

# A Participatory Approach to Women's Safety: Case of Pune India

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## ABSTRACT

Crime and fear of crime affect many aspects of everyday life in our cities. Without question, ample reasons justify people's deep-felt concerns about crime where women are found more vulnerable. This paper analyses women's geography of fear in public open spaces which is a feeling of "fear" and "insecurity" derived from a feeling of to be under the threat. This fear of crime has a considerable impact of the daily lives of urban dwellers directly or indirectly by causing urban open spaces such as public parks, squares, plazas, streets not to be used frequently. It has been found that elders and women are more exposed to fear of crime in cities. Consequently, women have to prefer to stay closed and safeguarded places and to avoid urban spaces, streets, parks, plazas, public transportation vehicles and areas. After dark they feel insecure while walking on the streets. Often they restrict the right to freedom of movement of their children particularly girls in the city. This phenomenon largely restrains the involvements of women in public life of the city. Discussing the reasons for fear of crime in public open spaces, this paper is aimed to discuss the women's safety issues in public realm. It examines the reasons and degrees of fear of crime using a participatory approach with city of Pune as a case. Various theories discussed which shape women's geography of fear and safety audit of public spaces conducted to find out women's safety aspects in selected study area. The analysis endeavors to identify architectural planning parameters which affect perception of safety in Indian cities in order to find out problems and take necessary measures to render public spaces safe for women.

**Keywords:** Crime, women, audit, geography of fear, safety.

## I. INTRODUCTION

Crime and fear of crime affect many aspects of everyday life in our cities. Without question, ample reasons justify people's deep-felt concerns about crime where women are found more vulnerable. Fear of crime holds the women hostage in their own homes, prevents them from using public transportation, forces merchants to close their shops early, and discourages investment, thereby increasing the cost of living, working, or operating a business. Over the past two decades many criminologists have argued that a crime must be viewed as an event that occurs at a specific site in a specific situation (Brantingham and Brantingham, 1975).

Empirical studies have shown that crime is concentrated heavily in a few "hot spots" (Sherman et. al. 1995, 1989). Crime place research has examined crime incidence at special purpose structures and facilities (high schools, taverns, bars, liquor stores, apartment buildings, and public housing). Some studies on crime showed crime to be concentrated spatially and

temporally. Research has also focused on the vulnerability as well as the perceived levels of insecurity of different sub-populations to crime. Women, children, the elderly, and the physically handicapped are typically found to be the most fearful of bus stop and subway settings. City of Pune is facing increased crime rate against women in last two decades. Many areas of city are found unsafe for women this restrict their mobility and use of such areas and spaces. There is an urgent need to identify such locations and find out architectural planning characteristics responsible for making such spaces unsafe for women population of the Indian cities

### Crime and Built Environment

Consideration of spatial variables for criminological research has got importance since 19th century however it could attracted attention of professional geographers in 1970s only. It was happened due to importance given to behavioural dimension of criminal behaviour. Oscar Newman in his study (1972) on defensible space

correlated crime with environment. The study defined concept of opportunity for crime and blamed unidentified urban space segments for such possibilities of crime. On the basis of data taken from two cities, Swansea, Wales, and Oklahoma City, Okla, variables like physical aspects of design, land use, location, and social dynamics of an urban area were studied against offence. Crime has long been thought to be intimately associated with the physical environment in which it occurs. The studies conducted over last twenty years have identified the relationship quite complex and in different time and space setting have exhibited varying results. A study on the distribution of property crimes in time and space and another on the target selection processes of offenders arrive at the similar conclusion that there is correlation between crime and elements of perceived physical environment which includes nodes paths edges etc. This suggests that awareness about such relationship would help in framing crime controlling policies on one hand and use of space in effective and safe way on the other. And thus the issue needs to be studied in detail.

### **The Crime Theory**

Theories explaining occurrence of crime identify place as an important factor of crime. The issues of rational choice, routine activity theory and crime pattern theory can help in recognize the Importance of place for understanding crime. Routine activity theory and crime pattern theory provide different explanations for crime occurring at different places however all support each other in one way or the other. The areas of research related to crime concentration about particular facilities (e.g. bars, liquor shops) the high concentration of crime at some places and the absence of crime at others. The preventive effects of various place features include the mobility of offenders where studies of how offenders select targets etc. helps in understanding the importance of places. There can be classification of theories of crime as the theories that explain the development of criminal offenders and other that seek to explain the development of crime event. Explaining crimes rather than criminality has attracted the attention of researchers in which place has gained prominence.

It is found important to observe offender and crime event explanation supporting each other instead of observing them as competitors. Offender theories are expected to present causes for becoming criminal offenders and also the causes and circumstances which

make them quite such acts. Observation of individuals who are likely to become serious violent offenders, or high-rate offenders committing less serious crimes would help in developing crime prevention strategies. But theories about the development of criminality have not provided solid grounds for development of reliable preventive strategies and also it seems difficult that adoption of such strategies would prevent most of the offenders from committing crimes. Understanding of the importance of place in crime prevention efforts have been influenced by theoretical perspectives of rational choice, routine activity theory and crime pattern theory. A rational choice theory provides the reason to consider place as importance factor as it put forward the possible explanation of the behaviour of the offenders with respect to selection of their prey and committing the crime. There are conflicting views on the possibility of testing rational choice however rational choice perspective can provide the basis for development of testable propositions related to offender behaviour and crime event particularly when it has support of routine activity theory ( Felson 1987).

### **Spatial Aspects and Crime**

The issue of crime and place has been addressed by scholars as is evident in the study by French scholar conducted during first half of the nineteenth century which analysed the distribution of crime across regions with differing ecological and social characteristics (Guerry, 1833). Another study in U.S. also has examined crime from locational perspective and found that characteristics of the urban environment are critical for explaining the emergence of crime in specific communities (Burgess, 1925). At micro level efforts have been made to identify relation between specific aspects of urban design or urban architecture and crime (Newman, 1972, Jeffrey, 1971). Further the scope increased to include more characteristics of physical space and criminal opportunity (Mayhew et al.,1979).

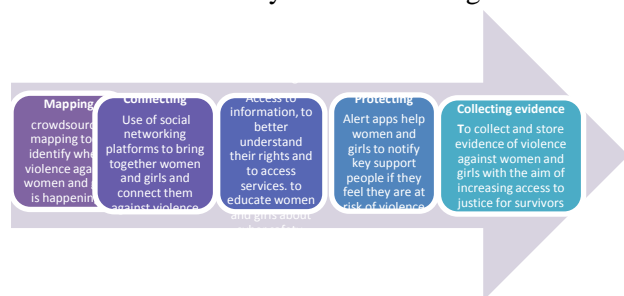
Places in this micro context are defined as specific locations within the larger social environment including neighbourhood, community, or city. Such micro places can be as small as the area immediately next to an ATM booth or as large as a shopping centre, or an apartment building.

Spatial Design influences largely the behaviour of people in various ways. The access to public spaces is controlled by social structure as well as individual

responses to the innate fear that depends upon various factors such as gender, age, education, etc as well as external environments that may be social or physical. Fear is the subject of research in various disciplines. Susan Smith (1989) has discussed sociology, psychology and geography of fear where geography of fear relates to the spatial aspects of place. The spatial perspective is related to geography, environment as well as architecture too (Listerborn, 2002).

### Role of Technology

New technology can help women to protect women from violence in 5 ways as shown in fig 1.



**Figure 1.** Role of Technology

**Crime Mapping with GIS:** Every crime has a spatial dimension and context it may be an address, street, ZIP Code, district or state the details of which can be obtained with GIS. This data can help in understanding of a crime occurrence its locational aspect in order to find out solutions and take necessary measures to stop a mishap in future. GIS can provide:

- Availability of law enforcement services in an area.
- Knowledge and information about crime in a specific area along with the country-wide crime data and information.
- An interactive user-driven website, mobile apps etc. could be created to help people
- Creating awareness at societal level regarding crime and available law enforcement services in an area.

It is capable of improving efficiency of the police and entire law enforcement department(s) at national level. Mobile based interactive mapping application is aimed is to develop a client-server architecture made accessible through a portable device(s) which communicate between authorized users especially the women and Master-Control segments like police, law enforcement authorities etc. through a two-way communication protocol in the corresponding

location/region. Such mobile apps are enabled with global positioning system (GPS) which are integrated with locational intelligence it may be an existing map-based services like Google Maps, Microsoft Bing Maps, or, Nokia Here Maps etc. through which location of that particular user can be traced. In case of emergency complaints can be logged through an interactive voice response (IVR) service. Police armed forces will communicate with the computer-aided dispatchers (CADs at the master-control segment, associated with a GIS based centralized server. They will be able to identify the proper location of crime (from where the complaint has been logged) on a map as they are equipped with on-board GPS enabled. In addition the real-time positioning for rescue operations, services offered can be tracked on a GIS map remotely through a centralized location. This system is designed to facilitate the work-force management via data-analytics and intelligence and enhancing women safety and security efficiently. The detailed information regarding nearest police stations, check-post etc can be made available to the registered users through “geo-fencing” services within the specified radar.

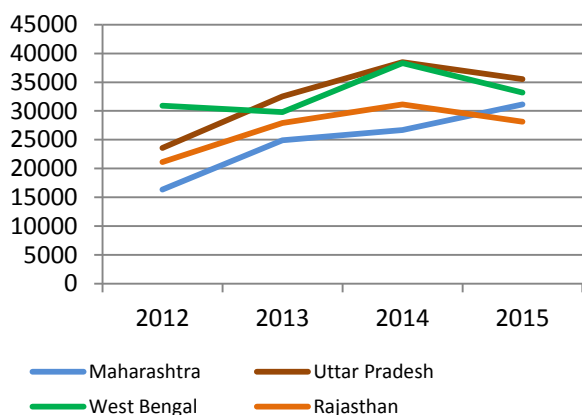
### Augmented Reality and Crowdsourcing

Augmented reality (AR) is a live direct or indirect view of a physical, real-world environment whose elements are "augmented" by computer-generated or extracted real-world sensory input such as sound, video, graphics, haptics or GPS data. It has become imperative to include citizens in public safety initiatives which can be done by through “crowdsourcing, which is reporting information using their smartphones by citizens about suspicious activities, terrorist activities, crime and vandalism etc. Another aspect is Augmented reality (AR) which is a live direct or indirect view of a physical, real-world environment whose elements are "augmented" by computer-generated or extracted real-world sensory input such as sound, video, graphics, haptics or GPS data. Crowdsourcing include sharing of information about assault and unsafe areas, share personal stories, and mobilize across cities and international borders (Manshable).

### Crime in Indian Cities:

Crimes against women increased 34 percent over the last four years in the country with cruelty by husbands and relatives being the most widely reported crime, according to the latest data from the National Crime Records Bureau (NCRB).The rate of crime against

women defined as crimes reported divided by total women population has gone up from 41.7 to 53.9 between 2012 and 2015. According to latest data released by the National Crime Records Bureau 2.24 million crimes against women were reported over the past decade where 26 crimes against women are reported every hour, or one complaint every two minutes, reveals vulnerability of women in India. .



**Figure 2.** Crime against Women in top 4 states.

Source: <http://www.firstpost.com>

Assault on women accounted for a quarter of cases last year, increasing 82 percent since 2012. Uttar Pradesh, Maharashtra and West Bengal and Rajasthan reported the most crimes against women in 2015, with 35,527, 31,126 and 33,218 cases, respectively.

**Table 1.** Rape Cases

City	2015	2014	%
Mumbai	712	607	17.29819
Pune	266	189	40.74074
Delhi	1893	1813	4.412576
Chennai	25	65	-61.5385
Kolkata	33	36	-8.33333
Bengaluru	112	104	7.692308
Ahmedabad	59	100	-41
Amritsar	27	34	-20.5882
Hyderabad	113	126	-10.3175
Ghaziabad	40	75	-46.6667
Lucknow	67	52	28.84615
Patna	63	54	16.66667

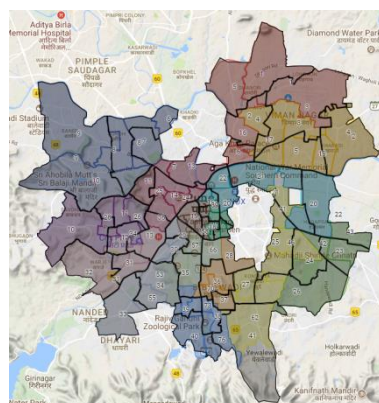
It is noticeable that in crime rate in showing a declining trend in Uttar Pradesh, West Bengal and Rajasthan while it is at an increase in the state of Maharashtra which is a matter of serious concern.

Pune and Mumbai have again shown an increase in the number of custodial and other rapes by 40 and 17 percent respectively. The NCRB data recorded 266 cases in 2015 as compared to 189 in 2014 in Pune, while 712 cases were recorded in Mumbai. Trailing Mumbai and Pune, the rape incidents in cities like Lucknow, Patna and Bengaluru have increased by 28.84 percent, 16.66 percent and 7.69 percent respectively.

## II. METHODS AND MATERIAL

### Exploration of Crime in City of Pune:

Pune is considered as the cultural capital of Maharashtra and referred as "Oxford of the East" because of the presence of several research and educational institutions in the city. The city has a traditional old-economic base as most of the old industries continue to grow resulting currently it is known for its manufacturing and automobile industries, information technology (IT) hub which attracts students, and professionals from India and abroad. It is one of the fastest growing cities in the Asia-Pacific region. The 'Mercer 2017 Quality of Living Rankings' evaluated living conditions in more than 440 cities around the world and ranked Pune at 145, second in India after Hyderabad at 144. The population of the Pune city is 3,124,458 as of the 2011 census. The migrating population rose from 43,900 in 2001 to 88,200 in 2005. The city of Pune is divided into 48 municipal wards.



**Figure 3.** Pune City Municipal Wards

Crime Index is an estimation of overall level of crime in a given city or a country where crime levels lower than 20 in considered as very low, crime levels between 20 and 40 as being low, crime levels between 40 and 60 as being moderate, crime levels between 60 and 80 as being high and finally crime levels higher than 80 as being very high. Safety index is, on the other way, quite opposite of crime index. If the city has a high safety index, it is considered very safe.

The crime index in Pune is 42.54 and safety index is 57.54. The overall crime rate in the city in 2016 has increased by seven per cent.

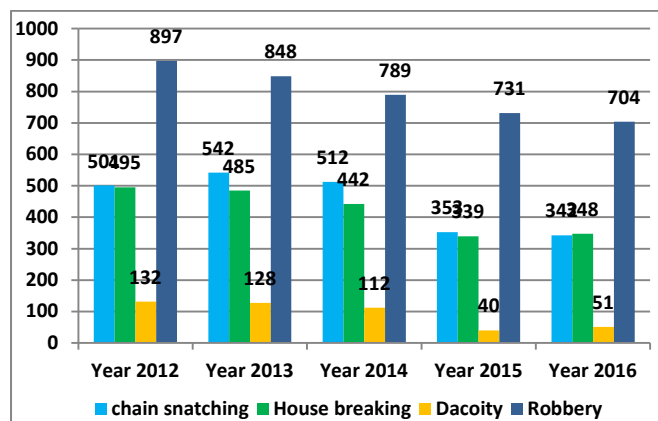


Figure 4. Crime in Pune

**Women's Safety Audit (WSA)** : A community safety audit is a way to create safer cities and communities. A safety audit can be used as a tool to bring attention to harassment and violence in public spaces and is found very useful in efforts of making cities safe particularly for women. This study uses a participatory tool that is used for collecting and assessing information about perceptions of safety in public spaces. It is a process in which people walk through a physical environment, evaluate the perceived safety, and identify ways to make it safer. This methodology, based on the premise that the users of a space can understand the space they use very well which was developed in Toronto, Canada (1989), by METRAC and has been adapted and used in over 40 cities around the world. The factors that are considered for conducting the safety walks (METRAC) are as below:

**Physical characteristics:** Lighting, signage, visibility, isolation, escape routes, maintenance

**Social organizations & Policing:** Assess ongoing community processes and actions to see whether they play a role in making women feel safer

**Usage of spaces:** Who are the users of the area; are there vendors, shops. Are there people of all ages and gender?

The safety audit was conducted in four phases, initial research and literature and review followed by reconnaissance site walks of outdoor spaces, interview

of key informants and questionnaire survey and final a photographic Survey.

Table 2. Women Population in Study Area

S.N	Ward	Population (F)
1	Deccan	7882
2	Aundh	8832
3	Karve Nagar	11344
4	Camp	7115
	TOTAL	35173

Sample included 0.7% of total population of the ward. Proportionate quota sampling used based on age group based on criteria set by METRAC.

Table 3. Quota Sampling Details

S.N.	Age band	Proportion %	Sample Size
1	16-30 Years	46	115
2	31-60 Years	40	98
3	Over 60	14	35
	TOTAL		248

In the first step crime data for Pune was obtained from. For analysis 4 wards selected based on Crime data viz. Deccan, Aundh, Karve Nagar and Camp.

### III. RESULTS AND DISCUSSION

The findings indicated that gender appropriate planning and design is characterized by availability of adequate safety measures in outdoor public spaces with ease of accessibility.

Results of semi-structured observations, in-depth interviews as well as questionnaire survey suggest that both men and women visit outdoor spaces mainly for activities related to health such as exercise, walking, jogging, and for socialization/ meeting friends.

The socio-cultural aspects such as geography of fear, ethic of care and gender role have emerged as key constraint factors which deter women from leisure participation in public realm. The supportive environment help women to roam, especially in same-sex peer groups to acquire spatial competence and self-

confidence and encourage them to use such spaces frequently and freely.

The physical environmental characteristics with reference to location, facilities and amenities, landscape elements found to be acting as major motivation factors for women to go out of their homes. Role of architectural planning features in four studied wards is presented in figure 5-6.

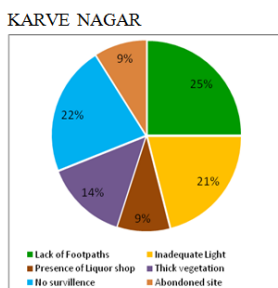


Figure 5. Architectural and Planning Features.

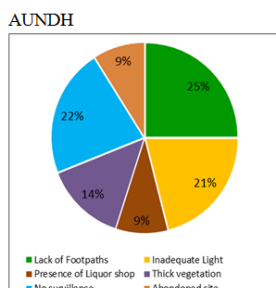


Figure 6. Architectural and Planning Features.

Provision of adequate amenities is important as the extent of participation in public life strongly depends on their availability especially in case of women cohort.

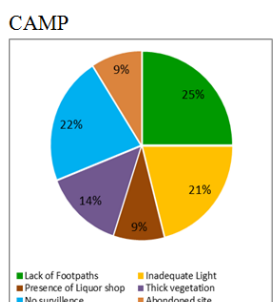


Figure 7. Architectural and Planning Features.

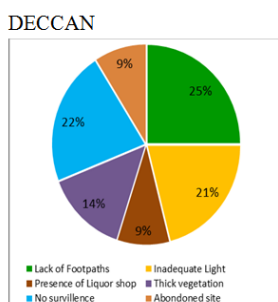


Figure 8. Architectural and Planning Features.

A number of outdoor spaces found unsafe because of the presence of thick vegetation which result in lack of visual connectivity. Many long stretches of isolated roads found without active and passive surveillance.



Figure 9. Place to hide and run away



Figure 10. Isolated street, No footpaths, absence of surveillance, lack of visual connectivity

Absence of footpaths resulted in increased vulnerability of women walking along roads both from vehicles as well as people. Inadequately lit spaces increase safety risk which is common phenomenon found in large number of cases. In addition to this presence of large abandoned spaces is another concern as there are often used for illegal activities and a space to hide for criminals.



Figure 11. Abandoned open space with vegetation and no surveillance.



Figure 12. Long stretch of road with no footpath and many places to hide.

Putting together the motivation and constraints factors, it has been suggested that the constraints of security concerns may be resolved by the increasing surveillance, provision of good security measures and enough quality lighting will enhance women's security in public places. The following problems identified which affected women's in study area in the present context.

- ✓ Lack of visual connectivity
- ✓ No policing.
- ✓ Vacant Open spaces
- ✓ Presence of Liquor shop.
- ✓ No footpaths.
- ✓ Absence of adequate lights at night
- ✓ Spaces to hide.

Lack of security measures result into less participation of women in outdoor activities which in turn adversely affects their quality of life. Particularly in the developing nation such as India, it has been established by this research that even in highly urbanized areas such as Pune there exists a large gap in safety of women particularly in context of public spaces.

#### IV. CONCLUSION

In Indian cities women experience violence or lack of safety, sometimes on a daily basis and it limits their rights and freedoms as equal citizens. Most of the areas are found unsafe for women particularly in the evening. Women's geography of fear is attributed to intra-personal, interpersonal as well as structural constraints where structural constraints are linked with spatial

characteristics of outdoor public spaces. Such spatial attributes associated with geography of fear have an adverse effect on their mobility.

The environments of some public spaces can become environments of fear while some potential spaces proved inaccessible to women at specific times. The finding from in-depth interviews affirms that spatial needs of women are different than men in terms of typologies, landscape elements, amenities and facilities, locational aspects, etc. The lack of consideration of these factors in spatial planning deters women to access outdoor leisure spaces in public realm by and large. Given the lack of safety to access and enjoy the places where they live they avoid certain places, routes and modes of public transportation. Women in Pune are not able to participate in public life, including political and community life frequently and this phenomenon adversely affect their psychological and psychosocial health and well-being, including their confidence and sense of self-worth. In India women's safety has often been excluded from key urban safety, planning and policy agenda. In case of Pune women are facing increasing safety issues which were not there in past.

This is because of many interlinked factors. Considering the importance of women's participation in social life there is an urgent need to address their physical, psychological and spatial requirement in urban areas of India. It calls for active participation of architects and planners in rendering city gender neutral.

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