

Chapter 3- Research Methodology

3.1 Research Background

Kolkata as a city has been documented and analysed from various social and spatial aspects. Like all old cities, the 'essence' of the city of Kolkata is largely found in its old residential areas. The city has a distinct spatial structure with defined old neighbourhoods developed incrementally since the time of the city's existence. The socio-economic and spatial characteristics of these neighbourhoods are distinct and reflect the historic evolution of the areas. The layering of development can be traced in most cases through a documentation of the neighbourhoods. However, in the process of transport corridors being developed, linking the entire city, with its old and new areas interwoven, the old areas sometimes come within transition zones facing the pressures of redevelopment. The nature of infill development in such areas often takes a course deviating from the earlier development to such an extent, that the character of these areas is obliterated. Yet, in the collective memory of the residents of the city, the perception of many of these areas remains etched 'the way they were', rather than the transformed new look. Films and popular fiction set in Kolkata further help in retaining these images by a detailed documentation of the settings in many of these neighbourhoods.

What then becomes an interesting area of research is identifying which areas qualify as these 'grey zones'⁷⁹ of the city, which are intrinsically identified as proto-typical neighbourhoods, but are undergoing transformations to the extent that they may lose their identity. Further, it becomes an area of academic interest to be able to identify which attributes of the neighbourhood are vital to the spatial and built identity of the neighbourhood, which when changed, alter the character of the built environment. If the identification of these attributes is possible to be quantified with some precision, in the case of future development scenarios, the nature of developments can be guided in a more sensitive manner to be able to retain the overall image that the neighbourhood is associated with.

A large body of work done by urban theorists discuss cities not only in terms of their urban structure but also their history, collective memory and perceptions, as complex collages of the past, present and future forms, coexisting simultaneously. In the light of these studies, understanding the same for the city of Kolkata, which has been of interest to historians and urbanists alike, this area of research would contribute significantly to formulation of development guidelines specifically for neighbourhoods which portray Kolkata the way it remains part of popular public memory.

3.2 Research Proposal

As discussed in earlier sections of the report, the study is restricted to old Kolkata residential neighbourhoods, which are in the process of being transformed from their perceived image. For cities with historic pasts and multiple socio-cultural layers of development, new development obliterating history is not a desirable phenomenon. Balancing new development initiatives of the city, while attempting to leave inner cores comparatively untouched, is a challenge for all city planners and urbanists. While change is inevitable, the nature of change in these old districts, can probably be guided if the factors causing the change can be identified and appropriately addressed. Historic districts can further be classified as those which have some landmark buildings or spaces and those, where there are no significant landmarks, but the pattern of streets and character of buildings in conjunction carry an essence of the time it was developed in. Much work has been done on the first category of historic districts in terms of urban conservation and revitalisation around landmark precincts. It is the second category on which a lesser body of work is available, particularly in the context of Kolkata. But these areas form a large part of many Indian cities and Kolkata is no exception. This research work is focussed to understanding how these neighbourhoods or 'grey zones'

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are positioned in the city's present structure with its new transport corridors and land use patterns and as a consequence how vulnerable they are to total transformation. The research tries to then analyse why some neighbourhoods resist transformation while others succumb to the pressures of development and transform totally. An identification of the factors which are responsible for transformation, would enable to further suggest suitable intervention guidelines for guiding the nature of future developments in such neighbourhoods and prevent total transformation.

The core focus of the present research work can be put forth by the following **Research Hypothesis** and sub-questions, which would be answered in the course of this research work, by application of various research methods and techniques.

The hypothesis to be tested is as follows:

If there is a pattern of transformation, there is a pattern of intervention. This is tested in the context of Kolkata's older 'quintessential' residential neighbourhoods.

The sub-questions which have been answered to be able to test the hypothesis are as follows:

- A. Which areas of the city hold neighbourhood patches with 'quintessential characteristics' which can be identified for testing the hypothesis?
- B. Do all residential neighbourhoods in old town areas have similar characteristics, or are there location-wise variations?
- C. Within a neighbourhood, which are the attributes that contribute to 'transformation' of the built environment?

These questions are answered in the report, sub-divided into chapters for the ease of segregating focus areas and the data related to them.

Sub questions A and B pertain more to the entire city with its structure and fabric as it is today. Through an overview of the chronological development of the city, the areas with 'quintessential characteristics' and criteria qualifying them as 'grey zones' are defined. This is followed by identifying the 'grey zones' at the city level and attempting to compare such grey zones for similarity or variations in characteristics. The next question, C would have to be addressed with reference to specific neighbourhoods and analysing factors affecting change would have to be demonstrated with specific case studies of prototypical neighbourhoods in transition. Case specific observations of more than one case study from different grey zones would then be compared to find out how similar, causes of transition for different 'grey zones' are, and whether a common framework of intervention guidelines could be developed for all grey zone areas of Kolkata.

3.3 Research Methodology

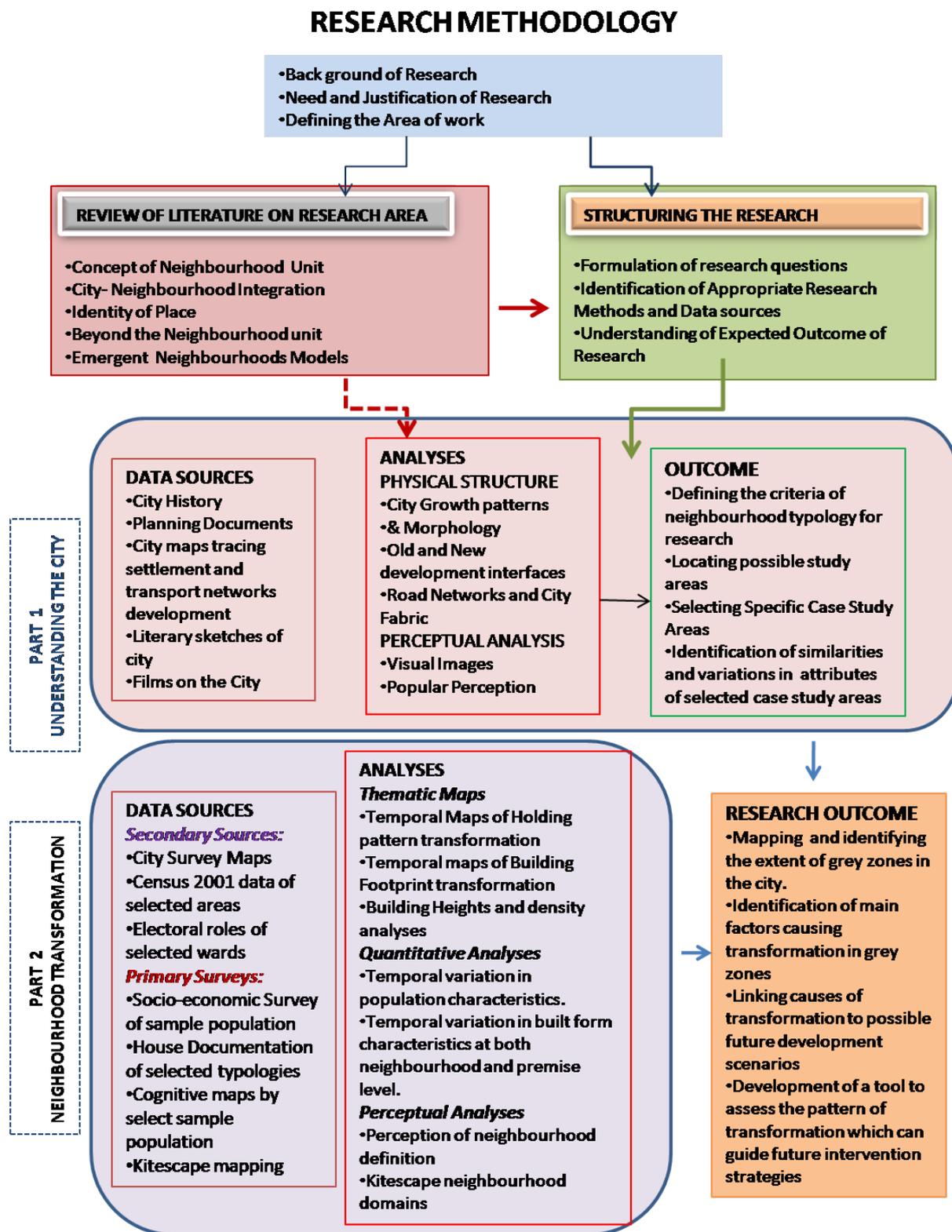


Fig. 3.1 The Methodology Flow-chart

3.4 Research Techniques

Various techniques of data collection and analyses have been used in this research work as found appropriate. The techniques are discussed in the following section based on the classification of data collection targeting the four sub-questions.

- A. What parameters will define neighbourhoods with ‘quintessential characteristics’ in the context of Kolkata?

In order to define which neighbourhoods would qualify as neighbourhoods with quintessential characteristics, largely references from secondary sources which discuss the history of the city and its development (social and spatial) were used.

References to documents on popular culture, cultural sketches from different periods of time, academic work on city growth and documents from planning organisations involved in city restructuring and new development works over a period of time, form the base for identifying the quintessential neighbourhoods. Visual depiction of these neighbourhoods in films and literature are also taken as bases for identifying key parameters of subject area definition. A rationalisation of perceptions and data is then done to list out the parameters which define neighbourhoods with quintessential characteristics.

Other data sources referred to for answering this question, are city maps showing the chronological growth of the city, which help identify the patches of these transition ‘grey zones’.

- B. Do all the residential neighbourhoods with ‘quintessential characteristics’ have similar attributes, or are there variations based on different factors?

The areas are compared on the following parameters:

- **Street Network:** Satellite images and city maps are used to understand basic road and street network patterns in different parts of town and the impact on size and scale of the neighbourhood blocks. These are analysed to find out if the patterns are similar or differ with locational differences.
- **Visual Impact:** A visual documentation of the streetscapes of some of these neighbourhoods is undertaken, also to help identify visual attributes of neighbourhoods in different parts of town.
- **Perceptual Image:** References to films and literary sketches set in different parts of the town, but all in these ‘grey zones’ are used to analyse perceptual similarities and variations in neighbourhoods in discrete grey zones and the causes for these variations, if any.

- C. What attributes contribute to these neighbourhoods’ identity and ‘perceived image’?

- D. Within a neighbourhood, which are the attributes that contribute to ‘transformation’ of the built environment?

The answers to both these questions are attempted together, as they two questions are correlated. Attributes, which contribute to a neighbourhood’s identity, when modified, lead to transformation of the neighbourhood, beyond the threshold of retaining the quintessential nature.

As this section forms the main body of the research, many different surveys were designed to obtain the required data in the most appropriate manner. Two major case studies were selected from two parts of the city, North and South Kolkata, based on the findings of the previous section.

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Case Study 1: Ramdhan Mitra Lane Area. (North Kolkata)

Study patch falls within Ward No. 10, Kolkata Municipal Corporation;

Ward Area: 0.39 sq.km.

Ward population: 33807 persons (Census 2001)

Average Household size: 5.75

Area of Study patch: 3.8 hectares

Population of the Study patch: 2588 persons (Electoral Rolls, 2010-11)

Case Study2: Kalighat Park Area. (South Kolkata)

Study patch falls within Ward No. 84, Kolkata Municipal Corporation;

Ward Area: 0.36 sq.km.

Ward population: 23400 persons (Census 2001)

Average Household size: 4.9

Area of Study patch: 3.9 hectares

Population of the Study patch: 3779 persons (Electoral Rolls, 2010-11)

Each case study area is then analysed in terms of:

Physical transformation of the neighbourhood:

- A detailed analysis of each neighbourhood is undertaken from **city survey maps**. Smart Maps prepared in 1910, form the main reference map. Updated Smart Sheets prepared by the Project management Unit (PMU) of Kolkata Municipal Corporation, showing present day plot sizes are also used for present context mapping. The degree of transformation is documented through these series data of maps.
- **Primary physical survey** of the entire case study patches is done to document premise level attributes of the neighbourhood and the same validated with the maps.
- Thematic maps are generated for the following attributes:
 - Present Land Use (roads, residential-non residential distribution)
 - Time series maps of Holding size pattern (1910, 1950, 2011)
 - Time series maps of Building Footprint (1910, 1950, 2011)
 - Map of Building Heights, 2011.
- Analyses based on the Maps generated
 - Percentage Distribution of road and plots areas within the patches and comparison between the two study patches.
 - Quantitative Analyses of the maps on Holding Size showing transformation over time in holding sizes and comparisons between the two study areas.
 - Quantitative analyses of built and un-built space in each study patch and comparison between the two study areas.
 - Quantitative analyses of the heights of buildings and comparison between the two study areas.

Social Attributes of the neighbourhood:

- **Census Data (2001) and Electoral Rolls (2010-11)** are used to obtain demographic characteristics for the case study areas.

An analysis of data from Electoral Rolls for a sample survey area, within the core of the study patch area, which is most representative of the study area in terms of the spatial and socio-cultural characteristics was undertaken.

Case Study 1: Ramdhan Mitra Lane Area. (North Kolkata)

Population of the Study patch: 2588 persons (Electoral Rolls, 2010-11)

Population sampled from Electoral Rolls, for demographic analyses: 695 (27% of total patch population)

Case Study 2: Kalighat Park Area. (South Kolkata)

Population of the Study patch: 3779 persons (Electoral Rolls, 2010-11)

Population sampled from Electoral Rolls, for demographic analyses: 545 (14% of total patch population)

- Primary socio-economic survey administered through **survey questionnaires of a random sample of the households** in the neighbourhood.

Sample surveys in each case study area were conducted.

Case Study 1: Ramdhan Mitra Lane Area. (North Kolkata)

Population of the Study patch: 2588 persons (Electoral Rolls, 2010-11)

Sample surveyed: 20 house holds

Case Study 2: Kalighat Park Area. (South Kolkata)

Population of the Study patch: 3779 persons (Electoral Rolls, 2010-11)

Sample surveyed: 25 households

Premise level variation and attributes:

Stratified sampling of the households and premises was done to get a fair representation of most types of houses in the neighbourhood, for analysis of premise level transformation which affect the overall neighbourhood area level transformation and give clues for intervention scenarios.

- **Physical documentation** of the selected buildings in their present condition is undertaken. **4 representative houses across identified typologies** in each study patch were documented for physical transformation.
- Primary surveys were also undertaken to **collect data on household transformation & impact on house structure and condition of the households surveyed, for socio-economic profiling ineach case study area.** (Structured in same questionnaire of socio-economic survey)

Image and perception of the Neighbourhood:

- **Cognitive Maps or Mind maps** were asked to be prepared by a random sample of population living in the neighbourhood to assess the varying perceptions of the neighbourhood and the present role.

30 Perception maps were prepared in each case study patch, by local residents of various age groups, gender, profession, etc. as well as by resident and non-resident retailers and people transacting business in the neighbourhood area.

Analyses of the Cognitive maps was undertaken to understand the nature of the area and neighbourhood spread correlating them with the profile of the respondents. Superimposition of multiple cognitive maps provides the overall delineation of neighbourhood.

- **Generation of Kitescape of the neighbourhood patch** was another technique used to map neighbourhood limits, as these neighbourhoods are culturally stitched together by the traditional activity of kite flying. The pattern generated provides another definition of the neighbourhood which is not at the ground level but at the terrace and roof level often structurally different from the neighbourhood patch defined by roads, landmarks and public realms at the ground level.

3.5 Research Outcome

An overlapping of all the data collected by different techniques is done correlating the analyses of the various data collected. Based on the multiple levels of data interpretation, the following are the expected outcomes of the study:

1. Defining a set of characteristics, which would help identify 'quintessential' residential neighbourhoods in grey zones in different parts of Kolkata.
2. Identifying of a set of attributes which most influence neighbourhood transformation.
3. Devising a tool to capture the attributes of premises, which cumulatively act as indicators of the future of these neighbourhoods and hence can provide cues to intervention strategies.
4. Conceptualising intervention strategies for future development scenarios to minimise transformation impact on the neighbourhoods and help retain their 'quintessential' character.