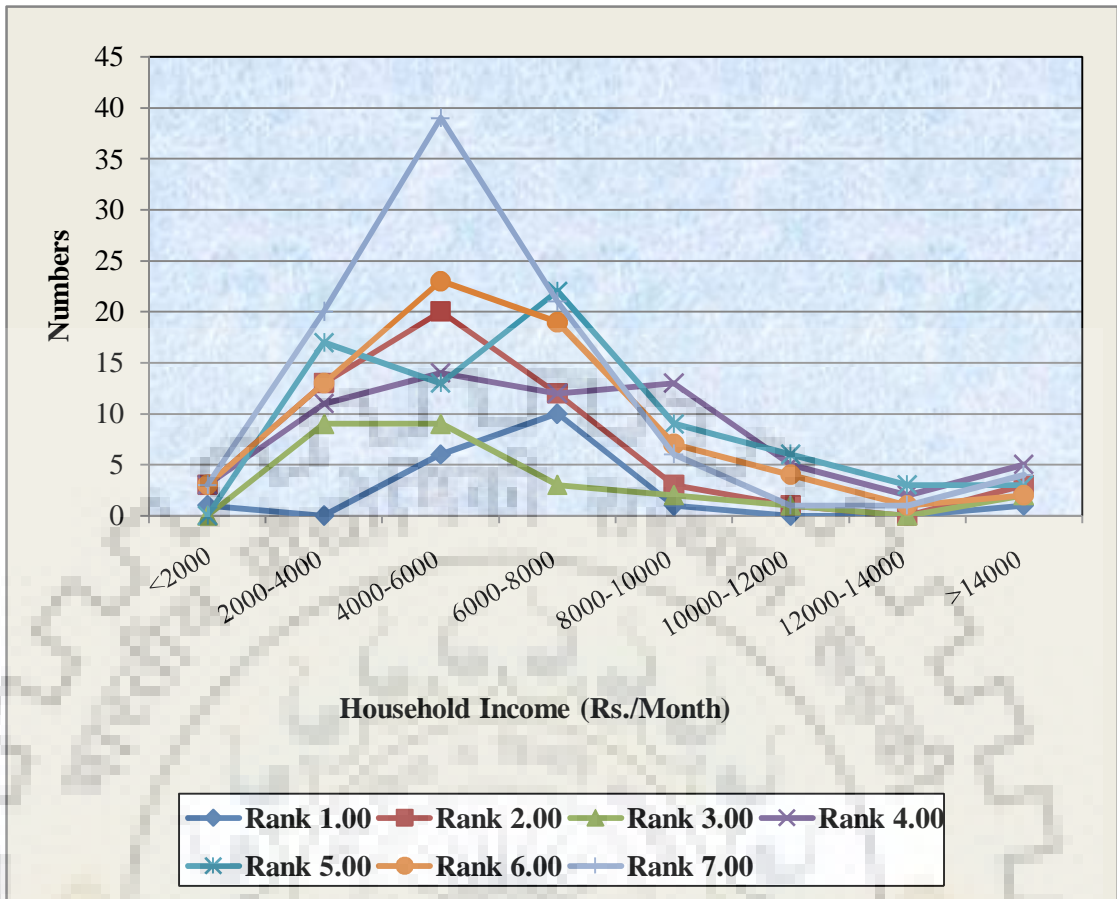


Fig. 4.74: Electricity Problem Rank

4.4.29 Transportation Problem Rank

Table 4.75 shows the rank provided by slum dweller household in Nagpur city with respect to transportation problem. It was observed that 25.43% slum dweller households provide rank-6 to transportation problem, whereas 17.04% slum dweller households provided rank-7 to transportation problem. Furthermore rank-5, rank-1, rank-2, rank-4 and rank-3 was provided to transportation problem by 12.35%, 12.35%, 11.85%, 11.60%, and 9.38% slum dweller households respectively. Thus it was apparent from the study results that transportation problem was ranked- 6 by majority of slum dweller households in Nagpur city.

Table 4.75: Transportation Problem Rank

SN	Household Income Rs/month	Transportation Problem Rank														Total	
		Rank 1.00		Rank 2.00		Rank 3.00		Rank 4.00		Rank 5.00		Rank 6.00		Rank 7.00		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	0	0.00	0	0.00	3	7.89	1	2.13	3	6.00	2	1.94	4	5.80	13	3.21
2	2000-4000	22	44.00	5	10.42	7	18.42	17	36.17	7	14.00	14	13.59	11	15.94	83	20.49
3	4000-6000	13	26.00	15	31.25	10	26.32	17	36.17	17	34.00	32	31.07	20	28.99	124	30.62
4	6000-8000	8	16.00	15	31.25	11	28.95	4	8.51	10	20.00	32	31.07	19	27.54	99	24.44
5	8000-10000	3	6.00	8	16.67	2	5.26	4	8.51	7	14.00	10	9.71	7	10.14	41	10.12
6	10000-12000	4	8.00	3	6.25	0	0.00	1	2.13	1	2.00	3	2.91	6	8.70	18	4.44
7	12000-14000	0	0.00	2	4.17	1	2.63	1	2.13	1	2.00	1	0.97	1	1.45	7	1.73
8	>14000	0	0.00	0	0.00	4	10.53	2	4.26	4	8.00	9	8.74	1	1.45	20	4.94
	Total	50 (12.35)	100.00	48 (11.85)	100.00	38 (9.38)	100.00	47 (11.60)	100.00	50 (12.35)	100.00	103 (25.43)	100.00	69 (17.04)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

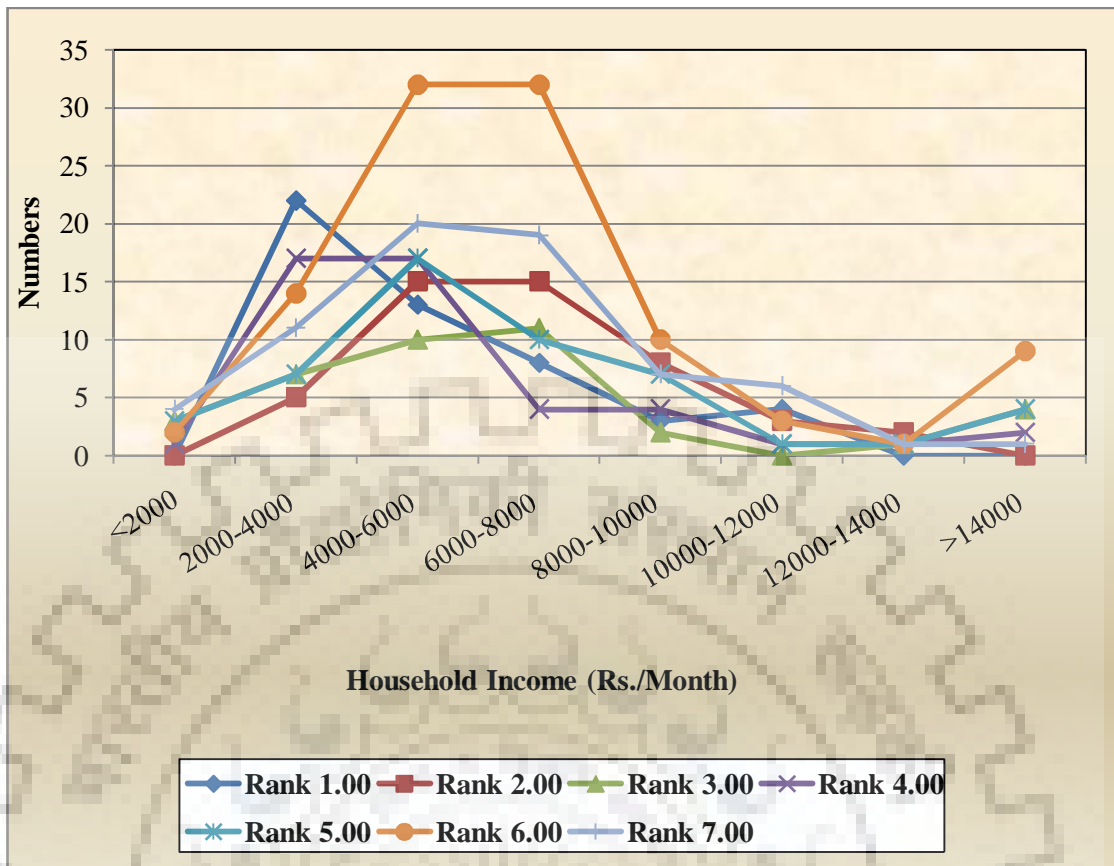


Fig. 4.75: Transportation Problem Rank

4.4.30 Problem Ranking

Table 4.76 shows problem ranking provided by slum dweller households for various problems such as water supply, solid waste management, sewerage, drainage, communication, electricity and transportation. It was evident from the information that rank-1 was provided to water supply problems by 41.65% slum dweller households, whereas rank-3 was provided to solid waste management and sewerage problem by 30.77% and 26.05% slum dweller households. In addition to this rank-4 and rank-6 was provided to drainage and communication and transportation problem by 26.16% and 26.27 respectively, whereas rank-7 was provided to electricity related problems by 25.20% slum dweller households in Nagpur City.

Table 4.76: Problem Ranking

SN	Problems	Problem Ranking														Total	
		Rank 1.00		Rank 2.00		Rank 3.00		Rank 4.00		Rank 5.00		Rank 6.00		Rank 7.00			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	Water Supply	177	41.65	57	13.70	34	8.44	22	5.38	33	8.00	4	1.02	78	20.67	405	14.285
2	Solid Waste Management	44	10.35	68	16.35	124	30.77	70	17.11	44	10.65	47	12.00	8	2.12	405	14.285
3	Sewerage	92	21.65	92	22.12	105	26.05	60	14.68	36	8.72	19	4.85	1	0.27	405	14.285
4	Drainage	23	5.41	60	14.42	43	10.67	107	26.16	89	21.55	44	11.22	39	10.34	405	14.285
5	Communication	20	4.71	36	8.65	33	8.19	38	9.29	88	21.31	103	26.27	87	23.08	405	14.285
6	Electricity	19	4.47	55	13.22	26	6.45	65	15.89	73	17.67	72	18.37	95	25.20	405	14.285
7	Transportation	50	11.76	48	11.54	38	9.43	47	11.49	50	12.10	103	26.27	69	18.30	405	14.285
	Total	425 (14.99)	100.00	416 (14.67)	100.00	403 (14.22)	100.00	409 (14.43)	100.00	413 (14.57)	100.00	392 (13.83)	100.00	377 (13.30)	100.00	2835 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. **Note:** Figure in parenthesis denotes 'row' percentage.

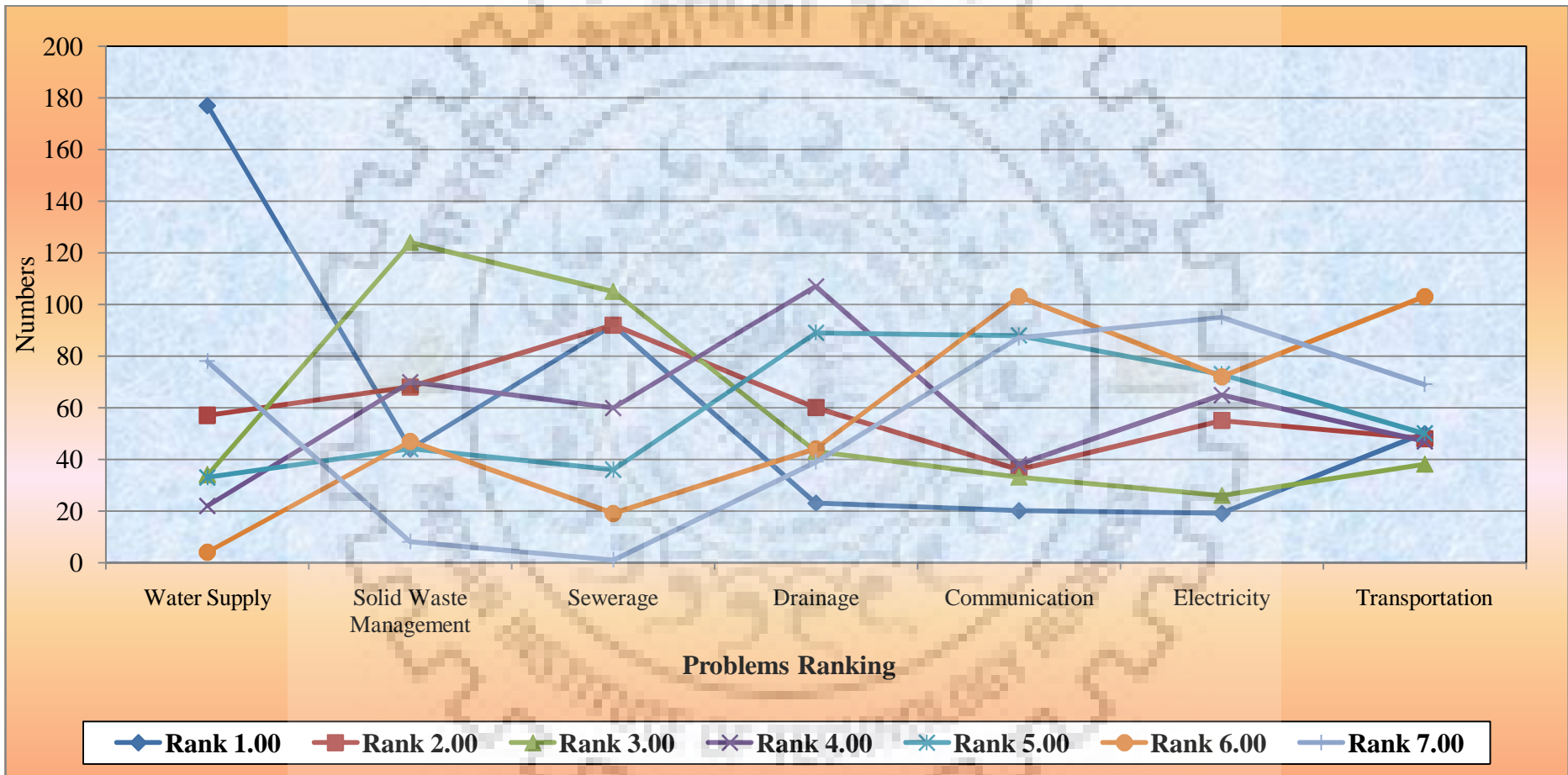


Fig. 4.76: Problem Ranking

4.5 Environment Aspects

Man has lived in a specific type of environment which many times was unfavourable to his growth as well as development. However, modern day human activities have adversely affected the environmental quality where man is living. In view of this it is more than necessary that the environment related issues be given utmost importance. Moreover, home is the place where man spends most of his life and hence issues related to the environment within which slum dwellers are residing were studied and the results are presented in this section of the thesis. The specific issues covered are as follows.

- Ventilation in household
- Quality of Water
- Shortage of Water in Summer/Winter
- Water logging after Rains

4.5.1 Ventilation

The slum houses are very small, and often their roofs are very low in height, besides they do not have proper windows and doors. Most of the houses have only one window which is so packed that hardly any air or sunlight enters through it. The shanty houses lack proper ventilation system. This results in the respiratory problems, especially in the children. In view of this nature of ventilation in the households of people living in slum areas of Nagpur City was assessed and the results are presented with respect to their household income.

Table 4.77 illustrates information pertaining to the status ventilation in the house of slum dwellers in Nagpur City. It was apparent from the information that house of 45.18% slum dwellers have good ventilation, whereas there was moderate ventilation in the house of 41.73% slum dwellers. Furthermore ventilation in the house of 13.09% slum dwellers was poor. It was apparent from the study results that there was good ventilation in the house of majority of slum dwellers in the Nagpur city.

Table 4.77: Ventilation in household

SN	Household Income Rs/month	Ventilation						Total	
		Good		Moderate		Poor			
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1	<2000	3	1.64	7	4.14	3	5.66	13	3.21
2	2000-4000	33	18.03	35	20.71	15	28.30	83	20.49
3	4000-6000	60	32.79	50	29.59	14	26.42	124	30.62
4	6000-8000	53	28.96	36	21.30	10	18.87	99	24.44
5	8000-10000	14	7.65	21	12.43	6	11.32	41	10.12
6	10000-12000	6	3.28	10	5.92	2	3.77	18	4.44
7	12000-14000	3	1.64	4	2.37	-	-	7	1.73
8	>14000	11	6.01	6	3.55	3	5.66	20	4.94
	Total	183 (45.18)	100.00	169 (41.73)	100.00	53 (13.09)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. Note: Figure in parenthesis denotes 'row' percentage.

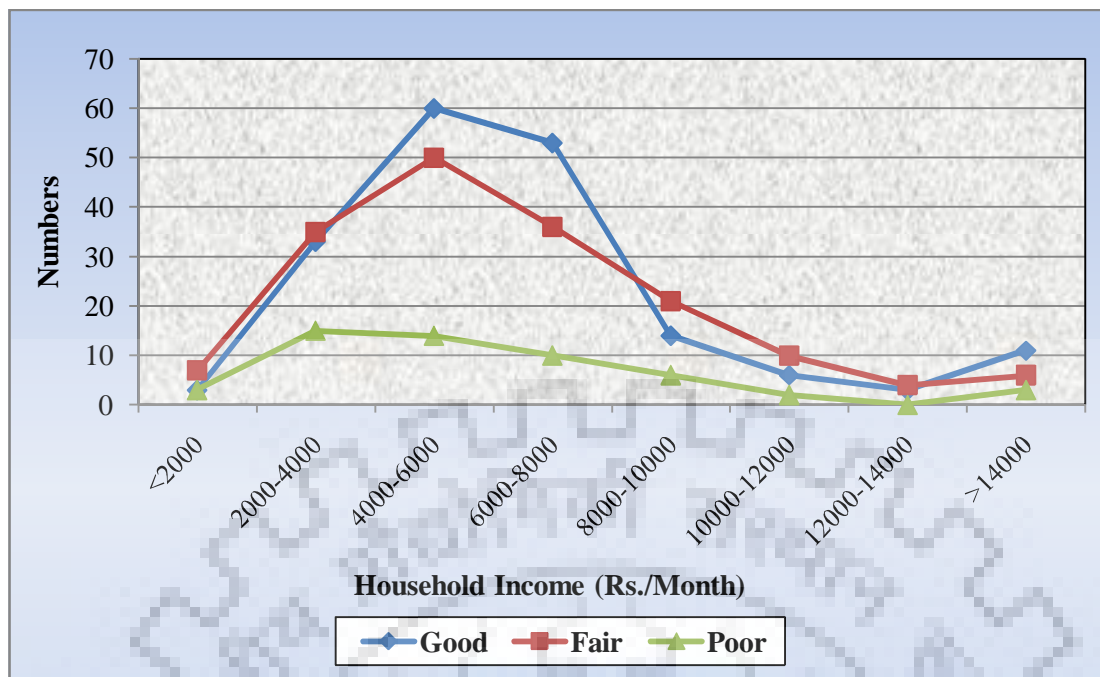


Fig. 4.77: Environment Aspects

4.5.2 Quality of Water

Urban slums in developing countries that are not recognized by the government often lack legal access to municipal water supplies and those, which are present in the study area, are no exception. This results in the creation of insecure ‘informal’ water distribution systems (i.e., community-run or private systems outside of the government’s purview) that may increase water-borne disease risk. Hence, the quality of water available for use in the slums of Nagpur City was determined and the results are presented hereunder.

Table 4.78 demonstrates information pertaining to the quality of water received by slum dweller household in Nagpur City. It was apparent from the information that 65.43% slum dweller household received good quality water from water supply, whereas 30.62% slum dweller household received moderate quality water from water supply. However; 3.95% slum dweller household received poor quality water from water supply. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household in Nagpur city received good quality water from water supply.

Table 4.78: Quality of Water

SN	Household Income Rs/month	Quality of Water						Total	
		Good		Moderate		Poor		Number	Per Cent
		Number	Per Cent	Number	Per Cent	Number	Per Cent		
1	<2000	8	3.02	4	3.23	1	6.25	13	3.21
2	2000-4000	56	21.13	27	21.77	1	6.25	83	20.49
3	4000-6000	81	30.57	34	27.42	9	56.25	124	30.62
4	6000-8000	69	26.04	26	20.97	4	25.00	99	24.44
5	8000-10000	21	7.92	17	13.71	1	6.25	41	10.12
6	10000-12000	13	4.91	5	4.03	0	0.00	18	4.44
7	12000-14000	3	1.13	4	3.23	0	0.00	7	1.73
8	>14000	14	5.28	7	5.65	0	0.00	20	4.94
	Total	265 (65.43)	100.00	124 (30.62)	100.00	16 (3.95)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013 Note: Most slums are located at lower elevation and hence get 24 hrs of water as the supply lines are always full of water and are prone to get contaminated with open drains and due to leakages water quality deteriorate.

Note: Figure in parenthesis denotes 'row' percentage.

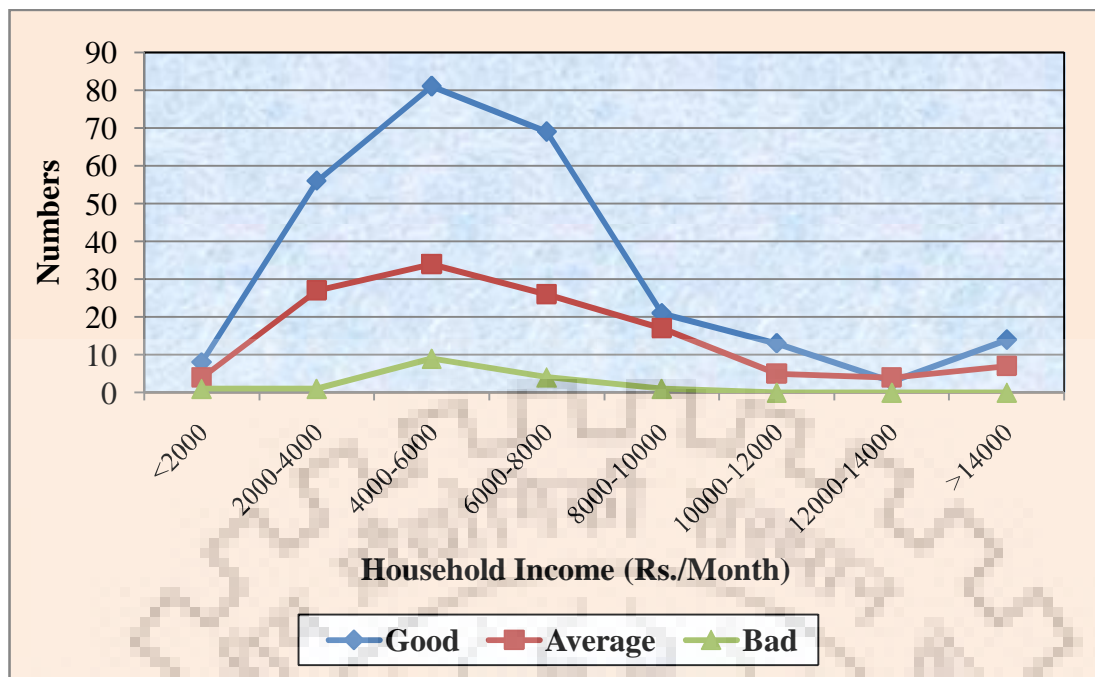


Fig. 4.78: Quality of Water

4.5.3 Shortage of Water in Summer/Winter

The study areas selected for this research activity has a history of facing water shortage as well as drought like situation, especially during summer season. Besides lower than average monsoon also create water scarcity during the winter season. Since, water is the basic necessity of life the availability or shortage of the same was studied and the results are presented as follows.

Table 4.79 illustrates information pertaining to the shortage of water faced by slum dweller household in Nagpur City during summer/winter seasons. It was evident from the information that 93.83% slum dweller household faced shortage of water during summer season, whereas 6.17% slum dweller household faced shortage of water during winter season. Hence it was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household in Nagpur City faced shortage of water during summer season.

Table 4.79: Shortage of Water in Summer/Winter

SN	Household Income Rs/month	Shortage of Water in				Total	
		Summer		Winter		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	13	3.42	0	0.00	13	3.21
2	2000-4000	81	21.32	2	8.00	83	20.49
3	4000-6000	117	30.79	7	28.00	124	30.62
4	6000-8000	90	23.68	9	36.00	99	24.44
5	8000-10000	36	9.47	5	20.00	41	10.12
6	10000-12000	17	4.47	1	4.00	18	4.44
7	12000-14000	7	1.84	0	0.00	7	1.73
8	>14000	19	5.00	1	4.00	20	4.94
	Total	380 (93.83)	100.00	25 (6.17)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013. Note: During summer months urban area consumes more water due to heavy demand for cooling purpose so the supply itself is restricted and hence shortage is felt in study area.

Note: Figure in parenthesis denotes 'row' percentage.

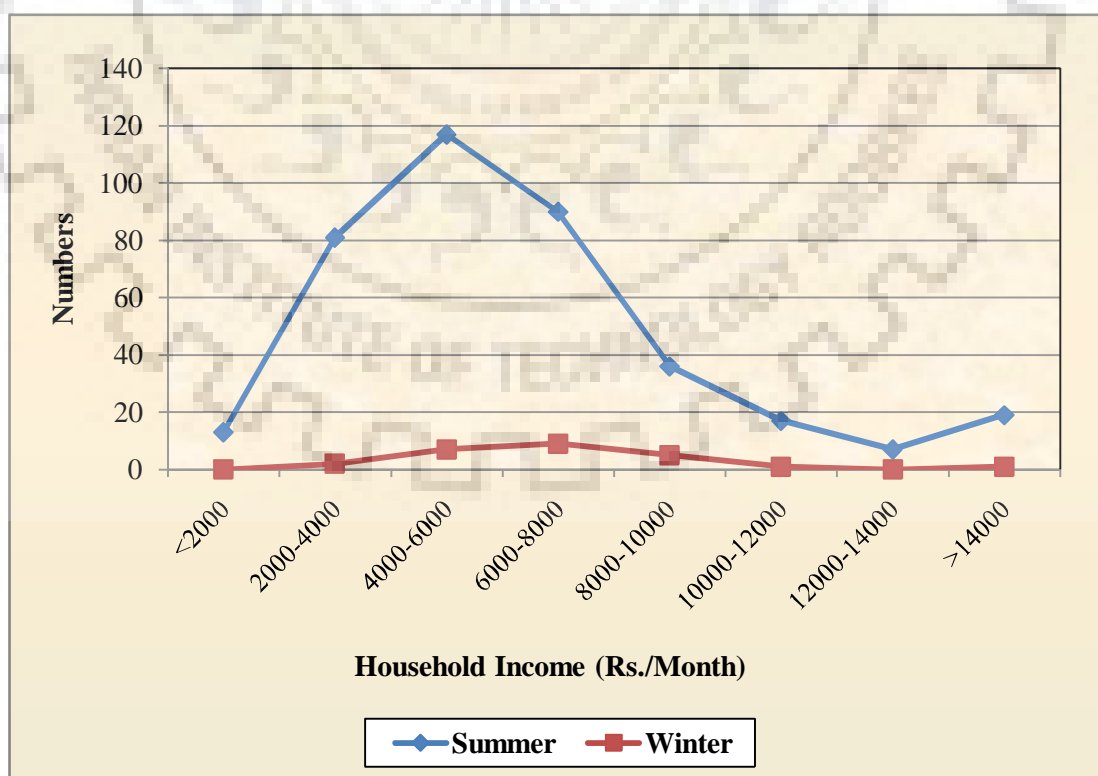


Fig. 4.79: Shortage of Water in Summer/Winter

4.5.4 Water logging after Rains

The slum population has been growing by leaps and bounds. Most slums are situated in vulnerable locations such as river margins, water logged areas and road margins etc. that are devoid of basic amenities. The quality of life of the slum dwellers is affected by the non-availability of basic facilities. In rainy season the slums get completely water logged as there are no proper sewer lines and drainage system to carry this water away from the area. The living conditions in slums are usually unhygienic and contrary to all norms of planned urban growth and are an important factor in accelerating transmission of various air and water borne diseases. In view of health related aspects of the slum dwellers it is necessary to know whether water logging thus take place or not in slum areas.

Table 4.80 illustrates information pertaining to the water logging problem after rain faced by slum dweller household in the Nagpur city. It was apparent from the information that 70.62% slum dweller household faced problem of water logging problem after rain, whereas 29.38% slum dweller household did not faced problem of water logging after rain. It was apparent from the study results that significantly ($P < 0.05$) high percentage of slum dweller household faced problem of water logging after rain in the area.

Table 4.80: Water logging after Rains

SN	Household Income Rs/month	Water logging after Rains				Total	
		Yes		No		Number	Per Cent
		Number	Per Cent	Number	Per Cent		
1	<2000	7	2.45	6	5.04	13	3.21
2	2000-4000	60	20.98	23	19.33	83	20.49
3	4000-6000	85	29.72	39	32.77	124	30.62
4	6000-8000	70	24.48	29	24.37	99	24.44
5	8000-10000	32	11.19	9	7.56	41	10.12
6	10000-12000	10	3.50	8	6.72	18	4.44
7	12000-14000	6	2.10	1	0.84	7	1.73
8	>14000	16	5.59	4	3.36	20	4.94
	Total	286 (70.62)	100.00	119 (29.38)	100.00	405 (100.00)	100.00

Source: Compiled by the Author based on Household Survey of the Study Area in 2013

Note: Figure in parenthesis denotes 'row' percentage.

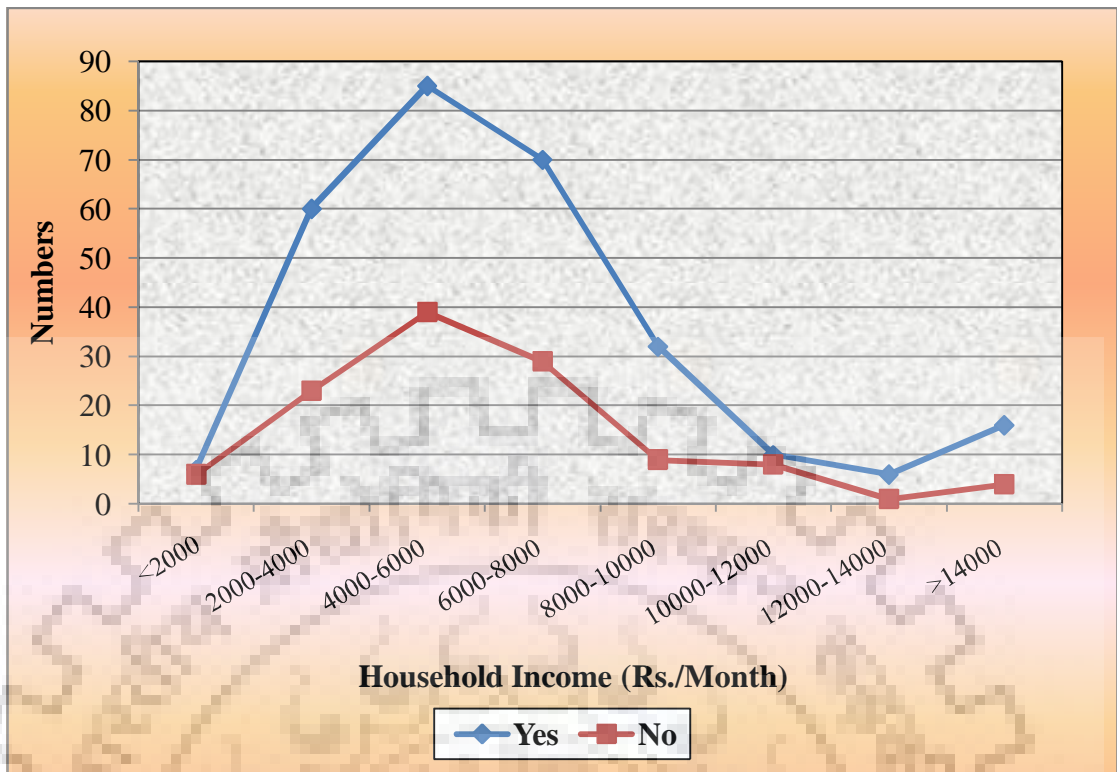


Fig. 4.80: Water logging after Rains

4.6 Model Development

In this study the empirical data was processed to determine the relationships between different independent and dependent parameters using regression analysis. This type of forecasting considers a number of variables that are related to the variable which is going to be predicted. Regression analysis was adopted because it can be used to describe the manner which variables are related. Once this relationship is determined methods of regression analysis can be used to estimate the value of the variable of interest. One of this related variables have been determined as monthly household income. A statistical model was then formulated to forecast the variables of interest. In view of this upon consultation with various subject experts and the published literature, specific set of independent variables were selected with monthly household income being the dependent variable. Monthly household income was selected as a dependent variable as the main research question was formulation of affordable housing policy for the weaker sections and economic aspect being the dominant part of that process.

The primary result of a regression analysis is a set of estimates of the *regression coefficients* $\alpha, \beta_1, \dots, \beta_k$. These estimates are made by finding values for the coefficients that make the average residual 0 and the standard deviation of the residual term as small as possible. The result is summarized in the *prediction equation*:

$$Y_{\text{pred}} = a + b_1X_1 + \dots + b_kX_k .$$

Regression analysis results

The general form of the equation to predict Monthly Household Income is as follows

Model 1

Monthly Household Income = 3.094 + (0.014 x Education) + (0.224 x No. of Family Members) – (0.146 x Distance covered from house to work)

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.199 ^a	0.040	0.033	1.55947

- a. Predictors: (Constant), Distance covered from house to work, No. of Family Members, Education

Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	3.094	0.360		8.594	0.000
Education	0.014	0.058	0.012	0.236	0.813
No. of Family Members	0.224	0.067	0.165	3.346	0.001
Distance covered from house to work	-0.146	0.065	-0.110	-2.236	0.026

The first model indicates that there is positive relationship ($r=0.199$) amongst the independent (Education, No. of Family Members and Distance covered from house to work) and dependent (Monthly Household Income) variables. Though the r value was very less, a significant positive relationship was observed between monthly household income and no. of family members ($r=0.224$, $P<0.05$), while a negative relationship with distance covered from house to work ($r=-0.146$, $P<0.05$). Overall, it is clear from the results that the independent parameters selected in this model have a noticeable influence on the monthly household income of the slum dwellers.

Model 2

The general form of the equation to predict Monthly Household Income

$$\text{Monthly Household Income} = 3.847 + (0.002 \times \text{Occupation P / S: Primary}) - (0.074 \times \text{Reasons for leaving their Native place}) - (0.022 \times \text{Occupation})$$

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.148 ^a	0.022	0.014	1.56732

- b. Predictors: (Constant), Occupation P / S: Primary, Reasons for leaving their Native place, Occupation

Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	3.847	0.144	-	26.750	0.000
Occupation P / S: Primary	0.002	0.005	0.018	0.313	0.755
Reasons for leaving their Native place	-0.074	0.026	-0.145	-2.841	0.005
Occupation	-0.022	0.058	-0.022	-0.381	0.703

The second model shows that there is positive relationship ($r=0.148$) amongst the independent (Occupation P / S: Primary, Reasons for leaving their Native place, Occupation) and dependent (Monthly Household Income) variables. Though the r value was very less, a significant negative relationship was observed between monthly household income and reasons for leaving their native place ($r=-0.022$, $P<0.05$). Overall, it is clear from the results that the independent parameters selected in this model have a noticeable influence on the monthly household income of the slum dwellers.

Model 3

The general form of the equation to predict Monthly Household Income

$$\text{Monthly Household Income} = 2.425 - (0.208 \times \text{Housing Condition}) + (0.038 \times \text{Plot area in sq ft}) + (0.127 \times \text{Built up area in sq ft}) - (0.147 \times \text{Storey}) + (0.368 \times \text{No. of Rooms}) + (0.009 \times \text{Materials of wall}) - (0.061 \times \text{Materials of Roof}) + (0.458 \times \text{Doors}) - (0.096 \times \text{Windows})$$

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.262 ^a	0.068	0.047	1.54547

- c. Predictors: (Constant), Housing condition, Plot area in sq ft, Built up area in sq ft, Storey , No. of rooms, Materials of Walls, Material of Roof, Doors, Windows

Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	2.425	0.841	-	2.882	0.004
Housing condition	-0.208	0.155	-0.069	-1.347	0.179
Plot area in sq ft	0.038	0.198	0.025	0.194	0.847
Built up area in sq ft	0.127	0.215	0.077	0.588	0.557
Storey	-0.147	0.306	-0.026	-0.480	0.631
No. of rooms	0.368	0.102	0.206	3.615	0.000
Materials of Walls	0.009	0.110	0.004	0.086	0.931
Material of Roof	-0.061	0.092	-0.034	-0.657	0.511
Doors	0.458	0.161	0.158	2.846	0.005
Windows	-0.096	0.186	-0.028	-0.515	0.607

The third model indicates that there is positive relationship ($r=0.262$) amongst the independent (Housing condition, Plot area in sq ft, Built up area in sq ft, Storey , No. of rooms, Materials of Walls, Material of Roof, Doors, Windows) and dependent (Monthly Household Income) variables. Though the r value was very less, a significant positive relationship was observed between monthly household income and no. of rooms ($r=0.368$, $P<0.05$), and with doors ($r=0.458$, $P<0.05$). Overall, it is clear from the results that the independent parameters selected in this model have a noticeable influence on the monthly household income of the slum dwellers.

Model 4

The general form of the equation to predict Monthly Household Income

$$\text{Monthly Household Income} = 2.953 + (0.000 \times \text{Expenditure on food}) + (0.001 \times \text{Expenditure on Cloth}) + (0.000 \times \text{Expenditure on Education}) + (0.000 \times \text{Expenditure on Health}) - (0.001 \times \text{Expenditure on Recreation}) + (0.001 \times \text{Expenditure on Electricity}) - (0.001 \times \text{Expenditure on Water}) - (0.001 \times \text{Expenditure on Transportation}) + (0.001 \times \text{Expenditure on Drinking water}) + (0.000 \times \text{Expenditure/spent on Loan repayment}) + (0.000 \times \text{Expenditure on Telephone/Mobile}) - (0.001 \times \text{Expenditure on Cooking Gas}) + (0.000 \times \text{Expenditure on Any other})$$

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.366 ^a	0.134	0.104	1.48152

- d. Predictors: (Constant), Expenditure on food, Expenditure on Cloth, Expenditure on Education, Expenditure on Health, Expenditure on Recreation, Expenditure on Electricity, Expenditure on Water, Expenditure on Transportation, Expenditure on Drinking water, Expenditure/spent on Loan repayment, Expenditure on Telephone/Mobile, Expenditure on Cooking Gas, Expenditure on Any other

Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	2.953	0.398		7.425	0.000
Expenditure on food	0.000408	0.000	0.258	4.608	0.000
Expenditure on Cloth	0.000819	0.000	0.099	1.719	0.086
Expenditure on Education	-0.000006	0.000	-0.002	-0.028	0.978
Expenditure on Health	-0.000172	0.000	-0.024	-0.409	0.683
Expenditure on Recreation	-0.000585	0.000	-0.070	-1.203	0.230
Expenditure on Electricity	0.000999	0.000	0.136	2.425	0.016
Expenditure on Water	-0.000655	0.001	-0.060	-0.974	0.331
Expenditure on Transportation	-0.000504	0.000	-0.071	-1.194	0.233
Expenditure on Drinking water	0.001109	0.001	0.093	1.632	0.103
Expenditure/spent on Loan repayment	0.000030	0.000	0.022	0.442	0.659
Expenditure on Telephone/Mobile	0.000313	0.000	0.055	1.077	0.282
Expenditure on Cooking Gas	-0.000979	0.000	-0.150	-3.000	0.003
Expenditure on Any other	-0.000016	0.000	-0.002	-0.043	0.966

The fourth model indicates that there is positive relationship ($r=0.336$) amongst the independent (Expenditure on food, Expenditure on Cloth, Expenditure on Education, Expenditure on Health, Expenditure on Recreation, Expenditure on

Electricity, Expenditure on Water, Expenditure on Transportation, Expenditure on Drinking water, Expenditure/spent on Loan repayment, Expenditure on Telephone/Mobile, Expenditure on Cooking Gas, Expenditure on Any other) and dependent (Monthly Household Income) variables. Though the r value was very less, a significant positive relationship was observed between monthly household income and expenditure on food ($r=0.000408$, $P<0.05$), expenditure on electricity ($r=0.000999$, $P<0.05$), while there is significant negative relationship of monthly household income and expenditure on cooking gas ($r=0.000979$, $P<0.05$). Overall, it is clear from the results that the independent parameters selected in this model have a noticeable influence on the monthly household income of the slum dwellers.

Model 5

The general form of the equation to predict Monthly Household Income

$$\text{Monthly Household Income} = 3.984 + (0.001 \times \text{Savings on LIC}) - (0.276 \times \text{Savings on Other/Bank})$$

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.119 ^a	0.014	0.009	1.57582

e. Predictors: (Constant), Savings on LIC, Savings on Other/Bank

Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	3.984	0.237	-	16.803	0.000
Savings on LIC	0.001	0.001	0.098	1.964	0.050
Savings on Other/Bank	-0.276	0.163	-0.085	-1.693	0.091

The fifth model indicates that there is positive relationship ($r=0.199$) amongst the independent (Savings on LIC, Savings on Other/Bank) and dependent (Monthly Household Income) variables. Though the r value was very less, positive relationship was observed between monthly household income and savings on LIC ($r=0.001$, Not Significant), while a negative relationship with Savings on other/bank ($r=-0.276$, Not

Significant). Overall, it is clear from the results that the independent parameters selected in this model have a moderate influence on the monthly household income of the slum dwellers.

Model 6

The general form of the equation to predict Monthly Household Income

$$\text{Monthly Household Income} = 5.707 + (.414 \times \text{HH Gadgets: Mobile phone}) - (0.202 \times \text{Landline phone}) - (0.133 \times \text{Radio}) + (0.169 \times \text{TV}) - (0.667 \times \text{Fridge}) - (0.305 \times \text{Bicycle}) + (0.344 \times \text{Auto Rickshaw}) + (0.018 \times \text{Sewing Machine}) - (0.757 \times \text{Two Wheeler})$$

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.383 ^a	0.147	0.126	1.48103

f. Predictors: (Constant), Mobile phone, Landline phone, Radio, TV, Fridge, Bicycle, Auto Rickshaw, Sewing Machine, Two Wheeler

Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	5.707	0.881	-	6.478	0.000
Mobile phone	0.414	0.182	0.123	2.276	0.023
Landline phone	-0.202	0.297	-0.035	-0.681	0.496
Radio	-0.133	0.158	-0.043	-0.842	0.400
TV	0.169	0.233	0.037	0.726	0.468
Fridge	-0.667	0.173	-0.207	-3.864	0.000
Bicycle	-0.305	0.150	-0.109	-2.037	0.042
Auto Rickshaw	0.344	0.237	0.080	1.456	0.146
Sewing Machine	0.018	0.171	0.005	0.106	0.915
Two Wheeler	-0.757	0.169	-0.245	-4.483	0.000

The sixth model indicates that there is positive relationship ($r=0.383$) amongst the independent (Mobile phone, Landline phone, Radio, TV, Fridge, Bicycle, Auto Rickshaw, Sewing Machine, Two Wheeler) and dependent (Monthly Household Income) variables. Though the r value was very less, significant positive relationship

was observed between monthly household income and mobile phone ($r=0.414$, $P<0.05$), while a negative relationship was observed with fridge ($r=-0.667$, $P<0.05$), bicycle ($r=-0.305$, $P<0.05$) and two wheeler ($r=-0.757$, $P<0.05$). Overall, it is clear from the results that the independent parameters selected in this model have a moderate influence on the monthly household income of the slum dwellers.

4.7 Hypotheses Testing

1. There is no difference in the economic status of the weaker sections living in slums of the Nagpur City
 - It was evident from the study results that there is significant ($P<0.05$) difference in the economic status of the weaker sections living in the slums of the Nagpur City, hence the hypothesis which states that, “There is no difference in the economic status of the weaker sections living in slums of the Nagpur City” is **rejected**.
2. There is no difference in the social status of the weaker sections living in slums of the Nagpur City
 - It was evident from the study results that there is significant ($P<0.05$) difference in the social status of the weaker sections living in the slums of the Nagpur City, hence, the hypothesis which states that, “There is no difference in the social status of the weaker sections living in slums of the Nagpur City” is **rejected**.
3. There is no difference in the educational status of the weaker sections living in slums of the Nagpur City
 - It was evident from the study results that significantly ($P < 0.05$) high percentage of the slum dwellers are very less educated, hence, the hypothesis which states that, “There is no difference in the educational status of the weaker sections living in slums of the Nagpur City” is **accepted**.
4. There is no difference in the occupation (organized unorganized sector) of the weaker sections living in slums of the Nagpur City
 - It was observed from the study results that majority ($P<0.05$) of slum dwellers are working in the unorganized sector, hence the hypothesis

which states that, “There is no difference in the occupation (organized unorganized sector) of the weaker sections living in slums of the Nagpur City” is **accepted**.

5. There is no relationship between the socio-economic, educational, occupation related parameters and the household income of the weaker section of the Nagpur City

- It was observed from the study results there is strong relationship between socio-economic, educational, occupation related parameters and the household income, hence, the hypothesis which states that, “There is no relationship between the socio-economic, educational, occupation related parameters and the household income of the weaker section of the Nagpur City” is **accepted**.

6. There is ample scope for delineating novel affordable housing related policy for the weaker section.

- On the basis of study results, it is apparent that there is a lot of scope for delineating novel policies for affordable housing; hence the hypothesis which states that, “There is ample scope for delineating novel affordable housing related policy for the weaker section” is **accepted**.

Chapter – V

Conclusions, Suggestions and Recommendations

This chapter of the thesis presents the conclusions drawn on the basis of the study results. Subsequent to the conclusions, the suggestions and recommendations are also delineated. The conclusions of the study are as follows

5.1 Conclusions

5.1.1 Part – I : Household Income of Slum Dwellers and Social Aspects

Throughout the world large cities have always exhibited diversity and the cities in India are no exception. They have always been more than just densely built sites, centres of economic power or concentrations of population. They have also been robust market places with commercial interest and have attracted flows of diverse people from different parts of the country, especially, from the rural areas. These inflows of ‘strangers/migrants’ have stimulated cities to become centres for the economic, social, cultural developments.

Today, however, the city’s diversity takes a new dimension, which can be attributed to the influx of people of different cultural backgrounds. A number of developments have contributed to this development: globalisation; political, economic and social restructuring and rescaling of governance from National to Local levels. Globalisation and the increasing inter dependency of cities in a network society have led to the accelerated circulation of people, commodities, capital, identities and images through global space as well as to the increasing mobility of ideologies, economic principles, policies and lifestyles. All this has resulted in the noticeable changes in the economic condition of the people living in these cities. Consequently, the transitional changes in the social aspects of people living in the cities (especially those living in the slums) are experiencing a steady increase. Furthermore, the impact of this transformation has been accelerated by the technological advancement. In view of this, the determinant of economic status i.e. household income and the numerous issues that are indicative of the social status of the slum dwellers were studied in detail and the specific conclusions drawn on the basis of data are presented hereunder

Household Income

- The monthly household income of majority of slum dwellers of Nagpur City varies between Rs. 4000 and 6000/-.

Social Aspects of the Slums of Nagpur City

Sex ratio in the slums of Nagpur City

- There is no remarkable difference in the sex ratio of the population living in the slums of Nagpur City

Age of the head of family

- Majority of household heads belong to age group 30-40 years.

Religion of the slum dwellers

- Substantially high percentage of slum dwellers in Nagpur city belongs to Hindu religion, followed by Buddhist and Muslim religions.

Caste of the slum dwellers

- Majority of slum dwellers in Nagpur city belong to SC category

Education of the slum dwellers

- Significantly ($P < 0.05$) high percentage of slum dwellers of Nagpur City are only educated up to primary level, which shows that the efforts taken by the local governing bodies to improve the educational status of the population are not very effective and need overhaul

Marital Status of the slum dwellers

- Majority of slum dwellers in Nagpur City are married.

Earning Members (of Household)

- Male family members are the primary earning members of the families living slum areas of Nagpur city

Years of Stay in the Slum

- Significantly ($P < 0.05$) high percentage of slum dwellers in Nagpur city are staying in the slums from more than 30 years, which shows that the study area has been receiving migrants from a fairly long period.

Previous Place of Residence of the slum dwellers

- Significantly ($P < 0.05$) high percentage of slum dwellers of Nagpur city previously lived at other places in Maharashtra state only indicating an uneven development within the Maharashtra State.

Reasons for coming to Slum

- Majority of slum dwellers are staying in the slum since their birth and hence, indicated that there is no other specific reason for them to live there.

Reasons for Leaving Native Place - Migration

- Majority of slum dwellers left their native place because of inappropriate living conditions.

Economic Condition of the slum dwellers since migration

- Economic condition of significantly ($P < 0.05$) high percentage of slum dwellers improved after migration from their respective native places, which shows that perceived benefit of economic development has become a reality for most of the migrants after settling in Nagpur City.

Occupation of the slum dwellers

- On the basis of the study results, it is concluded that substantially high percentage of slum dwellers in Nagpur city are working as daily wagers, which can be attributed to their low education.

Mother Tongue of the slum dwellers

- On the basis of the study results, it is concluded that Marathi is mother tongue of noticeably high percentage of slum dwellers of Nagpur City, which evident from the fact that most of them are residents of Maharashtra State only.

Desire to Shift for Better Living

- From the survey data, it is concluded that majority of slum dwellers in Nagpur city have no desire to shift for better living. Since, most of the slum dwellers are living here since; probably they have developed their lifestyle according to the available resources.

Distance willing to Move

- From the data it is concluded that majority of slum dwellers (those who are willing) in Nagpur city are willing to shift within less than 1 Km distance from the current place.

Safety of women walking after 7 pm

- On the basis of the study results, it is concluded that majority of slum dwellers of Nagpur city feel that it is safe for women walking after 7 pm, which can be attributed to the social cohesion amongst the slum dwellers

Thus, it can be concluded from the study results that there are no major problems experienced by the slum dwellers as far as the social aspects are concerned. This can be attributed to the fact that most of them are living there since their birth. Hence, in order to have an affordable housing policy for such a population, it will be necessary to first increase the awareness of benefits of good and well planned housing amongst them. The lack of awareness of good quality housing and perceived benefit of the same appears to be a hindrance for convincing these people to move to a new well planned housing.

5.1.2 Part-II : Physical Aspects of the Slums of Nagpur City

A number of studies have consistently found clear evidence of a relationship between neighbourhood environment and self-reported health and general well being. While these studies consider a number of neighbourhood variables (not just physical environment variables) and draw on residents' perceptions of neighbourhood as well as other measures of neighbourhood, the relationship between the physical aspects and self-rated health is clear which has a bearing on the sustainability of the society general and the slum dwellers in particular. It has been reported that physical environmental problems were positively and significantly associated with poor physical and emotional health; specifically people reporting that they disliked the physical aspects of their dwelling vis-à-vis physical environment were much more likely to report chronic health conditions. Studies also show that the negative impact of poor physical environment is greater for different types of residents, notably women, people who are unemployed and older people. Moreover, the physical aspects are also integral to any policy that focuses on the affordable housing for the weaker

sections of the society. In view of this the indicators of the physical aspects of the slum dwellings were studied in detail and the results are presented as follows

Housing Condition

- Majority ($P < 0.05$) of slum dwellers of Nagpur City presently live in the Semi Pukka type of house.

Plot area (in sq. ft.) of the house

- On the basis of the survey data it is concluded that plot area of majority of slum dwellers is 300-400 Sq. Ft.

Built up area in sq. ft. of the house

- The built up area related data indicated that few slum dwellers have constructed multistoried dwellings. Besides all the plot area has been used for construction purpose, thereby making the available built up area in majority of dwellings between 500 and 700 Sq. ft.

Floor/Storey of the house

- Though some slum dwellers have multistoried houses, majority of them have a residence that has only ground floor

Number of Rooms in the house

- Majority of slum dwellers of Nagpur City have two rooms in their house.

Materials of Walls and Roof of the house

- *Walls:* For majority of slum dwellers, the walls of the house are made up of cement and bricks.
- *Roof:* For majority of slum dwellers, the roof of residence is made up of AC sheets.

Doors of the house

- For a significantly ($P < 0.05$) high percentage of slums the size of doors is small.

Windows of the house

- Like, the doors, for a significantly ($P < 0.05$) high percentage of slums the size of windows is also small.

5.1.3 Part – III : Economical Aspects of the Slums of Nagpur City

Over the last few decades, urbanization has accelerated at an unprecedented scale. In 2007, for the first time in history, more people lived in urban than in rural areas worldwide. This shift to urban areas has been driven, on the one hand, by “push factors” characteristic of the rural areas such as unemployment, low standards of housing and infrastructure, lack of educational facilities, or conflict in rural areas. In addition there is stronger pressure in rural areas to comply with rigid social norms like the obligation to support extended families i.e. less economic independence, and stronger social stigma associated with certain family or medical conditions, among others. On the other hand, such problems are not severe in the urban areas and give the people to have economic (through higher opportunities) and social independence. Such economic status as well as independence has a strong relationship with the affordability of one of the most important basic necessity i.e. housing. Hence, the economic aspects prevalent in the slum areas of Nagpur city have been studied and the conclusions drawn on the basis of data are presented hereunder

Expenditure

- *Outside Food:* Majority of slum dwellers of Nagpur city spend Rs. 500 to 1000/- per month on outside food.
- *Clothes:* Noticeably high percentage of slum dwellers of Nagpur city spends less than Rs. 200/- per month on clothes.
- *Education:* Most of the slum dwellers of Nagpur city spend less than Rs. 200/- per month on education.
- *Health:* Most of the slum dwellers of Nagpur city spend less than Rs. 100/- per month on health.
- *Recreation:* Majority of slum dwellers of Nagpur city spend Rs. 200 to 400/- per month on recreation.
- *Electricity:* It is concluded that noticeably high percentage of slum dwellers of Nagpur city spend Rs. 200 to 400/- per month on electricity.
- *Water:* Considerably high percentage of slum dwellers in Nagpur city spends Rs. 200 to 400/- per month on water.
- *Domestic Water (Drinking):* Significantly high percentage of slum dwellers in Nagpur city spends Rs. 200 to 400/- per month on domestic water (drinking water).

- *Transportation*: Substantially high percentage of slum dwellers of Nagpur city spends Rs. 200 to 400/- per month on transportation.
- *Telephone/Mobile*: Majority of slum dwellers of Nagpur city spend less than Rs. 200/- on telephone or mobile.
- *Cooking*: Most of the slum dwellers of Nagpur city spend more than Rs. 400/- per month on cooking.
- *Other/Miscellaneous*: Apart from the above mentioned expenses there is no noticeable expense on other miscellaneous aspects by the slum dwellers of Nagpur city.

Savings on LIC by the slum dwellers

- Majority of slum dwellers in Nagpur city have no savings in LIC, which has direct bearing on their economic sustainability. Since, the housing related economic activities need an insurance cover. This aspect needs special attention while framing a new affordable housing policy.

Savings on Other/Bank of the slum dwellers

- It is concluded from the data that significantly ($P < 0.05$) high percentage of slum dwellers of Nagpur city have savings in other sources or bank.

Willingness to pay for Housing Provisions

- Majority of slum dwellers of Nagpur city are willing to pay between Rs. 500/- and Rs. 1000/- per month for housing provisions.

Household Gadgets

- From the study results, it is concluded that household gadgets such as mobile and television are available in significantly ($P < 0.05$) high percentage of households present in the slums of Nagpur City

Household Vehicles

- Most of the households in the slums of Nagpur city possess only a bicycle.

Types of Fuel Consumed by the slum dwellers

- It is concluded from the data that LPG and firewood are consumed as a fuel by significantly high percentage of slum dwellers of Nagpur city.

5.1.4 Part – IV : Infrastructure Aspects of the Slums of Nagpur City

There are plenty more ideas to be discovered in the squatter cities of the developing world, the conurbations made up of people who do not legally occupy the land they live on—more commonly known as slums. It has been reported that around one billion people live in these cities and, this number is going to increase very rapidly. Considering the number of people living in the slums in such cities, the pressure of infrastructure is a valid concern of the authorities. Besides, though there are many initiatives by the local governing bodies to improve the same i.e. infrastructure, it has been observed that the efforts are more often inadequate. Since, the slum dwellers living are directly related to the available infrastructure facilities, the same were studied in detail and the conclusions drawn with respect to the collected data are presented as follows

Distance covered from House to Work by the slum dwellers

- On the basis of survey data it is concluded that majority of slum dwellers have to cover 1 to 3 Km distance from their house for reaching their workplace.

Approach to House of the slum dwellers

- The approach to house of majority of slum dwellers is very congested.

Water Supply

- It is concluded that substantially high percentage of slum dwellers have facility of water tap as a primary source of water supply.

Domestic Water Supply System

- Majority of slum dwellers receive water supply through Public/NMC distribution system.

Water Supply Hrs in the slums

- Majority of slum dwellers of Nagpur city receive water 24 hours through water supply department of Nagpur Municipal Corporation

Water Supply Problems in the slums

- It is concluded that majority of slum dwellers of Nagpur city have no problems regarding water supply.

Electricity Availability and Electricity Tariff

- Form the survey data it is concluded that electricity with meter and monthly billing facility is available in the majority of households present in the slums of Nagpur city. However, these slum dwellers feel that the electricity tariff is very high.

Power cuts in Slum Area during Summer and Winter Seasons

- It is concluded from the data that significantly ($P < 0.05$) high percentage of households in the slums of Nagpur City face power cuts during summer season, while no such problems was experienced during the winter season.

Voltage Fluctuation

- There was no problem with respect to the voltage fluctuation in slums of Nagpur city.

Washing Space in the House

- Washing space is available in significantly ($P < 0.05$) high percentage of households of slums of Nagpur city.

Availability of Toilets

- Individual toilet is available in substantially high percentage of slum households of Nagpur city.

Presence of Manholes and Drains

- Manholes as well as drains are present majority of slum areas of Nagpur city.

Garbage Disposal Problems in the slums

- Majority ($P < 0.05$) of slum dwellers throw garbage on the street as there are no specific arrangements for the disposal of the same.

Solid Waste - Garbage Collection

- Solid waste collection takes place every alternate day in majority of slums of Nagpur City.

Availability of Street Lighting in the slums

- Street lights are available in majority of slum areas of Nagpur City.

Distance of Bus stop from the house

- The bus stops are available in less than 1 km distance from majority of households of Nagpur city.

Distance of Primary and Secondary Schools

- From the data it is concluded that primary as well as secondary schools are situated less than 1 Km away from the households of majority of slum dwellers of Nagpur city.

Distance of Dispensary and Hospital

- Dispensary as well as hospitals plays a vital role in the healthcare management, and the study results indicate that both dispensary as well as hospital is situated less than 1 Km from the households of considerably high percentage of slum dwellers of Nagpur city.

Ranking of Problems (related to Water Supply, Solid Waste Management, Sewerage, Drainage, Communication, Electricity and Transportation)

- Though there are certain areas where the slum dwellers experience problems, the survey data showed that the problems faced by these individuals are as follows, the problems with respect to its gravity in decreasing order are those related to Water Supply, Solid Waste Management, Sewerage, Drainage, Communication, Transportation, Electricity.

5.1.5 Part – V : Environment Aspects

The different environmental compartments like air, water, soil have direct influence on the quality of life of man. Since, there are pressures on the different ecological domains (social, physical infrastructure, economic, cultural, etc.) of the urban dwellings, the issues that have direct relevance to the housing related policy were studied and the conclusions drawn on the basis of collected data are presented here.

Ventilation in the household

- There is good ventilation in majority of households present in the slums of Nagpur City.

Quality of Water

- Substantially high percentage of slum dwellers in Nagpur city receives good quality water through water supply department.

Shortage of Water in Summer/Winter

- Significantly high percentage of slum dwellers in Nagpur city faces shortage of water during summer season.

Water logging after Rains

- Considerably high percentage of slum dwellers in Nagpur city faced problem of water logging in their slum after rain.

Main Conclusion

Every individual has a right to a decent standard of living, which is a prerequisite to a decent living, hence, to the fulfillment of human life beyond simple survival is access to adequate housing. Housing does not simply provide security and shelter (fulfilling physical needs) from weather and climate, but, also the means for sustainable development. Furthermore, in a civilized society, the housing needs are not just that of an individual, but those of the society in general. Since, the affordability of the households is an important issue for availing the same i.e. a household, baseline data of the individuals forming the society is crucial. Majorly, the key areas, which may influence the success of Govt.'s housing policy demand that more focus should be given towards improving the literacy as well as the skill levels of the population as these were found to be the core issues.

5.2 Suggestions and Recommendations for

5.2.1 Architects/Planners

- The present study showed that household income of slum dwellers is very low and hence the architects and planners should design the houses in such a way that cost of constructing house should be as low as possible.
- Use of information and communication technology should be promoted by the academic institutes as well as professional bodies to make the information pertaining to construction technology, cost of material, quality and durability

of the construction material available to the professionals (Architects and Planners).

- A National Level database regarding various issues (availability of land, finance, construction materials, construction technology, cost of construction etc.) related to affordable housing should be developed by the academic institutes. Such information will be very useful to determine the transition of affordable housing related issues over a period of time.
- Architects and planners should study housing designs proposed by others.
- Architects/Planners should conduct research in developing area specific designs for the houses
- Architects and planners should focus on the quality as well as cost of the material to be used to construct houses for the weaker sections of the society.
- While designing houses for the people belonging to weaker sections architects and planners should take into consideration the social aspects that demand space for performing religious, societal, public events.
- The designing of affordable housing for the weaker section should consider future technological developments which will necessitate demand of space in the households.
- The benefits of well planned cities as well as houses with ergonomic design should be communicated /propagated by architects and planners.
- Architects and planners should study the availability of land in different areas of a city before designing the colonies so that proper utilization of space can be achieved.
- Since, the study results showed that approach to the household from the main road is very congested with very less to no space for parking architects should give sufficient emphasis towards these aspects while framing new housing policy.
- Architect /Planners should give sufficient emphasis towards safety as well as ventilation in new houses to be designed for the weaker sections.
- Architects/Planners should interact more frequently so as to exchange their ideas, which can help in formulating a better and sustainable concept for the development of affordable housing schemes

- Similar studies should be carried out in other cities of India to corroborate findings of this study.

5.2.2 Local Governing Body

- The local Governing Bodies should periodically evaluate the validity of housing related schemes.
- Since, educational status of weaker sections is very low, efforts should be taken towards improving their educational status so that their household income can see noticeable rise. This will subsequently improve their economic condition and will help them to afford a relatively decent accommodation.
- Before announcing any housing related scheme, the local governing body should take inputs from the architects/planners so that the scheme will become more effective.
- In order to improve socio-economic status of weaker sections employment generation in the city should be given due importance.
- Systematic feedback mechanism should be developed to identify or know the problems faced by people living in slum areas.
- A high power committee should study the affordable housing schemes implemented by other local government bodies to ensure success of new housing scheme.
- Budgetary allocation towards affordable housing schemes should be pragmatic and based on the hard facts.
- Since, all the slum pockets in a city are not similar; the housing policy should be flexible so that the peculiar details of a particular region are to be taken into consideration prior to implementation of the same.
- Factors governing slum dwellers' decision to stay put at the prevailing location should be studied by the members of local governing bodies
- The impact of unplanned housing on the societies in the vicinity of such slum pockets should also be studied in detail.
- The local governing body should float welfare schemes with a holistic view for the weaker sections
- The local governing body should identify and work with the leaders in the slums so as to propagate the welfare schemes amongst the weaker sections

5.2.3 State/Central Government

- The State/Central Govt. should set up a task force to identify all relevant issues (socio-economic, education and employment related) vis-à-vis affordable housing for the weaker sections of the society
- Specific advertisement campaigns should be conducted by the State/Central Govt. departments in collaboration with the NGOs and social workers to educate weaker sections regarding benefits of living in well planned societies.
- Adequate funding should be made available by the State/Central Government for implementing affordable housing schemes in the respective cities.
- A task force should be set up by the State/Central Government departments to study and evaluate the affordable housing schemes developed in different countries.
- State/Central Govt. should facilitate interaction with the planners and architects for delineating a robust affordable housing policy for the tier II and tier III cities
- An affordable housing model should be developed and evaluated prior to down streaming of the new affordable housing concept
- State Govt. should promote formation of self help groups in the slum areas, which can help them to give financial stability and can further help them in improving quality of their social life
- The study results show a pathetic situation of the slum dwellers with respect to their education hence more efforts are needed from the State and Central Govt. to achieve the literacy targets for a given area.
- Similarly training of vocational courses should also be imparted to the slum dwellers to improve their earning potential.
- Since the data showed that majority of earning members living in the slums are casual workers, efforts are needed from the Govt. as well as Non Govt. organizations to improve their skills through specific training programs, which can help them to grab good jobs and subsequently economic development.
- Govt. should formulate a holistic housing policy (free of regulatory hassles) for the weaker section
- Banking and Non Banking Financial Institutions should provide finance to the weaker sections at an affordable interest rate

- Role of microfinance agencies in the economic development of the weaker sections in view of meeting their basic need of shelter should be studied in research endeavors.
- Relocation and rehabilitation policies of the different Govt.'s should be studied in detail to determine lacunae (if any) present in the same.



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ANNEXURE-I

Dated दिनांक:

:/...../.....

Annexure 1/अनुलग्नक १
Household Schedule (English Version)
घरगुती अनुसूची (मराठी संस्करण)

1. Name of the Slum/ स्लमचे नाव:.....
2. Ward No.वार्ड क्र./Prabhag No. प्रभाग क्र.:..... Prabhag Name प्रभागाचे नाव:.....
Zone No. झोन क्र.:.....Name of the Zone झोनचे नाव:.....
3. Name of the Slum Dweller/Head of Family
स्लम रहिवास्याचे नाव / कुटुंब प्रमुखाचे नाव :.....
Demographic Characters/जनसांख्यिकीय वर्णन:

Sr.No./क्रमांक	Relation to HoF/ कुटुंब प्रमुखाचे नाव	Male/ Female पुरुष/स्त्री	Age/ वय	Religion/ धर्म	Caste/ जात	Education/ शिक्षण	Marital Status/ वैवाहिक स्थिती	Occupation/ व्यवसाय		Distance covered from home to work place/घरा पासून व्यवसायाच्या/कामधंद्याच्या जागेचे अंतर	Monthly Income/मासिक उत्पन्न	Remarks/ अभिप्राय /शेरा
								P/प्रा	S/दु			
1	HoF/ कुटुंब प्रमुख											
2	Wife/ Husband पत्नी / पती											
3	Father/वडील											
4	Mother/आई											
5	Son मुलगा /Daughterमुलगी 1											
6	Son मुलगा /Daughterमुलगी 2											
7	Brother भाऊ /Sister बहिण 1											
8	Brother भाऊ /Sister बहिण 2											

4. Years of stay in the slum स्लम मध्ये राहत असल्याचे एकूण वर्षे:.....
5. Previous place of residence/work पूर्वी राहण्याचे/व्यवसायाचे ठिकाण:
 Maharashtra /महाराष्ट्र : Madhya Pradesh/मध्यप्रदेश : Bangla Desh/बांगला देश:
 Chhattisgarh/छत्तीसगड : Other States/अन्य राज्य: Nepal/नेपाल :
6. Reasons for coming to slum स्लम मध्ये येण्याचे/राहण्याचे कारण:
 By Birth/जन्मापासून Stay with spouse / family / guardian / children.
पती/पत्नी/मुला-मुलीं/परिवार/कुटुंबा सोबत राहणे
 Search of Employment रोजगार/कामाच्या शोधात
 Take up gainful employment चांगला पैसा /लाभदायक रोजगार मिळविण्यासाठी Other reasons/इतर कारणे:
7. Reasons for leaving their place पूर्वीची जागा/वस्ती सोडण्याचे कारण:
 Inadequate earning/ पेशाची कमतरता/अपर्याप्त कमाई Preference for urban life/शहरी जीवनाचे आकर्षण/ प्राथमिकता
 Bad agriculture year/वाईट शेतीचे वर्ष Stay near Workplace/ कामाच्या /व्यवसायाच्या जागेजवळ राहणे
 Attraction of better employment/चांगली नोकरी/उत्कृष्ट रोजगाराचे आकर्षण For Social functions/Reasons/सामाजिक कारणे / कार्य
 Unemployment / बेरोजगार /बेकारी Other reasons / इतर कारणे

8. Economic conditions of the average family since migration/ स्थानांतरण नंतर कुटुंबाची आर्थिक परिस्थिती:

- Improved/ सुधारली Deteriorated/बिघडली
 Same/ बदलली नाही Don't know/माहित नाही

9. Occupation व्यवसाय/ कामधंदा:

- Cooley कुली/ कामगार Hawker vendor फेरीवाला/विक्रेता
 Self employed स्वयंरोजगार/ स्वतःचा व्यवसाय Rag picker कचरा उचलणे
 Casual labour नैमित्तिक कामगार Cycle Rickshaw सायकल रिक्शा
 Auto Rickshaw ऑटो रिक्शा चालक

10. Mother Tongue मातृभाषा:

- Marathi/ मराठी: Bengali / बंगाली: English / इंग्लिश
 Hindi / हिंदी: Punjabi / पंजाबी: Others /इतर भाषा
 Urdu / उर्दू: Gujarati /गुजराती:
 Telgu /तेलगु Nepali / नेपाली:

11. Housing Condition घराची स्थिती:

Types प्रकार	Good(Livable) राहण्याजोगे	Average(Need Repair) दुरुस्ती करणे आवश्यक	Bad(Dilapidated) मोडकळीस आलेले
Wall भिंती			
Roof छप्पर			

12. Housing Data: निवास/घराबद्दल माहिती

- Plot Area जागेचे क्षेत्रफळ _____ / Built up area बांधकामाचे क्षेत्रफळ _____
- Storey/किती मजले : Ground Floor/तळमजला / Double Storey/ दोन मजले
- Type of House घराचा प्रकार : Kutchha कच्चे / Semi Pucca अर्ध पक्के / Pucca पक्के /
- No. of Rooms एकूण खोल्या : _____
- Material of Walls भिंतीची सामुग्री : Mud माती /Mud+Bamboo माती+बांबू /Mud+ Bricks माती+ विटा / Cement+Bricks सिमेंट+विटा / Other इतर _____
- Material of Roof छपराचे सामान : Thatch गवताचे /Tiles कवेलू /AC Sheets सिमेंट शीट/GI Sheets टीन पत्रे /Pucca Flat Slab सिमेंट स्लब /Others इतर
- Doors दरवाजे : Large मोठे / Small लहान / No नाही
- Windows खिडक्या : Large मोठे / Small लहान / No Windows/खिडक्या नाही
- Light/Ventilationप्रकाश/वायुजीवन : Good चांगले / Fair योग्य / Poor अयोग्य / No नाही
- Approach to house घरापर्यंत जाण्याचा मार्ग : Good चांगला / Congested संकुचित/अडचणीचा Paved फरशी बसवलेला / Unpaved बिना फरशीचा / Muddy मातीचा

13. Infrastructural data आधारभूत संरचना/ घराच्या अत्यावश्यक सेवा सुविधा :

1. Water पाणी :

- Water Supply पाणी पुरवठा : Tapनळ/Open Wellविहीर/Hand Pump हापशी-पंप/None काही नाही/Other इतर
- Water Supply System पाणी पुरवठा योजना: Public सरकारी (NMC) / Private खाजगी(Tanker) / Both दोन्ही
- Water Supply पुरवठा (in hrs.): 24 Hrs/२४ तास / Morning/सकाळी Evening/संध्याकाळी/ नियमित/ अनियमित
- Quality of Water पाण्याची दर्जा : Good उत्तम / Average साधारण / Bad वाईट
- Shortage of Water in Months of पाण्याची टंचाई: Summer उन्हाळा / Winter पावसाळा
- Water Supply problemsपाणी पुरवठ्याची समस्या: Colour रंग / Smell वास / Presence of particles गढूळ

2. Electricity वीज :

- i. Available आहे / Not Available नाही
- ii. Metered मीटर / Non-Metered मीटर नाही
- iii. Billing देयक : Monthly महिनावारी / Flat Rate एक दर / No Billing विनादेयक /निशुल्क
- iv. Tariff दर/प्रशुल्क : Very High जास्त / Low कमी / Free निशुल्क
- v. Average Daily Power Cuts(Hours) in Summers उन्हाळ्यात साधारण लोड शेडिंग:Hrs तास / No Power Cuts नाही
- vi. Average Daily Power Cuts(Hours) in Winters हिवाळ्यात साधारण लोड शेडिंग:Hrs तास / No Power Cuts नाही
- vii. Voltage Fluctuation वीज दाब कमी जास्त होणे : More जास्त / Less कमी / No नाही

3. Sanitation आरोग्य विषयक स्वच्छतेसंबंधी :

- i. Washing space in the house घरातील धुण्याची जागा : Yes आहे / No नाही
- ii. Toilets संडास/ शौचालय : Public सरकारी / Individual वैयक्तिक / Open मोकळी जागा / Other इतर
- iii. If using public toilet सरकारी शौचालय वापरत असल्यास : Expenditure per month (Rs)महिनाचा खर्च _____
- iv. Presence of Manholes in the area/ वस्तीत जवळपास मलवाहिनी/गटार: Yesआहे/No नाही
- v. Drains जल निस्सारण/सांडपाणी वाहिनी : Open उघडी नाली /Covered बंद नाली /Kutcha कच्ची नाली /Pucca पक्की नाली /underground जमिनीखालून

4. Solid Waste Disposal घन कचरा व्यवस्था :

- i. Thrown on the street रस्त्यावर/उघड्यावर फेकणे /Municipal Dustbins पालिका कचरा पेटी /Compostingखात बनविणे /Burned openly उघड्यावर जाळणे /Any other इतर प्रकार
- ii. How often it is collected from the disposal point कचरा गोळा करण्याची सोय : Daily दररोज /Alternate Dayएकदिवसानंतर /Weekly आठवडी /No कधीच नाही
- iii. Is the dumping area used by non-slum dwellers डम्पिंग जागेचा वापर वस्ती बाहेरचे करतात काय?: Yesहोय/ Noनाही

14. Community Facilities वस्तीतील सामाजिक सुविधा:

1. Park or Play Ground nearby जवळपास बगीचा/ खेळ मैदान : Yes आहे / No नाही
2. Whether the area is water logged after rains वस्तीत पावसाळ्यात पाणी जमा होते काय? : Yes होय / Noनाही
3. Street Lighting available रस्त्यावर विजेचे दिवे : Yes होय / No नाही
4. Whether mosquito net is needed मच्छरदाणीचा वापर : Yesहोय / Noनाही
5. Nearest Bus-stop in distance बस थांब्याचे अंतर : 1/2km/ 1km / 2km /3km/5km/10km
6. Distance from your residence to the nearest घरापासून अंतर
 - i. Primary school प्राथमिक शाळा : 1/2km/ 1km / 2km /3km/5km/10km
 - ii. Secondary school माध्यमिक शाळा : 1/2km/ 1km / 2km /3km/5km/10km
7. Distance from your residence to the nearest घरापासून अंतर
 - i. Dispensary छोटा दवाखाना : 1/2km/ 1km / 2km /3km/5km/10km
 - ii. Hospital मोठे रुग्णालय : 1/2km/ 1km / 2km /3km/5km/10km

15. Rank wise infrastructure problem in your area (put numbers) वस्तीतील आधारभूत संरचना / अत्यावश्यक सेवा सुविधा समस्या क्रमाने लावणे

- | | |
|---|--|
| <input type="checkbox"/> Water supply problem पाणी पुरवठा समस्या | <input type="checkbox"/> Drainage problem जलनिस्सारण/सांडपाणी समस्या |
| <input type="checkbox"/> Solid waste management problem घन कचरा व्यवस्थापन समस्या | <input type="checkbox"/> Communication problem संपर्क/दळणवळण समस्या |
| <input type="checkbox"/> Sewerage problem मल निस्सारण/गटर समस्या | <input type="checkbox"/> Electricity problem विजेची समस्या |
| | <input type="checkbox"/> Transportation problem वाहतूक व्यवस्था समस्या |

16. Expenditure: (monthly in Rs) महिन्याचा व्यय/ खर्च:

- | | |
|------------------------------|--|
| • Food खाद्य /अन्न : _____ | • Transportation वाहतूक : _____ |
| • Cloth कपडे : _____ | • Drinking water पिण्याचे पाणी : _____ |
| • Education शिक्षण : _____ | • Loan repayment कर्ज हप्ता : _____ |
| • Health आरोग्य : _____ | • Telephone / Mobile मोबाईल : _____ |
| • Recreation मनोरंजन : _____ | • Cooking Gas स्वैपाकाचा गैस : _____ |
| • Electricity वीज : _____ | • Any Other अन्य इतर : _____ |
| • Water पाणी : _____ | |

17. Savings बचत :

1. LIC Policy चिन्हा : Yes आहे / No नाही 2. Others/Bank इतर/(बँक) : Yes आहे / No नाही

18. Details of Household Gadgets घरगुती उपकरणे :

Type प्रकार	Mobile Phone मोबाइल	Bsnl फोन	Fm रेडीओ	TV टीवी	Fridge फ्रीज	Bicycle सायकल	Auto Rickshaw ऑटो रिक्शा	Sewing Machine शिलाई मशीन	2-Wheeler स्कूटर
Quantity राशी									

19. Movement/Travel Chart: दैनंदिन कामकाज / प्रवास तक्ता

Activity कार्य/कृती	Mode of Transportation वाहन प्रकार/ प्रवासाचे साधन	Distance Walk/Travel अंतर पायी /प्रवासाचे	Frequency in a Week आठवड्यातून किती वेळा
Shopping बाजार/खरेदी	Public सरकारी /Own खाजगी/Walk पायीKm	Daily दररोज /Twice दोनदा /Thrice तीनदा /
Recreation मनोरंजन	Public सरकारी /Own खाजगी/Walk पायीKm	Daily दररोज /Twice दोनदा /Thrice तीनदा /
Daily Chores दैनंदिन कामे	Public सरकारी /Own खाजगी/Walk पायीKm	Daily दररोज /Twice दोनदा /Thrice तीनदा /

20. Energy/Fuel Requirement इंधनाची गरज :

SN. क्र	Energy per Month इंधन प्रती महिना	Cooking Qty स्वैपाकासाठी	Lighting Qty प्रकाशासाठी/उजेडाकरिता	Space Heating Qty in Winter हिवाळ्यात घर गरम ठेवण्यासाठी
1	LPG गैस	½ / 1 / 2 Cylinders	½ / 1 / 2 Cylinders	Not Reqd गरज नाही
2	Kerosene मातीचे तेल	5/10/15/20/25 lit	5/10/15/20/25 lit	Not Reqd गरज नाही
3	Firewood जळाऊ लाकूड	10/15/20/25/kg	10/15/20/25/kg	Not Reqd गरज नाही
4	Cow dung गोवरी	10/15/20/25/kg	10/15/20/25/kg	Not Reqd गरज नाही
5	Electricity वीज	500/1000/1500Rs	500/1000/1500Rs	Not Reqd गरज नाही
6	Charcoal/Koyla कोळसा	10/15/20/25/kg	10/15/20/25/kg	Not Reqd गरज नाही
7	Sawdust/ Bhusa भूसा	10/15/20/25/kg	10/15/20/25/kg	Not Reqd गरज नाही
8	Urban Waste शहरातील केर	10/15/20/25/kg	10/15/20/25/kg	Not Reqd गरज नाही
9	Others इतर			

18. Are you ready to move from the current area to a new place:
या वस्तीतून नवीन जागेत जाण्यास तयार आहात काय? Yes होय / No नाही
If yes then how far हो असल्यास किती दूर: 1km/3km/5km/10km/15/km/25km/
19. Willingness to pay for Housing Provisions
घराची सुविधा दिल्यास स्वेच्छेने पैसे/परतफेड करण्याची तयारी आहे काय?: Yes होय / No नाही.
If yes how much per month can be paid होय असल्यास किती करणार: Rs.1000/ 2000/ 3000/ 5000/
20. Is it safe for a woman to walk alone after seven P.M.in the area/
वस्तीत सायंकाळी ७ नंतर बायका मुलींना ये जा करण्यात वस्ति सुरक्षित वाटते काय?: Yes होय / No नाही .
21. Frequency of burglary चोरीचे प्रमाण :
 आठवड्यातून एकदा क्वचितच
 दोन आठवड्यातून एकदा कधीच नाही
 महिन्यातून एकदा
22. Does HoF drink daily कुटुंब प्रमुख दररोज दारू पितात काय?: Yes होय / No नाही / No Comments अभिप्राय नाही
23. Do children play around मुले सभोवताल खेळतात काय? Yes होय / No नाही/ on own स्वतः निर्भोडपणे/
need supervision लक्ष द्यावे लागते
24. Crime गुन्हाचे प्रमाण : High फार जास्त / Medium साधारण / Low
अगदी कमी / Never कधीच नाही
25. Remarks शेरा/ टिप्पणी:
-
-

LIST OF PUBLICATIONS

1. **Bakde Vilas K.** and Kulkarni S.Y. (2014). **Affordable Housing- A critical Review of Literature**, *International Journal of Innovative Research and Studies (IJIRS)*, Vol. 2, Issue 3, pp 164-175.
2. **Bakde Vilas K.** and Kulkarni S.Y. (2014). **Importance of Baseline Data for Delineating Urban Housing Policy – A Case Study in Tier II City of India**, *Architecture, Time, Space and People*, The refereed Journal of the Council of Architecture, India, Vol. 14, Issue 5, pp.28-35.

