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## Research Title:

Women's perception of safety of public space in resettlement sites: The case of Kannagi Nagar in Chennai, India

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## **Summary**

India is among the countries experiencing high rates of violence against women in public space. The extent of violence varies significantly in their regions in terms of the type and degree of violence. In the resettlement site, the problem of women safety is more serious than the other type of settlements because many resettlement sites do not consider principle guideline of designing safer public space while they contain a large number of people from different places. Similarly, impact of resettlement on economic and social aspects of the residents also accelerate the safety challenges.

The study aimed to examine how the design and use of public space affect women's perception of safety in Kannagi Nagar resettlement site in Chennai, India. In that regard, the study addressed the following research sub-questions; how do women perceive the safety of public space in Kannagi Nagar? To what extent have safety issues for women been addressed in the design of public space in Kannagi Nagar? How do women use public space in Kannagi Nagar? Which strategies do women use to address (or improve) the safety of public space in Kannagi Nagar?

The research employed qualitative research to explain the phenomena of women's perception of safety, to capture the information needed to answer the research questions above. The methods applied included; open-ended questions using a semi-structured interview guide to collect information from all respondents on their perception to women's safety, combined focus group discussions, and participatory mapping were used to collect opinions from resettled women, participant observation to visualize the real situation and also secondary data were used to triangulate the information. Furthermore, data gathered from the field was analyzed using Atlas Ti 8 and Arc GIS to produce the thesis report.

The study revealed that the main cause of women's perceived lack of safety in Kannagi Nagar resettlement site is associated with social and physical disorder. Women perceived that presence of drug dealers, alcoholism, crime incidences like rape and fighting behaviour, unoccupied buildings, vandalism and unfriendly sharp corners in resettlement sites causes fear among them and leading to the characteristics of unsafe area.

This study strongly recommends that, in order to improve women safety in Kannagi Nagar. First, the government and NGOs should take urgent initiatives to educate and bring out young people on drugs and alcohol. Second, the government or any other stakeholder should create some projects within the resettlement so that the community can be employed.

## **Keywords**

Resettlement, Public Space, Safety, Perception of Safety, Maintenance of public space.

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## Abbreviations

AEE	Additional Executive Engineer
CCDO	Chief Community Development Officer
CO	Charity Organization
CMDA	Chennai Metropolitan Development Authority
DIDR	Development-Induced Displacement and Resettlement
FGD	Focus Group Discussion
GCC	Greater Chennai Corporation
GIS	Geographical Information System
IRR	Impoverishments Risks and Reconstruction Model
MCDS	Montfort Community Development Society
NGO	Non-Governmental Organization
SHGs	Self-help Groups
TNSCB	Tamil Nadu Slum Clearance Board
VAW	Violence Against Women

## Terms

<b>WR<sub>1</sub></b>	Resettled women respondent
<b>MR<sub>1</sub></b>	Resettled men respondent
<b>KR<sub>1</sub></b>	Key Informant respondent
<b>CL<sub>1</sub></b>	Community leader respondent
<b>1</b>	means document number

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# **Chapter 1: Introduction**

## **1.0 Introduction**

The aim of this chapter is to introduce the study. This chapter helps to understand where the research problem is derived from, and introduce the general background of the study, problem statement, and the objective of the research. The research question, sub-questions, significance of the study, limitation, and scope of the study will be presented as well.

## **1.1 Background**

Urbanization is considered as a fundamental base of economic growth, however, is not necessarily associated with rapid or steady growth (Annez and Buckley, 2009). Not all urbanization aspects are economically beneficial, as it tends to create challenges related to congestion and overcrowding of the urban area if not well managed (McGranahan and Satterthwaite, 2014). Most urban governance fails to address the negative side of urbanization (ibid). Urbanization also contributes highly to the formation of informal settlements particularly in Africa, Latin America, and Asia, and the presence of large numbers of low-income groups in the urban growth process coupled with shortage of housing, and high land prices accelerate the emergence of squatters or slums (Martine and McGranahan, 2013).

India experienced high rate of urbanization and it is considered that up to now 71 million of population living in cities are migrants from rural areas, a census report shows there is an increased number of people from 35 million in 2001 to 52 million in 2011 which counts to 42.6 percent of the total urban population (MoHUPA, 2016, p.31). The situation caused the overcrowding in many cities in India and sometimes overburdens the government to provide urban infrastructure and basic facilities to the citizens, some in urban areas suffer from underserviced facilities and an inadequate housing stock (MoHUPA, 2015). A report of Ministry of Housing and Urban Poverty Alleviation (2015) cautions that if these challenges are not going to be managed well, the estimates indicate that in twenty years 225 million of people will put huge stress on the urban system. Furthermore the report shows that the trends of people living in slums have significantly increased from 28 million people in 1981, 46 million in 1991, 61.8 million in 2001 and 65.5 million of people in 2011 (MoHUPA, 2015). Moreover the report shows, 22.4 percent of slum population live in towns and 17.4 percent live in all states. However the high percent of slums reported in the megacities like Delhi, Mumbai, and Kolkata about 42 to 55 percent of their population lives in slums (MoHUPA, 2016, p.94).

Addressing the challenges of slums, the Indian Government has formulated various schemes, like the Environmental Improvement of Urban Slums (EIUS) scheme. In 1996 the government decided to introduce the comprehensive National Slum Development Programme (NSDP) in order to assist schemes dealing with slum upgrading. In 2009 the government launched Rajiv Awas Yojana (RAY) with the vision of "Slum Free India" under RAY financial support and was extended for housing provision, creating a rental housing stock, and the improvement of basic infrastructure and social amenities. In June 2015 the Pradhan Mantri Awas Yojana (PMAY) "Housing for all" scheme was established to address four basic housing needs of the urban poor namely; in-situ slum redevelopment, credit linked subsidy, affordable housing in partnership, and subsidy for beneficiary-led individual house construction (MoHUPA, 2016, p.95). These schemes operate in different parts of India.

Tamil Nadu state has the Tamil Nadu Slum Clearance Board (TNSCB) which was established in 1971. The TNSCB is responsible for planning and implementation of slum upgrading, clearance and relocation projects, and functions as an institutional, local body

(CPD, 2009). Before 2000 the TNSCB was implementing a policy of constructing small numbers of tenements in the same place (Raman, 2011, p.74). Since 2000 the TNSCB is involved in the construction of large-scale of tenements in peripheral areas, where slum residents from the city are relocated (*ibid*). The TNSCB implemented resettlement projects in different places in Chennai like Semmenchery, Gudapakkam, Ezhil Nagar and Kannagi Nagar.

## **1.2 Background of the problem**

In many countries, urbanization brings complex challenges and accelerates the occurrence of violence and crime. Recent studies show that for some countries experiencing high rates of crime, the crime rate goes proportional to the speed of urbanization. For instance, a survey conducted in 17 countries of Latin America shows that settlements located in areas that are experiencing high rate of population growth are more victimized than settlements which receive less rate of population or stable populations (UN-Habitat, 2012, p.68). Crime and violence have been persistent in many cities, indeed more than 60 percent of residents living in urban areas and experience being victims of crime, especially in developing or transitional countries (UN-Habitat, 2016, p.22). Moreover researchers found that population changes which take place in many settlements are strongly associated with the crimes (UN-Habitat, 2012).

In addition, most of the researchers mentioned that an urban environment also contributes to challenges of crime and violence. Evidence shows that poor planning, design, and management of urban environments increase the risk of injury, death, and loss of property to the citizens (UN-Habitat, 2012). Empirical research proved that built environments play a great role in increasing and decreasing chances of crime and violence in a city, the data indicate that an estimated 15-16 percent of crime globally has been associated with planning, design, and management of environments (UN-Habitat, 2012, p.69). Moreover the distribution of land-use patterns, building and site design, street layouts plans infrastructure maintenance especially lighting have been showing the direct relation with crime chance, preceding incidences and safety perception (*ibid*). Lack of strategies and integrative comprehensive planning of crime prevention in cities is among the factors accelerate urban crimes opportunities (UN-Habitat, 2012, p.69). The impact of crime and violence are multiple on economic, political, social and even in gender, women are more vulnerable than men (UN-Habitat, 2012).

Many women experience violence in different parts of the world. The percentage of violence against women differs from one country to another. According to UN-Women (2017) the previous studies indicates that in Rabat, Morocco 92 percent of women experienced sexual harassment in their lives and these significant incidences are happening at public spaces, in Quito Ecuador, studies show that 68 percent of women experienced sexual violence in public spaces as well as in Papua New Guinea, where 80 percent of women vendors experienced sexual harassment in market places.

India is among the countries experiencing challenges of violence against women. Indian regions vary significantly in type and degree of violence. In 2011 more than 24,000 rape cases were reported and a large percent of these emanated from Delhi, where 706 rape cases took place (Chakraborty, Kumar, et al., 2017, p.304). However, Chakraborty et al. mentioned that not all incidences of violence are recorded, in India, crimes against women continue to increase. In 2013, the National Crime Records Bureau reported 309,546 crimes against women, which is an increase of about 27 percent compared to 2012 (*ibid*).

Accordingly, there is clear evidence that every 51 minutes, a woman in India faces some sexual harassment in public spaces (Bhattacharyya, 2016, p.312). The argument presented by Bhattacharyya in this context implies that women who access public spaces have a higher chance of facing risks or dangers of sexual harassment or violence. Bhattacharyya clarifies that the suffering of women in public spaces is due to the cultural patriotism however she argues that there are other factors like unemployment, poverty, patriarchal practice and gendered social-cultural values that contribute to violence against women.

Due to the challenges of women safety in India, The Government of India has taken some initiatives to rescue the situation. The government made legal system amendments by introducing the use of information technology for women's safety, self-defense subjects as the part of curriculum in schools, making the police stations more friendly to deal with women safety issues and implementing the appropriate urban planning and design which help to enhance the safety in cities (MoHUPA, 2016, p.35-36). However, despite all mentioned initiatives, the problem of women safety in some Indian cities is still persistent.

### **1.3 Problem statement**

Kannagi Nagar is among of largest slum resettlement site in Chennai, located 25 kilometers away from the center of the city, the area is not only affected by distance challenge, but also it's the ghetto of poverty reproduction, crime, and dirtiness (Coelho, Venkat, et al., 2012). Kannagi Nagar accommodates different communities with diverse backgrounds which brings complexity to this area. It experiences a substantial safety challenge for more than 15 years now.

As written in the newspapers and previous studies that the safety problem in Kannagi Nagar is serious. From the web link information of Parthsarath on 20 April 2017 written about "*The dark side of Kannagi Nagar*" Reported that the area is not safe; the women are scared because of bad incidences happening in public space. On October 2016, bad incidence reported, two young men murdered by their fellows on the fighting of drugs selling. The young men who are involved in illegal activities in Kannagi Nagar normally fight in public space and use sharp objects like a knife. Likewise, some people use un-occupied tenements for criminal activities, especially young boys who drop from schools engage in illegal activities on streets, which increase tension to women feeling more unsafe in public space (Parthsarath, 2017). A copy of source found at (annex 6).

Also, the web link of Kumar (2017) on 07 December 2017 posted about "*Chennai's Kannagi Nagar: An address that denies livelihood to its residents.*" He reported that Kannagi Nagar has more than 150 listed criminals, and people see Kannagi Nagar like home of all crime in Chennai, which reflect the bad image to their neighboring settlements, and lead to some employers refusing to employ the people from Kannagi Nagar due bad reputation that Kannagi Nagar is the place of poverty and crime. Availability of crime and criminal people in a neighborhood generate fear among the community and more for the women (Kumar, 2017). A copy of source found at (annex 6) of this report.

Furthermore, previous studies mentioned that Kannagi Nagar associated with an infrastructure problem, lack of sufficient streetlights; 58 percent of the street lights in public spaces are not functioning, and this situation leads to women feeling unsafe to walk during the dark hours within the resettlement (PUCL, 2010). Furthermore, the authors explained that situation of unsafety leads some parents to drop their girl children from school, and increases the number of early marriage, as parents believe this would protect them from violence and abuse. The authors add that residents were complaining about resettlement being unsafe because of incidents happening of violence against women and girl children at the site.

From the background of the problem, as mentioned by Bhattacharyya (2016), India is one of the countries experiencing high rates of violence against women in public space. Also the local weblink media, newspapers and previous studies, I identified the gap to conduct the research with regards to women safety because the problem is prevailing.

## **1.4 Research objective**

The aim of the study is to measure the effect of design and use of public space on women's perception of safety in Kannagi Nagar resettlement site.

### **1.4.1 Research question**

How does the design of public space affect women's perception of safety and use of public space in Kannagi Nagar?

### **1.4.2 Research sub-questions**

1. To what extent have safety issues for women been addressed in the design of public space in Kannagi Nagar?
2. How do women perceive the safety of public space in Kannagi Nagar?
3. How do women use public space in Kannagi Nagar?
4. Which strategies do women use to address (or improve) the safety of public space in Kannagi Nagar?

## **1.5 Significant of the study**

This study aims to measure the effects of design and maintenance on the use of public space and women's perception of safety in Kannagi Nagar resettlement site. To address women's safety problem we need to understand in detail the causes of the problem, therefore the study carried out and because the study combined two dimensions of safety objectives and subjective information of women safety provides a real picture of the safety problems in Kannagi Nagar. So the study provides the road map of the problem which will be useful in finding a solution. On the other hand, the study will make the justification made by other researchers that women feel more unsafe to access and use public space than men. The research findings will offer a suitable recommendation to urban planners and decision-makers to address the safety matters through participatory designing and improve the daily management of public space. And because the study is adopted a case study richness of information will be provided which will add information to the body of knowledge.

## **1.6 Scope and limitations**

The study focused on examining the effects of design and use of public space on women's perception of safety in Kannagi Nagar. There are two types of public space, indoor and outdoor. For the matter of this thesis, only outdoor public space will be discussed. Furthermore, not all outdoor public spaces will be addressed in this study, only those available in Kannagi Nagar resettlement site identified as streets, parks, bus stops, alleys, and open spaces. The study cannot address all violence against women happening in outdoor of public space because of the large extent of work and also time. Moreover, the study is not in my home country, so a major challenge I faced is the language barrier even though I used translators as well as limited finance. The study will be limited to one resettlement site that makes it difficult to generalize the findings, but a single case could be useful to understand better the problem and provide lessons.

## Chapter 2: Theory review

### 2.0 Introduction

The aim of this chapter is to review and discuss the different concepts and theories which help to develop the knowledge to answer the research questions and lastly, the information discussed from the previous studies will be adapted to develop the conceptual framework which will guide the entire study. This chapter will present and discuss the concepts and theories underlying this research as follows: 2.1 Safety and perception of safety, 2.2 The gendered perception of safety, 2.3 Public space, 2.4 The women's perception of safety on design and use of public spaces, 2.5 Maintenance of public space, 2.6 Development-induced displacement and resettlement, 2.7 Gender impact of resettlement, 2.8 The impact of resettlement on the perception of the safety of women and 2.9 Conceptual framework.

### 2.1 Safety and perception of safety

#### 2.1.1 Safety

The word 'safety' is a common word used by different professionals, and it has different meanings. According to Boholm, et al. (2016, p.321) 'safety' indicates the non- existence of risk, while risk refers to "unwanted events" which potentially may or may not occur. Moreover, the use of the word 'safety' is sometimes used interchangeably with the word 'security'. Boholm et al. (2016) distinguish safety and security by referring safety to be associated with unintentional harm such as accident and security intentional harm such as malicious act. Further, Maurice et al. (2001, p.238) define safety "as a state in which hazards and conditions leading to physical, psychological or material harm is controlled in order to preserve the health and well-being of individuals and the community". In their opinion, safety is the outcome of the complex procedure "in which humans interact with their physical, social, cultural, technological political, economic, and organizational environment".

To attain the optimum level of safety at any level in the community Maurice et al. (2001, p.238), provided the following conditions; the first condition is the creation of the social cohesion, harmony, and equity within the community that guards the human rights and freedom of the people. The society that treats fairly all different groups of people, enhancing activities that promote peace and prevent violence within the community and also addressing challenges of poverty and inequalities are most likely to attain safety. Secondly, safety can be achieved through the respect of the individual values, once the community recognizes the values of different people physical, material even psychologically in a living place, it helps the community as well as individual people to live freely without any fear of danger. Thirdly, safety also can be attained in a society if the control and prevention of the accidents taken are into consideration. This implies that the community should control the action behaviour of people in particular environments.

Furthermore, Maurice et al. (2001) mentioned two dimensions of safety, which are objective and subjective safety. Objective safety is the condition of people feeling insecure reinforced with real danger; the solution of it is focusing on that danger. Meanwhile, subjective safety is the condition of people feeling insecure while there is not really the forthcoming danger. In other words, subjective safety is the situation where by the people or group of people may feel unsafe without any seen reasons, Therefore when a feeling of unsafety without sustained with objective thoughts, the intrusion will focus directly on "perception".

#### 2.1.2 Perception of safety

The knowledge of perception lately seems to be important in addressing the challenge of the environment and human behaviour (Garling and Golledge, 1993). Ewing and Handy (2009,

p.67) define “perception as the process of attaining awareness or understanding of sensory information”. They explained that perception is the outcome of an interaction between past experiences and perceived. Moreover Garling and Golledge (1993) described that perception is the cognitive process in receiving and selecting information to build a mental image which creates a perceptual environment and this differs from one people to another because everybody has different knowledge, values, and goals.

The design of public space influences the behaviour of use or not use of public spaces (Ewing and Handy, 2009). The qualities of public space reflect how people react to a place with regard to comfort, safety, interest, and evaluate the situation according to their own attitudes and preferences (ibid). The design quality of public spaces influences individual feelings about space (ibid). Meanwhile, Garling and Golledge (1993, p.1) explain that perception shows the relationship between environment and behaviour. Individual perception, psychologist termed as general assumptions, while geographers focus on high order units such as the household where it is considered as “decision making”. This implies that perception is termed as attitudes, interpretation, preference, and judgment in a given environment.

Furthermore, the perception of safety is shaped by the attitude of the people in a certain built-up environment (Austin et al., 2002). Many scholars argue that the social and physical environment of the neighborhood had an impact on the safety perception (Austin et al., 2002, Brunton-Smith and Sturgis, 2011). Low quality of the settlements environment like the deterioration of infrastructure facilities, absence of social control and poor housing conditions contribute negatively to the perception of safety. There is a strong relationship between built-up environment conditions and perceptions of safety. However, there are other factors that influence the perception of safety which are demographic characteristics, victimization experiences and environmental conditions (Austin et al., 2002).

### **2.1.2.1 Demographic characteristics**

Many researchers applied demographic variables like age, sex, education level, and social and economic status to study the behaviour of humans and their environment. Austin et al. (2002) describe the impact of demographic variables on the perception of safety seen through evaluating the attitude of people towards human behaviour and their built-up environment. Many studies have indicated that women experience higher level of crime fear than men (Austin et al., 2002, Chakraborty et al., 2017). On the other hand, men experience a high rate of victimization than women (Austin et al., 2002, Scott, 2003). Age of people also associated with safety perception, since many authors have differed on correlation of age and safety perception. According to Scott (2003), the relationship between safety and age is not clear, and their study shows that both older and younger people have the same level of fear of crime, but younger women and older women have the different fear of perceived risk of crime. Younger women are more afraid of sexual assault than older women. Kallus (2001, p143-145) contributed that most relevant factor affecting women sense of safety is age. Kallus says teenage girls tend to feel less secure in public spaces than older women which might lead them to feel insecure and afraid in the use of public space. Macmillan et al. (2000) and Austin et al. (2002) noted that social and economic status had a substantial relationship with the perception of safety; more research revealed that people who relied on categories of high-class status, high educational level, and high household income associated with a lower level of fear. Similarly, Viswanath et al. (2007, 2008) described that urban poor who live in slums or resettlement sites feel more unsafe than middle and higher-income groups. Furthermore, Scott (2003) analyzed that class, and marital status had an influence on women safety perception. She argued that women with low-income and low levels of education women are more likely fear to walk alone after dark as results staying home at night.

Moreover, she argues that single women feel more unsafe than married women, because of having less financial resources than men or married women, living single is associated with high levels of fears in all situations. She added that financial limits cause women to live in poor areas which increase the exposure of women to the risk of victimization.

### **2.1.2.2 Experience of the victim**

Victimization has a big impact on individual attitude to perceive safety. People who are victim of the crime are more fearful than non-victims because crime affects victims psychologically (Austin et al., 2002). Meanwhile, Macmillan et al. (2000, p.319) noted that the mind-sets of women about safety perception is mostly shaped by fear of sexual victimization especially when interacting with strangers. Austin et al. conclude that the presence of crime victims within the neighbourhood significantly influences the perception of unsafety. However, on the other hand, crime in the neighbourhood is associated with the attitude and behaviour of residents (Austin et al., 2002).

### **2.1.2.3 Environmental conditions**

Austin et al. (2002) mentioned that the urban neighbourhood design, social and physical condition had been connected to emotional and behaviour of the residents, which affects the perception of safety. A heterogeneous neighbourhood perceives a lower level of safety than homogeneous one. The neighbourhood which received more social changes like increased number of people with different backgrounds had a higher level of fear as compared to a neighbourhood with less change. The mixed neighbourhood experienced a concern of diverse and perceived increased heterogeneity (Austin et al., 2002, Ayyar, 2013). However a neighbourhood where building structures are deteriorating, there is unsupervised youth, there is a dominance of drunk men and low level of street activity, these situations perceived unsafe neighbourhood (Kallus, 2001, Austin et al., 2002).

## **2.2 The gendered perception of safety**

According to Chakraborty et al. (2017), the notion of 'safety' for women means addressing violence against women. The term 'violence against woman' was defined by the UN Declaration on the Elimination of Violence Against Women in Article One (1993) as quoted by Chakraborty et al. (2017, p.300) as "an act of 'gender-based violence' that results in or is likely to result in physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life". Many authors mentioned that violence against women is deeply characterized by gender inequalities in public and private spheres, failure to recognize public and private spaces, affecting women's safety perceptions (ibid).

In addition Viswanath et al. (2008, p.22) mentioned that according to women's safety audit report conducted Jagori NGO on 2007 Delhi detected that society perceived that women should use private space over public space, women termed as domestic workers should have stayed in the home environment, and society relates to this with an 'ideology of respectability'. They believe that good women can prevent harassments through personal respect like dressing properly, use public space with specific reasons like meeting or events, and they do not walk alone after dark. This notion implies that public space is belonged to men more than women (Viswanath and Mehrotra, 2007, 2008, Chakraborty et al., 2017). According to Day (2011, p.150), the patriarchy social system assigns power to the masculine gender which drawbacks on women (ibid). The patriarchy burdens to women through the gender division of labour and activities and gender access to resources affects women in one way or another (ibid). Moreover, Day (2011) argues that safety of women is not constrained only by design of the city, but also the traditional gender norms of safety which restrain inhibit the freedom of women to access public space. Some norms in society undermine the

dignity of women by creating layers or classes in society. To address the situation Chakraborty et al. (2017) suggested that the gender-based violence should be addressed in both private and public space because these space are depending to each other, through a collaboration of the multi-sectoral organization.

Macmillan et al. (2000, p.319) noted that safety perception is gendered in nature; women are more linked with the fear of sexual assault than men. Invariably women fear rape in a wide variety of situations and interactions that might not appear to men. In addition, Macmillan et al emphasized that stranger harassment has strong effects on perceptions of safety to women than non-stranger sexual harassment in a social context. Stranger harassment condenses the feeling of safety while women walking alone after dark and staying alone home at night, and using public space. Furthermore, Scott (2003) and Stokes (2009) believe that the problem of stranger harassment known as 'stranger danger' is the result of a socially constructed problem. Social problems in urban modern life are often because the social problem is considered as an individual case rather than a societal one. The authors argued that a lack of unity and support within a society increases the fears of dangers from a stranger.

Related to Jacobs (1961) and Wendt (2009) describes that safety in the street is enhanced by society, not by a police security officer, lack of social control among the residents behaviour leads to safety problems. They add that familiarity among the residents helps to control the environments and also reduce the occurrence of crimes. Moreover, authors argue that not only control of the behaviour of the surrounding residents but also visitors coming in settlements should be treated with direct and straight forward methods. Strangers in neighbourhood should be handled by knowing where they come from. In modern city life it's difficult to handle the strangers due to high changes within neighbourhoods.

Furthermore, Stokes (2009) pointed out that the effects of stranger danger incidences in society are increasing due to the erosion of social ties within society. Presence of bad incidences in society destruct solidarity and creates discrimination and fragmentations of the trust among the community. To deal with the challenge of stranger danger or threat. Stokes suggested that the problem of strangers can be solved through neighbourhood community integration. Meanwhile, Jacobs (1961, p.35) suggested various conditions to handle the problems caused by strangers and also enhancing safety in public space, safe streets must have the "eye upon the streets". The eye belongs to those we might call natural proprietors of the streets, the owners of the buildings should ensure the safety for both visitors and residents by controlling their behaviour. She added that the street should be busy with a mixture of activities like restaurants, small businesses, including the buildings along the street, which increases the "eyes on the street" by watching the sidewalks and. Lastly, she emphasizes that is very important the streets have lighting, which assures the free movement of people at night.

### **2.3 Public space**

The term public space was defined in many various ways considering ownership, control, access, and use (Vikas, 2014, p.54). Vikas defines public space as spaces which can be accessed and used without considering ownership. Similarly, Bhattacharyya (2015) defines public space as those spaces which all citizens are free to access regardless of their differences. While Kallus (2001, p.129) quote Krier (1979, p.15) defines public space "all type of spaces between buildings in town and other localities".

Carr et al. (1992) describe that public space plays a great role in urban areas, is used as the node of communication, and provides routes for movements, shared ground for playing and relaxations. Author added that if public space will be well defined, protected and includes

special cultural meaning, it can help people to satisfy the environment. That implies that an organization of the public space is a very important element in designing. The public space should be separated from the private space by defining some places by using spatial means such as boundaries, fences, walls, gates, and signs. On the other hand, it is expected public space to be accessible to everyone, where the strangers and citizens access with the fewer restriction (Madanipour, 1999).

### 2.3.1 Use of public space

Public space is divided into two parts, indoor and outdoor public space. For the matter of this study, only outdoor public space will be discussed. The outdoor public space includes Parks, squares, open spaces, bus stops, streets, alleys and playgrounds (Kallus, 2001). The uses of outdoor public space are divided into three categories, and each category differs according to their demands on the given environment (Gehl, 2011). Gehl (2011, p.9) discusses three outdoor public space activities as follows;

*First* is the necessary activities which underlie in all situation or condition, necessary activities include those who are more or less obligatory activities like going for work, school, shopping, and other activities which is compulsory. In other word are all activities which entail participating, and no choice of participation, majorly these activities involve walking

*Second* is the optional activities, this is the activities done only under encouraging exterior conditions; it's dependent on the wish of participants and if time and place attracted to do so. This category includes activities such as walking for refreshing, standing or sitting in some area to delight in the scenery and other activities related to this. These kind of activities conducted only when the external physical conditions are conducive, while the place and weather are inviting. Therefore there is a big link between the physical environments and optional activities.

*Third*, are social activities which are all activities that depend on the presence of others in public space. Social activities include greetings, playing, conversations, discussion, communal activities, and cultural activities, simply seeing and hearing to each other. These activities also are named as the resultant activities because it links two categories of activities necessary and optional activities, they can develop a connection with other activities because people they meet in the same space (Gehl, 2011, p.9).

**Figure 2. 1: Types of activities conducted in public space**

Use of public space	Quality of the physical environment	
	Poor	Good
Necessary activities	●	●
Optional activities	●	●
Social activities	●	●

Source: Gehl (2011)

Figure 2.1 above shows the relationship between the quality of outdoor public use and the occurrence rate of the activities. This implies that quality of outdoor space affects the types of activities. It has been seen that when the quality of outdoor space is good optional activities increases the occurrence frequency, and social activities increase significantly, and necessary activities remained constant (Gehl, 2011).

Furthermore, the use of public space discussed with other scholars. Vikas (2014) described that public spaces are more attached to social aspects and often serve as the basic survival of the society. Public spaces are used for communication, entertainment, political, religious, commercial and other social roles. In addition, Kallus (2001) mentioned that women use public space not only for building a social network but also get access to information and learning. Many scholars indicate that public space enables the society to make discussion, interchange of ideas, promoting awareness to a society and boosting ethical conduct (Vikas, 2014).

According to Vikas (2014) factors accelerating the individual or society to use or not use of public spaces are design and management of the public spaces. Meanwhile, Kallus (2001) discusses that the things which make the women avoid using public space are lighting conditions; threatening activities took place in public space, forms of surveillance, untrimmed vegetation which block views, victim's experiences and hearing the bad safety incidences within the area.

Machielse (2015) adds that the perception of safety can be achieved when public spaces have surveillance cameras and police patrol. Though the presence of security means and control can be interpreted differently (ibid). Vikas (2014) argues that the overprovision of security and policing can be interpreted to mean that space is unsafe.

## **2.4 Women's perception of safety on design and use of public space**

Cities are designed to fit the everyday social interaction of people. Public space is a significant aspect of city structure. One aspect of determining the quality of public space is safety. Safety weighs up the most significant factor influencing the decision of women to use or avoid public space (Kallus, 2001, Vikas, 2014). Though there are other factors such as personal experience of crime, media information, rumours, location, visibility, presence of greens like shrubs, trees, streetlights, presence of strangers, presence of uncertain conditions and daunting activities which are all contributed significantly to women's perceived safety (Luymes and Tamminga, 1995, Kallus, 2001, Vikas, 2014). Furthermore, the design of public space had an impact on the use of public space and the level of perceived safety. In recognition of the safety challenges, a few researchers come with the following principle guidelines of the design of safer public space which are:

1. Visibility of others; the design public space should provide the environment for people to see each other (clear view), and also enable people to make an appraisal and recognize strangers and determine the closeness of each other is one of a significant factor of enhancing the perception of safety predominantly to the women's who feel more vulnerable to assault (Luymes and Tamminga, 1995).
2. Visibility by others; the design of public space should be located near to buildings or places where a large number of people cross. This will permit the casual observation by others, who may come to rescue or provide assistance in threatening circumstances (Luymes and Tamminga, 1995). Further Bell (1998) elaborates that women feel unsafe in isolated spaces. Bell proposed to increase the quality of visibility in public space should include ground-level activities and clear boundaries of land use zoning which differentiates public and private space.

3. Environmental awareness and legibility; the design of public space should consider the surrounding landscape. The design should ensure people are able to see and understand the instant environment. Also, the clarity of the surrounding environment (legibility) is a crucial aspect, it helps people to understand and make a proper decision when anything wrong happens in the public place without becoming confused or lost, through knowing the connections and routes to safe places. Similarly, Bell (1998) explains that awareness of the environment usually increases women's confidence to use public spaces. Women can use public space even after dark once they are able to interpret the environment better like how to leave a place and where to get assistance if necessary.

According to Ewing and Handy (2009, p.67) 51 perceived qualities of public spaces influence the use of public spaces which are “adaptability, distinctiveness, intricacy richness, ambiguity, diversity, legibility, sensuousness, centrality, dominance, linkage singularity, clarity, enclosure, meaning, spaciousness, coherence, expectancy, mystery territoriality, compatibility, focality, naturalness, texture, comfort, formality, novelty transparency, complementarity, human scale, openness, unity, complexity, ornateness, upkeep, continuity, imageability, prospect, variety, contrast, intelligibility, refuge visibility, deflection, interest, regularity, vividness, depth, intimacy, and rhythm”.

## **2.5 Maintenance of public space**

Maintenance of the public space refers to the cleanliness of space, take proactive measures prevent vandalism, repairing damaged property in public space (Machielse, 2015, p.9). According to Shenassa et al. (2006) describes that keeping neighbourhood free from grafting and clean all the time enhance the perception of safe space. Destroyed spaces or vandalize are not attractive to people and keep people distant to use of the public space (ibid). In addition, Vikas (2014) emphasizes that maintenance of public space and prevention of vandalism creates essence of assurance among the public that the place is safe. People often associate vandalism with disorder and lawlessness hence creates the feeling of vulnerability among people. Furthermore, Chakraborty et al. (2017) found that in resettlement sites administration is not working properly hence, the issues of cleanliness and maintenance of the public space are ignored, and administration setup is not well developed especially for resettlement sites which continue to receive new residents. Loukaitou-Sideris (2006) suggested that in order to reduce the fear of perceived unsafety in public space physical interventions are important to improving the appearance of buildings, ensure cleanliness and maintenance of public space.

## **2.6 Development-Induced Displacement and Resettlement (DIDR)**

### **2.1.2 Displacement**

Displacement refers to situations where people are displaced from their homes, so moved out from their homes. Displacement has a significant impact on poor people leading to greater impoverishments (Jaysawal and Saha, 2016, p.137). DIDR projects had negative consequences in many countries in term of economic, social, and cultural (ibid). Development-induced displacements projects tend to affect people in large number estimated about 10 million people each year are displaced during the last two decades (Cernea, 2000, p.3659).

### **2.6.2 Resettlement**

Vanclay (2017, p.5-6) defines resettlement as “the comprehensive process of planning for and implementing the relocation of people, households, and communities from one place to another for some specific reason, together with all associated activities, including (a) the provision of compensation for lost assets, resources and inconvenience; and (b) the provision

of support for livelihood restoration and enhancement, re-establishment of social networks, and for restoring or improving the social functioning of the community, social activities and essential public services". Terminski (2013, p.35) defines "resettlement in the context of relocation based on previous plans and social consultations with affected communities, usually accompanied by adequate support mechanisms in the new place of residence. The costs of physical relocation and the depletion of former resources are thus compensated for by the support received in the new location".

There are three main causes of resettlements are natural disasters, development, and conflicts, but the main causes of resettlement are development projects (van Eerd, 2017). Most of these resettlement projects are undertaken in Asia, Latin America and Africa (Terminski, 2013). DIDR embodies exclusion from the physical geographical location, economic, and social of functioning social network (De Wet, 2001). Koenig (2009) argues that development-induced displacement and resettlement projects in urban areas are mostly characterized by evictions and human right violations, urban renewal, slum upgrading, and infrastructure development projects tend to displace the whole settlement and mostly who affected is poor people.

The impact of resettlement on communities is enormous, especially with regards to socio-economic aspects. According to Fernandes (1991) and Das and Rao (1989) as cited by Cernea (2000, p. 3659) many development projects led the community to impoverishment. In India alone, researchers found that state developments projects caused the displacement of more than 20 million people in the last four decades and about 75 percent of these people were neither rehabilitated nor were their livelihoods restored. Furthermore, Cernea explained that when resettled project affects people, people face eight impoverishment risks which are: landlessness, homelessness, joblessness, marginalization, and food security, increase morbidity, jobless, loss of access to common property resources and community disarticulation. Not all risks occur in all resettlement projects, but these risks can differ from one resettlement project to another (ibid).

## **2.7 Gender impact of resettlement**

The impact of resettlement is not homogeneous with regards to gender. More studies indicate that women suffer more with the impact of displacement and resettlement than men (Bisht, 2009, Mehta, 2011, Coelho et al., 2012, Quetulio-Navarra et al., 2017). However, Mehta (2011, p.37) notes that despite the recognition of "differential impacts" still most resettlement projects are enclosed with gender-blindness. These situations happen because resettlement programs do not consider women and children as the subjects of their own rights, instead, men are viewed as the head of household. Furthermore, Bisht explained existence of bias policy, which prevails in many developing countries lead women to lose their compensation right. For example resettlement policy of Tehri Dam in India they did not take into account to compensate women, the policy does not demonstrate any measure for the widowed, or divorced who are not benefits from the family compensation are classified as dependent and unqualified for right of compensation (Bisht, 2009). To address these challenges Mehta (2011) recommends that a gender lens analysis is vital on addressing power relations and social issues as there, there is a need to distinguish the differential impact of resettlement on men and women and develop proper solutions for reconstruction. Resettlement majorly affects gender in the economic and social dimension, as can be read below.

### **2.7.1 Economic impact of resettlement**

Cernea (1997, 2000) argues that resettlement leads to risks of the impoverishment of affected communities. He highlighted eight impoverishment risks, as mentioned above. Cernea explains that removing people from their original land disrupts their livelihood which was dependent on, was used the lands as the economic production system. Further, Mathur (2009)

contends that due to the loss of lands most of the displaced people shift from land-based activities to other economic activities. Unfortunately most displaced women face more difficulty in acquiring alternative economic activities than men (*ibid*). Moreover Cernea in his IRR model has signified that joblessness is among of the impoverishment risk which affects adversely the economy of the displaced. Coelho et al. (2013) explained that effects of resettlement to the women are worse than for men, since the findings indicate that most of the women lose their jobs than men, most of them lose their sources of livelihood which are mainly depends on sectors of domestic works, however those who hang on the domestic jobs relocation are forced them to commute for a long to the previous places to work, this becomes unsustainable due to the increase of the transport cost. Similar, to Desai et al. (2018) due to the distance and safety issues, women fear to commute for a long time to fulfill their livelihood activities, rendering them to jobless.

The impact of resettlement also depends on the context, in rural areas studies noticed that before resettlement women were depending on common property resources like grazing areas, water, forest, and other resources as their source of economy which contributes to the household income (Bisht, 2009, Sikka and Mathur, 2018). While in urban context Coelho et al. (2013) explained that before resettlement most of the women who lived in urban slums were depending on the domestic working class. After resettlement, most of them lose their jobs due to the distance and others become no longer on working because of the restriction given with their husbands (*ibid*).

Moreover, Bisht (2009) emphasizes that displacement does not impact only on physical displacement, but also weaken the ability of women to be independent in term of economic and social as well. Further, Sikka and Mathur (2018), discusses that resettlement weakens economic of women due to the changes made on livelihood opportunities because women were depending on the research resource available on their environment to earn income and contributes to family income. Therefore at resettlement site no traditional livelihood can be carried out, the displaced have to resort to other livelihood source which is difficult for the women. Women fail to meet their daily needs and become dependent on their men (Bisht, 2009, Coelho et al., 2013, Sikka and Mathur, 2018). It's concluded that in resettlement sites men is considered to have more power in economic, political and social power than women (Sikka and Mathur, 2018).

### **2.7.2 Social impact of resettlement**

Resettlement also disturbs social networks. Cernea (1997) argues that involuntary resettlement results in social disarticulation, which tends to separate and disintegrate communities. He explained that resettlement destructs the social, organizational structure of the community, splitting the kinship groups through which communities usually used to interact. The impact of community disintegration, it breaks social bond. This has been termed as the net loss of "value of social capital" that compounds loss of natural and man-made capital (Cernea, 1997, p.1575).

Once social capital is destructed, it takes time to rebuild. According to Vanclay (2003, p.8) social impact is a broader term, which can affect people in more than one dimension can be affected as an individual or as the community. Vanclay mentioned that resettlements bring a lot of impacts on social aspects. Social impacts are embedded with the following changes; changing people way of life like how they live, work and interact with others, changes culture of the people, community cohesion, changes in environmental scenery example quality of the place, physical safety access and control of over resources, and also changes desires of the displaced about their future, views about their safety, and future of their children.

In addition, Vanclay argues that involuntary resettlement disintegrates communities leading to the destruction of social cohesion. The impact of fragmentation is more severe on women than to men (Bisht, 2009). Separation of the kinship structures increases insecurity and fear among women in a new settlement site (Mehta, 2011). With increased distance and transportation costs, women are incapable to fulfill the social obligations like attending wedding ceremonies, which leads to disruption of the social network. Although both men and women face the same challenges in the reconstruction of the social capital, for women it is more difficult than men because of the breakdown of their previous routine resulting in a sense of anxiety (Bisht, 2009). Furthermore, Quetulio-Navarra et.al (2017) concluded that social capital for women is built at home while for men is built in the public space and workplace.

## **2.8 The impact of resettlement on the perception of the safety of women**

Many scholars discuss the impact of resettlement on economic, social, and cultural reference but not from a safety perspective. However, there are a few studies carried out which show that women perceive less safety in resettlement sites (Viswanath and Mehrotra, 2008). Involuntary resettlement causes the loss of livelihoods of people (Jaysawal and Saha, 2016). Loss of livelihood among the resettled community contributes to the economic deprived situation (ibid). Individual economic deprived have greater encouragements to obtain incomes through illegal activities such as theft, robbery, and fraud (Brunton-Smith and Sturgis, 2011, p.334). Similar to Chakraborty et al. (2017) argues that resettlement affects people psychologically, through the loss of jobs and having to adapt to new environments some people adopt disorderly behaviour like increased consumption of alcohol, drugs abuse, theft, robbery, and other negative related behaviour. Likely the neighbourhood of people who economically deprived tends to be more vulnerable to commit crimes as compared to neighbourhoods which their people are economically stable (Brunton-Smith and Sturgis, 2011).

Further, Brunton-Smith and Sturgis argue that the settlement which characterized by lower social-economic status, a high population which is often changing, more ethnically population diverse, and low level of community mixing, these places usually are facing the safety issues. Moreover, Brunton-Smith and Sturgis (2011) discuss the existence of visible signs of physical and social disorder in neighbourhoods like vandalism, abandoned buildings or unoccupied buildings, graffiti, unsupervised teenage groups hanging out on the street corners, noise pollution and careless of waste dumping is an indicator of the unsafe settlement.

In addition, Brunton-Smith and Sturgis (2011, p.338) and Loukaitou-Sideris(2006, p.225) explained that presence “broken windows” which reflects the signs that no one really cares about or regulates the physical signs of the disorder can destroying the community cohesion and stimulate, or turn in more disorder and crime. In addition, Gau et al. (2014) explained that broken window came with the theory of broken window theory which mainly aimed to reduce the crimes and social moral decay in the society by improving disorders conditions. This argument has been considered as the justification of expansion police authority to interfere the people individual actions. The authors added that in small town or areas the residents trust in police is high compared to the big town. Moreover, author mentioned the people who believes on the police services are determined by attitudes of their feeling they feel safe or unsafe in a given area. Also the types of activities carried out by police give the impression of reducing the feeling unsafe among the people and some do not. Presence of police alone is not enough to reduce the social disorders in a neighbourhood they need a strong relationship between police and community to work together, and also good

communication between them. The authors added that disorders cause the breakdown of people trust their neighbors and willing to exercise control over the area by calling police services that make people feel more unsafe. Moreover revealed that the neighbourhoods which score higher level of fear of crimes are that scored poor in social bonds (Gau et al., 2014).

On the other hand, studies indicate the design characteristics of the built environment influence safety in a particular location (Brunton-Smith and Sturgis, 2011). Ayyar (2013) argues that apart from the social, cultural, and economic impact of the resettlement, it has been discovered that design of the resettlement sites increases safety issues. Existence of the sharp corner design in resettlement sites affects the women's perception of safety, women feel unsafe to move freely on streets because of the blockage of the visibility (Desai et al., 2018).

Chakraborty et al. (2017) emphasized that the lack of women's safety in resettlement sites is strongly affected by its design, planning, and authority. The layout planning of resettlement sites does not consider the parameters of safety (Chakraborty et al., 2017). For instance lack of women-friendly street corners and the absence of infrastructure like street lights within the resettlement site lead to increased unsafety for women. Moreover, many resettlement sites are located in the outskirts of the city which automatically increases the distance for women to commute, consequently increases the safety risk for women (Desai et al., 2018). In addition, Bisht (2009) argues that the sense of safety and security of women is also affected by the geographical location, the environment of knowing to each other enables women to feel safer to use the public space rather than the new environment. Resettlement brings together people from different settlements with different castes, religions, and Dalit resulting in increased tension of women about safety (Ayyar, 2013). A new settlement does not provide a similar perception of the sense of safety especially noticeable in resettlement sites where the adjacent areas reported a high level of incidences (Bisht, 2009). Safety issues in new settlements can have a worse impact on women and children than men (van Eerd, 2017). Lastly, Viswanath and Mehrotra (2007 p.1542), concluded that the women who live in resettlement sites face more challenges of safety, than women who live in middle and high-class residential areas.

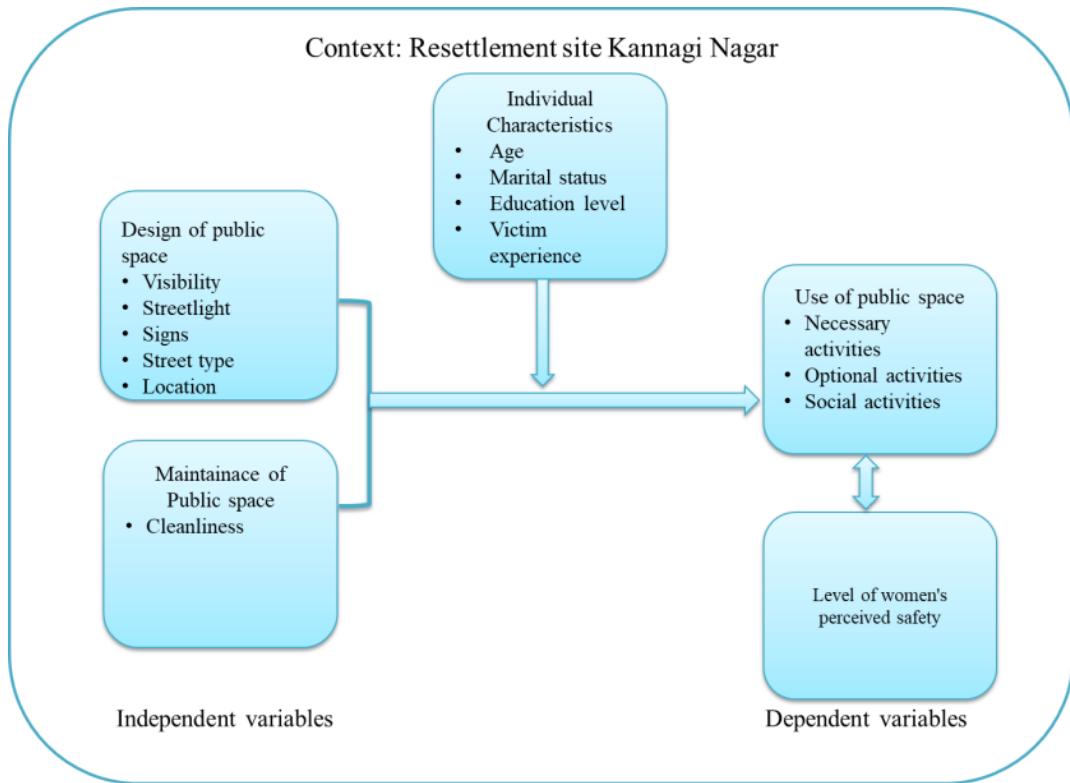
## 2.9 Conceptual framework

The conceptual framework was used to show the relationship between independent variables, dependent variables, and intermediate variables. Figure 2.1 below shows the conceptual model of the study, which intended to measure how design and maintenance of public space; influence the use of public space and women's perception of safety. According to the theories reviewed the independent variables design and maintenance of public space has an impact on the variable of the use of public space. Previous studies indicate that the public space which lacks principles of safe design and proper maintenance hinder the use of public space. Women's perceived unsafety to use public space which characterized with the following features located at the isolated area from the buildings or people pass, roads which streetlights are not functioning or inadequate light, narrow street type, unfriendly corners, public space with no signs or mark, and un-regularly maintenance.

To this study design and maintenance is independent variables which affect the use of public space and women's perception of safety as dependent variables and individual characteristics are the intermediate variable which affects the dependents variables. From the literature review, the level of women's perceived safety differs according to individual characteristics. The previous studies show that age, marital status, victimization experience and level of education contribute to judgments of safety among the women. Some studies indicated that

young women's are more fearful with the sexual harassments than elderly women, uneducated women are more perceived unsafe than educated women, married women feel safe to use public space than single, and victim people are more afraid than non-victim. Therefore this study focuses on measure the effects of design and maintenance on use of public space and women's perception of safety in context of Kannagi Nagar resettlement site as shown below.

**Figure 2. 2: Conceptual framework based on literature review**



Source: Author (2019)

## Chapter 3: Research design and methods

### 3.1 Introduction

This chapter provides the methods and strategy applied in the study. First is operationalization of the concepts and variables, followed with description of research strategy, sampling techniques, and data collection methods. Furthermore validity and reliability of the study and finally, the methods used in data analysis will be presented.

### 3.2 Revised research question

The main research question is: What are the effects of design and use of public space on women's perception of safety in Kannagi Nagar resettlement site in Chennai, India?

#### Research sub-questions

Research sub -questions is the same presented in chapter one.

### 3.3 Operationalization, concepts and variables

Operationalization is a significant part of the study. According to van Thiel (2014, p.43), operationalization is the process of transforming the theory of the study into practical, in order to be measured in the real world. Operationalization done by defining concepts of the study, breakdown of the variables into an indicator and assigning the score or values to measure each variable.

#### 3.3.1 Definition of concepts

**Women's safety;** A perceived condition which dangers or threats lead to physical, sexual psychological harm that occurring in public life is controlled in order to preserve the health and well-being (Maurice, Lavoie, et al., 2001, Chakraborty, Kumar, et al., 2017). This means a state of a woman being free from violence and crimes.

**Women perception of safety;** is an attitude, interpretation, opinion, feeling or judgment of women about safety in a particular environment (Austin, Furr, et al., 2002, Garling and Golledge, 1993).

**Public spaces;** are all spaces within the neighbourhood which freely accessed and used by all citizens without considering the ownership (Vikas, 2014, Bhattacharyya, 2015). In this study, public space includes streets, bus stops, parks, alleys, rear sides of the buildings, sides of the buildings, and open spaces (vacant lands).

**Safe design of public spaces;** comprises the following elements; visibility, street lights, location, street types, and signs (Luymes and Tamminga, 1995, Bell, 1998, Vikas, 2014).

**Use of public spaces;** public space is used for mixed activities namely necessary activities like going to work, schools, another is optional activities like walking around the street for leisure and social activities meetings, events, or occasions (Gehl, 2011, Vikas, 2014)

**Table 3. 1: Operationalization of the concepts and variables**

Research sub-questions	Concepts /Variables	Dimension/criteria	Indicators	methods	Sources
1. How do women perceive the safety of public space in Kannagi Nagar?	Women safety	Objective safety	Types of crimes happening in Public space. - Rape - Physical assault - Eve- teasing - Murder - Rowdy behaviour	Secondary data collection	-Police station -Tamil Newspaper -Registered reports
		Subjective Safety	Feeling on the - presence of security camera - response police - functioning street light - presence of strange men in public spaces - presence of disorderly activities in public space - walking alone after dark	Semi-structured interview and Focus group discussions using participatory mapping techniques	-Resettled women
	Individual characteristics	Age interval	- 15-35 years - 36 and above		
		Education level	- Primary - Secondary - Higher Secondary - Undergraduate - Postgraduate		
		Marital Status	- Single - Married - Widow		
		victim experience	- Victim - Non-victim		
2. To what extent have safety issues for women been addressed in the design of public space in Kannagi Nagar?	Design of safe Public Spaces	Location of public spaces	- Place where public place located, isolated or near to buildings.		
		Street type	- Wide, narrow streets		
		Visibility	- Clear visibility at a distance		
		Signs	- Signs of entrance and exit of public space		
	Maintenance	Maintenance	- Cleanliness of public space		
3. How do women use public space in Kannagi Nagar?	Use of public space	Necessary activities	- Going to work - Pick and drop school children - Going to school - Waiting on the bus stop - Used for domestic tasks - Used for small business		
		Optional activities	- Use for leisure walking - Refreshing and relax - Sitting or standing and enjoy the environment		
		Social activities	- Participate in meeting or events use for building a social network (e.g. leisure talk)		
4. Which strategies do women use to address (or improve) the safety of public space in Kannagi Nagar?	Strategies used	Individual strategies	Precaution while walking in the dark - Moving in groups or company - Employing the services of a personal security agency - Attended a safe defense-course - Use of ICT to gain and create awareness (e.g., safety pin)	Semi-structured interview	-Resettled women -NGOs - Community leader

### **3.4 Research strategy**

A research strategy is a significant component of the research design. The selection of a strategy depends on the nature of the research, knowledge available on the topic, and the research objective (van Thiel, 2014). In addition, van Thiel (2014, p.86) describes a case study as a strategy which involves the selection of one or more cases to conduct the field research about the subject (real-life setting). It is used to study the phenomena of a particular context. The reason used to adopt a case study strategy in this study, was the study focused on acquiring in-depth knowledge on the women's perception safety in Kannagi Nagar.

A case study strategy is recommended when the research aims to describe, to explore or to evaluate, seek in-depth information, when more data needed is qualitative and involves a small unit of study, and a large number of variables (van Thiel, 2014). The objective and research questions of this research led to select a case study as a suitable strategy. This research aims to measure the effects of design and use of the public space on women's perception of safety in Kannagi Nagar. The case study strategy helps the researcher to focus on the selected case. To this study, one case study was selected. However the findings can be considered as the representative for other locations in the same research sphere. The type of case study strategy adopted is congruence analysis. According to Blatter and Blume (2008) congruence analysis depends on the correlation between research findings and real expectation of the main theories.

### **3.5 Sample size and selection**

Kannagi Nagar resettlement site was selected to be a case study to conduct the research. The results from the literature review chapter helped to get the features for a selection of the study area. Because there is the relationship between built-up environment and perception of safety, so selection of area is important for the study. The selection of the sample size of the research depends on the research objective, the number of the total population, the resources available and the nature of the research design (Daniel, 2011, p.236-237). Kannagi Nagar is among of the largest resettlement sites, divided into two zones with the total number of 15,656 tenements (PUCL, 2010).

The area has been chosen is what could be considered as the part of Kannagi Nagar resettlement site. Kannagi Nagar is divided into two characteristics of the tenements G+1floor tenements which one tenement accommodates 8 families, and another is G+2 floor tenements, in which one tenement accommodates 18 families. The reason used to select G+2 floor tenements to conduct the study are results obtained from pilot semi-structured interviews and information obtained from the community leader he mentioned G+2 tenements had more problems with regards to safety. The selection was relevant because the characteristics of that area and nature of population confirm the findings. Features of the study area are large number of people (overcrowded), waste uselessly, unoccupied buildings, untrimmed trees, sharp corners of the buildings, unsupervised young men and women, alcoholic men roaming around the streets and groups of gangs.

Stratified sampling was applied to select resettled women respondents ,women were selected according to age groups criteria ,two groups were selected by asking womens their age, the literature review indicates that age is the significant factor which used to mesure the perception of the women safety.Perception of safety among the women is affected more by age sample women with age 15-35 was selected 14 and women with age 36 and above was 16. selection of sample was highly considered. Also random sampling was applied to select a resettled men respondents. Also other key informants from Non-Governmental Organizations, a charity organization, the Tamil Nadu Slum Clearance, J-11police station Kannagi Nagar, Greater Chennai Corporation on zone 195 division xv, Chennai Metropolitan

Development Authority, and the community leader were selected purposely. Additional, the information also gathered from experts of Kannagi Nagar researchers.

Furthermore, to assure the quality of data collected, the respondents were asked the time lived in Kannagi Nagar resettlement site and resettled under which schemes. This question was aimed to collect information from the respondents who have enough experience in a particular area. The number of respondents is shown in the table below:

**Table 3. 2: Number of study units**

S/no.	Respondents type	Category	Position	Number of respondents
1.	Resettled women	Residents of Kannagi Nagar		30
2.	Resettled men	Residents of Kannagi Nagar		6
3.	A key informant from TNSCB	State government authority	<ul style="list-style-type: none"> <li>Additional Executive Engineer(AEE)</li> <li>Chief Community Development Officer(CCDO)</li> </ul>	2
4.	A key informant from NGO,s working in Kannagi Nagar	Non- Governmental Organization	<ul style="list-style-type: none"> <li>Director of MCDS</li> </ul>	1
5.	A key informant from CO working in Kannagi Nagar	Non- Governmental Organization	<ul style="list-style-type: none"> <li>A social worker from Asha Nivas</li> </ul>	1
6.	Key informant from Greater Chennai Corporation -zone 195 division xv-unit 45	State government authority	<ul style="list-style-type: none"> <li>Executive Engineer</li> </ul>	1
7.	A community leader from Kannagi Nagar	Local government authority	<ul style="list-style-type: none"> <li>Chairman of resettlement</li> </ul>	1
8.	The J-11 police station in Kannagi Nagar	State government authority	<ul style="list-style-type: none"> <li>Inspector police</li> <li>Women police</li> </ul>	2
9.	Key Informants from CMDA	State government authority	<ul style="list-style-type: none"> <li>Executive planner</li> </ul>	1
10.	Interviews with the Experts		<ul style="list-style-type: none"> <li>Vanessa Peter</li> <li>Karen Coelho</li> </ul>	2
<b>Total</b>				<b>47</b>

### 3.6 Data collection methods

Since the research strategy adopted is a case study, this implies that a large body of information is collected from the field (primary data), though secondary data also was included to get more information for answering the research questions and to triangulate data. The methods used for primary data collection are semi-structured interviews, focus group discussion, participatory mapping, and participant observation. The interview guidelines were prepared according to conceptual framework and operationalization table.

#### 3.6.1 Primary data collection

All information for this research was collected through semi-structured interviews and supplemented and triangulated by focus group discussion, participatory mapping, and participant observation.

### **3.6.1.1 Semi-structured interview**

The main method used to collect data in the field is a semi-structured interview. According to van Thiel (2014), the semi-structured interview method is used to collect the non-factual data like people's perception, relationship, and opinions. Also, semi-structured interviews provide room for changes if necessary; interviews involve conversation and discussion, which enables a researcher and the respondents to understand clearly the subjects (van Thiel, 2014). For this research 47 semi-structured interviews were conducted from resettled women and men, key informants and experts. Data for design, maintenance, and use of public space and women's perception of safety were collected. To measure the effects of design, use and maintenance of public space on women's perception of safety data were collected from 30 semi-structured interviews from resettled women and triangulated by 6 semi-structured interviews of resettled men. Respondents were carefully selected according to eligibility criteria resettled women respondents should be aged with 15 years and above, who were living in Kannagi Nagar not less than five years and who make use of public facilitates and public space.

### **3.6.1.2 Focus Group Discussion**

Another method used to collect primary data is the focus group discussion. FGDs is a method used to discuss certain subjects and reach consensus of the subject within a particular group, usually group consists 8-12 participants (van Thiel, 2014). In this study FGDs were used to understand in-depth what makes women feel safe or unsafe in using public space in the resettlement site for them to identify the specific places they felt were unsafe and why, and also to hear their opinion on how to improve the safety. Two focus group discussions were conducted, to avoid bias the technique used to select participants to participate in FGD, and we asked one active respondent to organize the two groups of women within the study area who lives in Kannagi Nagar no less than five years. With the 8 members in each group, at age between 15-35 age and 36 and above, the discussion was carried out inside the houses which were convenient place and women were very comfortable to share their opinion. During FGDs participatory mapping technique were applied as tool of data collection. The discussion was resulted in prioritizing the unsafe areas and suggestion of improving women safety in Kannagi Nagar.

### **3.6.1.3 Participant Observation**

Participant observation method was used to collect primary data from the field. According to van Thiel (2014, p.71) describe that participant observation means the researcher takes part in the research situation and keep close with the unity of the study. Being available in area the researcher can study behaviour and gather extra information by asking them. Regarding this study, participant observation was used to obtain more information for answering the research question of how the design of public space addresses the women safety in Kannagi Nagar ,some of the indicators of the designs and maintenance the information was captured through observation. Also participant observation enables the researcher to gather information about the people behaviour of Kannagi Nagar. Interestingly, I went to Kannagi Nagar at night to observe how safe and unsafe it was. Moreover photographs were taken to support what I saw during the field example the question of how women use public space in Kannagi Nagar the information was captured through semi-structured interviews method but also confirmed by physical visualization.

## **3.6.2 Secondary data collection**

From the fieldwork, secondary data were collected from identified organization. The secondary data used to supplement the information missed to being collected from primary data sources, and also secondary data help to cross-check data collected and makes the comparison of the data which increase the validity of data. I managed to collect the layout

maps of Kannagi Nagar from TNSCB and GCC zone 195 division xv as well as leaflet from the Montfort Community Development Society. In addition I downloaded the published articles and reports, and newspapers of Kannagi Nagar. All this information was used for the analysis.

### **3.7 Validity and reliability**

In this section, the validity and reliability of the research findings were discussed as follows;

#### **3.7.1 Validity**

A case study research is an applicable way for in-depth knowledge from a small number of units, which ensures the richness of information and achieves high internal validity but limited to external validity which hampering the possibility of generalization (van Thiel, 2014). To ensure the validity of this study the following procedures were done. First a researcher began with conducting pilot semi-structured interviews for the targeted unit of the study (resettled women) to get the room for improves the tool. Second the information was collected from different sources to measure the same item, which is called triangulation (ibid). Example after gathering the information from the resettled women and the answers pattern mentioned by them, that the main causative source of the women to feel unsafe in resettlement is the men, I decided to carry out six randomly interviews among the resettled men to compare the information provided by female respondents. In addition to enhancing the validity of data, the same information was collected from the semi-structured interviews was gathered again through focus group discussion by applying the participatory mapping technique and field observation.

The potential challenge of case study research is the selectivity and subjectivity of the researcher, which invariably affects the internal validity. To address the challenge the researcher followed the ethics of research to avoid bias (van Thiel, 2014). To this study researcher has struggled to avoid bias by applying research ethics example organization of participants of focus group discussion was done through random sampling based on age, the exercise was aided by resettled women who are not leader or who had influence to community.

Lastly, validity was assured by collecting more information from different key informants and stakeholders. The information was gathered until the information started to repeat saturation points of the information was reached.

#### **3.7.2 Reliability**

Reliability refers to the measurement of accuracy and consistency outcomes of variables (van Thiel, 2014). Though, proven that it's difficult for the researcher to achieve both accuracy and consistency (ibid). To ensure the reliability of the research two things are done first methods used to collect data are clearly described and protocol procedure of collect and analyze data are well defined. By selecting the methods used by other researchers with the relevant topic, documentation of every stage of research and keeping data records of research data, enhance reliability and research can be repeatable which will offer the same results.

### **3.8 Data analysis**

In this research, the type of data collected is qualitative data. Most of the data derived from the semi-structured interviews, focus group discussion, and participant observation. This means data collected in verbal, written and visual communication (van Thiel, 2014). Before analysis, the data collected were structured and grouped into patterns through description analysis. This helps the researcher to retrieve quick information. To analyze the qualitative

data the computer program called ATLAS. TI 8 was used. The patterns of data grouped by researcher are uploaded into ATLAS. TI 8 program and researcher set codes which enabled to interpret the findings and constructing the networks relation of the variables. Also some of data were analyzed through Arc-GIs 10.4 application which leads to the production of spatial information, the several maps were constructed.

## Chapter 4: Research findings

### 4.1 Introduction

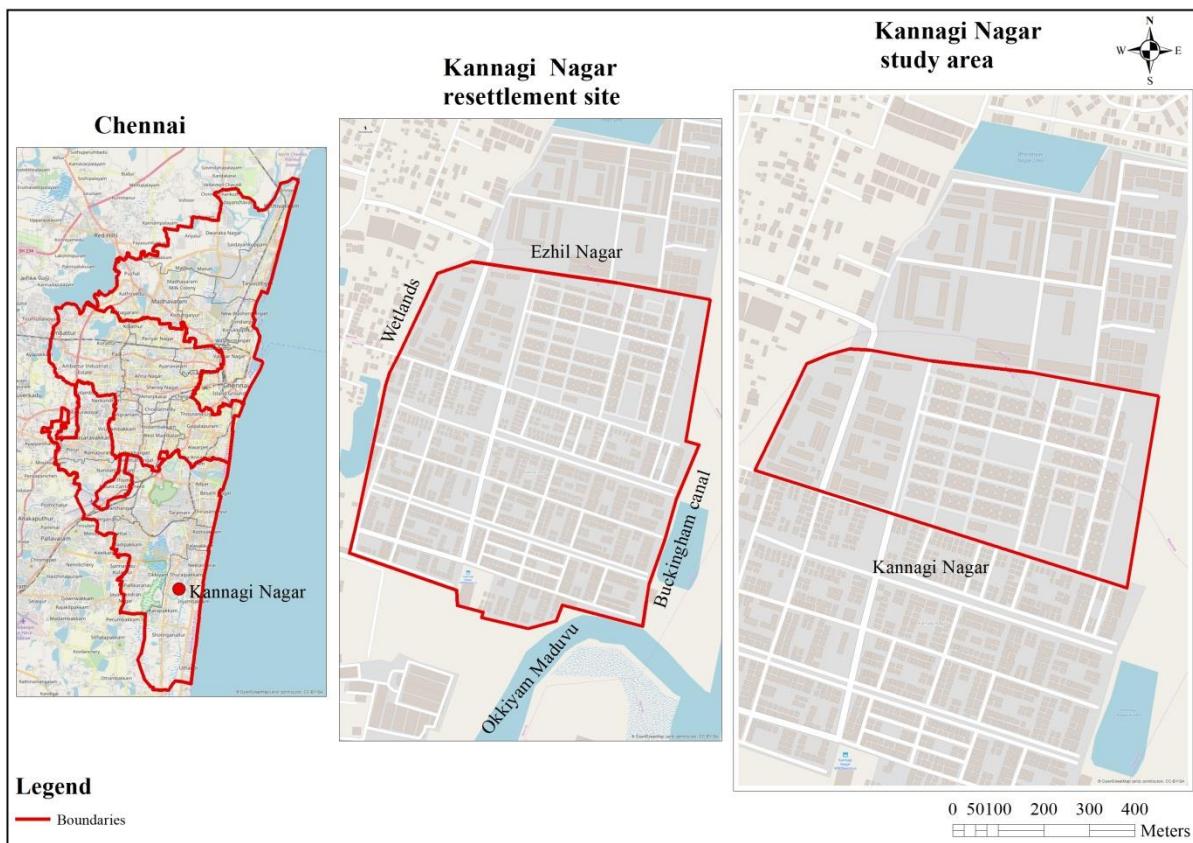
This chapter presents the research findings and data analysis. The findings are based on primary and secondary data collected from the field. Most of the information collected from the primary data source and gathered through semi-structured interviews, focus group discussions and participant observation. The chapter starts with description of the research area followed by general characteristics of the sampled population. The research question has been answered by first answering the sub-questions in a logical manner.

### 4.2 Description of case study

**Chennai** is the Capital city of Tamil Nadu state; previous was known as Madras. Chennai city has a total population of 4.68 million according to the national census of 2011(Krishnamurthy and Desouza, 2015). In chennai from late 1990s to late 2010 more than 100,000 people from the different parts of the city were involuntary resettled to Semmenchery, Tondriarpet, Thilagar Nagar and Kannagi Nagar(Diwakar and Peter, 2016).

**Kannagi Nagar** is among of largest resettlement sites in Chennai it is part of Okkiyam Thoraipakkam ward in the south region of Chennai zone 15 (Sholinganallur), division 195 unit-45 (The Hindu, 2011). According to a report from PUCL (2010, p.14) up to April 2010 the total number of houses constructed in Kannagi Nagar was 15,656 units. The resettlement site accommodates a large number of people from 62 slum settlements of the city with a population of approximately 80,000 residents (FLLRC and CRF, 2015, p.6). The tenements were constructed under different programs as following; in the 2000 year, the total number of 3000 tenements were constructed under the Flood Alleviation Programme (FAP) for the 33,313 families of slum dwellers identified from the river margins in the city, also 6500 houses were constructed under the program of Rehabilitation and Resettlement of the slum families living in objectionable areas in Chennai city, in the year 2002-2003 the total number 1,620 tenements were constructed under the program of Eleventh Finance Commission special problem Grant year, in 2004-2005 houses were constructed under the Chennai Metropolitan Area Infrastructure Development, and in 2005 the total number of 1,271 tenements for seashore fisherman affected by the Tsunami (FLLRC and CRF, 2015, p.2-3). The tenements are divided into two parts G+1 floor and G+ 2 floors. The maps below show Chennai, Kannagi Nagar and the study area within the Kannagi Nagar.

Map 4. 1: Location Maps



Source: Constructed by Author (2019)

### 4.3 General characteristics of the sample

During the data collection period, semi-structured interviews were used as the main data collection tool to collect information from the resettled women, resettled men, and key informants and expertise. The study area was divided into three zones, and in each zone 12 semi-structured interviews were administered. Further, 30 semi-structured interviews were conducted from resettled women and 6 from men to triangulate information obtained from the resettled women. During the interviews, the following information was collected from resettled women in terms of age, marital status, education level, victim experience, time lived in a resettlement site and the place where they originally came from. Moreover, individual characteristics were taken into consideration since they influence perception of safety. To ensure the quality of data women who qualified to answer interviews are those who lived in Kannagi Nagar for more than five years.

Therefore the 30 semi-structured interviews were conducted to women with age of 15-35 years old were 14 respondents and 36 and above years old were 16 respondents. In terms of marital status, the data shows that 23 were married women, 4 widow and 3 were single. Education level 7 women were non-educated, 6 was had reached to primary level, 14 to secondary level, 1 to high secondary level, and 2 reached to undergraduate level. In terms of victim experience, data shows that 20 women out of 30 said they did not experienced safety issues, 7 of them have experienced it indirectly through friends and relatives while 3 responded that they had personally experienced safety problems. The tables below show the summary of the individual characteristics of the women respondents.

**Table 4. 1: Women respondents according to Individual characteristics**

Women respondents according to Individual characteristics		Number of women
Age	15-35 years old	14
	36 years old above	16
	<b>Total</b>	<b>30</b>
Marital status	Married	23
	Widow	4
	Single	3
	<b>Total</b>	<b>30</b>
Education level	None	7
	Primary level	6
	Secondary level	14
	High secondary level	1
	Undergraduate level	2
	<b>Total</b>	<b>30</b>
Victim experience	Personal victim experience	3
	Family/friend victim experience	7
	No victim experience	20
	<b>Total</b>	<b>30</b>

In addition, semi-structured interviews were also conducted to the highlighted key informants and expertise in Chennai. This was done purposely to acquire different opinions and perspectives of the stakeholders regarding women safety in Kannagi Nagar. The table below shows the key informants and their responsibilities in Kannagi Nagar.

**Table 4. 2: The responsibilities of Key informants present in Kannagi Nagar**

Name of Key informants	Key informants and their responsibilities
Asha Nivas - NGO	<ul style="list-style-type: none"> <li>• Provision of training to community especially women and school children training on safety issues and environmental hygiene.</li> <li>• Teaching classes for the young girls for everyday evenings concerning life skills programs and self- defense like Karate.</li> <li>• Organizing the events as child girl day which conducted twice per year</li> </ul>
SHGs- (MCDS NGO)	<ul style="list-style-type: none"> <li>• Provides training to the resettled women in safety skills, entrepreneurship skills, vocational skills, and other skills like development skills, artificial jewelry making skills, family counseling, Health services care, leadership training etcetera.</li> <li>• Organizing the community events like alcoholism day which is conducted on 23<sup>rd</sup> June used to encourage the community to stop drinking, women events like women day celebration on 23<sup>rd</sup> March some awareness is conducted on that day like legal rights.</li> <li>• Support the SHG women to open the personal accounts in government banks and access the low interest loans (empowering the women)</li> </ul>
Community leader	<ul style="list-style-type: none"> <li>• Encouraging the community to participate in community programs like women development initiatives program, school programs etcetera</li> <li>• Listening and solving community problems</li> </ul>
GCC	<ul style="list-style-type: none"> <li>• Responsible for connection and maintenance of all street lights cables</li> <li>• Maintenance of the stormwater drainage, managing solid waste, and management of drainage system</li> </ul>

	<ul style="list-style-type: none"> <li>• Maintenance of parks, playfields</li> </ul>
J-11 Police station	<ul style="list-style-type: none"> <li>• Responsible for law enforcement</li> <li>• Investigates the crimes happening in resettlements</li> <li>• Prevention of anti-social behaviors by dealing with drugs and alcohol affected people</li> <li>• Dealing with community safety issues</li> <li>• To resolve community disputes</li> <li>• Attending the accidents, emergence and investigate the source of accidents.</li> <li>• Attend court to give the evidence</li> </ul>
CMDA	<ul style="list-style-type: none"> <li>• Approval of the resettlement layouts plans.</li> </ul>
TNSCB	<ul style="list-style-type: none"> <li>• Prepared a layout plan of the resettlement site</li> <li>• Construction of tenements by outsourcing the contractors</li> <li>• Coordinate other stakeholders in site inspection</li> <li>• Owning and supervise tenements</li> <li>• Provision of the necessary facilities in resettlement sites like water supply systems, drainage systems, lighting system construction of basic amenities like schools, hospitals</li> </ul>

Source: Author field work (2019)

#### 4.4 Design of the public space in Kannagi Nagar

The importance of this section is to provide the answers for the question of to what extent have women safety issues been addressed through the design of public spaces in Kannagi Nagar. The findings from resettled women respondents, TNSCB, GCC, and field observation revealed that the design of Kannagi Nagar layout plan is a grid-iron pattern(see annex 2). Grid-iron design refers to the general plan which composes of straight streets which meet at perpendicular intersections in a consistent way and comprehensive, which forms cross junction. It has the advantages of simplicity, can be repeated at any scale, and location can easily be accessed, and distribution of the land uses are within the grid pattern (Grant, 2001).

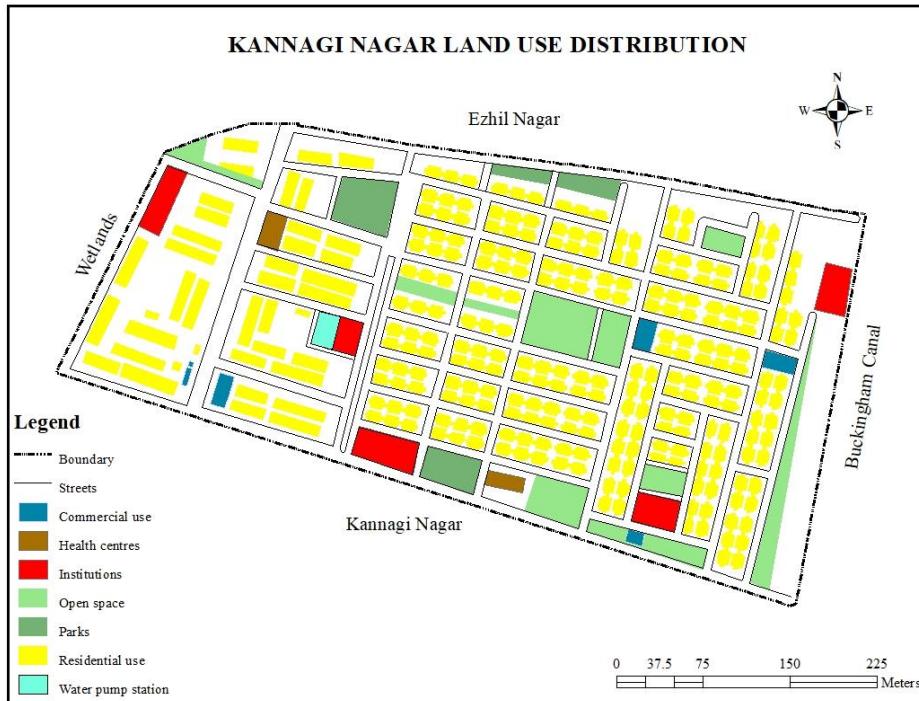
From field observations and secondary data (map) the layout plan of Kannagi Nagar comprises of different land uses, which are institutional, public space, residential, religious, community facilities and commercial use. Commercial use like markets, shops, ration shops, institutional use like a TNSCB office, councillor unit office, e-serve office (which dealing with online services for birth and death certificates, and receiving complaints from citizens through online), and public space like ground playfield, Parks, bus stop, community facilities like water pumping station, urban primary health centres, nursery schools, Hope Foundation school and religious use like the temple Arulmigu Kasi Viswanathar temple. All these uses are distributed in the grid pattern except temple located near to canal.

From the interview with key informants of TNSCB, it was explained that the design and approval of all resettlements sites including Kannagi Nagar done by CMDA, who has an authority to plan the entire city. The main criteria used to design resettlement site is based on the number of people who will be relocated, the number of people determines the number of floors that should be constructed. Normally, resettlement projects are constructed on government land and people who are residing in objectionable areas such as road reserves or riparian reserves are the ones being resettled there.

The key informant of CMDA explained that the overall mandate to plan in Chennai is with the Chennai Metropolitan Development Authority. However, CMDA has delegated that role to the Slum Clearance Board, so that they can develop their own plans for resettlement sites, but this must be done within the planning and resettlement norms set by the latter. Moreover, the key informant emphasized that CMDA is responsible for preparation of Master plans and

layout plans of the whole Chennai excluding the resettlements areas. Map 4.2 shows the distribution of land use in Kannagi Nagar as mentioned above.

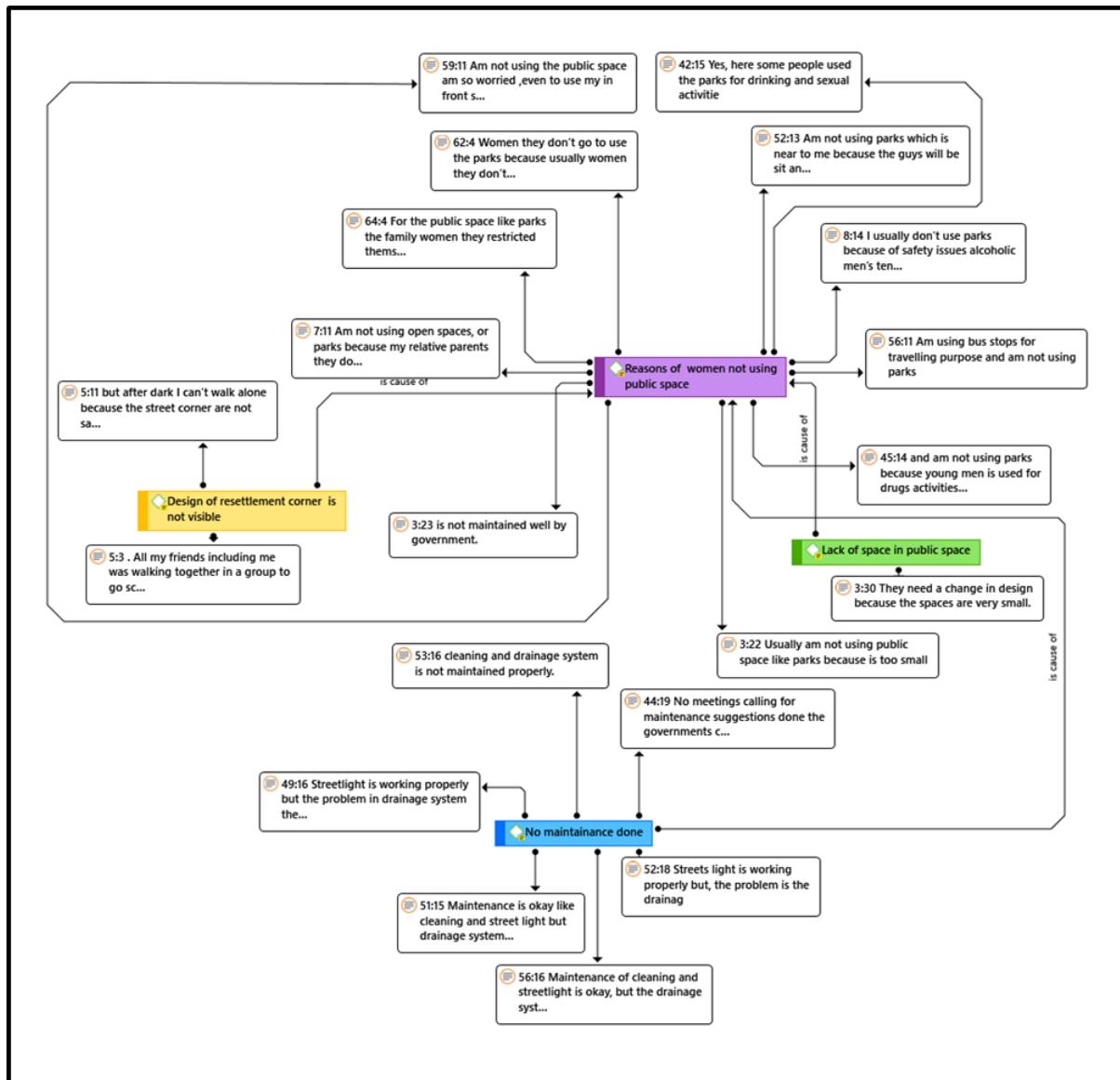
**Map 4. 2: The design and distribution of land use in Kannagi Nagar**



Source: Constructed by the author (2019)

Figure 4.1 below shows the link between design, maintenance and use of the public space. To show the relation of these three variables, codes were used supported by quotations. The reasons for women not use public space in Kannagi Nagar is caused by lack of maintenance, poor design, and social and physical disorders. However, many quotations of respondents indicates that most of the women in Kannagi Nagar fear to use public space because of the physical and social disorders factor.

Figure 4. 1: The relation between design, maintenance and use of public space (see annex 3 for the full view)



Source: Author Analysis (2019)

#### 4.4.1 Visibility element in public space

From the field observation, as mentioned above the design of the resettlement is a grid-iron pattern and streets provide the sharp corner in cross or T-junctions, so it is difficult to see the nearest objects (blocked visibility). Due to sharp corner and sides of streets, they lack an overview of the public space. The sharp corners do not allow one to see what could be approaching just before the turn. This lack of oversight increases the fear factor among women especially after dark time as well as untrimmed roadside trees also inhibit visibility and increases the fear factor in the area. Below is an excerpt from a female respondent;

*"I was born here, and I know how difficult it was to go to school from my home. All my friends including me were walking together in a group to go to school, but then also we felt very unsafe because of the young men at that time they all used to stand at the corners of the road and tease us whenever we passed by that side, and we felt very unsafe walking through those days". WR5*

Furthermore, some of the respondents mentioned that they feel unsafe not only because of the design of the sharp corners in the site but also because of insufficient space in and out of the

buildings, even the park also small compared for the number of population residing there. An excerpt from a female respondent;

*“Usually am not using public space like parks because it is too small also is not maintained well by the government. Also I prefer to use wide street rather than the narrow one because the space between the block is private space so I cannot use it”. WR<sub>3</sub>*

Moreover, the findings from key informant Asha Nivas (CO) explained that the design of the houses and public space in Kannagi Nagar are characterized by small spaces. This makes women use public space as private space. The space provided in house limits women to perform their domestic task freely, for stance washing clothes, dishes, and other related activities are conducted outside of the houses. Below is the excerpt from key informant (CO):

*“In Kannagi Nagar, the main problem is the lack of space in and out of the buildings, you know two families have to share one toilet, and one family contains four, five to six members if you don’t want to share the toilet, so you have to buy two houses then will be fine. For the previous time four to five years ago the situation was worse in terms of water scarcity, there was no space for washing and drying the cloths it was a challenge.” KR<sub>38</sub>*

The findings, from a study conducted by PUCL (2010) in Kannagi Nagar confirms that the size of the houses is below Indian planning standard which makes women feel uncomfortable to utilize the space and most of the time women are forced to use public space for the domestic tasks. It also showed in their research that the houses provided to the resettled people are too small to accommodate their family members so many activities should be conducted out of the buildings (public space).

#### 4.4.2 Street type element in public space

The findings reveal that most of the women preferred to use the wide streets rather than small streets, small streets here means their small road between buildings. The resettled women respondents mentioned that they use wide streets more than narrow streets because the narrow streets are not clean are normally used by criminal people to conduct illegal activities, and during dark time there is no light which makes to be more dangerous. The photographs below show the existing situation of the narrow streets and alleys.

Photographs 4. 1: The narrow streets in Kannagi Nagar



Space between the tenements

Alley

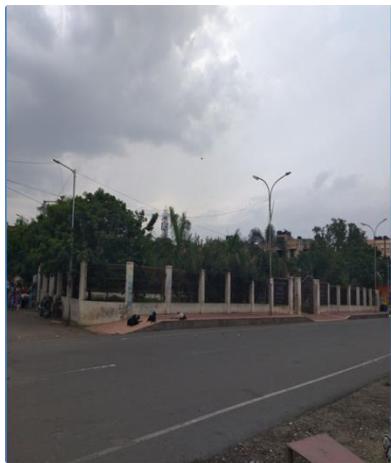
Rear sides of tenements

Source: Author field work ( 2019)

#### 4.4.3 Signs element in public space

From the field observation, there are no signs or marks in public space. However, in parks there is the gateway which is used for entry and exit purposes, all parks are fenced and opened with schedules. Therefore the signs element is irrelevant to the case study.

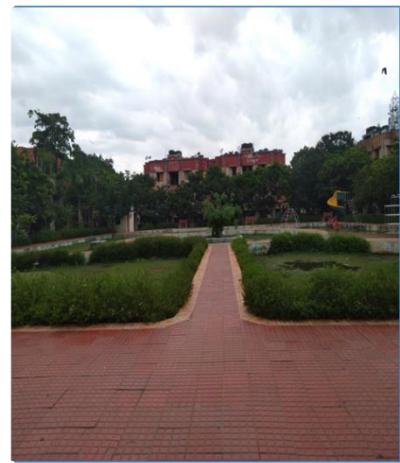
Photographs 4. 2: Shows absence of signs element in one of the park



Fenced park



Entrance and exit gate of park



Inside the Park

Source : Author field work (2019)

#### 4.4.4 Street light element in public space

Based on the field findings, a majority of respondents admitted that the street light is working within the area; there are only a few places where the lights are not working. Also, most of the respondents mentioned that they feel safe because of the availability of streetlights. Streetlights add confidence to women to move freely during the dark time. Although the areas where lights are not working the respondents blame criminals have destroyed them, so that they can execute their illegal activities in the dark. Furthermore, field observation found the absence of lights behind the buildings and sideways. When I visited the area on night time I observed a group of young men coming out from dark places of the buildings. This confirms what female respondents said, feeling unsafe because of those young men roaming around in backyards of the buildings particularly in the night.

Photographs 4. 3: Street lighting working in main roads and crossroads



Streetlight in main road



Streetlight in cross road



Streetlight in main road

Source : Author field work (2019)

The photographs 4.3 above shows the streets with light. Streetlights enable the women to conduct necessary activities like walking freely as demonstrated in photograph one on the left side, washing dishes as seen in photograph two, and because of streetlight provides good environment of safety, also women perform optional activities like getting fresh air from outside, sitting and relaxing as shown in photograph three from the left.

**Photographs 4. 4: The absence of lighting in space between tenements**



Absence of light in sides of tenements

Absence of light in rear sides of tenements

Absence of light in alley of tenements

Source : Author field work (2019)

The Photographs 4.4 above show the area where there is an absence of light which hinder the women to use public space. The similar findings with semi-structured interviews women feel unsafe to walk along the dark places. From the field observation no women can be seen alone in these places as shown in the photographs above, the street is so quiet. So this implies that women feel unsafe to use public space in absence of lights.

#### **4.4.5 Location element of public space**

The study found that the location element also is one of the factors which influence women's perception of safety. During interviews I discovered that women who live close to government offices that have security guards and the main roads where they inserted CCTV cameras feel safer than those living far from them. Streets that are busy with small business like small shops, vendors (mixed activities) and many people moving around make women feel safer than areas that are quiet. In Kannagi Nagar there are places mentioned by respondents to be unsafe areas, Pudipet area (the area live the people resettled from Pudipet), reserve bank area (people resettled from the scheme of cleaning reserve river bank), in Arulmigu Kasi Viswanathar temple road (7<sup>th</sup> crossroad) and near the main road which separates Ezhil Nagar and Kannagi Nagar. The women living close to these places feel unsafe to walk in streets even in day time. Moreover from the field observation, areas, where women feel unsafe, have the following characteristics: first the street is so quiet with no on-going activities, few people walk in the streets, some houses are not inhabited (unoccupied buildings), trees with unpruned branches, and litter in the street.

Map 4.3 below shows the existing situation of Kannagi Nagar. The photographs on the map shows exactly what exists in different places. Some of characteristics mentioned by female respondents like feeling unsafe because of un-occupied houses has been shown in the map, also women feel safe because of living close to the government offices or institutions, some

of the offices are shown on the map, the public space where women feel more unsafe because of the location is also shown example from the Pudipet area the street road 7<sup>th</sup> cross road which separates tenements and the temple close to Buckingham Canal also shown on the map.

**Map 4. 3: The existing situation of Kannagi Nagar**



Source : Constructed by author (2019)

## 4.5 Maintenance of public space

The interviews with resettled women and also with the key experts from the Greater Chennai Corporation revealed that maintenance of public space in Kannagi Nagar is done but not regularly. The findings revealed that out of 30 women respondents 26 women mentioned that maintenance is done by the government, but not regularly and insufficient. Moreover, the women explained that not all public spaces are well maintained and the type of maintenance carried out are cleaning of the streets, cleaning of the parks, and fixing broken streetlights but not the drainage system. Even though maintenance is done but not in a sufficient manner. Some of the excerpts from women respondents indicate that;

*"Streetlight is working properly, but the problem is in the drainage system which they don't take into account, usually if maintenance is needed it takes one month after they have been informed and also it depends on the type of maintenance needed". WR<sub>21</sub>*

*"Maintenance is done but not always, and it takes time after reporting. I remember when we had the problem with the drainage system, we went to the TNCSB representative office to report three times they didn't come to repair so we decided to upload a picture on social media, then they came after seeing it and they warned us that don't post pictures like this again and said better come to our office to remind us as much as possible". WR<sub>5</sub>*

On the other hand, findings from the key informant interview with GCC regarding maintenance of streetlights, absence of lights rear and sides of the tenements and drainage system maintenance in the site, indicates that maintenance in Kannagi Nagar is done whenever any form of vandalism is reported besides visiting the public spaces regularly during supervision. Moreover, the Executive engineer explained that in Kannagi Nagar GCC is responsible for installation and maintenance of all street lights, laying of cables, and maintenance of electric crematoriums, and also for the construction and maintenance of the stormwater drainage, managing solid waste, management of the drainage system and maintenance of parks and playfields. The findings revealed that in the last five to ten years many improvements have been made in Kannagi Nagar like paving of some streets, regular maintenance of the street lights, and construction of two new parks. An excerpt from the official is shown below:

*"We maintain street lights along the main street, and they are always in working conditions. However, we do not provide streetlights between the buildings and alleys because the policy does not provide for it. Although it is being considered and in future we shall be providing streetlights in the alleys too. We have also proposed to have maintenance of drainage done by private contractors since we do not have the capacity to maintain all of them as we would want". KR<sub>41</sub>*

## 4.6 Use of public space

In Kannagi Nagar, women use public space for three types of activities which are necessary, optional and social. To answer the research question semi-structured interviews were conducted to resettled women and the community leader. The findings are presented below;

### 4.6.1 Use public space for necessary activities

This section explains how women in Kannagi Nagar use public space for the necessary activities. Regarding the question of what kind of activities women perform when you are using public space in Kannagi Nagar. The finding revealed that 27 out of the 30 respondents use public space for the necessary activities including; going to work, going to school, pick and drop school children in the bus stop, conducting small business like vendors, pump water from underground in the streets, making a broom, washing dishes, clothes and drying, cooking, and store their belongings outside of their tenements along the streets. All women use public spaces for the necessary activities regardless of their different individual characteristics and prevailing physical conditions.

Majority of the women mentioned that they use the bus stop and streets to perform necessary activities like traveling, walking and conducting domestic tasks. It is common of these activities to be conducted in outdoor public space though the domestic activities are supposed to be carried out in the indoor space. This is due to lack of space in the resettlement site as

described in the design section above. Excerpt of women respondent and community leader are presented below;

*"My kids play in the park that has been recently constructed for the public. I am also using bus stops when traveling". WR 21*

*"Women stay and use public space. Public places here are the bus terminal, park, and a temple. They are saying that women are more strong and brave in this area. You cannot approach them in a bad way". CL1*

#### 4.6.2 Use public space for optional activities

This section explains how women in Kannagi Nagar use public space for optional activities. The findings revealed that 7 out of the 30 respondents mentioned that they use public space for walking around the site, refreshing, sitting, talking, relaxing and make fun. The number of women who use the public space for the optional activities in Kannagi Nagar is very few compared to social and necessary activities.

Individual characteristics showed to have an impact on the optional activities as age, marital status, and education level and victim experience. Regarding age women with 36 years and above were 4 that use public space for optional activities while those with 15-35 age was 3. In terms of marital status; 6 women were married and 1 was single, whereas for the education level; 5 women reached secondary while 2 primary levels and victim experience; 6 women were non-victims while only 1 woman experienced victimization. The table below shows the summary of women use the public space for the optional according to their individual characteristics.

Table 4. 3: Shows the number of women who use and not use public space for the Optional activities

Women		Use public space for the optional activities	Not use public space for optional activities	Total Number of respondents
Age	15-35 years old	3	11	
	36 years old and above	4	12	
	<b>Total</b>	<b>7</b>	<b>23</b>	<b>30</b>
Marital status	Married	6	17	
	Widow	0	4	
	Single	1	2	
	<b>Total</b>	<b>7</b>	<b>23</b>	<b>30</b>
Education level	None	0	7	
	Primary level	2	4	
	Secondary level	5	9	
	High secondary level	0	1	
	Undergraduate level	0	2	
	<b>Total</b>	<b>7</b>	<b>23</b>	<b>30</b>
Victim experience	Personal victim experience	1	2	
	Family/friend victim experience	0	7	
	No victim experience	6	14	
	<b>Total</b>	<b>7</b>	<b>23</b>	<b>30</b>

Therefore the results revealed that women with 36 years and above use public space for optional activities more than the women with 15-35 years, but the difference is less. This means all women age they use public space for optional activities but in less number. Regarding marital status, married women use public space for optional activities more than singles and widows. This implies that married women feel more secure to use public space than single or widow women. The results reveal that women with high education use public space for optional activities more than those with low-level of education or none, this implies that education adds confidence to the women to use public space. Victim experience results indicate that women who are non-victims use public space for optional activities more than the women who were victim, this implies women who are not victimized feel safe to use public space while victimized women are occupied with high level of fear and anxiety because they are affected physically and psychologically.

Therefore, the findings imply that majority of all women use public space for the necessary activities and not for optional activities and because optional activities are affected by physical environment, if the environment is not good women do not perform such kind of activities.

#### 4.6.3 Use public space for social activities

This section explains how women in Kannagi Nagar use public space for social activities. The findings revealed that from the 30 women 28 answered the question of “are you participating in social and cultural activities that take place in public space in Kannagi Nagar” as follows; 17 women are not participating in social or cultural activities and 11 participate in social and cultural activities. Moreover the data reveal that the participation in social activities is affected by individual characteristics as follows; age, the women with age 36 and above who using public space for social was 7 and with age 15-35 age was 4, the women who not use public space for the social activities age 36 and above was 7 also and age 15-35 was 10. Marital status, the women who use the public space for social activities as follows; 7 married, 1 widow and 3 singles, and who are not using the public space for the social activities 14 married, 2 single and 1widow. Education level; women who use the public space for social activities 2 was none, 1 primary, 7 secondary and 1undergraduate, while women who not use the public space for social activities was 5 none, 5 primary, 5 secondary,1 higher secondary and 1 undergraduate level. Victim experience women who use the public space for social activities are all non-victim, women who not use the public space for social activities was non-victim was 12 and 5 had the victim experience.

Table 4. 4:Shows the number of women who use and not use public space for the social activities

Women		Use public space for the social activities	Not use public space for social activities	Total number of respondents
Age	15-35 years old	4	10	
	36 years old above	7	7	
	<b>Total</b>	<b>11</b>	<b>17</b>	<b>28</b>
Marital status	Married	7	14	
	Widow	1	1	
	Single	3	2	
	<b>Total</b>	<b>11</b>	<b>17</b>	<b>28</b>
Education	None	2	5	

level	Primary level	1	5	
	Secondary level	7	5	
	High secondary level	0	1	
	Undergraduate level	1	1	
	<b>Total</b>	<b>11</b>	<b>17</b>	<b>28</b>
Victim experience	Personal victim experience	0	0	
	Family/friend victim experience	0	12	
	No victim experience	11	5	
	<b>Total</b>	<b>11</b>	<b>17</b>	<b>28</b>

Table 4.4 above shows the number of women who use the public space for social activities, and for those who are not use the public space for social activities as the data presented above and summarized on the table.

The findings above revealed that older women participate more in social activities than young women, and the reasons behind this is that elder women are interested in building social networks through social activities. Most women participate in meetings, NGOs events conducted by some NGOs and charity organization like SHGs, Asha Nivas and social developments clubs where they can access loans for starting business and solving their social issues. On the other hand data revealed that the women who were married less use of public space for social activities than single women and widows. The reason is women who are married have restrictions from their husband to go and participate in social activities; this shows how the patriarchy power system affects the women. Moreover, in education the findings revealed that all women are participating less in using public space for social activities, therefore the education factor was not visible in regard to this section. Also victim experience findings show that the women who are non-victims participate more in social activities than victimized. however the data revealed that all victim and non-victim participate less in social activities with different reasons.

In addition, women mention the reasons for them not to participate in social activities because they leave early in the morning going to work in other places as the domestic worker so they come late or night and they do not have the time to participate in those activities. Others do not participate because they are not aware of the events; others do not participate in social and cultural activities because of their family restrictions especially husbands. Other do not participate because they are busy with domestic activities in their homes, while others fear to attend social activities because they tend to attract lots of people, so they feel it is unsafe place for them to be there. In addition to the reasons mentioned above, some are not culturally permitted to participate in these activities because they are not married. One respondent explained as reason for not participate in cultural activities like baby showers and weddings as follows:

*"The problem I face in reference to these cultural activities is because I am not married, and this is one of the things I do not like about these activities. I have also noted that even married people are not all happy in their marriage. Some of the activities we the single people are not allowed to participate in include baby showers ceremonies, etc". WR<sub>27</sub>*

However the findings show that women participate less in social activities, but women use public spaces for social activities as follows. Women use streets for ceremonies, events, and women meetings. They sometimes close some of the streets when they organize specific

activities like wedding or funeral. For example Women Self Help Groups events are normally done by closing the streets.

**Photographs 4. 5: Women use public space**



Vending



Waiting for the bus



Working



Washing



Pumping water



Drying clothes



Storage



Sitting



Walking

Source: Author field work ( 2019)

The Photographs 4.5 above show some of the necessary and optional activities executed by women in public space in Kannagi Nagar.

## 4.7 Perception of women safety in public space in Kannagi Nagar

This section describes how women in Kannagi Nagar perceived safety. Women describe the kind of violence against them happening in parks, bus stops, open spaces, alleys and streets (public space) in Kannagi Nagar. In Kannagi Nagar, the most common violence to women is eve-teasing<sup>1</sup> which mostly happens in public space and is done by young men. Others include rape, sexual harassment, shouting at girls, robbery, and stealing of jewelry like chains.

### 4.7.1 Why women feel unsafe in public space

From the semi-structured interviews conducted to 30 female and of 6 male respondents asked about where the women felt more or less safe in Kannagi Nagar as compared to their previous location 28 feel safe to live in the previous place, 4 feel safe to live in both places and 4 feel safe to live in current place means in Kannagi Nagar. Majority of women mentioned that they felt safe to live in their previous places because as it had a low population density and people used to live together with their families and relatives, people knew each other, helping each other but in Kannagi Nagar, such situation does not exist, most people migrate in and out, making it difficult for women to build a new social network.

Respondents mentioned that Kannagi Nagar is associated with a social and physical disorder like unsupervised youth, drug dealing, alcoholism (public drunkenness), bad incidences like rapping, prostitution, rowdy behaviour, eve-teasing, and fighting, litter, vandalism, and unoccupied tenements. Existence of such behavior breeds fear and insecurity among women. Excerpts from women and men respondents are as follows;

*“This place here is not safe because it is surrounded with unknown people entering the buildings randomly and cause the theft problem, See that building, women cannot enter the 4<sup>th</sup> floor because small children have been raped there, so we are so worried to use that building”. WR<sub>2</sub>*

*“The previous place was safe for women, here is not safe for the women because anytime, any incidences can happen anyone can come out with the knife and while they chop them without reasons and can drop the bottle from the building when they fighting it”. MR<sub>35</sub>*

To analyze perception of safety they were asked whether they think public spaces in Kannagi Nagar are safe for the women of all ages to move around freely. Women responded differently to this question as discussed below. In Kannagi Nagar, most women do not feel free to move around in public spaces. The findings indicate that women perception of safety is affected by individual characteristics age, marital status, and education level and victim experience. Women with age 36 years and above were 16, and 8 respondents mentioned that public space in Kannagi Nagar is safe for women of all ages, 7 of them mentioned that it is not safe for women of all ages. They pointed out the reasons for feeling safe to move freely in public space in Kannagi Nagar among those reasons are availability of security guards in parks, availability of police station and patrol, insertion of CCTV camera in some street and government offices, presence of streetlights, underground activities in some places like vending and small shops. However the majority mentioned that the presence of the police station helped in improving the safety situation in the area. One of the respondents had the following to say;

<sup>1</sup> Eve-teasing common term used in India means sexual harassment or assault happening in public space

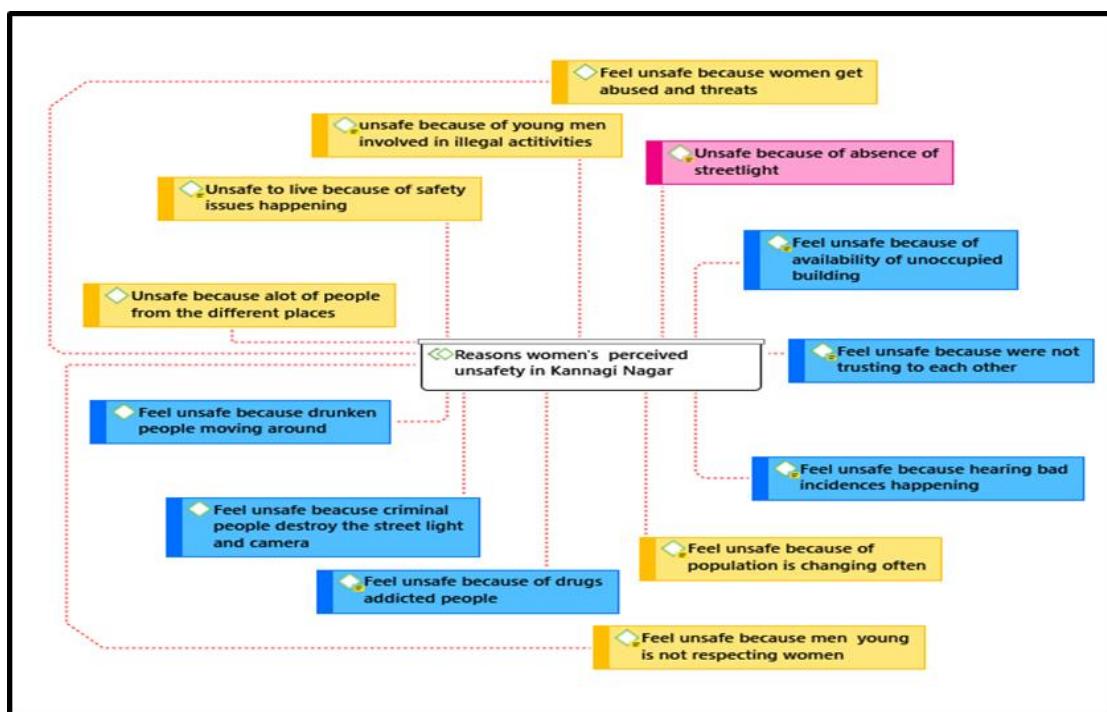
*"For now at least women can use the public space because the police used to walk around the streets so there are no more issues of safety for women". WR<sub>13</sub>*

For the age of 15-35 years, the finding reveals that out of the 14 respondents, 10 respondents mention that public spaces are not safe for all women and especially young girls and 4 respondents feel all public spaces are safe for women of all ages. One of the respondent says that;

*"All women here feel unsafe irrespective of age, although, young girls feel more unsafe when walking to the bus stop for school, young boys used to tease them, and elderly women are afraid on the theft incidences happening in the street because they used to snatch their jewels and mobile phones". WR<sub>6</sub>*

Based on the interview findings presented above, in Kannagi Nagar, it can be concluded that indeed older women feel less unsafe as compared to younger women, younger women feel more unsafe.

Figure 4. 2: The reasons of women perceived unsafety in public space



Source: Author Analysis ( 2019)

Figure 4.3 above represents codes frequency which explains reasons why women in Kannagi Nagar feel unsafe in public space.

#### 4.7.2 Perception of women towards walking alone in public space

Majority of women feel unsafe to walk alone after dark. Three-quarters of the female respondents mentioned that all women feel unsafe to walk alone after dark. Further, some women feel unsafe even to walk alone in the day time. However, the research revealed that for those who feel more unsafe to walk even day time, are those who are affected by the location of public space and who have directly or indirectly experienced safety problem either through their person, friends or relatives. For instance one woman whose house is located at the boundary of the area (within the tenement numbers 14937-14953) along the Buckingham canal and is surrounded by unoccupied tenements she says feels more unsafe to walk around the area.

The findings indicate that women at age 36 and above feel safe to walk alone in both times during the day time and after dark. Out of 16 respondents, 9 of them feel safe to walk both during the day and after dark, 5 of them feel safe to walk alone in the day time and not after dark, and 2 of them feel unsafe to walk both day and after dark. Contrary to the young women at age 15-35 most of them feel safe to walk only at day time and not after dark. The findings show that out of 14 respondents 7 respondents feel safe only to walk alone in the day time and not in dark time, 4 of them feel unsafe to walk alone in both day and after dark and only 2 of them feel safe to walk alone at all time. The table below shows

Table 4.1: Feeling of women towards walking alone

Women age group	Feel safe to walk alone during the day time not dark time	Feel safe to walk alone both time day and after dark	Feel unsafe to walk alone both time day and after dark	Total
15-35	5	9	2	16
36 and above	7	2	4	13
<b>Total</b>				<b>29</b>

This finding reveals that young women feel more unsafe to walk alone in Kannagi Nagar than elder women.

#### 4.7.3 Victim experience

This section focuses on the impact of the victim on women's perception of safety. Respondents were asked whether they had experienced any safety issue since they came to Kannagi Nagar. This question provides an understanding of what the impact in or having experienced safety issues on the feeling of safety and for those who were not experiencing such situation. 30 respondents were interviewed 20 of them did not experience any safety issues, 3 were victim, and 7 experienced through friends/families victim experiences. Below is an excerpt from a respondent.

*"This place is not safe and more girls are afraid to go to school because they hear lots of news happening in Kannagi Nagar like rape so this makes them feel more unsafe". WR<sub>19</sub>*

The findings reveal that for the women who are a victim themselves feel more unsafe than those who have not experienced it, also the women who experienced it through their friends or family members feel unsafe. Furthermore, the findings show that even women who have never been victims also feel unsafe because of the incidences that frequently happen in the area.

#### 4.7.4 How women perceive safety in the presence of strange men in public space

This section presents the link between the presence of strange men and women's perception of safety. Women responded to this question as follows. Out of 29 respondents who answered this question, 21 respondents mentioned that they normally see strange men roaming around in public space and 8 of them mentioned that they have not seen strange men circulating in public space. They also mentioned that strange men are often seen roaming around the settlement in all time and more in the evening time. Further, the respondents mentioned that these strange men normally sit on their auto<sup>2</sup> along the road, some sit in the unoccupied buildings where they sell and consume drugs. Below is an excerpt from the women respondent;

<sup>2</sup> Auto-is the means of transport popular in India kind of motor cycle

*“During night a lot of strangers come other wear masks and are threatening the women when the door of house is opened”. WR<sub>8</sub>*

The finding reveals that women in Kannagi Nagar feel less safe in the presence of strange men in public space, some strange men show threatening behaviour that makes women feel unsafe. The presence of unknown persons brings fear to women and them therefore hasten to use public space for optional activities as mentioned above.

#### **4.7.5 Safe and unsafe public space**

From the two focus group discussions of women of age 15-35 and age 36 and above and individual semi-structured interviews from resettled women and men respondents were asked about the experience they have in public space in Kannagi Nagar. In the individual semi-structured interviews the women answered the question of which places or streets they thought was unsafe and why. To compressively answer this question the groups were given an area map to identify the unsafe locations and categorize them. The women used the card to write the places and streets which were categorized as more unsafe with red cards, unsafe with blue cards and safe space and streets with yellow cards.

*“The place where we feel more unsafe during day time and at night in this area include auto stand, park, empty land near to Ezhil Nagar, Pudipet street, Temple street, 9th main road, 6th Cross Street, 23th Cross Street, 6th Main Road, and Babu shop school gate. While the places where we feel slightly safe include 11th Main road and Tsunami Housing. Reasons, why these places are unsafe for women, are that these areas are mainly visited by drunken men, unoccupied buildings along temple streets are unsafe for women because drug dealers and criminals operate in those streets”. (FGD)*

Moreover, women were asked which precaution they take when they pass through such unsafe places. They named the streets they tend to avoid and the reasons. Further, they also identified the public spaces that are safe to use. Based on that, the researcher prepared a map that marked the safe, unsafe and more unsafe public space in the site with the help of the respondents.

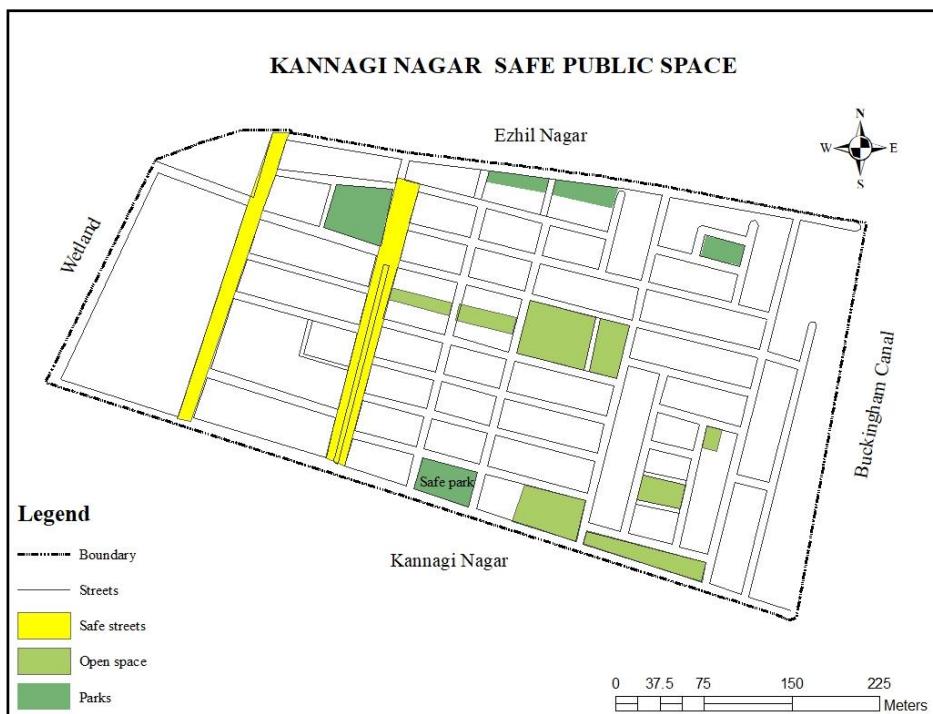
The maps below indicate the reading of public spaces based on the information gathered from 30 female respondents and concretized by 16 women from the focus group discussions with age mentioned above in within the study area.

The analysis of the information was transformed from subjective information of the women’s (opinions and perception) of their safety in Kannagi Nagar into spatial information. The maps offer a general understanding of the public space where the women feel safe and unsafe to use public spaces during the day and at night. The exercise conducted in G+ 2 tenements in Kannagi Nagar.

Map 4.4 below shows the public space where the women feel safe in Kannagi Nagar. Women mentioned the streets and public places which they feel comfortable to use as presented on map. They provided reasons that made them view these spaces as safe included presence of CCTV camera, streetlights, police station, and police patrol.

In addition, from field observation, these safe public spaces are located near to offices like the councilor office, e-serve offices, and also there are some safe activities carried out like corner shops, vendors and more streets are busy with mixed ground activities.

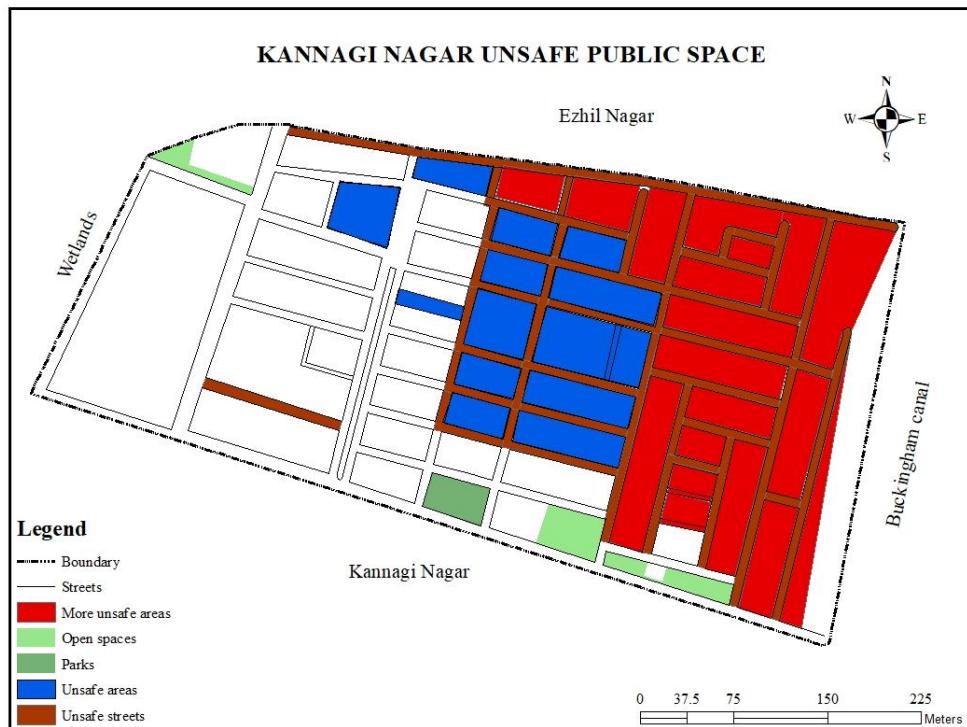
**Map 4. 4: Show the safe public space in Kannagi Nagar**



*Source:* Constructed by Author (2019)

Furthermore, the researcher produced the map which shows the unsafe and more unsafe public spaces as mentioned by female respondents the map below shows the streets and public spaces which women perceived as unsafe for them in Kannagi Nagar.

**Map 4. 5: Show the unsafe public space in Kannagi Nagar**



*Source:* Constructed by Author (2019)

The map 4.5 above indicates unsafe and more unsafe public space. The details provided by the women clearly indicated that perception of safety is influenced by behaviour of people. In this case rampant illegal activities among young men contributed to how women perceive and the general safety in the area. Women indicate unsafe public space as shown in the map above.

During the discussion, respondents were identified northeastern part of a map as more unsafe public space compared to southwestern(zoned as red color), the reasons mentioned by respondents to be more unsafe because public space located in isolated area, which acts as a gateway for criminals, the place has many buildings which are un-occupied are used by criminal people for illegal activities, and also public space (main road separate Ezhil Nagar and Kannagi Nagar) are located close to Ezhil Nagar resettlement site which is famous with bad incidents with regards to women safety like rapping incidences and eve-teasing.

Moreover, women indicate that the northeastern part to be unsafe public space(zoned as blue color) because of the following reasons the police patrol is not regular, drunken men moving around at any time, frequent fighting of young men and there are no CCTV cameras. In the few cases that CCTV cameras were installed, criminals destroyed them. In the discussion, women added that they feel unsafe to walk in these areas after dark because there is no street light in alleys and rear sides of the buildings; however the problem of lights in rear and sides of the building is for whole site.

#### **4.8 Strategies used by women to improve their safety in public space**

In this section, the researcher asked women to explain which safety precautions they take to be or stay safe in areas that are perceived to be unsafe. In this regard the specific question asked was as follows: Do you take any precaution when you go out. For example, do you carry something for protection or avoid certain areas or do you use other methods?

Three-quarter of the women respondents said that they do not carry anything for precaution when they go out, but they use several methods to ensure they are safe. The methods reported being using include walking as a group, avoid unsafe routes, and avoid meeting strange men and attending self-defense karate classes.

For instance, the places which have been mentioned by women to be unsafe and they avoid includes Pudipet streets block number 14000- 15000, the main road which separates Kannagi Nagar and Ezhil Nagar, avoids temple street road (number 7<sup>th</sup> main road). In addition, some women believe that decent dressing is one other way of keeping safe. The following excerpt the interview illustrate some of the strategies women use;

*"I am not taking any precaution when am going out but I am trying to avoid some of the streets, I avoid walking along the temple main roads and next road which separate us and Ezhil Nagar, and usually keeping telling the girls not to walk alone and at all-time they should walk as a group". WR<sub>6</sub>*

*"I usually avoid some of the routes especially when it is dark I cannot use 7<sup>th</sup> main road, I avoid drunken men and strange men. You know these people (criminal) threaten us a lot even when they see our child is playing outside they shout at us to take our child from playing in the streets back into the house so that they are free to use it for their criminal activities". WR<sub>31</sub>*

Moreover, in Kannagi Nagar, there are NGOs and CO, and J-11 police station which used to work together with the community. There are some clubs organized by the police like women club, girls club where the police used to train women regarding safety issues. Also there are

the NGOs like Asha Nivas, Women Self-help groups under Montfort Community Development Society and Veer Peaceful Environment all these organizations to help women to become independent economically and physically safe. They conduct training on self-defense like Karate, teaching the women ways to protect themselves in public space and insisting on self-hygiene and decent dressing. Excerpts from Key informants (CO);

*"Strategies advised for the women to be safe in public space they should wear the respected dresses not to give the chances for the others (men) for any types of physical harassment. We teach women not to allow men to touch them. For the young girls "Good touch bad touch" trains the girls if the strange men come and touch someplace is good and where a body part is not good to touch. So if somebody makes a bad touch you can take immediate action like shouting to seek help to the near people, or any action to protect them from the situation". KR 38 (NGO)*

#### 4.8.1 Strategies of reporting unsafe situations in the resettlement

This section present finding gathered from interviews, the approach used by women to make sure they are safe in public spaces in case of any unsafe situation and how they report it. Respondents were specifically asked the following question: In case you feel unsafe, could you tell me what you do to ensure your safety while using public space? Do you use your phone for help or any program on your phone? Did you go to the police? For any safety issues did you approach anyone else for help? Did you feel the response met your needs? Why or why not? What else did you do?

From this question, women respondents pointed out what they did in case they feel unsafe in public space. Out of the 16 respondent, 9 respondents mentioned that in case of an unsafe situation the first approach was to ask assistance from police by using their phone to call or going direct to the police station, 4 of them said that the first approach taken is asking the assistance from the family or neighbors community or anyone who could be nearby, and 3 of them said that the first approach is to defend themselves by using self-defense technique like fighting and karate. However, no respondent mention that they used phones for the safety program. This implies women are not aware of software that is available and can be downloaded to be used as a safety application also no training is conducted about using the phone for safety issues. Despite having a lot of respondents mentioning that first, they seek assistance from the police also some respondents complained that the police response is unsatisfactory once they call the police in any unsafe places the police answers are sometimes discouraging, and sometimes they delay to respond. A respondent below explains what she is encountered;

*"When I feel unsafe the first people to contact is friends or family, I don't contact the police, and because the police are not willing to help quickly instead they start to ask lots of questions while you are in a dangerous locations. I am not using any program on my phone for safety issue also I don't trust them. Sometimes even neighbors are afraid to give help because they have been threatened with sharp objects like a knife". WR<sub>6</sub>*

Table 4. 5: Shows the number of women and approach taken in unsafe situations

Action was taken	Number of women respondents
Call the police	9
Ask assistance from the family/friends	4

Self-defence(fighting)	3
<b>Total</b>	<b>16</b>

The table 4.5 above show the number of women and action taken when they feel unsafe on the public space. The finding reveals that most the women contant with police by using phone or directly report of the incidence. This implies that women in Kannagi Nagar trust the police services.

## Chapter 5: Conclusions and recommendations

### 5.1 Introduction

This chapter presents the conclusions and recommendations as revealed by the research findings and triangulated by the literature review that has been done in chapter two. In the conclusion section, the essence is to answer the main research question by focusing on each of the research sub-questions. In this regard, it answers “What is the effect of the design and use of public space on women’s perception of safety in Kannagi Nagar resettlement site in Chennai, India?”. The recommendations section discusses the researcher’s views based on the analyzed data on how to improve women safety in public spaces within the resettlement site in Kannagi Nagar. In addition, it identifies areas of further research.

### 5.2 To what extent have safety issues for women been addressed in the design of public space in Kannagi Nagar?

This question will be answered from the design and a maintenance perspective. **Design:** Design of public space critical affects the women perception of safety and literature indicates that designs that respond to principles of safer public space tend to be used more by women than those that do not. In the study area, the safe principles such as poor night visibility due lack of streetlight, location of public spaces such as parks in isolated places, absence of truncation angle at the junctions were commonly highlighted and observed by the researcher. Moreover, findings gathered from semi-structured interviews, focus groups discussion, participatory mapping, participant observation and secondary data (map) it is manifest that the design of the resettlement site does not consider women is safety. These results were further confirmed by key informant’s interviews from CMDA, GCC, and TNSCB.

These findings relate to various perspectives of design of public spaces as noted by Ewing and Handy (2009) and Luymes and Tamminga (1995) and Bell (1998) that the aforementioned elements of safe public space enhance usability by women.

Furthermore, Bell (1998) and Desai et al. (2018) explains that signs in public spaces increase awareness and confidence of women to use public space while the absence of women-friendly street corners, ground activities and absence of streetlight in resettlement reduces women’s perceived safety (*ibid*).

**Maintenance:** Lack of maintenance of public space was also identified as a big problem that makes women hesitate to or avoid using public spaces. For example, the majority of the respondents mentioned that they avoid visiting some public spaces which are not regularly cleaned or appeared vandalized. Therefore, the existence of physical disorder of the infrastructure in Kannagi Nagar indicates poor level of maintenance by the authorities. It also indicates the level of social decay by the perpetrators in the society. Vikas (2014) posits an argument that maintenance of public space and prevention of vandalism creates an attractive environment enhances safety of a public space. Chakraborty et al. (2017) add that poor maintenance of public space is a sign that the administration is not working properly.

### 5.3 How do women perceive the safety of public space in Kannagi Nagar?

Perception is subjective; therefore varies from one individual to another. The results from semi-structured interviews and focus groups discussion show the women’s perceptions of safety differs according to their individual characteristics of age, victim experience, education level, and marital status. As discussed in chapter four the findings show that young women in Kannagi Nagar feel more unsafe than elderly women in public space. This finding is also shared with Kallus (2001) who argue that younger women tend to avoid using public space

compared to older women because young women tend to feel less secure in public space than elder women. However, this finding contradicts an argument by Scott (2003) that both older and younger women have the same level of fear of crime but younger women fear more sexual assault than older women.

Additionally, victimization experience in this study shows that the women who experienced crime personally or from relatives or friends feel more unsafe than non-victims. This finding relates to Austin et al. (2002) who argue that people who are victims of crime are more fearful than non-victim because crime affects victims psychologically, and presence of crime victims in the neighborhood significantly influences the perception of unsafety. Furthermore, Macmillan et al. (2000) mentioned that the mind-set of women is shaped by the fear of sexual victimization especially when interacting with strangers is another cause of fear for women.

Education empowers the mind and this was very evident in Kannagi Nagar when those with no education were found to feel more unsafe than those with some education. This finding relates to research done by Scott (2003) that women with low levels of education are more likely to feel unsafe to walk alone than educated women. This implies that education adds confidence to women to use public space.

Further, with regard to marital status findings revealed that there is no significant relationship between marital status and level of perceived safety as mentioned in the interviews. However the findings also revealed that most women feel unsafe in a site because of hearing and seeing bad incidences that have happened within the site and/or nearest the neighborhoods.

#### **5.4 How do women use public space in Kannagi Nagar?**

The results revealed that women in Kannagi Nagar use public space for three types of activities necessary, optional and social activities. However, the findings pointed out that all women use public space for necessary activities rather than optional and social activities.

The most used public space in Kannagi Nagar by women is streets and bus stop rather than parks and open spaces, alleys, and space between buildings. Further, women mentioned that they use bus stop because there is no alternative to cheap transport but is not safe for them and especially for the school girls.

The findings reveal that all women in Kannagi Nagar use public space for necessary activities regardless of individual characteristics. Very few numbers of women are conducting optional activities, however, the few numbers are involved have the individual characteristics showed an impact as follows; The results show in marital status, married women use more public space than single and widow, educated women use more public space than none and low-level of education. In regards to victim experience, non-victim use more public space than victim and age showed the less difference which means no impact on age. This implies that the physical environment of Kannagi Nagar hinders women from conducting optional activities. The hindrance was mainly caused by presence of social and physical disorder in the resettlement site.

In social activities the results show that many women were not participating in social activities and for those who had participated, the individual characteristics show the impacts as follows; In terms of age the findings reveal that elderly women participate more in social activities conducted in public space than younger women, marital status has no impact shown, educated women participate more in social activities than non-educated ones, in term of victim experience the results shows that all those participating in social activities are non-victims. This implies that the low level of women in Kannagi Nagar to participate in social activities and especially young women are affected by the restriction received from their

family members especially husbands as women mentioned in interviews, which portray the patriarchy system existing in Indian culture affect the women. This is related to the argument made by Chakraborty et al. (2017) who claim that public spaces are mainly used by men more than women. Furthermore the results show that women hardly use public spaces for social activities because of them being unaware of various social functions, unfamiliarity among themselves and lack of trust between them and social-cultural exclusion of unmarried women.

## **5.5 Which strategies do women use to address (or improve) the safety of public space in Kannagi Nagar?**

**Strategy:** The results from the semi-structured interviews, focus group discussions, and key informants revealed that women use several methods to address the safety issues in public spaces. Most of the respondents mentioned that they used to walk in groups and avoid some routes which are suspected as unsafe. Few of them mentioned they used to wear non-provocative clothes as a way of preventing sexual harassment. This can be compared to Viswanath and Mehrotra (2008) that discusses the women precautions take to keep safe such as to avoid walking alone in dark time, not talking with strangers, avoid isolated areas and dress in a decent manner that is not sexually provocative in the public space.

**Reporting procedure:** Further, results from the findings indicate that the majority of women do contact the police whenever they are in danger, others seek assistance from relatives, neighbours, and friends. It was also revealed that in most cases responses are slow even with police, instead of quick response they become inquisitive and in the process criminals getaway. This means majority of the women believe on effectiveness of the police services in a Kannagi Nagar.

These findings are similar to the arguments made by Gau et al. (2014) that in a community people who believe in police services was determined by attitudes they have on police and perception of the activities carried out with the police in a particular area that can lead people to increase the feeling of safety or not. Calling police in danger zones implies that women in Kannagi Nagar had the trust of police. Therefore poor response of police mentioned on interviews diminishing the trust among the police and community which will lead to an increase of disorders. Gau et al emphasized that for the community to maintain order a strong collaboration between police and community is inevitable.

## **5.6 What is the effects of design and use of public space on women's perception of safety in Kannagi Nagar resettlement site in Chennai, India?**

The results from the semi-structured interviews, focus group discussions, participant observation and secondary information reveal that the design of public spaces affects the women's perception of safety. As mentioned above, it is clearly manifested that Kannagi Nagar lacks safety elements in the design, so women perceive it to be unsafe to use public spaces because they did not provide the conducive environment in regards to physical and social to be used. Existence of unfriendly sharp corners, un-occupied buildings, untrimmed trees, drunken people, commercial sex workers, gangs, and strangers in public spaces led women avoid using public space for optional and social activities. Further, women feel unsafe to use public spaces because of the location especially when it is isolated. It can be concluded that the main cause of women feeling unsafe in public spaces in Kannagi Nagar is unbecoming behaviour of men in public spaces which many authors have referred to as social incivility.

## 5.7 Recommendation

To minimize the negative impact of the resettlement site, the resettlements projects should consider the location of people to relocate. Relocating people far from their previous residences causes economic and social challenges to them. Impacts of resettlement like people lose to jobs, access to education there is a risk that they will end up in criminal activities to sustain their life. Further, to minimize the safety issues in resettlement site, the project implementer should consider the number of people resettled in one area. In most cases large groups present various behaviours which may not be in harmony with others. In addition, some people take advantage of the large group to commit crime in pretext that they cannot be noticed.

Importantly, to improve the safety issues TNSCB should consider the criteria used for designing the safer public spaces guidelines principles by extending the size coverage per persons (spaces) also applying the truncation on street design to be visible. In addition, they should involve the affected community and women in designing the resettlements sites from the planning phase up to the implementation phase.

Furthermore, the recommendation for Kannagi Nagar is drawn from the respondent findings in each specific area as follows:

- The un-occupied building should be fenced off so that they can not be used by criminals.
- The government should provide the CCTV camera to all public spaces as the same to the second main roads, and official governments where most of the respondents feel safe because of cameras.
- GCC should provide streetlights on the rear and sides of the buildings where the criminal people are used to hide during the dark time.
- The GCC should take immediate action on maintenance, doing the proper cleaning in public spaces like open spaces, rear sides of the buildings (drainage systems) and fixing the destroyed street light in some few streets like 14937blocks.
- The police need to be more strict, response and patrol time especially on the tenements number 13000-15656, also police station should extend the services by opening the police women wing (desk) which will help the women to access the police services in a friendly manner, because the findings show that many women are not reporting the violence against them in police station because of fear of police environment.
- Government and NGOs together should unite and take actions to unsupervised youth, for providing them with shelter and some training on the life skills from drug abuse and illegal activities.
- To improve women safety, the government also should enforce the law for restricting early marriage for the girls. This is because most parents encourage their girls to get married at early age to avoid being raped.

## 5.7 Potential for further study

The researcher recommends the following areas for further research:

- The impact of violence of men against women inside and outside of the house
- The place of unmarried women in participating in a social gathering in patriarchal society

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## Annex 1: Semi-structured interview guide questions

I am Lilian Ignasy Msasi a student of Institute for Housing and Development studies-Erasmus University Rotterdam in Netherlands, pursuing Msc.in Urban Management and Development. Am conducting the study on; Effects of design, maintainace of public space on use of public spaces and women's perception of safety in Kannagi Nagar resettlement-Chennai India.

I would like to seek your opinion and experience regarding this study. I expect to use 30 minutes of conversation and I will focus on women's safety.

Before we start, I would like to request for your permission to record this discussion, it will helps me capture all information which will be useful in analysis Also I want to assured that your opinion and information you will provides to me, will be treated in high confidentiality and will be used only for this study. The interview questions adopted from UN-Women (2010) and edited to fit Kannagi Ngar resettlement sites .

<b>SEMI- STRUCTURED INTERVIEW FORM</b>	
Institute for Housing and Urban Development Studies (IHS) Erasmus University Rotterdam, the Netherlands	
<b>Interview Form for resettled women in Kannagi nagar</b>	
Researcher Name :	Lilian Ignasy Msasi
Research Topic :	Effects of design and use of public spaces on women's perception of safety in Kannagi Nagar resettlement site in Chennai-India.
Contact of researcher :	+255765279985;msasilily@gmail.com
<i>All information will be treated in high confidentiality and used for this study only.</i>	
Information of the Interviewee	
Date of interview and time :	
Name :	
Age :	
Marital status :	
Education level :	
Contacts :	
<b>Questions</b>	
1. Could you explain to us what time did you came in Kannagi Nagar and under what scheme?	
2. From your experience you have can you tell us where did you feel safe place to live here or previously place? (kindly explain your answers)	

3. Could you explain to us kinds of violence against women happening in Parks, Bus stops, open spaces, alley (space between buildings) and streets (public space in Kannagi Nagar)?
4. Do you think public space in Kannagi Nagar is safe for the women of all ages to move about freely? If yes or no could you explain us when, where and how?
5. Could you explain how do you feel to walk alone during the day time? And after dark?
6. Did you experience any safety issues since you came here? When and what?
7. Have your female friends/family members ever experienced a safety issue in Kannagi Nagar, when and what?
8. Do you take any precaution when you go out? For example do you carry something for protection or avoid certain areas or using others methods describe?
9. In case you feel unsafe could you tell me what you do to ensure your safe while using public space?
  - a. Do you use your phone for help or any programme in your phone? No
  - b. Did you go to police? For any safety issues. No
  - c. Did you approach anyone else for help? No
  - d. Did you feel the response met your needs? Why or why not?
10. How many strange men can normally be seen circulating in public space? During morning, afternoon, evening and night none? Some? Various? Many?
11. What kind of activities do you perform when you're using public spaces in Kannagi Nagar?
12. Is there any activities take place in public spaces make you feel safer?
13. Which activities make feel you less safe?
14. Who is conducting these activities?
15. Are you participating in social and cultural activities that take place in public space in Kannagi Nagar?
16. How could women's feeling of safety in public spaces can be improved? For example Changes in design, services, men behaviour, culture etc. Suggest
17. There is any NGO or association within Kannagi Nagar dealing with the women safety issues happening in Kannagi Nagar?
18. There is any maintenance done in public spaces? Like cleaning, fixing broken facilities or not functioning street lighting?
19. Do you feel safe because of you husband?

#### **Interview Form for resettled men in Kannagi nagar**

##### **Questions:**

1. Could you explain to us what time did you came in Kannagi Nagar and under what scheme?
2. Could you explain the women safety status in previously location and here, how its differ
3. Did you know the violence against women happens in public space in Parks, Bus stops, open spaces,  
Alley (space between buildings) and streets (public spaces) in Kannagi Nagar?
4. Do you think public spaces in Kannagi Nagar are safe to be accessed by all women?
5. What do you think can be the reason that's makes women feel unsafe to use the public space in Kannagi Nagar?
6. From your opinion, suggest the ways which will help to improve the women safety in Kannagi Nagar

<b>Interview Form for NGOs working in Kannagi Nagar</b>	
Researcher Name :	Lilian Ignasy Msasi
Research Topic:	Effects of design and use of public spaces on women's perception of safety in Kannagi Nagar resettlement site in Chennai-India.
Contact of researcher :	+255765279985;msasilily@gmail.com
<i>All information will be treated in high confidentiality and used for this study only.</i>	
Information of the Interviewee	
Date of interview and time :	
Name :	
Position :	
Contacts :	
<b>Questions:</b>	
<ol style="list-style-type: none"> <li>1. Could you tell me the situation of women safety in public space in Kannagi Nagar?</li> <li>2. What are the issues that affect women's safety in public space in Kannagi Nagar?</li> <li>3. How does your organization work to address these issues?</li> <li>4. Could you describe the types of activities of your organization focuses on addressing women safety in public space?</li> <li>5. What are the key lessons learned from the development and implementation of the initiatives? What is your key successes and challenges of the initiatives?</li> <li>6. Do you work in collaboration with local authorities or other government structures on addressing women safety and violence prevention? If yes describe are you</li> <li>7. Do you have any plans of expanding your work on women safety issues? If yes, explain</li> <li>8. Do you know of other organizations/institutions/networks working within the resettlements on women's safety Promotion and violence prevention? If yes provides names and contact information.</li> </ol>	
<b>Interview Form for Leader of SHG in Kannagi Nagar</b>	
<b>Questions:</b>	
<ol style="list-style-type: none"> <li>1. Can you explain to me the responsibilities of the Women Self-help group in Kannagi Nagar?</li> <li>2. Could you describe the type of activities of your organization focuses on addressing women safety in public space?</li> <li>3. What are the key lessons learned from the development and implementation of the initiatives?</li> <li>4. What are your key successes and challenges of the initiatives?</li> <li>5. Do you work in collaboration with local authorities or other government structures on addressing women safety and violence prevention? If yes describe are you collaborating in what issues?</li> <li>6. Do you have any plans of expanding your work on women safety issues? If yes, please explain</li> <li>7. Do you know of other organizations/institutions/networks working within the resettlements on women's safety Promotion and violence prevention? If yes provides names and contact information</li> <li>8. Did you involved in any safety programs?</li> </ol>	

### **Interview Form for TNSCB**

#### **Questions:**

1. Planning history of Kannagi Nagar?
2. Which criteria do planners consider to design resettlement sites?
3. Are there guidelines for the design?
4. By who are they made?
5. Are they applied to all resettlement sites?
6. How do you address women's safety in the design of resettlement sites?
7. Are affected communities and women involved in the design?
8. Are safety issues a problem in resettlement sites?
9. Do you have a map of the area which you could share?

### **Interview Form for GCC**

#### **Questions:**

1. Can you explain to me the responsibilities of the corporation in Kannagi Nagar?
2. Could you explain why many open spaces in Kannagi Nagar are used different from the layout plan perhaps?
3. Could you tell me the type of maintenance and schedule of maintenance in Kannagi Nagar?
4. What is your opinion regarding improvement of women safety in Kannagi Nagar?
5. How about an unoccupied building there is any plan?

### **Interview Form for J-11 police station**

#### **Questions:**

1. Could you explain the situation of women safety in Public space in Kannagi Nagar?
2. Could you tell me trends of crimes against women are they increasing or decreasing In Kannagi Nagar? Specifically Rape, Physical assault, Eve teasing and rowdies
3. What are the issues affecting women safety in Public space in Kannagi Nagar?
4. How does police done to improve safety to the women of Kannagi Nagar?
5. Do you have the women police wing dealing with women issues?

### **Interview Form for Community Leader**

#### **Questions:**

1. Could you explain the existing situation of women safety in Kannagi Nagar resettlement site?
2. There is any safety crimes incidences happened Kannagi Nagar concerned women?
3. Did you have the records for this sexual harassment?
4. Did you know the places where are more unsafe for the women in Kannagi Nagar?
5. Why do you think these areas are unsafe?

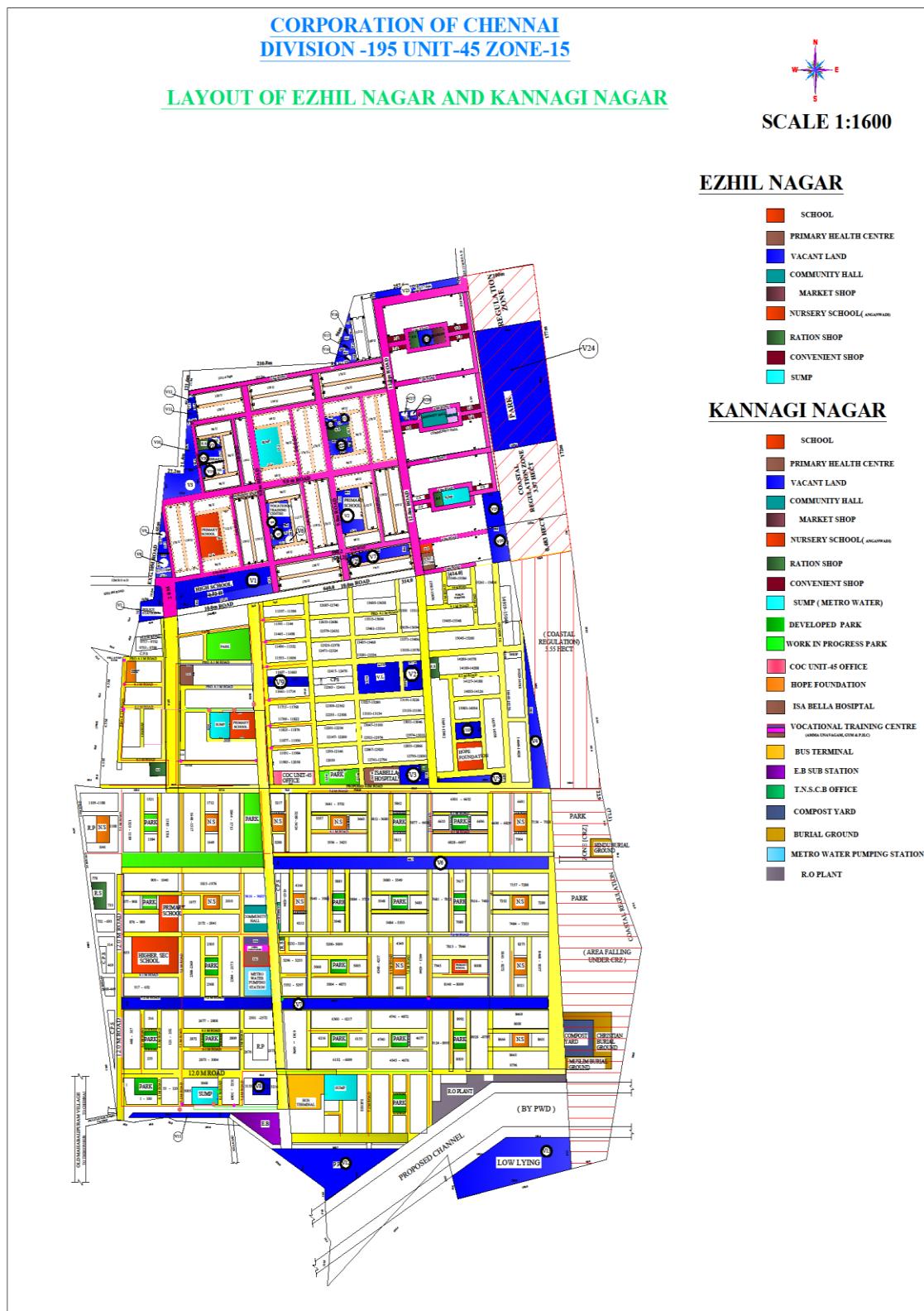
6. What types of public spaces do women use or avoid to use and why in Kannagi Nagar?
7. Do women go out alone, or in group or in the company of men?
8. Do women stay in public spaces and use them, or just passage through them?
9. What kind of activities do women perform when they use public spaces?
10. What kinds of violence do women experience in public space within Kannagi Nagar?  
When and where are they most likely to experience such violence?
11. What kinds of violence are considered most common? Are there gender –specific forms of violence against women (e.g. eve-teasing, sexual harassment) or is the concern mostly generalized violence (e.g. theft, other)?
12. Which age group of women in Kannagi Nagar most often experience violence?
13. There is any a programme or practices addressing violence against women in Kannagi Nagar? If so, what is the program about? Do you think is a good programme, if there is no programme do think it's important to have it?
14. Which safety issues require the most attention for the women in a resettlement?

### **FOCUS GROUP DISCUSSION**

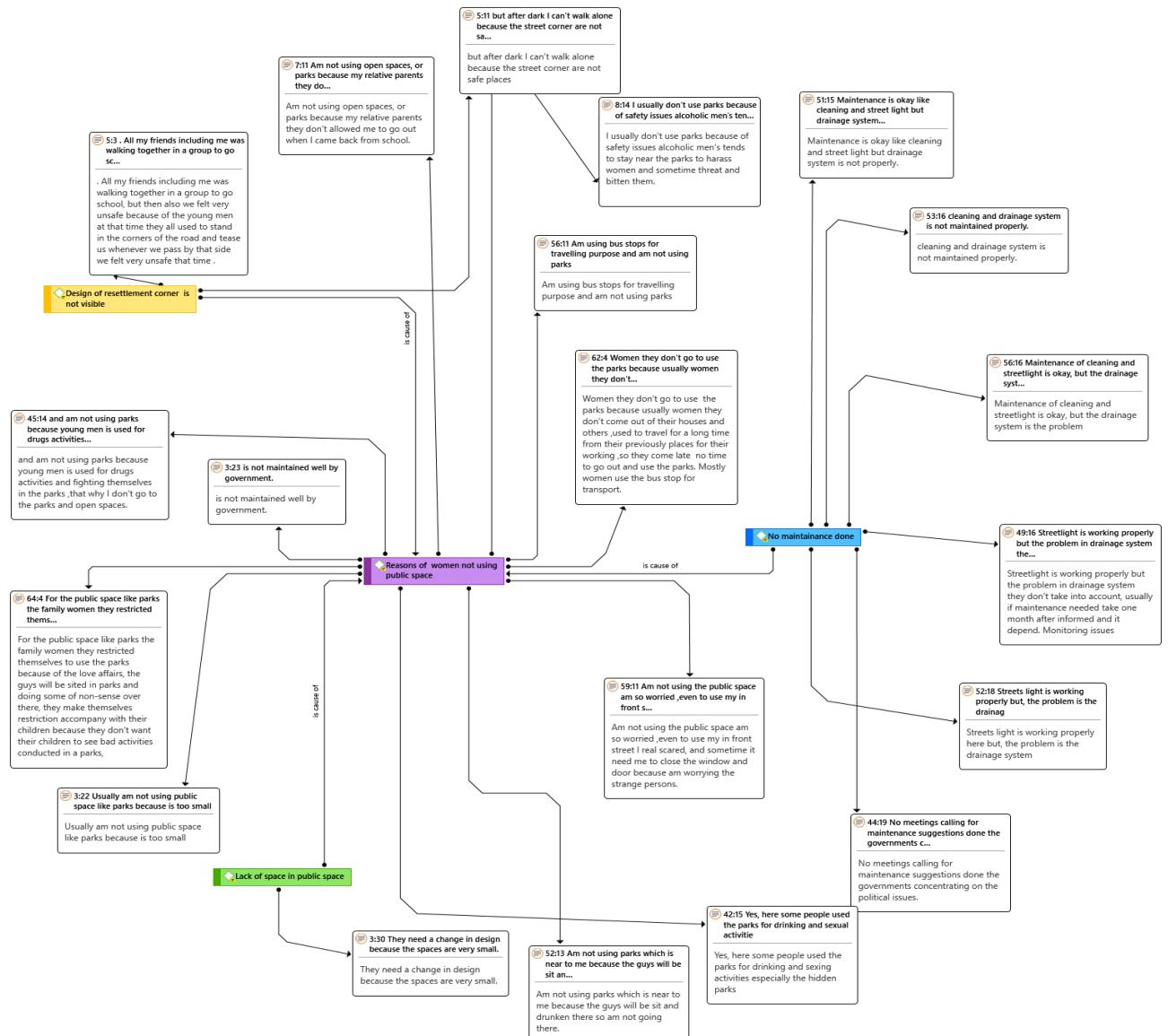
#### **Questions:**

1. Making the sketch and mapping the location where the women more unsafe and less unsafe and reasons of making them to feel less safe or unsafe in those places?
2. Do you use these places, how will manage to use these places?
3. How to improve the women safety in each specific area?

## Annex 2: Kannagi Nagar Layout plan



## Annex 3: Network show relationship of maintainace,design and use public space



## Annex 4: Time schedule for Research

Activity	Time			
1.Research proposal and preparation	April-June 2019			
2.Data collection	June –July 2019			
	Week 1 24June-30June	Week 2 1July-7July	Week 3 8July-14July	Week 4 15July-21July
3.Orientation in Chennai				
4.Conducting pilot semi-structured interviews to women respondent				
5.Participants observation				
6.Conducting semi-structure interview				
7.Conducting two Focus group discussion				
8.Physical observations				
9.Data processing				
10.Data Analysis, recommendation and conclusion	July-September 2019			
<b>Final submission</b>	<b>04<sup>th</sup> September 2019</b>			

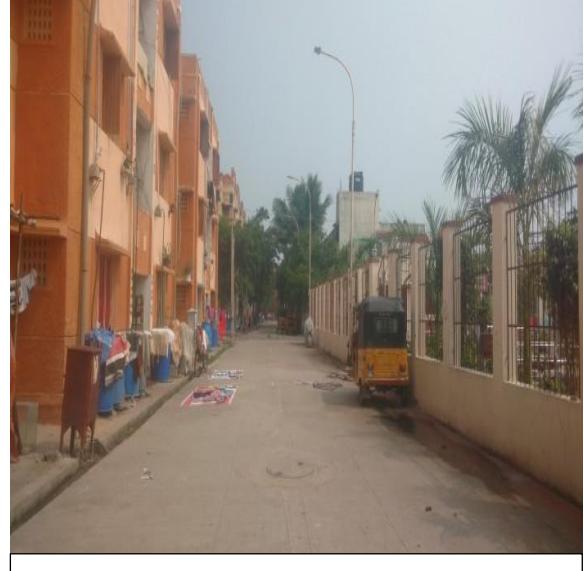
## Annex 5: Shows the summary of findings

Concepts/ Variables	Indicators	Findings
1. Women safety	Feeling on the presence of security camera	<ul style="list-style-type: none"> <li>Women feel safe with the presence of CCTV camera.</li> <li>CCTV camera inserted in few areas, main roads and some offices.</li> </ul>
	Feeling on presence and response police	<ul style="list-style-type: none"> <li>Women feel safe because of police station, and police patrol</li> <li>Blaming the police low response on the incidences</li> </ul>
	Feeling on the presence of functioning street light	<ul style="list-style-type: none"> <li>Women feel safe on availability of working streetlight</li> </ul>
	Feeling on the presence of stranger men in public spaces	<ul style="list-style-type: none"> <li>Some of women feel safe on presence of strange men's and others feel unsafe</li> </ul>
	Feeling on the presence of liquor shops near or in public spaces	<ul style="list-style-type: none"> <li>Not mentioned</li> </ul>
	Feeling on the presence of disorder activities in public space	<ul style="list-style-type: none"> <li>Women feel unsafe because disorder activities like fighting in public spaces, selling drugs, selling alcohol and sexual business</li> </ul>
	Feeling on walking alone after dark	<ul style="list-style-type: none"> <li>Feel unsafe to walk alone after dark</li> <li>Most of them they not walk after dark inside the streets</li> </ul>
2. Design of safe Public Spaces	Place where public place located, isolated or near to buildings.	<ul style="list-style-type: none"> <li>From the field observation location is one of the factors affecting the women perception safety. <u>Isolated public spaces women are fear to use it</u></li> </ul>
	wide, narrow streets	<ul style="list-style-type: none"> <li>Most of the women use the wide streets and rarely use the narrow one only at day time.</li> </ul>
	Clear visibility at distance	<ul style="list-style-type: none"> <li>From the field observations the design resettlement layout does not provides visibility element ,presence of sharp corner and unpruned trees block visibility</li> </ul>
	Signs of entrance and exit of public space	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>
	Cleanliness of public spaces	<ul style="list-style-type: none"> <li>Cleaning done to some extents</li> </ul>
3. Use of public space	Necessary use	<ul style="list-style-type: none"> <li>Women use public space for pumping water, small business, travelling purpose, pick and drop school children, domestic tasks, going to work.</li> </ul>
	Optional use	<ul style="list-style-type: none"> <li>Making stories, refreshing, relaxing, and walking around</li> </ul>
	Social use	<ul style="list-style-type: none"> <li>Most of the women are not participating in social activities but few of them.</li> </ul>
4. Strategies used to insure safety	Precaution while walking in the dark	<ul style="list-style-type: none"> <li>Most of the women avoiding some routes</li> </ul>
	Moving in groups	<ul style="list-style-type: none"> <li>Moving with company or group</li> </ul>
	Employing the services of personal security agency	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>
	Attending a self-defence course	<ul style="list-style-type: none"> <li>Few women in a resettlement attended the training self-defence training conducted by SHG and Asha Nivas NGOs</li> </ul>
	Use of ICT to gain and create awareness (e.g. safety pin)	<ul style="list-style-type: none"> <li>Not aware of its existence</li> </ul>

## Annex 6: Web media links

<p><b>Chennai's Kannagi Nagar: An address that denies livelihood to its residents</b>  <a href="https://www.thenewsminute.com/article/chennai-s-kannagi-nagar-address-denies-livelihood-its-residents-72791">(/article/chennai-s-kannagi-nagar-address-denies-livelihood-its-residents-72791)</a></p> <p>They were displaced from their original homes to 'beautify' Chennai, and now, they're stuck forever with the tag of the neighbourhood of criminals.</p> <p><b>K Praveen Kumar</b></p> <p>7Dec 2017 ,Thursaday</p>		<p>The neighbourhood, which has more than 150 listed criminals, is seen as the home of all crime in Chennai – which means employers refuse to hire anyone residing in Kannagi Nagar, be it for white-collar jobs or menial ones. With no means of livelihood, the of Kannagi Nagar and neighbouring Ezhil Nagar are now stuck in a cycle of poverty and crime.</p>
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*Source:* Taken from: <https://www.thenewsminute.com/article/chennai-s-kannagi-nagar-address-denies-livelihood-its-residents-72791>

<p><b>The Dark Side of Kannagi Nagar</b></p> <p>has not allowed her daughter to go to school since Diwali, simply because she is scared. A resident of Kannagi Nagar, Mary had watched from her balcony as gangs of young boys came out with weapons on the night of October 29. Three of the boys lost their lives that day. "But I can't really tell what happened. People are watching us right now. They might harm me" she whispers</p> <p><a href="#">Priyanka Parthasarathi</a>Follow      Apr 20, 2017</p>	 <p>The street where the murders took place</p>
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*Source;*<https://medium.com/@priyanka.parthasarathi17/the-dark-side-of-kannagi-nagar-71bb810d90a7>

## Annex 7: Photos of Research Methods



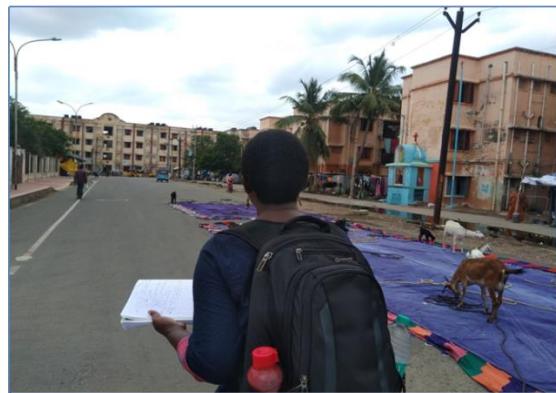
Interview with community leader



Interview with resettled women



Interview with key informant MCDS(NGO)



Field observation



Group 1 FGD



Group 2 FGD



Group 1 output of discussion



Group 2 output of discussion

## Annex 8: IHS copyright form

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