3. CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This research is aimed to look into cultural context of social life of urban men and women with reference to use of leisure open spaces with Mumbai as a case study. The first part deals with the construction of a framework wherein this research can be conducted more specifically, it includes the issue of research methodology. This work integrates both empirical and theoretical knowledge in the belief that this can contribute to a more nuanced picture of the issues investigated. Second part includes a brief description about Mumbai to provide the context of research. In the next part methodological approaches and analytic procedures in terms of research schedule, logistics, insights, reasons for methodological decisions are discussed which are aimed to explore the social and environmental dimension that shape leisure life of men and women in urban environment. The criteria employed to ensure the quality of research are outlined and the ethical considerations and limitations of the study are stated in the final part.

3.2 Theoretical Framework

The subject of investigation is gender and leisure participation which represents a social phenomenon dealing largely with urban planning and design. It has been taken out of a real life context and therefore represents a piece of reality. This phenomenon has different geographical contexts with different social conditions, cultural traditions etc., which is dealt with an urban design and planning approach. It places the physical aspect in the centre of attention where physical intervention matters with reference to a socio-cultural phenomenon. It is considered that the exploration of a spatial and physical aspects of urban setting is not possible without an understanding of a range of other subjects such as culture, economy, social relations, social theory etc., because these structures influence or constitute
the physical space. This dissertation combines analysis and design/practice as well as theory and empirical data where the interaction between the urban landscape and the social life taking place.

This qualitative inquiry is focused specifically on the experience of leisure spaces by both the genders and the factors that are responsible for this experience from architectural and planning perspective. Urban dwellers are not able to use the public spaces equally and are deterred from using certain spaces due to various socio economic, and cultural factors which might relate to class, social status, ethnicity poverty, religion, gender, etc. Key observation provides an understanding of the emergence of social groups or networks with diverse socio-demographic background, the gender specific and time specific behavioral pattern in outdoor leisure spaces. Understanding of the phenomenon into the relationship between preferences of leisure spaces by men and women is the matter of concern. In addition to the key terms that have been discussed in previous chapter, those which provided theoretical foundation for this research are briefly discussed in the following section:

**Leisure**

“Leisure is a freedom provided by the cessation of activities, especially time free from work or duties” (Merriam-Webster’s collegiate dictionary, 1999). “Leisure may be defined as activity chosen in relative freedom for its qualities of satisfaction” (Borg & Clark, Year Unknown).

**Leisure Constraint**

“Constraints are limitations or barriers imposed on the individual that may lead to decreased or non-participation in an activity. On a general level, constraints are those factors that may limit participation and enjoyment in a given activity. Understanding constraints has contributed to our understanding of leisure behavior in general.” (Patterson, 2001, p. 30) “Leisure constraint can be defined as any factor which prevents an individual’s participation in a recreation activity or limits the
frequency, intensity, duration or quality of their leisure experience.” (Coble, Selin, & Erickson, 2003).

**Urban Public Spaces –**

“Zukin (1995: 45) defines public spaces as “places that are physically there, as geographical and symbolic centres, as points of assembly where strangers mingle”. Sennett (1990:27) adds to this by pointing out the attraction of several diverse activities as a further determinant of public space. That is why public space is crucial to the ‘liveability’ of a city. It offers space for the residents’ recreation and social interactions.” (Kürten, 2008, p. 67)

**Accessibility –**

“Accessibility is defined as ' the freedom or ability of people to achieve their basic needs in order to sustain their quality of life' (Lau & Chiu, 2003). Physical and psychological access is a basic consideration for all open space planning.” (Pasaogullari & Doratli, 2004)

**Gender Friendly / Gender Sensitivity –**

“It encompasses the ability to acknowledge and highlight existing gender differences, issues and inequalities and incorporate these into strategies and actions.” (Christodoulou & Zobnina, 2009)

**Appropriation of Space –**

“It is the ability to attach meaning to spaces, to communicate meaning, and to act in spaces in a self-regulated manner. Several studies identify gender differences in spatial orientation, (...) and the way people appropriate spaces for everyday action.” (Groß & Gryl, 2015)

**Gender Planning –**

“It is the process of planning that takes into account the impact of differing gender roles and gender needs of women and men. It involves the selection of appropriate
approaches to address not only women and men’s practical needs, but which also identifies entry points for challenging unequal relations (i.e. strategic needs) and to enhance the gender-responsiveness of policy dialogue.”(Christodoulou & Zobnina, 2009).

Gender Appropriate Spaces –

For the purpose of this study, it may be derived from above definitions that these are the spaces that acknowledge the differential spatial needs of both the genders and are designed with due considerations of them to make them meaningful (appropriate) for both the genders in everyday life. The concept of appropriate spatial design of public spaces stipulates enhancing participation and involvement over time in the physical development and management of public space. The concept is different than traditional planning where combination of spatial planning and efforts to restructure social interaction by enabling specific user groups to appropriate the area. This approach may be beneficial if implemented at the planning authority level (Parker, Delshammar, & Johansson, 2012).

Theories of essentialism as well as ethics of care are associated with approach of society towards building gender roles. Such gender roles in a particular society influence the behavior and approach of men and women towards way of life thereby controlling the quality of life through differential labor division, leisure and spatial usage for the same. Some of the aspects that contribute to quality of life incorporate leisure, access to green spaces, safety as well as equal opportunities towards life which puts forward the issue of women’s access to leisure. Safety pertaining to indoor or outdoor spaces is perceived differently by men and women where women perceive outdoor spaces more unsafe thereby associating factors with it such as spatial design, time, light and presence of people which is explained through various theories such as Jane Jacob’s theory of eyes on the street, CPTED, Defensible space theory, prospect refuge theory, space syntax theory, etc.
With the theoretical underpinning calling for further examination of these theories within specific geographical and socio-cultural context helped this study to formulate the research framework.

3.3 Research Design

This study adapted mixed methods of inquiry both Qualitative and Quantitative strategies. For constructivist\(^2\) premise of theory building, both naturalist\(^3\) and positivist\(^4\) paradigms are chosen for this research. The naturalistic paradigm is interpretive and the purpose of inquiry, adopted to understand and unfold the particular phenomenon, not to generalize to a population with limited representative data. Qualitative methodologies of inquiry as feminist methods with in-depth interviews and naturalistic observations with video tape recording with frame to frame microanalysis are used for data gathering methods intended for naturalist paradigm. Positivist paradigm explains behavior through measurable data using standardized tools for data gathering method of quantitative inquiry for precision and generalizability and to predict the trend.

An ethnographic approach\(^5\) is adopted to “explain the ways that culture constructs and is constructed by the behaviors and experiences of its members. It applies multiple data collection methods at a single phenomenon. The methods range from surveys to observational data, video tapes, photographs and recordings of speech in action”(Atkinson & Hammersley, 2011). The focus of inquiry in this research is three-fold. First is to find out people’s concerns regarding leisure, second is to explore their perceptions and preferences with reference to

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\(^2\)Constructivist – The theory that is emerged after the Grounded theory inquiries deals largely with socially constructed experiences and perceptions and provides wide band of diverse possibilities within the social structure. (Wuest, Merritt-Gray, & Berman, 2002)

\(^3\)Naturalistic inquiries employ direct contact of the investigators with the actors in the situation and the emergent strategies are used to design the study. These are contextual inquiries (Denzin & Lincoln, 2011).

\(^4\)Positivist – A framework that makes quantitative inquiries with experimental testing(Denzin & Lincoln, 2011).

\(^5\)Ethnographic Research: The research that focuses on an entire cultural group thereby describing their shared patterns of values, behavior, language and culture. Here, fieldwork is used as a method of data collection (Atkinson & Hammersley, 2011).
leisure spaces, and third is to examine the usage pattern of different leisure spaces in urban setting. Therefore, in principle, three suitable methodologies are required and selection of a variety of methodologies from different disciplines was a crucial part of achieving the objective of developing a suitable integrated approach. The appropriate approach towards such complex multilayered phenomena that involved subjective study of people’s perceptions was Grounded Theory approach which is described in the following section of this chapter.

Next part includes multiple photo sorting method which is used in this research to find out perception and preferences of men and women about outdoor leisure spaces based on landscape perception research paradigm. In next part, behavioral mapping methodology adopted in this work is explained which is in essence a naturalistic observations largely used in urban design research to examine quality of urban space. It is followed by in-depth semi-structured interviews inspired from feminist research scholarship. The hypothesis emerged from the three inquiries were served for the framework of quantitative survey that followed qualitative inquiry.

A model for this research was designed with the core concerns fractured into themes and then sub-themes where empirical as well as literature studies is needed (Figure 3-1). For multi-layered inquiries into complex varied behavioral patterns, perceptions and preferences were designed with varied adapted research methods to collate and confirm emerging categories. This process helped formulate the hypothesis whereby another inquiry into testing the hypothesis was conducted on a larger sample. This research was hence conducted in two stages –
Figure 3-1: Model for Research Design

Source: Author
Stage I - With constructivist Grounded theory approach, evolving patterns of people’s perceptions and preferences were studied with the help of different research methods or inquiries. The first stage deals with finding appropriate research methods, collating the data and outcomes from each method to evolve with a hypothesis and categories that may need further detailed inquiry (Figure 3-2). The qualitative methods used in the first stage are - Photo Sorting Survey, Semi-structured interviews and Naturalistic observations by video tape micro-analysis.

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<th>Grounded Theory Approach</th>
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<td>Photo Sorting Survey</td>
<td>Random Sample 20</td>
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<tr>
<td>Participant Observations Behavioral Mapping Video recordings and frame analysis</td>
<td>Random Sample – one each from typologies - Beach, Sea-face, Lakeside, Neighborhood garden, Medium size park, City Park, Joggers’ park and Playground</td>
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</tbody>
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Figure 3-2: Research Design – Grounded Theory Approach
Source: Author

Stage II – The emergent themes are further examined to test the hypothesis. For this survey was conducted with a larger sample covering geographical area of Mumbai Metropolitan Region – Urban with varied demographic characters (Figure 3-3).

3.1 Research Context
This quantitative inquiry was conducted in the context of urban areas within Mumbai Metropolitan Region. This ever growing and prospering city of Mumbai has its own singular character that marks life of people in Mumbai from other cities. Crowding, highly dense development patterns, large disparity between rich and poor, ever growing slum population, inadequate
infrastructure, etc. are few to represent some of its characters. The highly busy life presents meager time for leisure. Leisure spaces and patterns in Mumbai depend largely upon income groups and spatial character of various geographical parts of Mumbai with the availability of different typologies of open leisure spaces. The coastal area of Mumbai has natural leisure spaces such as beaches and designed ones such as sea-fronts. Another typology of waterfront is noticed at few places wherever lakes or ponds are conserved and lakefronts are developed. Similarly jogging tracks that were planned in few posh areas previously are now seen in various other parts of the city. City parks, playgrounds and small or medium scaled neighborhood gardens are part of development plans as major typologies of outdoor public leisure spaces.

Being a linear city, Mumbai makes its people to spend lots of time and energy in travel to work leaving them exhausted by the end of the day affecting their access to leisure in general. It further impacts women’s lives negatively due to extra burden of duties towards family.

Women from Mumbai are going through a tectonic shift in their lives. Aspiring for better career while balancing with confirming to gender roles, they struggle for equal opportunities in all aspects of life including safety, health and leisure. Due to recent incidences of crimes against women in
public spaces, Mumbai has earned a status of city that is becoming unsafe for women and the experiences and safety perceptions may change depending upon population and spatial character of various parts of Mumbai.

Such various parts of Mumbai are popularly recognized by its residents based on Mumbai’s growth patterns such as island city or South Mumbai, its northern and central suburbs, their exurbs farther extending towards peripheral regions of MMR, twin city of Navi Mumbai and rest of the identified areas as new growth centers towards South. These geographical parts have their own distinct social and demographic characters due to different in-migrants groups preferred to settle at certain locations. These parts were identified as different strata for sample selection.

3.2 Part II: Research Methodology and Methods

Methodological decision-making involves making choices that address the research questions. The selection of appropriate research approach is quite critical because a researcher’s view of social phenomena affects his/her acuity regarding reality, knowledge and its value. Such perceptions and approach in turn influence judgment of relevant themes and interactions. Hence, methodology for research into the role played by leisure in life of men and women must consider – Questions of ontology (the nature of reality of social entities); Epistemology (the nature of – and what is acceptable as – knowledge within a particular discipline); and Axiology (value judgments) (Saunders, Lewis, & Thornhill, 2009, p. 119).

A three-fold approach of this inquiry included leisure concerns of people, their leisure perceptions and preferences and differential usage patterns of leisure spaces. Developing integrated approach with employing suitable methodologies was crucial. Grounded theory approach was found to be appropriate for examining such complex multilayered phenomenon. To explore people’s perceptions and preferences towards outdoor leisure spaces,
multiple photo sorting method was used while for exploring differential usage patterns behavioral mapping with naturalistic observations was carried out at different leisure spaces. In-depth interviews from feminist research methods were conducted to explore women’s concerns regarding leisure. This three-fold inquiry led to design the framework for quantitative inquiry.

### 3.3 Methodological Framework

Mixed methodology approach towards grounded theory enabled this study to focus research questions that call for real-life contextual understanding of leisure as a phenomenon from multi-level perspectives as well as cultural influences. Multiple methods used for assessing magnitude and frequency of constructs for exploring the meaning and understanding of constructs which are integrated to draw on the strengths of each in addition to framing the investigation within philosophical and theoretical positions. The methodology is informed by feminist research which as per Reinharz can be applied to non-feminist research paradigms that uses a multiplicity of research methods where thrust is given to qualitative data but in addition to this quantitative data may be used in analyses (Reinharz & Davidman, 1992).

In order to explore role of leisure in people’s lives, this analysis draws upon theoretical frameworks from the feminist, social, behavioral, urban design and planning and landscape to inform all phases of the study which provided opportunities for the integration of a variety of theoretical perspectives (e.g., feminist theory, prospect and refuge theory ecological theories, complexity theory, stress theory, critical theories, or others). Being an inductive or theory-development driven research a systematic and rigorous form of inquiry was adopted that uses methods of data collection such as multiple photo sorting, feminist in-depth interviews, naturalistic observations and online structured questionnaire survey that are discussed in detail in the following sections.
Being an inductive or theory-development driven research a systematic and rigorous form of inquiry was adopted that uses methods of data collection such as multiple photo sorting, feminist in-depth interviews, naturalistic observations and online structured questionnaire survey that are discussed in detail in the following sections (Figure 3-4).

Combination of qualitative and quantitative investigation methods for data collection and analyses were used to seek in-depth understanding and impact of the phenomena in urban settings of Mumbai.

This research adopts Grounded theory method (GTM) which is a systematic methodology in the social sciences involving the discovery of theory through the analysis of data. It is a research method which operates almost in a reverse fashion from traditional social science research.

Instead of traditional way of research of formulating hypothesis and then testing it, in grounded theory the inquiries are made by data collection as a first step by various methods. The collected data is analyzed to identify key points that are coded and grouped into similar concepts. These concepts lead the researcher to identify categories that help formulate a theory. This is called a reverse engineering hypothesis (Grounded Theory, 2015) employed where complex interrelationship between prevailing social and structural processes influence behavioral patterns in a particular context (Wuest, Merritt-Gray, & Berman, 2002). Grounded theory methodology offers a powerful methodological framework. As a qualitative inquiry method, GTM focuses on everyday life experiences, help understand respondent’s perceptions, interactive, descriptive and depends on respondent’s
explanations (Gorra, Year unknown). Hence this method has been found suitable for this inquiry.

Adopting an appropriate grounded theory approach needs an understanding of the philosophical perspectives and the related epistemologies. Not adhering to explicit Grounded Theory tradition, this research is epistemologically closer to constructivist grounded theory approach. Constructivism is a research paradigm that denies the existence of an objective reality, “asserting instead that realities are social constructions of the mind, and that there exist as many such constructions as there are individuals.” Strauss and Corbin, in the evolution of grounded theory, acknowledge the importance of a multiplicity of perspectives and “truths” that help re-conceptualizing and reconstruction of theory that is richer and more reflective of the context by analysis of human behavior (Mills, Bonner, & Francis, 2006).

This approach is found more appropriate for this research as principally it supports participants’ perceptions. The very approach is also a central tenet of feminist research methods of inquiry making it ‘feminist grounded theory approach’ (Rohland, 2009).

The continuous comparison of the relationship within the data helps evolving a Core Problem or Core Concern, understanding the properties of the categories and relationships between them. This evolved framework is grounded in the data. The process of data collection is continued till no new variation in behavior emerges and the categories are saturated (Wuest, Merritt-Gray, & Berman, 2002).

**Stages of Analysis**

This research follows method of analysis as per GTM that incorporates four stages – The first stage incorporate ‘Coding’ that is identifying anchors that allow key points of the data to be gathered. The process of data analysis
includes first coding substantively. Each field note, transcription, or document is read line by line. Code names are assigned to each discrete data bit, which could be a sentence, a paragraph, or even a page. In the second stage, codes of similar content that allows data to be grouped are collected to formulate ‘Concepts’. As codes recur, the indicators are compared for similarities and differences. Eventually, codes are grouped together into ‘Categories’ or broad groups of similar concepts that are used to generate a theory. The last and fourth stage incorporates collection of categories that detail the subject of research to generate a ‘Theory’. The constant comparison of categories results in the formation of hypotheses about the relationships among categories. (Grounded Theory, 2015; Wuest, Merritt-Gray, & Berman, 2002)

Steps used for developing grounded theory in this study are –

1. Conducting four surveys to identify/explore indicators which constitute the phenomenon.
2. Transcription of the data collected in the surveys.
3. Developing codes from the data.
4. Comparison of codes and identifying repetitive codes to formulate concepts.
5. Reorganizing and merging concepts to formulate broad categories.
6. Based on the study, hypothesis is formulated and questionnaire prepared for final survey with respect to the outcome of the grounded theory categories.

3.4 Methods for Data Collection

The research involves largely an inquiry into social phenomenon related to physical aspects, the study deals with two approaches – the etic and emic. Etic is an outsider’s perspective generally a researcher whereas emic is insider’s perspective where researcher attempts to understand and describe the phenomenon from the particular culture’s own viewpoint. Etic perspective
enables a researcher to look at the phenomena from bird’s eye-view and make comparisons, whereas emic perspective offers more sensitivity and understanding toward the phenomenon and people (Pike, 1967). Both these perspectives when used together offer the most desired impact providing justice to an investigation of the phenomena (Morris et al, 1999).

This research adopts feminist methods of investigation of ‘emic’ type where female researcher makes inquiries with unstructured or semi-structured interviews who can understand the phenomenon as an insider earns trust and get more reliable and valuable information from the respondent.

Since the study deals with peoples’ preferences and perceptions, the survey methods adopted are largely qualitative research methods (Table 3-1). Qualitative research explores attitudes, behavior and experiences. Data from multiple sources with different investigation methods have inherent biases so using more than one source and/or method provides a more accurate picture.

Table 3-1: Qualitative Methods of Investigations

<table>
<thead>
<tr>
<th>Qualitative methods of survey applied</th>
<th>Instrument of survey</th>
<th>Method of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-structured Naturalistic observations</td>
<td>Video recording</td>
<td>Frame by Frame Microanalysis Recording sheets</td>
</tr>
<tr>
<td>Feminist methods of in-depth semi-structured interviews</td>
<td>Audio recording</td>
<td>Coding the data and analysis with Microsoft excel 2007</td>
</tr>
<tr>
<td>Comparative Methodological Research Method</td>
<td>Multiple Photo Sorting</td>
<td>Coding the data, building matrix and analysis with Microsoft excel 2007</td>
</tr>
</tbody>
</table>

Source: Author

For larger samples, quantitative methods of research were employed and detail structured questionnaires were prepared (Table 3-2). Quantitative research generates statistics through the use of large-scale survey research.
Table 3-2: Quantitative Methods of Investigations

<table>
<thead>
<tr>
<th>Quantitative methods</th>
<th>Instrument of survey</th>
<th>Method of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structured Surveys</td>
<td>Internet</td>
<td>Software – Microsoft Excel 2007</td>
</tr>
<tr>
<td>Questionnaires</td>
<td>Questionnaire sheets</td>
<td>Software - SPSS version 20</td>
</tr>
</tbody>
</table>

Source: Author

The data collected with various qualitative methods is coded and converted into quantitative format. This data was analyzed with the help of different software and the multi-layered analysis was performed for the identification of the phenomenon. The results from multiple sources and investigations were then trainagulated for reliable interpretation and evaluation to gain a better understanding and establishment of the phenomenon.

**Coding:** The interviews or other methods of collection of data provide information in the form of text from respondents. The interview sheets, audios and videos are repetitively and attentively studied to find cues and key phrases or words that are repeated. Open Coding is done on the basis of these repetitive key phrases. From these codes are evolved conceptual components. With constant comparative analysis of these codes and concepts and theorizing from it, emerged the broad categories. Hypothesis is evolved from this continuous process of data collection, coding, comparing, analyzing, and formulating concepts and broader categories.

The study is conducted in three stages each of which is discussed in details in following section.

**3.5 Stage – I: People’s Perception of Leisure Spaces**

The first part of this inquiry aimed to deal with varied experiences and perceptions regarding leisure spaces which invariably involve a natural setting. This part is informed from landscape research paradigm. Landscape perception is a response of people towards physical components of natural and man-made landscapes that largely depends on the socio-economic,
cultural background of the participant (Landscape Preference and Perception, 2013). Paradigms of landscape perception which is defined as a basic theory, a conceptual framework within which scientific theories are constructed, broadly include four types viz. the expert, the psychophysical, the cognitive and the experiential paradigms. Socio-demographic factors also affect landscape perception which includes gender as a trait affecting landscape preferences (Landscape Preference and Perception, 2013).

People’s perception about a landscape is directly related to the character of environment activities to be performed therein (Simonic, 2006) which are invariably different for men and women. Landscape research needs to address both landscapes and people equally.

3.5.1 Preferences and Spatial Perceptions

The process of obtaining Information through senses, its organization and interpretation is called as ‘Perception’. It is an interaction between living beings and environment (Kaplan & Kaplan, 1978). Appleton’s habitat theory proposes that landscapes responding to biological needs of people provide them experience of pleasure and satisfaction (Porteous, 1996). Stimulus (of such landscapes) have the arousal potential influencing individual perception that is determined by Berlyne’s four factors called as ‘Collative Properties’ – Complexity, Novelty, Incongruity and Surprisingness (Kaymaz, 2012). Men and women both have their own experiences and justifications for having such perceptions and preferences which is examined in this work.

3.5.2 Multiple Photo Sorting Method

The survey attempts to mine respondents’ notions of spaces by making them analyze the reasons for their selections, likes and dislikes. The research method was qualitative with visual cues. Tool adopted was multiple photo sorting survey method and the analysis was done with converting the data into quantitative type by coding it and building matrix with Microsoft Excel
2007. To identify what are the contemplations that formulate the decisions and perceptions free listing method is used as a part of multiple photo sorting method.

The aim of this survey is to identify the indicators for –

1. On which criterion people categorize the spaces.
2. What are the preferences in various urban landscaped areas by men and women and in what way they differ.
3. What are the factors that make men and women restrain themselves visiting such places alone irrespective of their likes and dislikes.

In this survey, multiple photos were used to extract information and enlist all the spatial indicators they can think of regarding their spatial preferences. Based on these indicators a final questionnaire was formulated for a survey of larger samples.

To make investigations into how men and women perceive spaces differently and their spatial preferences are different from each other, a survey method of ‘Comparative Methodological Research’ was used (Nyaupane, Lew, & Tatsugawa, 2010). The research method was qualitative with visual cues. Tool adopted was multiple photo sorting survey method and the analysis was done with converting the data into quantitative type by coding it and building matrix with Microsoft Excel 2007.

The methodology incorporates interpretations of photographs by people, insiders and outsiders. Interpretation of photographs is an established method in Comparative Methodological Research. Photographs eliminate other influencing factors such as environment, sound and weather conditions, people, etc.
This is sensory perception using only one sense (sight) and also has an advantage of reaching illiterate people and even avoids cumbersome process of survey questionnaire where people have to read a lot of text and write their responses (Nyaupane, Lew, & Tatsugawa, 2010)(Figure 3-5).

3.5.3 Participants and Settings / Sample Design and Ethical Considerations

Sample selection of 20 respondents was done on the basis of three criterions: Age, Gender and Income groups. Respondents were selected from various age groups ranging from 15 to 65, both the genders with composition of 7 men and 13 women and different income groups and education level. List of the respondents with their age, gender, income and profession is provided (Appendix I)

They were contacted formally with appointment for half an hour that would be required for the whole sorting process and interviews involved therein. They were informed that the responses will be audio recorded and used for the research purpose and also their names will be kept anonymous in the process. Their responses / interviews regarding the criteria based on which they sort the photographs three times were audio recorded and the files were transferred to the computer to transcribe the data. During this process, the respondents’ names were replaced with code numbers 1, 2, 3, … and so on.
3.5.4 Instrument

55 photographs were shortlisted in the first selection that were further after the pretest of two interviews, were reduced to 31 photographs. These photographs were then printed on 4” X 6” photo paper (matted to reduce overpowering effect of the colors and make them look more natural).

Selection criterion: Selection of the photographs was based upon three major criterions:

Six different typologies of recreational open spaces in urban set-up – playgrounds, neighborhood parks, City Level Park, Jogging Tracks, beaches and other waterfronts are selected for the study purpose. The instrument included 31 photographs which represent presence of various landscape elements such as water, soft-scapes and hard-scapes, greenery in terms of ground covers, shrubs, flower beds, shady trees, etc., visual barriers such as hedges, walls, etc, seats/benches, trellis, gazebos, jogging tracks, children’s playing instruments etc.

Photo sorting method has been used in three different ways to identify selection of indicators to categorize spaces, preferences and constraints or apprehensions regarding spaces. Accordingly, the responses with the number of photographs were marked three times the respondents grouped the photographs for various purposes as stated below.

1. Multiple Photo Sorting Method: Grouping of their own selections – Define and explain grouping criterion – discussions recorded.
2. Multi-Dimensional Scaling Method: 31X20 matrix was prepared based on binary co-occurrence of data – Respondents were asked to sort the photos on the basis of good or bad places as they perceive them or likes and dislikes – clear identification of positive and negative attributes from people’s point of view.
3. Respondents were asked again to categorize the photographs on the basis of whether they would like to visit these places alone, their inhibitions and fears.

### 3.5.5 Use of Software for Data Management and Analysis

There are various benefits of use of software in research projects such as data storage, tabulation, editing, coding, typesetting, graphics, data analysis, statistical analysis, mind-mapping, etc. though the actual research process is a responsibility of researcher’s brain (Gorra, Year unknown). For this study the collection of photographs and editing was done in Microsoft Power-point 2007 whereas transcribing, tabulation, coding and analysis were carried out in Microsoft Excel 2007.

### 3.5.6 Transcribing and Coding

At the time of interview, after each of three stages explained above, the groups or bunches of photographs is taken charge of and the numbers of the photographs are taken down as explained above. After which the respondent was asked to explain what was the criterion or reason for categorizing a photograph in a particular group. The audio recording was done of the whole interview as it was impossible in terms of time to take down all those reasons or explanation at the time of interview. The recording after transferring to computer was studied and restudied to take down phrases directly in Microsoft excel under the three different tabulations for three stages of interview. After all the interviews are entered in excel in this manner, in first stage, phrases used by the respondents were gathered. In second stage, depending upon the four point scale of the response (Worst, Bad, Good, Best) colors was assigned to each scale. Based on this, the likes and dislikes for each photograph was counted. For the third stage of interview, the response was binary – yes or no. Again, the responses were assigned a particular color and yes or no for each photograph was counted (Figure 3-6).
The detail analysis and results of this survey are discussed in next chapter.

3.6 Stage – II: Semi-structured Naturalistic Observations

“Geography in its various guises influences the cultural formation of particular genders and gender relations; gender has been deeply influential in the production of the geographical”

Space, Place and Gender; (Massey, 1994, p. 177)

It is observed that there is an imbalance between the number of male and female visitors to urban outdoor leisure spaces as well as their behavioral patterns (Wearing, 1998). This study endeavors to identify the usage patterns and preferences of men and women while striving to comprehend the causal factors.

The activities in the outdoor leisure spaces are categorized by Gehl as necessary, optional and social activities: 1. Necessary – activities that are necessary part of daily urban life; 2. Optional (Urban Recreation) – activities
that people would like to do and directly related to quality of the space offers; 3. Social – When people visit same spaces more frequently and spend more time for active and passive recreation. The optional and social activities contribute to make cities livable and spaces desirable (Gehl, 2002). The success of outdoor leisure spaces depends largely upon types of activities and the quality that the space offers. This study examines into the behavior and activities of the users of such spaces in the given settings.

Research into gender and outdoor leisure suggests that women are more involved in health related activities and socialization is an important factor for them. Most of the women prefer passive recreation generally at home (Bialeschki & Henderson, 1986) and it is true for both working women and home-makers. Women experience various leisure constraints such as lack of time, household work, childcare and other societal and family demands (Alberta Sport, Recreation, Parks and Wildlife Foundation (ASRPWF) and Travel Alberta, 1988).

It is found that usage and behavior patterns of men and women differ in outdoor leisure spaces. Women are found less in active sports and outdoor activities (Zuzanek, 1978). Women are more found preferring indoor activities such as pursuing hobbies, classes, etc. (Deem R., 1982).

Men and women have differential spatial preferences; women are more cautious regarding selection of locations and more sensitive to potential risks. It is also evident from the research that presence of less number of women signals a failure of spatial design (Whyte, 1980).

Considering the notable generation of stresses in urban areas and stress reduction causatum of green spaces, the design and existence of such spaces becomes a critical issue in urban design and planning. A research conducted by the author (Mahimkar & Gokhale, 2014) concludes that women seldom use outdoor recreational spaces for their own leisure activities and their usage pattern in such spaces is influenced by various factors such as –
• Risk perception and analysis – Many women did not feel safe outside, certain spaces are perceived by women as more prone to risk.
• Socio-cultural background and acceptance of the concept of women’s recreation exclusively for her own sake by society and herself,
• They have lots of restrictions on their attire, movement and time,
• They visit such spaces as duty towards family such as accompanying children or elderly.

3.6.1 Behavioral Mapping and Usage patterns

These outcomes inspired the further investigations into gender space dynamics. This study endeavors to identify the different usage patterns and preferences while striving to comprehend the causal factors. Taking insights from chapter Literature review this study examines into the behavior and activities of the users of such spaces in the given settings.

Evaluation of Architectural design is guided by people’s spatial behavior that is an indicator of success or failure of architectural design. Good understanding of human spatial behavior leads to help setting up appropriate design norms. Such understanding may be developed by a survey method called ‘Behavioral mapping’. It is a manual procedure of recording detailed observations of who does what where for a specified time period. Technological limitations in previous days allowed only costly and time consuming methods such as manual behavioral mapping and time-lapse filming (Yan & Forsyth, 2005). Development in technology and electronics today provides better, cheaper and less time consuming options for survey such as video recording and microanalysis.

The aim of this survey is to examine if men and women in the context of outdoor leisure spaces have different usage patterns and preferences in terms of location, ambience, and presence of people with particular characteristics in terms of gender, age, social strata, etc., if they behave differently and engaged
in different types of activities. The aim directs this survey to pose research questions –

1. How men and women both use outdoor recreational spaces and
2. What are the design factors that affect their visits and usage patterns so as to encourage them access such spaces to improve their quality of life that may help landscape architects, urban designers and planners to consider these preferences and perceptions while designing such spaces.

To achieve the aim, behavioral mapping survey in outdoor leisure spaces of identified five types was carried out with technological gadgets and methods. The research method used was behavioral mapping; tool was video recording and analysis was done by frame by frame micro-analysis methods (Figure 3-7).

3.6.2 Behavioral Mapping with Videotape / Photographs

Microanalysis

Research documentation with video tapes has been used in various fields such as ethnographic studies, anthropology, kinesics (Culture and body language), medicine, education, spatial relationships between people-proxemics, sociology, etc.

Video recording tool was used to record naturalistic observations as the purpose of this study was to capture actual activities and usage rather than their own impressions regarding their activities and usage. Manually
recording the detailed usage and movement patterns during specific time period and understanding spatial behavior will help interpret people’s preferences in a better manner. The success of the spatial design largely depends on number of users and to the degree of usage.

Collier states the significance of video recording as effective survey method as it records pragmatism of time and activities, interactions and psychological veracity as it captures ‘sparkle and character’ of an event. (Barness, 2007; Belk & Kozinets, 2005; Yan & Forsyth, 2005; Rosenstein & Sheva, 2002; Bank, 1995; Collier, 1986). Collier states that “only film or video can record the realism of time and motion or the psychological reality or varieties of interpersonal relations” (Rosenstein & Sheva, 2002).

3.6.3 Participants and Settings / Sample Design and Ethical Considerations

With due consideration to various types of open spaces as suggested by landscape studies such as -

1. Parks and gardens – including urban parks, country parks and formal gardens
2. Natural and semi-natural urban greenspaces – including woodlands, urban forestry, scrub, grasslands, wetlands, open and running water, wastelands and derelict open land and rock areas
3. Green corridors – including river and canal banks, cycleways, and rights of way
4. Outdoor sports facilities (with natural or artificial surfaces and either publicly or privately owned) – including tennis courts, bowling greens, sports pitches, golf courses, athletics tracks, school and other institutional playing fields, and other outdoor sports areas
5. Amenity greenspace (most commonly, but not exclusively in housing areas) – including informal recreation spaces, greenspaces in and around housing, domestic gardens and village greens.
6. Provision for children and teenagers – including play areas, skateboard parks, outdoor basketball hoops, and other more informal area (e.g. ‘hanging out’ areas, teenage shelters)
7. Allotments, community gardens, and city (urban) farms
8. Cemeteries and churchyards
9. Accessible countryside in urban fringe areas
10. Civic spaces, including civic and market squares, and other hard surfaced areas designed for pedestrians

(Dorset Council, 2015).

Following typologies were selected for this study in Mumbai. From above typologies, following are not taken under the purview of this study.
1. Private Open spaces.
2. Woodlands or Forest areas and national parks.
5. Public spaces that are not purely designed as leisure spaces such as market squares, roads or communication routes, etc.

As the contextual inquiries are designed in the urban context of Mumbai metropolitan region, types of public outdoor leisure spaces that are available were categorized and considered for this study are as follows:

1. Coastal areas of Mumbai provide natural sea-beaches
2. Sea-face (man-made/built) that provides just sitting along the sea-shore and walkway along it.
3. Development of lake-fronts as urban design projects, provided another typology
4. Planned neighborhoods provided small neighborhood parks
5. Medium Sized Parks that are larger than neighbourhood parks and smaller than city parks
6. Mumbai, with a status of financial capital and metropolitan city, attracts many tourists. Regional or city level parks are large scale spaces, visited by both, tourists as well as locals.

7. Certain areas of Mumbai witness jogging parks as a part of health awareness initiatives. Though this typology is followed in many private housing projects, only public spaces are considered for this study.

8. Playgrounds

<table>
<thead>
<tr>
<th>No</th>
<th>Typology</th>
<th>Place surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sea beaches</td>
<td>Girgaon Chowpaty</td>
</tr>
<tr>
<td>2</td>
<td>Sea face</td>
<td>Worli Sea face</td>
</tr>
<tr>
<td>3</td>
<td>Lake sides</td>
<td>Kachrali Lake, Thane</td>
</tr>
<tr>
<td>4</td>
<td>Neighborhood gardens</td>
<td>Gandhinagar, Dombivli</td>
</tr>
<tr>
<td>5</td>
<td>Medium size park</td>
<td>Veer Baji Prabhu Udyan, Dadar</td>
</tr>
<tr>
<td>6</td>
<td>City scale parks</td>
<td>Hanging Gardens, Malabar Hill</td>
</tr>
<tr>
<td>7</td>
<td>Joggers' park</td>
<td>Bara Bungalow, Kopri, Thane</td>
</tr>
<tr>
<td>8</td>
<td>Playgrounds</td>
<td>Shivaji Park, Dadar</td>
</tr>
</tbody>
</table>

Source: Author

For this study, one case from each typology was selected (Table 3-3) and the survey was carried out on the peak hours of summer evenings when maximum footfall occurs in outdoor recreational spaces.

3.6.4 Instrument

Research inquiries were made using qualitative method of spatial survey by video recording at the eye level with the moving digital camera or mobile phone camera of the selected leisure spaces at peak evening hours during summer vacations covering all spatial aspects, landscape elements with furniture and amenities throughout the area under reference. Video
recordings are much in detail facilitating natural observations and depend largely upon how people behave helping formulate design norms for such spaces (Whyte, 1980). Care was taken to record spatial settings of these spaces with reference to amenities and landscape elements with its softscape and hardscape. It was aimed to record activities of the users and if such activities are single or group.

3.6.5 Use of Software for Data Management and Analysis

For this study, data storage was done in the form of video files .mp4 as well as .MOV depending upon whether mobile phone or digital camera is used for the recording. The recordings have in their properties the date and time when the recording was done. Few recordings were to be edited for better quality output. For such editing the software ‘Any video Converter’ was used to increase number of frames in the file.

Each recording was immediately transferred to Personal Computer to be used for detailed observations and named as per the name of the leisure space that was studied. The folders were created for each such space where such files are stored that are also used to store further frozen frames or pictures from each video.

The videos are observed in the software ‘Windows Media Player’ first to get an overall idea of the character of the space and users and then repetitively to decide upon which the significant settings are where the video has to be frozen and a frame is to be considered for study. For such decision, following factors played a major role.

1. Significant difference in the settings
2. Significant difference in character / activities of users
3. Covering the whole length of video and not concentrating only on a particular part of it
4. Covering the whole geographical area of the leisure space under reference

5. Covering various amenities and vegetation characters as far as possible

Care was taken not to repeat similar pictures and from same geographical part of the space. After the decision of freezing a particular frame, the video had been paused and ‘Print Screen’ button on the keyboard was used. The picture was then pasted in the new file of software ‘IrfanView’ and then stored in the same folder where the video file was stored. These frames are named as numbers 01, 02, 03, and so on.

The Google Map of the specific Leisure space was also retrieved and with the ‘Print Screen’ command saved in the ‘IrfanView’ as stated before. While freezing the individual frame and numbering it, the location in the frame is marked on the Google map of the same place with red dot and numbered same as the number of the frame so as to co-ordinate and cross refer the location and the frame in map.

After freezing all the frames for a particular video file, each frame /picture is studied in detail.

3.6.6 Transcribing and Coding

Collier discussed five aspects of survey of Public spaces which are redefined and designed for surveying of Outdoor Leisure Spaces based on the literature review and other survey observations.
Based on the observation matrix suggested by Colliers, five layered observations are noted (Figure 3-8)–

1. Location - Context – Locality, Landmarks, Signs, Geographical features, etc
2. Appearance – Visual character, street and building characters, spatial Ambience and amenities provided – Noting down ambience / character of space in that particular frame with keywords
   a. Lonely/ crowded
   b. Private / open / visually permeable
   c. Entrance / corners from where maximum view is available
   d. Children’s play areas
   e. Character of vegetation – Wild / planned / lawn / big shadowy trees / hedges /flowering plants
3. Organization – Character of the neighborhood, typology of that open space
4. Functions – Use and Activities Survey –For this categorization of activities (keywords) is done prior to noting down.

Figure 3-8: Collier’s Matrix – Adapted for Behavioral Mapping Survey
Source: Author
a. Active – Walking, Jogging, Playing, Group activities, accompanying children/helping them play, gym

b. Passive – Sitting / standing at one place involved in chatting, observing other activities/nature, speaking on mobile phones

5. People –
   a. Users counting – Finding number of male and female users
   b. Types of users – visitors – locals / tourists / social strata of the visitors
   c. Noting down how many people are involved in particular activities.

**Figure 3-9: Coding Process – Behavioral Mapping Survey**

*Source: Author*

Notes regarding all above factors were taken in Microsoft Excel 2007 file in a tabular form under each numbered photograph. All the observations are noted and coded under each heading from the above points under consideration (Figure 3-9).
The details of this survey (Behavioral Mapping) analyses and results are discussed in the next chapter.

3.7 Stage – III: Semi-structured In-Depth Interviews

The need to discuss day to day life of women, their lifestyle, how they perceive and satisfy their own needs for recreation and well-being balancing the family-work duo and most importantly their geography of fear in public spaces was an important part of this inquiry. Such inquiry demanded methods where both interviewer and interviewee share same minority group (gender), social distance can be minimal and interviews may be more open and honest with better understanding level (Daucet & Mauthner, 2006) instead of objective, standardized and detached approach to interviewing. In-depth interviews in this work is guided by feminist research method which allows women to recount their experiences and the interviewer make the respondent talk freely picking up the relevant points and keeps the conversation going to receive the relevant information (Feminist interviews, 2012).

This method brought a different perspective to the practice of in-depth interviewing (Hesse-Biber & Leavy, 2007) required for this inquiry as compared to the traditional interview methods interviewer fixes the questions, directs the respondent towards answers in a particular format leaving less space for experiential expressions in respondents’ own words.

A subjective inquiry where perceptions and preferences are involved, a low structured method gives justice whereby providing respondent more freedom.
and flexibility to express and share their own experiences. Such in-depth inquiry provides much detailed and reliable information rather than leading the respondent by highly structured questions (Figure 3-10).

Data thus generated helped me to understand processes, especially those that emerge over time, provided detailed information about setting or context where the voices of participants are emphasized.

Sociological research establishes two different approaches to researching human beings namely ‘Emic’ and ‘Etic’ (Pike, 1967). Emic or insider perspectives help understand culture from native’s perspective and allow details study within one cultural group whereas Etic or outsider perspectives allow understand behavioural psychology and help make comparative analyses to generalize the studies of several cultural groups (Morris et al, 1999).

Considering Women as one cultural group, their perceptions regarding leisure in their life as well as leisure constraints were to be investigated. Hence Feminist method of inquiry from ‘emic’ perspective was selected for this study.

The investigations are needed to be made into psychological aspects to understand perceptions and the respondents are women. In-depth semi-structured interviews of women respondents were conducted, tool was audio recording and analysis was qualitative analysis coded and converted into partial quantitative data.

The aim was to identify Health Awareness in women, Risk Perception of women in Public Spaces, the barriers in the accessibility – socio-cultural as well as physical, Importance and frequencies of visits to recreational spaces for their own sake and Risk or fear perceptions that are further specified with following research questions (Figure 3-11).
1. What are women’s concepts of personal leisure and how important it is for them?

2. What are the leisure constraints they perceive and experience in urban Indian Scenario?

3. What are their experiences when they are in public leisure spaces and does it affect their perceptions and future patterns of visits to such spaces?

4. What are their efforts towards keeping themselves in state of overall well-being?

A guide questionnaire was prepared for the interviewers based on the points discussed above (Appendix II). While taking notes, a copy of questionnaire was referred and added key phrases in front of a question which could be elaborated after the interview to avoid disturbance by the time taken to write elaborative experience.

3.7.1 Participants and settings / Sample Design and Ethical Considerations

The sample of 41 women was selected so as to be composed of balanced selection from different age groups as well as from various income groups. All the respondents were convenient samples as more comfort was expected during the interview process. Respondents were contacted formally with appointment for minimum half an hour that would be required for apparently informal communication guided to get an understanding of respondents day-to-day life and leisure concepts and patterns. They were informed that the interview will be audio-recorded and used only for the
purpose of study and recording done for the ones who agreed willingly. Those who were not comfortable with audio-recording, manual notes were taken down with reference to the guideline questionnaire. The recordings were studied and notes were taken that are added to other notes. Three interviews were taken at the outdoor park with a group of women. After request and explaining the purpose of interviews three women volunteered for participation. Two interviews were conducted on phone because of the unavailability of time and travel distance. In the tabulation, names of the respondents were replaced by code numbers as Respondent 1, Respondent 2, etc.

3.7.2 Use of Software for Data Management and Analysis

For this study, interviews were audio recorded with the use of mobile phones. The audio files were then transferred to computer for further detail study. The manual notes from these audio files were taken. All these notes were then transcribed into a document in Microsoft Word 2007. Identifying the key phrases from each interview coding was done and tabulated in Microsoft Excel 2007.

3.7.3 Transcribing and Coding

The manual notes were studied to find key-phrases that are repeated in interviews that helped generalise a particular phenomenon. A document file containing all the transcripts of the interviews was prepared along with the questionnaire. The data then transferred in a tabular format using only key phrases to convert into text codes. Different files were created with reference to composition of sample, leisure patterns and leisure constraints (Figure 3-12).
3.8 Setting stage for Larger Survey

To extend the findings of qualitative inquiries performed during stage I, II and III and also to verify the hypotheses to larger and varied population, further inquiry was needed that would aim to get basic and authentic information about role of leisure and leisure places in people’s life. For this purpose, quantitative data from larger sample was required that could provide inputs from both visitors and non-visitors of leisure places. Questionnaires surveys were conducted in Mumbai metropolitan area with a sample size of 566. The inquiry addressed the importance, preferences regarding leisure in people’s life, the constraints, perception of risk in accessing outdoor leisure places, perceptions about spatial characteristics of outdoor leisure spaces, purpose and motivation of visit across the demographic variables such as age, sex, income, health, marital status, education, living arrangement, etc. A questionnaire survey tool was formulated, in which variables were identified from the findings of qualitative inquiries. The samples of residents within the study areas were chosen for wider and unbiased validity from the residents of the neighborhoods.
3.8.1 Aim

To make in-depth inquiry into the comprehensive phenomena that has been emerged from the earlier preliminary surveys, a questionnaire survey on larger sample was designed to **identify the role of Outdoor Leisure Spaces in people’s lives**—

1. Their Importance
2. People’s Perceptions and preferences
3. Geography of fear / Risk Perceptions
4. Other Constraints in accessibility and use
5. Usage Patterns

From the literature that dealt with leisure constraints, following factors that influence use of leisure space were considered to formulate the questionnaire: (Figure 3-13)

**Figure 3-13: Factors Influencing Use of Leisure Spaces**

Source: Author

- Cultural contexts – Gender, Age, family background, religion, income group, type of job, etc.
- Perceptions of Risk and Fear
- Preferences for Outdoor Leisure Spaces and type of leisure
- Leisure spaces nature and availability

Constraints / barriers and Motivations Comprehensive analyses of three different surveys that were conducted led this study to emerge with seven significant categories and formulate the hypothesis (Figure 3-14).

Referring to various factors that are put forward by Pasaogullari (2004) and the table of leisure constraints that was accomplished by categorization in this study (Refer Table 2-2, Page no. 38), close ended questionnaire where explicit response categories were offered. The reasons of designing a close ended questionnaire were - 1. Open ended and in-depth interviews were conducted in pilot surveys before on smaller samples from which emerged the categories
for this larger survey (Pasaogullari & Doratli, 2004). 2. As this survey was to be conducted on larger sample size of about 600, close ended questionnaire was found more appropriate (Check & Schutt, 2012).

The design and composition of the questionnaire was such that it would help achieve the aim of the survey and yield valuable information with respect to the research questions.

Figure 3-14: Formulation of Hypothesis by Grounded Theory Method
Source: Author
<table>
<thead>
<tr>
<th>Section no.</th>
<th>Theme</th>
<th>Categories</th>
<th>Type of Constraint</th>
<th>Frame of Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Information</td>
<td>Physical and Cultural Constraints</td>
<td>Intrapersonal (Demographic Factors)</td>
<td>Demographic factors or Intrapersonal factors do affect perceptions regarding leisure such as gender, age, education, occupation, income, marital status and family size. Such information provides insight to individual’s perceptions and preferences.</td>
</tr>
<tr>
<td>2</td>
<td>Recreation In My Life</td>
<td>Physical and Cultural Constraints / Intrapersonal</td>
<td></td>
<td>This question is about how do you find time for yourself and in what way you use it for your own recreation. It deals largely with ethic of care and motivations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Access</td>
<td>Structural</td>
<td>Factors that restrain individual to visit outdoors such as Distance between residence and leisure spaces and particular typology that is preferred</td>
</tr>
<tr>
<td>3</td>
<td>Personal Choices / Concerns</td>
<td>Safety</td>
<td>Intrapersonal</td>
<td>This is to know more about psychological / intrapersonal constraint and motivational factors such as comfort</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Structural</td>
<td>Attributes that control spatial preferences and perceptions such as Aesthetics, Maintenance, Dark/unlit areas, Time, Security System, Road safety, Traffic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interpersonal</td>
<td>It deals largely with Social construction of fear such as Eve-teasing, harassment, General violence, Questioning gazes, Robbery, Anti-social groups, active sports, crowded or lonely spaces</td>
</tr>
<tr>
<td></td>
<td>Amenities and Management</td>
<td>Structural</td>
<td>Various landscape elements / furniture such as locality, maintenance, toilets, drinking water, dustbins, shaded areas, security, lighting, pathways, signages, jogging tracks, play equipment, newspaper stand</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aesthetic Appeal</td>
<td>Structural</td>
<td>Ambience of the space such as water bodies, sculptures, vegetation character</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Activities</td>
<td>Interpersonal/ Intrapersonal</td>
<td>Type of leisure – active / passive – walking, seating/observing, chatting, playing, group activities, etc.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Views regarding significance of leisure in life</td>
<td>Intrinsic and Extrinsic Motivations</td>
<td>Interpersonal</td>
<td>Encouragement by family members for leisure participation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intrapersonal</td>
<td>Interest in hobbies, sports, health consciousness</td>
</tr>
</tbody>
</table>

Source: Author
Questionnaire was divided in the factors influencing perceptions that are outcome of previous surveys, though the questions are arranged according to the flow of the questions to be answered (Table 3-4).

- Cultural context with reference to demographic character
- Access
- Safety
- Amenities and Management
- Aesthetic appeal
- Activities
- Intrinsic and Extrinsic Motivation

After making the sections largely depending on the seven significant categories, questions were detailed and designed carefully for the flow or order of answers as well as wording so as to maintain simplicity and clarity and avoided any confusion or ambiguity. The length of the questions was kept as short as possible.

The questionnaire was divided into four major sections. Under each section heading, a frame of reference was provided in brief to explain the background and need of the questions and to provide an idea or directions regarding how to answer that particular section. The questionnaire was tested offline and online to ensure that the responses provided were mutually exclusive and exhaustive. The pattern for responses was designed so as to provide for disagreement.

**Numerical Rating or Likert scale** was the most appropriate tool for such survey. Response choices range was specified in each such question (Check & Schutt, 2012).

**Matrix Questions**: As the questionnaire had sections with a particular focus, there are series of questions with the same response choices. These were ‘Matrix Questions’ in the form of table in which column headings provided for response choices and Row headings for the series of questions.
Multiple Choice Questions with check boxes were provided where respondents have to choose options more than one.

3.8.2 Tool Testing

Pilot testing of the questionnaire was tested before administering to larger sample to discover flaws and possible causes of confusion such as textual composition of question leading to confusion that may result into no or invalid response to that question.

Step One: 25 questionnaires were distributed to friends and contacts on 1st Feb 14, to verify feasibility and clarity of the questions. After receiving the responses, it is further analyzed and few questions were altered with different composition of the same questions whereas few questions were added.

Step Two: After the additions and alterations, the new questionnaire was floated online on 19th Feb 14 as next step. The major flaw was noticed in the online responses that for multiple choice questions, respondents had only one option to choose and choosing more than one option simultaneously was disabled for online responses. The link for this questionnaire was mailed to about 100 contacts from which 77 responses were received. Some of these respondents mailed back the feedback mentioning the problems while filling up the questionnaire. Due to the flaw in response to multiple choice questions, all these 77 responses were not included in the analysis.

The modified questionnaire was redistributed to 25 contacts from step one to fill in manual responses and 25 contacts from step two to fill in online responses again. When the questionnaire qualified this stage successfully, the responses were examined for statistical analysis in Microsoft Excel 2007.

3.8.3 Testing for analysis

After data input and tabulation of the responses in Microsoft Excel 2007, frequency tables were generated to analyze and obtain an early impression of
the results. This testing of analysis ensured that the questionnaire survey would fulfill the aims and yield valuable data for this overall study.

3.8.4 Survey Administration

Administration used for this survey was a ‘Mixed Mode’ survey. Mixed-mode surveys allow the strengths of one survey design to compensate for the weaknesses of another and can maximize the likelihood of securing data from different types of respondents (Check & Schutt, 2012; Leeuw, Hox, & Dillman, 2008). The questionnaire was sent electronically to respondents who had e-mail addresses and administered in person with those who do not. Phone reminders were used to encourage responses online. As the same questionnaire and response choices were used for all the modes the impact of mode effects was substantially reduced.

The printable form of the questionnaire prepared for in-person survey is attached for the reference (Appendix III). To reach more respondents by in-person paper survey, the questionnaire was also translated and printed in Marathi (Appendix IV). In synchronization with this questionnaire, an online questionnaire also was prepared using Google forms (Appendix V). The survey questions were same using same text for both methods of administration so that the results could be compiled and synchronized.

For administration of this survey combination of three different methods was used:

1. In Person – To balance the samples from different strata as mentioned in stratification as well as from different demographic character such as gender, age, etc. efforts were made to reach more people using household surveys.

2. Internet Survey / Electronically Administered – The online questionnaire that was created in Google Forms was mailed inline or a link was sent to the respondents. Such emails had a cover letter
requesting a response along with statement of purpose of this research and assuring the anonymity of the response. The covering text was personalized depending upon the formality or informality of the relationship with the respondent. The form was embedded inline and also a link to the form was provided.

https://docs.google.com/forms/d/1ccnSKKr1ZwkgefQAgJD4-jtuHpzPkopIt2XVuRevvqg/viewform

3. Group Administration: Some questionnaires were distributed at the parks or such leisure spaces so as to reach the users of such spaces. Participants in the Group activities were requested to fill the forms after explaining them the purpose of this survey.

3.8.5 Distribution of the Questionnaire

800 questionnaire forms were distributed of which received responses were 673. Of the total responses, 413 were in-person surveys and 260 were online. After the tool testing, 77 responses were to be abandoned and questionnaire was modified. Excluding 30 incomplete responses, 566 valid and cognizable responses were used for analysis.

3.8.6 Physical setting and Sample Design

The study area selected was Mumbai Metropolitan Region, for which the Stratified Sampling method was found most appropriate so as to cover the all urban areas within MMR. The method is further explained below in detail with the steps in method of selection of sample.

The stratified sampling needs to address –

- The bases of stratification, i.e. what characteristics should be used to subdivide the universe/population into strata?
- The number of strata, i.e. how many strata should be constructed and what stratum boundaries should be used?
• Sample sizes within strata, i.e. how many observations should be taken in each stratum?

The stratified sampling for the survey was two-fold. For identifying proportionate sample of urban population, four districts that comprise Mumbai Metropolitan Region fully or partially were considered (Table 3-5). Further, for distribution of sample throughout the region, different zones in MMR that are popularly recognized by its people are considered as different strata.

Table 3-5: District-wise Urban Population within Mumbai Metropolitan Region

<table>
<thead>
<tr>
<th>Population of District - census 2011</th>
<th>Total Population (No.)</th>
<th>Percentage of Urban</th>
<th>Urban Population (No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thane</td>
<td>110,60,141</td>
<td>77% Urban</td>
<td>85,16,309</td>
</tr>
<tr>
<td>Raigad</td>
<td>26,34,200</td>
<td>36.8% Urban</td>
<td>9,69,386</td>
</tr>
<tr>
<td>Mumbai Suburban</td>
<td>93,56,962</td>
<td>100% Urban</td>
<td>93,56,962</td>
</tr>
<tr>
<td>Mumbai City</td>
<td>30,85,411</td>
<td>100% Urban</td>
<td>30,85,411</td>
</tr>
</tbody>
</table>

Source: (District Census 2011)

The sample size for this survey is as follows (Table 3-6) –

Table 3-6: Zones in MMR (Urban) for Stratified Sampling

<table>
<thead>
<tr>
<th>District</th>
<th>Stratum (Zones)</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mumbai City</td>
<td>Zone 1 South Mumbai</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Zone 2 Central Suburb A</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td>Zone 3 Western Suburb A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zone 4 Central Suburb B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zone 5 Western Suburb B</td>
<td></td>
</tr>
<tr>
<td>Thane</td>
<td>Zone 6 Vasai Virar</td>
<td>174</td>
</tr>
<tr>
<td></td>
<td>Zone 7 Thane – Bhivandi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zone 8 Kalyan-Titwala-Badlapur</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zone 9 Navi Mumbai</td>
<td></td>
</tr>
<tr>
<td>Raigad</td>
<td>Zone 10 Khanda-Panvel</td>
<td>189</td>
</tr>
<tr>
<td></td>
<td>Zone 11 Uran-Rasayani</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author
Details of Stratified sampling in the survey

1. Define the target population – Urban Areas of Mumbai Metropolitan Region
4. Evaluation of the sampling frame – Sample from each district is selected so as to avoid under, over or multiple coverage, to reach a sample size of around 500 to 600.
5. Division of the sampling frame into strata – Each district is further divided into 11 commonly known geographic zones of Mumbai so as to cover whole MMR and avoiding overlapping.
6. Each zone is numbered as Zone 1, 2, 3, …
7. Further sample is selected from each stratum depending upon the physical area and the level of urbanization of each stratum randomly. The stratified random sampling is done with due consideration to the selection from various groups such as Gender, Age, Education, Income and Ethnicity / Cultural Context.

3.8.7 Units of Analysis

- Units of analysis (Cases) - Residents of Mumbai above age 18
- Universe / Target population - All residents of Mumbai
- Sub-set of population /Samples /cases are selected from different geographic Zones of Mumbai, its suburbs and Greater Mumbai (Figure 3-15)(Appendix VI)

3.8.8 Methods of Data Collection and Management

For in-person paper surveys, the data collected was on individual questionnaire whereas for online surveys, data was automatically collected in
tabular form in Google Sheet. This data was imported in Microsoft Excel 2007 file in which responses from in-person surveys were also filled in manually.

Figure 3-15: Geographical Strata / Zones selected in Mumbai Metropolitan Region (Urban)
Source: Author

3.8.9 Methods of Coding and Analysis

The manually entered data and data imported from Google Sheet in Microsoft Excel was coded first and then imported to statistical analysis software SPSS 20 (Statistical Package for Social Scientists).
Using Microsoft Excel at an early stage of data collection and coding helped the study to collect data fields where there were more number of characters in questions as well as responses. It also helped pilot analysis to provide general impression regarding data set by automatically creating graphs.

For advanced statistical analysis of the data, it was imported to software SPSS that is especially designed for advanced statistical tests such as one/two way Anova, Chi-square tests, T-tests, Correlations, etc. In SPSS, false entries could be prevented due to preset data ranges.

The data analysis is significant to express and interpret relationships between two or more variables that helps formulate a theoretical model. A theoretical model is an abstract depiction of the possible relationships among variables. Theoretical models for statistical analysis evolve from the research questions. Descriptive statistics are the numerical, graphical, and tabular techniques for organizing, analyzing, and presenting data. It is an abridged version of the collected data. (Argyrous, 2011). There are various statistical tests that were applied to the collected data depending upon types of variables and relationship whether between two or three variables in software SPSS. Detail statistical analysis is submitted in soft copy format. The condensed data analysis is provided in Chapter Five.

### 3.9 Summary

Study of interrelationship of gender and outdoor leisure in Indian urban context is the major concern of this research. Theoretical framework for this study was adopted based on the various theories that are discussed in this and previous chapters. Few of the various theories that are referred are theories of leisure, quality of life, ethics of care, Maslow’s theory of five levels of needs, Jane Jacob’s theory of eyes on the street, CPTED, Defensible space theory, prospect and refuge theory, etc. To achieve the aim of rendering outdoor leisure spaces gender appropriate, insights from these theories are
drawn to conceptualize the frame work for empirical examination in the physical settings of city of Mumbai.

This chapter has considered the value of using empirical research in inquiry and identified the selection of grounded theory methodology as being appropriate to meet the objectives of this research. The value of situating this research within the domain of architecture, landscape, urban design and planning as well as social sciences is to get closer to developing an understanding of issues that matter to those in the practice context and to move understanding forward in a well-reasoned and well-informed direction. The choice of methodology is determined by the purposes of the research study and the notion of ‘fitness for purpose’ is of key importance (Cohen, Manion, & Morrison, 2005, p. 73). The methodology adopted in this study encompasses the range of approaches and rationale used to collect data. This study sets out to measure intrinsic motivational levels and to ascertain the opinions and views of the sample group. Thus, the data collection in this study employs a blend of quantitative and qualitative research methods. Qualitative data obtained and analyzed to get more detail about the subject under consideration, while quantitative data is supposed to provide more precision. By using research methods from both approaches the methodology is developed to provide a rich insight into the phenomenon of leisure in life of urban men and women. This chapter discussed conceptual underpinning this research and the rationale for the research design. Further, the context of the study in terms of the geographical, socio-cultural and socio-economic context of study area Mumbai is presented. Research methodology, the procedures, protocol of inquiry of both qualitative and quantitative methods are explained, sampling and data collection procedures, measures of the study variables, and data analytic techniques used are described. In the ensuing chapter, the details of observations, analyses and results from empirical work are discussed in next Chapter Five.