

Macro level characterization of Historic Urban Landscape: Case study of Alwar walled city



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ABSTRACT

Globally, old and historic settlements exhibit efficient urban planning in terms of compactness, walkability, energy efficiency and social cohesiveness. However, with the passage of time, usually a city's old settlements undergo numerous socio-economic and physical transformations leading to an urban chaos. The walled city of Alwar in the state of Rajasthan is selected as a representative case study of a medium-sized historic city with a rich cultural past. Alwar is one of the regional priority towns in National Capital Region Plan-2021 of Government of India and is proposed to be an important magnetic centre for the region. The walled city area and its old neighbourhoods portray unique features of a Historic Urban Landscape (HUL). The study identifies the core urban elements of its HUL and Arc Map-10.1 is used to spatially map characteristics of its old neighbourhoods, commercial areas, road network, open spaces and intangible heritage. Figure Ground Analysis and Development Trends Analysis are carried out based on primary surveys, reveal changing housing needs and economic requirements. The study concludes that the traditional residential culture of mohallas and chowks and their rich heritage should be included in the development plans of government with a focus on community-based regeneration rather than tourism alone. This may ensure a socio-economic and environmental sustainability in the long run for such historic settlements.

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1. Introduction

Cities are the society's focal point where the human interaction, diversity, culture and commerce flourish. The several layers of cultural history and growth result in a city's rich past, present as well as its future (UNESCO, 2010; Samani, Salehi, Behbahani, & Jafari, 2011). The fabric of a historic town is not just based on its physical form and structure but also connects various attitudes and activities, giving it a unique identity of relevant human interests. Cities that are the most successful are able to attract investment and businesses to meet the aspirations of their citizens while alleviating poverty, promoting inclusion of society and their heritage (Licciardi & Amirtahmasebi, 2012). However, these city cores are mostly prone to undesirable and consequential effects of rapid urbanisation and intense development, creating waves of meta-morphic change; threatening the inherent values and cultural

heritage of the city which necessitates the need for urban conservation and rehabilitation to act as a catalyst to promote social interaction between its inhabitants, further encouraging vitality of these communities by looking into their rich past and identifying their beginnings, growth and multiple layers of development (Evans & Shaw, 2004).

Urban fabric or the web is more or less a result of urban experiences, which are key to human settlements, culture, and society (Cohen, 2010). These material organization of urban space is crucial to producing social and economic arrangements in any city. Elements of urban form tend to mediate physically and spatially with its social, economic and environmental setting (Lynch & Rodwin, 1958). Hence, any city is a result of complex relationship among its socio-economic, spatiotemporal and environmental processes and practice (Tonkiss, 2013). Urban Web, in general, relates to cities as webs or lacework, containing patterns and weaves, based on physical entities, those which tend to be permanent by nature. These patterns dictate much of the resulting potential for any population, their ideals or aspirations, which may change periodically (Cohen, 2010). Recognition of urban fabric and its elements

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allow basic identification, documentation, and possible analysis in a given context.

Currently, India's attention is focussed on the urbanisation imperative and the Smart Cities Mission is gaining ground rapidly. The urbanisation agenda is covered in two parts: urban rejuvenation of 500 Indian cities and the implementation of 100 Greenfield and Brownfield smart cities (Ministry of Urban Development, 2014). International Organisations such United Nations Educational, Scientific, and Cultural Organization (UNESCO) and World Bank have advocated the need for a social and inclusionary approach for historic cities for a sustainable revitalization of old communities (Suri, 2007). In the present context, the main research query is how efficient and sustainable is the urban fabric of existing historic cities and what traditional planning principles still hold true.

The present study focuses on Alwar walled city as a representative case study of a historic town which was laid out more than 200 years ago based on Indo-Islamic traditional principles. The city currently acts as an important magnetic centre in the National Capital Region (NCR) Plan 2021 of Government of India (GoI) (Fig. 1). Alwar is also known as the 'Gateway to the historic and colourful state of Rajasthan' having a variegated history of almost 19 generations of rulers ruling the city. The historic and eminent fort on highest Mewat Hills of ancient folded mountain range of Aravalli in Alwar is reminiscent of the regal way of life and being one of the most prominent regional centres for various social, cultural and economic activities for the entire territory.

The study analyses the characteristics and potential of old walled city of Alwar with key objective to understand the urban transformation of city's core area over the years and identify the core elements of its historic urban fabric using GIS as spatial tool. The study intends to recognise the key elements of Alwar's historic urban fabric based on comprehensive literature studies and

persuades the future government programmes to adopt an inclusionary approach for smart urban rejuvenation.

2. Literature review

2.1. Conceptual shift with respect to historical cities

Over the last decades, several international bodies, such as UNESCO, The International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) and The International Council on Monuments and Sites (ICOMOS) are involved with important programs of conservation of neglected heritage precincts. Initially, in Europe an individualistic approach of passive conservation of individual heritage monuments which were considered in isolation from their surroundings was prominent (Steinberg, 1996). Also, the mass destruction of historic cities in Europe during World War II led to the rebuilding of older urban areas and tried to treat them sensitively. At the same time, a contemporary school of architecture with importance to bulldozer approach of construction was highly criticized across Europe and North America because of its indiscriminate destruction ideologies (Steinberg, 1996). Gradually the creative use and re-use of older quarters of the city taken as a whole allowed the old communities to flourish, with a scope for both built environment and traditional social systems to gain importance.

Since the 1930s, U.S. federal government legally designates historic districts through the United States Department of Interior under the auspices of the National Park Service. A Historic District or Heritage District (HD) is defined as a section of the city comprising older buildings with valuable historical or architectural value (Local Preservation: a service of the National Park Service 1993). In Canada, concept of Heritage Conservation Districts is followed to legally protect historic sites and complexes varying in

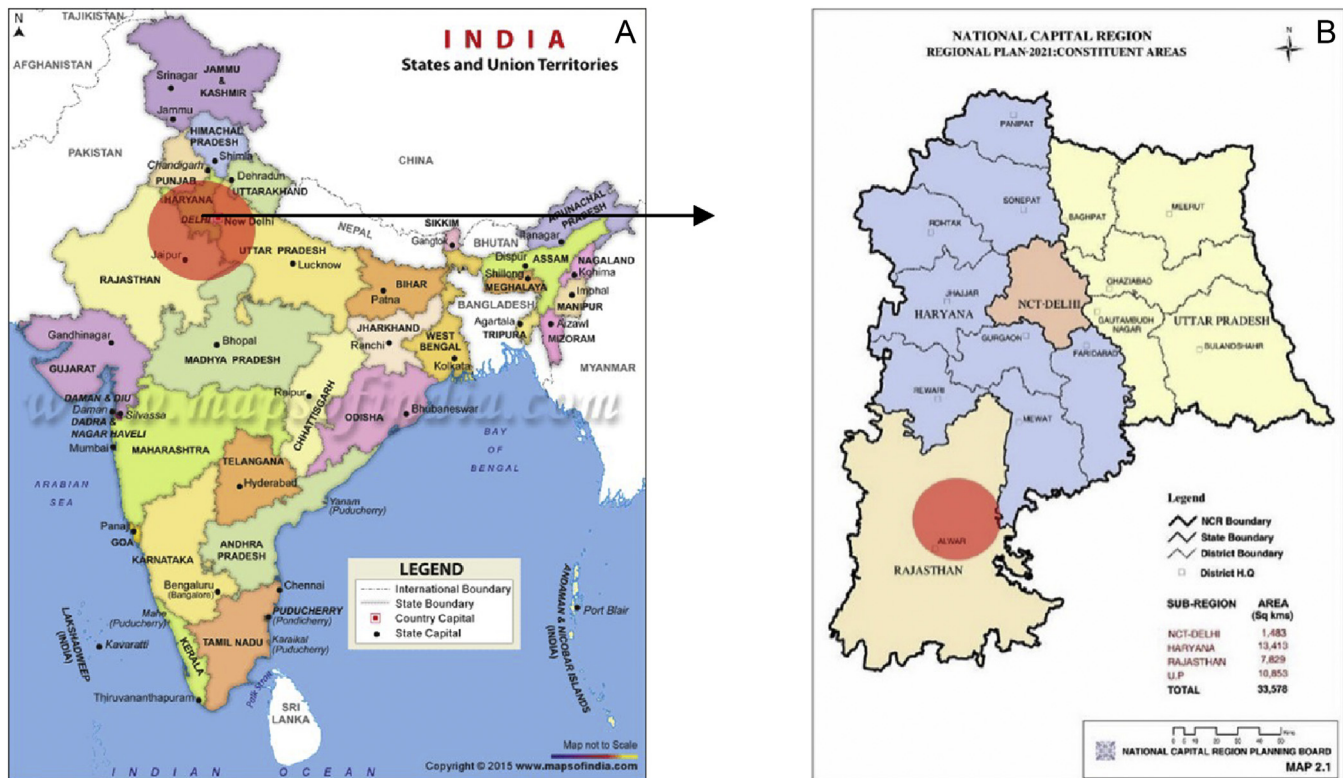


Fig. 1. Location of Alwar city in NCR Plan 2021. Source: <http://www.mapsofindia.com/> accessed on 14th April 2016; <http://ncrbp.nic.in/ncrconstituent.php> accessed on 14th April 2016.

their sizes. Later in 1964, ICOMOS promoted the Venice Charter that established a conservation approach for historic monuments. While the Venice Charter was only concerned with single monuments, the UNESCO Convention introduced the concept of cultural heritage, which is the basis for integrated urban conservation (Steinberg, 1996).

In 1976, UNESCO's concept of Historic Urban Landscape (HUL) for historic core areas was introduced and HUL was defined as ensembles of any group of buildings, structures, and open spaces, in their natural and ecological context, including archaeological and paleontological sites, constituting human settlements in an urban environment over a relevant period of time, the cohesion and value of which are recognized from the archaeological, architectural, prehistoric, historic, scientific, aesthetic, socio-cultural or ecological point of view' (Samani et al., 2011). All the core urban elements such as land uses and patterns, spatial organization, visual relationships, topography and soils, vegetation as well as technical infrastructure are considered to be important elements/components defining the character of historic landscapes.

In the Indian context, historic cores are symbols of the city's image despite having undergone numerous social and cultural transformations. They are key geographic factors for the growth of the local and regional economy (UNESCO, 2010). Culture is the greatest expression of the old communities living in these old quarters. This aspect of historic cities builds a relationship with the UNESCO's understanding of HUL. UNESCO explains historic cities not on the basis of their individual buildings of exemplary merit, but as the way of their life highlighting intangible aspect of heritage. It supports the notion of a precinct with a unique way of life and sustainable revitalization of historic cities. Indian HUL is typically characterized by traditional houses, streetscapes, water systems, living communities and their associated traditional livelihoods and social practices clearly differentiating them from the rest of the city (UNESCO, 2010). India has numerous examples of such historic towns and cities, owing to its rich and diverse history and cultural expression. The old city elements not only ensured a walkable and compact urban development but also kept social cohesion as an important aspect. However, now these areas are on the verge of extinction and demand a socially sustainable approach to smart urban rejuvenation.

2.2. Urban elements of historic urban fabric

In order to understand a historic urban landscape and its elements, few historic cities such as Jacksonville in the United States and Stralsund in North East Germany have been studied in detail to understand the strategies being adopted to identify the urban layers. Each of these case studies is unique in their approach to revitalizing their old historic districts. The main criteria for selection of the two case studies are the geographical context of the cities in the developed economies i.e. USA and the European Union, the high similarity with the objective to map urban layers of historic development from the physical and social point of view and the availability of data.

The first case study is of Jacksonville is enriched with unique historic neighbourhoods, compact urban pattern and downtown area with contrasting low-density surrounding development and strong urban fabric with historic structures. A rich urban landscape characterises the overall scale of the historic district. There are numerous amenities and assets like museums, riverfront, parks, cultural and entertainment venues, employment centres. The four most important layers of historic core in Downtown Master Plan which were overlapped to analyse their role in public life were economic development, transportation, connectivity and linkages and neighbourhood preservation. Local citizens' participation

formed the most important inputs for the entire process of identifying the central issues and opportunities (Zyscovich, 2010).

On the other hand, the historic centre of Stralsund is a bustling port island in North East Germany with unique historic landscape not only attracting visitors in works of art but also giving an opportunity to experience history and urban life participation. Historic character and city components such as the city wall, city ponds, road network, the relation between building, green and open spaces, inner and outer appearance of structures and style, scale and character, relation between the city and urban area over time, natural and man-made environment with its various functions were mapped spatially and detailed location analysis and mapping of core elements within walled city was done in detail with several sub-concepts such as improving living conditions of the local inhabitants, improving traffic management and circulation and networking green and open spaces (Hansstadt Stralsund, 2000).

2.3. Introduction to walled city of Alwar

Geographically, Alwar city is located at 27.57°N; 76.6°E with an average elevation of 271 m and bordered by Aravalli ranges to its west. Alwar is a landlocked district bounded by Gurgaon, Bharatpur, Mahendranagar, Jaipur and Sawai Madhopur. The total urbanised area is approximately $58.07 \times 106 \text{ m}^2$, out of which total developed area is $40.70 \times 106 \text{ m}^2$ with total population 381,400 (Town Planning Department, 2011; Census, 2011). Presently, the traditional way of living is still prevalent in the old walled city which portrays a rich tangible and intangible heritage of the city. NCR plan 2021 targets Alwar as an important magnetic centre and weekend tourism hub in NCR which further raises the concern how the old city area will be treated under the phase of this new development with different sets of objectives and priorities. Master Plan 2031 also prioritizes the decongestion and decentralization of central core of the old city (Town Planning Department, 2011).

The walled city of Alwar was laid out in the 17th century A.D. based on ancient town planning principles in the form of a gated community with intricate and compact social fabric. The surrounding contiguous development of the city is less dense and is planned on the basis of modern town planning principles. The central core serves as the Central Business District of the city with traditional economic activities such as wholesale businesses, textiles, jewelry, handicrafts and art industries. Historic neighborhoods of the city portray the rich Rajputana style of architectural elements like Jalis, Jharokhas, brackets, and courtyard system of planning which is unique to only the old city area. Above mentioned facts makes the study of the walled city of Alwar interesting with a large scope of future interventions.

2.4. Historical timeline

The historic timeline is an important component for providing a macro view of the evolution of the historic walled city of Alwar. The prehistoric pieces of evidence by Archaeological Survey of India (ASI) show that the territory held a special historical and regional place in ancient India. In 1049 A.D. Kushwaha clan from Amer won over Nikumbh Yadav and Solapur city was formed which was later known as Alwar. In 1492 A.D., Alawal Khan established grand city wall boundary around Bala fort and the princely state of Alwar emerged. A strong influence of Muslim league on the architecture of the city is observed during the period from 1555 to 1574 A.D. The walled city of Alwar is believed to be laid out by 1st Maha Rao Raja Sri Sawai Pratap Singh in 1775 A.D with 5 entry gates viz. Malakhera gate, Delhi Gate, Red (Laal) gate, His Highness (Hajuri) Gate and City Palace Gate based on ancient town planning principles under the

foothills of Aravalli mountain ranges. He contributed a lot towards the building of public structures such as Pratap dam, step wells, and gardens. From 1791 to 1815, 2nd Rao Raja Bakhtawar Singh constructed several important historic buildings such as city palace complex and Sagar tank.

Post-independence, Alwar city acceded into the dominion of India by merging the princely state of Alwar with its three neighbouring states, viz. Bharatpur, Dholpur and Karauli to form the Matsya Union. On 15 May 1949, it was re-united to form the present-day district in the state of Rajasthan. The modern planning of Alwar city demonstrated the adaptive reuse of the city palace complex as public offices and district court since 1954. During the late 1950s and early 1960s, many planned housing schemes by Alwar Municipal Council (AMC), Urban Improvement Trust (UIT) and Rajasthan Housing Board (RHB) came up outside the old city boundary. During this time, few Town Development Schemes (TDS) outside the walled area were conceived, for which the city limits were extended by levelling the ramparts and filling the old moats. The late 1940s, the large-scale exodus of refugees from Pakistan further created the need for better infrastructure and Rajasthan State Industrial Development & Investment Corporation Limited (RIDICO)¹ came into being in the early 70's to promote industrial growth in the city. The walled city and its contiguous historic development form the basis for soft boundary delineation of the study area.

2.5. Urban transformation

The above macro level analysis gives an overview of the historical evolution of the city and further helps in understanding the various physical and social transformations in the city due to its political, social and economic restructuring in the past. This transformation has given an entirely new character to the present day urban fabric of the city. The walled city of Alwar exhibits a historical legacy and regional prominence. It was once the princely state capital and an important cultural centre for the whole region, making it an important historic district and weekend tourism hub. However, the political restructuring after India's partition in 1947 and industrial setup in the 1970s led to large-scale exodus of refugees from Pakistan and migration from nearby villages to the urban centre respectively. This resulted in a situation of the housing crisis and many properties are in a state of neglect and dilapidation. The three factors represented in boxes 1, 2 and 3 of Fig. 2 shows how one situation resulted into other situation and thus, resulting in the present day fabric of the city.

High tourism potential and the city's historical significance have resulted in the acceptance of local art and handicrafts as well as home-based enterprises such as pickles and kite making. The large and upper middle-income classes aspired a high standard of living due to better economic conditions and industrial boom and hence, shifted to suburban housing developments, leaving behind socially backward classes in the core city area (Lall, 2001). The physical transformation is also clearly visible in terms of vacant and neglected housing owing to multi-faceted ownership (Lall, 2001). In order to have an extra income source, local inhabitants have adopted rental housing. The shift to nuclear families and demand for rental housing further led to rampant housing extensions and transformation. Also, a mixed residential land use has become prominent with upcoming cottage and small scale industries.

¹ Rajasthan State Industrial Development and Investment Corporation popularly known as RIICO is a premier agency of Government of Rajasthan was incorporated on 28 March 1969 and so far developed 321 industrial areas by acquiring about 59,084 acres (239.10 km²) of land.

3. Methodology

The macro level characterization of the old walled city of Alwar is done on four levels viz. Soft boundary delineation, figure-ground analysis, spatial mapping of core urban elements and development trends analysis. The basis for this analysis is secondary data collection, reconnaissance and visual surveys, structured questionnaire based primary household surveys, the behaviour pattern of local residents and visitors and experts' opinion surveys.

3.1. Soft boundary delineation

For the analysis of the historic urban fabric of Alwar city, the soft boundary delineation was done by overlapping its various layers of historical development and evolution so that a tentative study area can be defined for the analysis. A detailed administrative map of the city was used to delineate the municipal wards within the city core. The neighbourhoods which are also known as mohallas are mapped on GIS using inputs from local residents' consultation and reconnaissance surveys. Master Plan 2031 for Alwar has identified five planning districts viz Old City, Moti Doongri, Matsya Industrial Area, Tijara Road and North East zone out of which the old city planning zone is selected as the base layer, constituting around 800 ha of area which accounts for 6.8% of total notified planning area (Town Planning Department, 2011).

The main factors considered for delineation of study area are listed below:

- a) Main arterial Roads as physical boundary
- b) Historical evolution of the city and old walled city development
- c) Medium to high residential density areas
- d) Differences between historic organic settlements and new planned development under TDS in the late 1940s
- e) Characteristic difference between old and new commercial areas of the city
- f) Presence of traditional architectural style of dwelling units
- g) Notified Slums are avoided

Fig. 3 shows the delineated boundary in terms of its limits because of contiguous and amalgamated nature of housing systems in old city area.

Key salient features of the delineated soft boundary are summed up below:

- The delineated historic urban fabric is approximately 3.80 Sq. km.
- 66 numbers of identified old neighborhoods with traditionally structured society
- 26 numbers of identified historical landmarks
- 20 numbers of identified urban corridors
- 17 numbers of identified prominent commercial areas
- 18 numbers of identified intangible heritage components

Fig. 4 intends to represent the basic concepts being explored and the methodological framework which is being adopted for the study.

3.2. Mapping of Historic Urban Landscape

In order to understand and analyse various layers of the development of Alwar's Historic Urban Landscape, six urban core elements have been identified based on comprehensive literature review and local context of the city. These six elements of urban fabric are historical landmarks and monuments, old

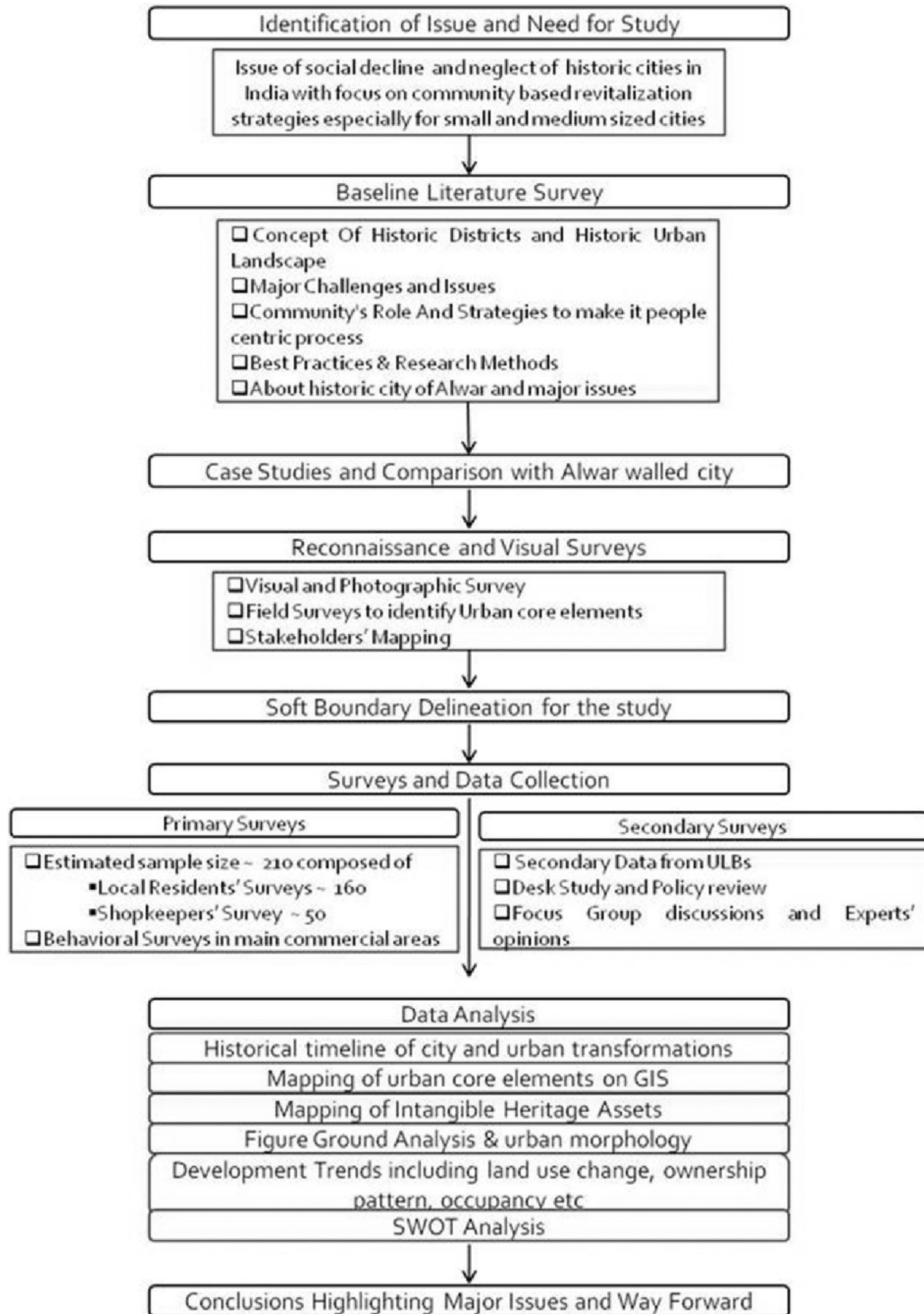


Fig. 4. Methodology of the study.

neighbourhoods (known as mohallas), commercial areas (knowns as bazaars), street network and important urban corridors, open spaces (squares known as chowks) and parks and intangible heritage assets. These layers are mapped and analysed using Arc GIS Desktop-Version 10.1. These elements include tangible as well as intangible heritage assets of the city as shown in Fig. 5. The Historic Urban Landscape of the city comprises not only its physical and social fabric, but also its economic and cultural fabric. This selection of intangible heritage makes it an inclusionary process whereby various layers are integrated holistically. The mapping is done on the basis of reconnaissance surveys and cognitional data analysis.

These layers are further used to identify existing land use and urban pattern of the delineated study area. Figure-ground analysis is also carried out to understand the morphology of the old walled city area.

3.3. Development trends analysis

Stratified random and clustered sampling survey technique was used for primary surveys of local residents and shopkeepers. The total 210 sample size is chosen for primary surveys based on equations (1) and (2); out of which 160 sample households are surveyed in detail in addition to 50 shopkeepers. Also, behavioural surveys of local people were conducted. This helps in carrying out cognitional mapping of urban core elements based on perceptions of local people as well as experts. The questionnaire used for the

surveys is discussed in Annexure A.

For the purpose of sample size calculation, the confidence interval is assumed to be 90% (z value = 1.645) and margin of error ‘m’ to be 20%. The sample size is calculated using equation (1) (Dhingra, Singh, & Chattopadhyay, 2016; Dhingra & Chattopadhyay, 2016):

$$n = \frac{z^2 \times p(1 - p)}{m^2} \tag{1}$$

where

- n = required sample
- z = value of confidence level C.I. (for 90% it is 1.645)
- p = estimated prevalence of variable of interest (assumed to be 30%)
- m = margin of error (assumed to be 20%)

Correction for finite population is done using equation (2) (Dhingra et al., 2016; Dhingra & Chattopadhyay, 2016):

$$n = \frac{n}{1 + \frac{(n-1)}{POPL^n}} \tag{2}$$

where

POPLⁿ = ward wise population as per 2011 census

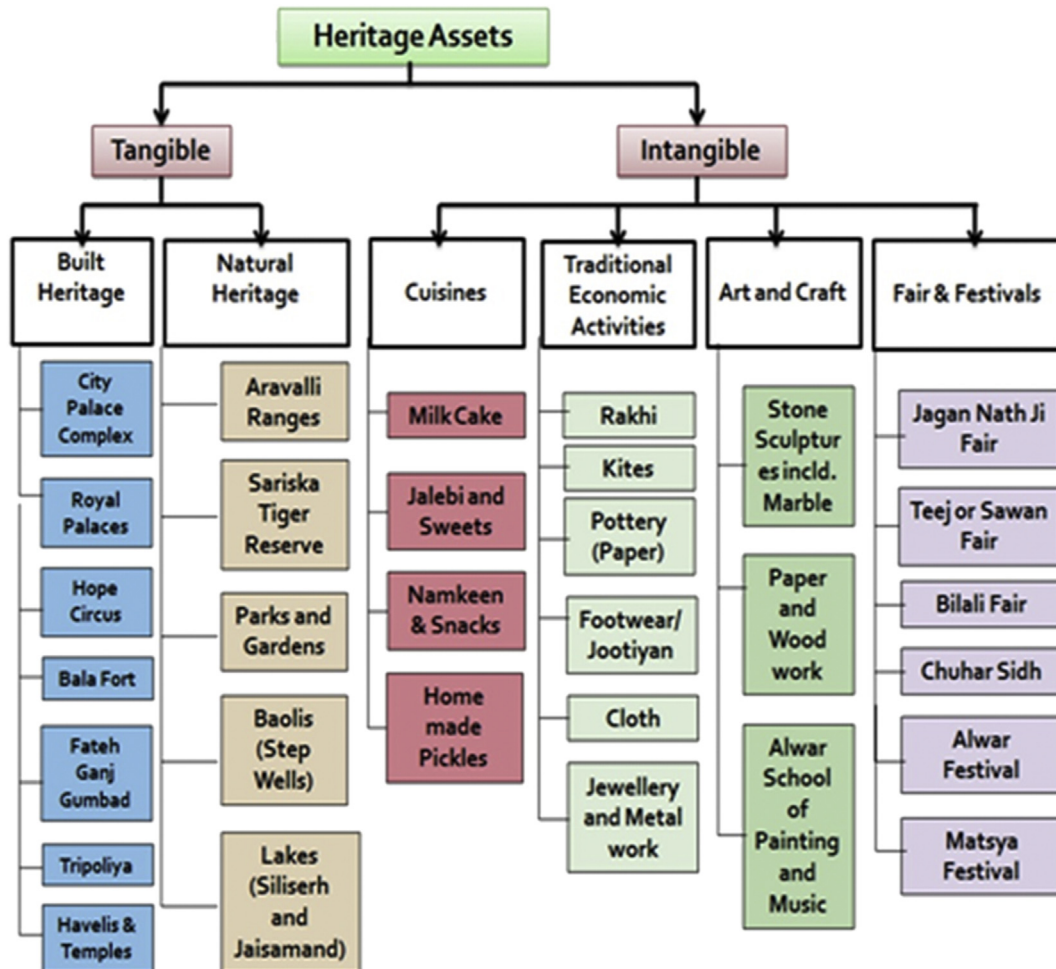


Fig. 5. Heritage assets of Alwar city (Dhingra, 2014).

4. Results and discussions

This section discusses in detail the analysis being carried out for the delineated study area within the soft boundary.

4.1. Figure ground analysis

The figure-ground analysis reveals the urban morphology and pattern of settlements in HUL of Alwar. The map in Fig. 6 shows a mix of open and built up the fabric of the city. It clearly shows that the old city area is highly dense and congested which is also confirmed by Master Plan 2031 document. A random street network is observed at an informal level with narrow lanes. Besides, there is a sense of visual linkage to old monuments and Aravalli Hills from the network of roads. The overall morphology of the city depicts a strong Indo-Islamic influence on the city and is interesting from the ancient town planning principles point of view.

The old and historic neighbourhoods of Alwar city exhibit a compact development and social cohesion among its local community. Importance was extensively given to pedestrians and local climatic conditions which enhance not only the walkability but also the energy efficiency in these old settlements. This needs to be verified through more rigorous tools and also corroborated through present mobility pattern, users' perception and need analysis. The most important aspect of old Indian cities is their squares which are

numerous in numbers but are not utilized properly and lack a vibrant public life. Squares and junctions were crucial meeting places for community discussions and participation.

Old wells and tanks employ natural water management techniques which were initially an important part of mohallas and located on chowks. Now these wells are dried up but once they were the main water source for inhabitants. The hot and dry climate of the region demanded high reliability on rain water harvesting and storing. Also, a natural drainage pattern has been observed in the walled city as per the natural contours and the old neighbourhoods seldom face issues of water logging. The old neighbourhoods in Alwar were planned within walls, surrounded by moats before 1940s. The historical timeline discusses how the walls were removed and city extended due to new town development schemes and the news areas are probably situated on the filled moats. This was further substantiated by the primary surveys in its various old neighbourhoods. As one starts moving from city core to the other contiguous old development, the water logging issues are found to be aggravating. Overall, the traditionally planned settlements of Alwar walled city were efficiently planned considering the environmental as well as socio-economic sustainability.

4.2. Mapping of core urban elements

The spatial mapping of the main urban corridors shows that they are aligned with shops carrying out traditional economic

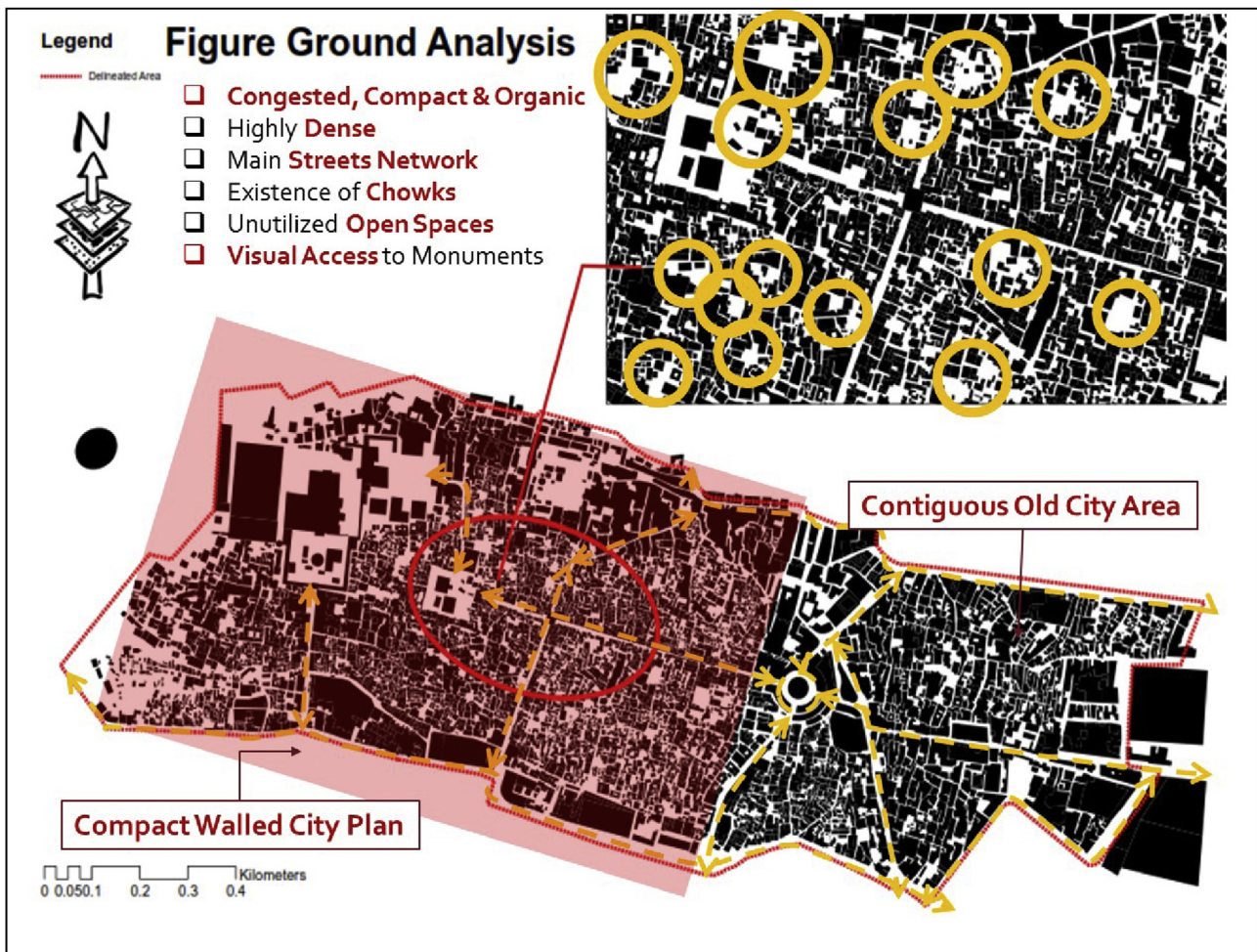


Fig. 6. Figure ground analysis of historic district of Alwar.

activities for generations. Most of them have commercial land use on the ground floor and residential land use on its top floors. A distinct architectural style is visible on the facades of these buildings making it a more vibrant public space. These commercial areas have natural surveillance through eyes on streets harnessing mixed land use pattern.

Fig. 7 shows various historical monuments and open spaces (indigenously known as “chowks”) most of which are state protected monuments, but their physical condition is not up to the mark. A conflict between old and new ways of construction is noticed which leads to disharmony in the old and modern architectural styles.

Fig. 8 shows the street network and urban corridors aligned with important commercial areas (bazaars) within the delineated soft boundary. These markets carry out unique economic activities in the old city. However, the physical condition of these commercial stretches is not up to the mark and needs appropriate development control guidelines for urban infill. Several traffic problems such as loading and unloading issues, congestion, encroachment of narrow lanes by hawkers and incompatible land uses are observed.

Fig. 9a shows another important element of the social fabric of the city i.e. the old neighbourhoods in the city which are indigenously known as “mohallas” integrated with many open spaces acting as squares and parks for the community. The word mohalla has its origin from the Arabic word *Mahalla* which literally means a district, country subdivision or neighbourhood. These mohallas are

hidden residential enclaves primarily seen behind the facades of busy commercial centres and architecturally meritorious ancient monuments. In India, the term Mohalla can be understood as a region of a town inhabited by a community living in the same area and hence, developed as an integrated cluster of houses based on the similarities and the differences in the community’s territorial, professional, family and ethnic relationship. A mohalla can consist of several dozen or even several hundred houses build along the big street with small side streets can organize in a form of quarter. The old street network is used to differentiate and demarcate the mohallas with the help of local consultation of old residents’ and associated focus groups.

There is an important relationship between the neighbourhoods and the social cohesion among its community as pointed out in many literature. As Beumer (2010) mentioned that the local space is plays an important role in the governance of local social cohesion. He affirms that the neighbourhood becomes an extension of personal identity of the residents, whether they are seen as individuals or communities and thus, the image and the location of the neighbourhood increasingly matter. In terms of the social function, the old neighbourhoods acted as traditional self-governing small community organizing a community’s way of life (Cieslewska, 2010, pp. 258–263). These mohallas represent an interesting spatial element in an old Indian city and future studies need to be undertaken to assess their existing social cohesiveness and its impact on other social conditions such as crime rates and coherence

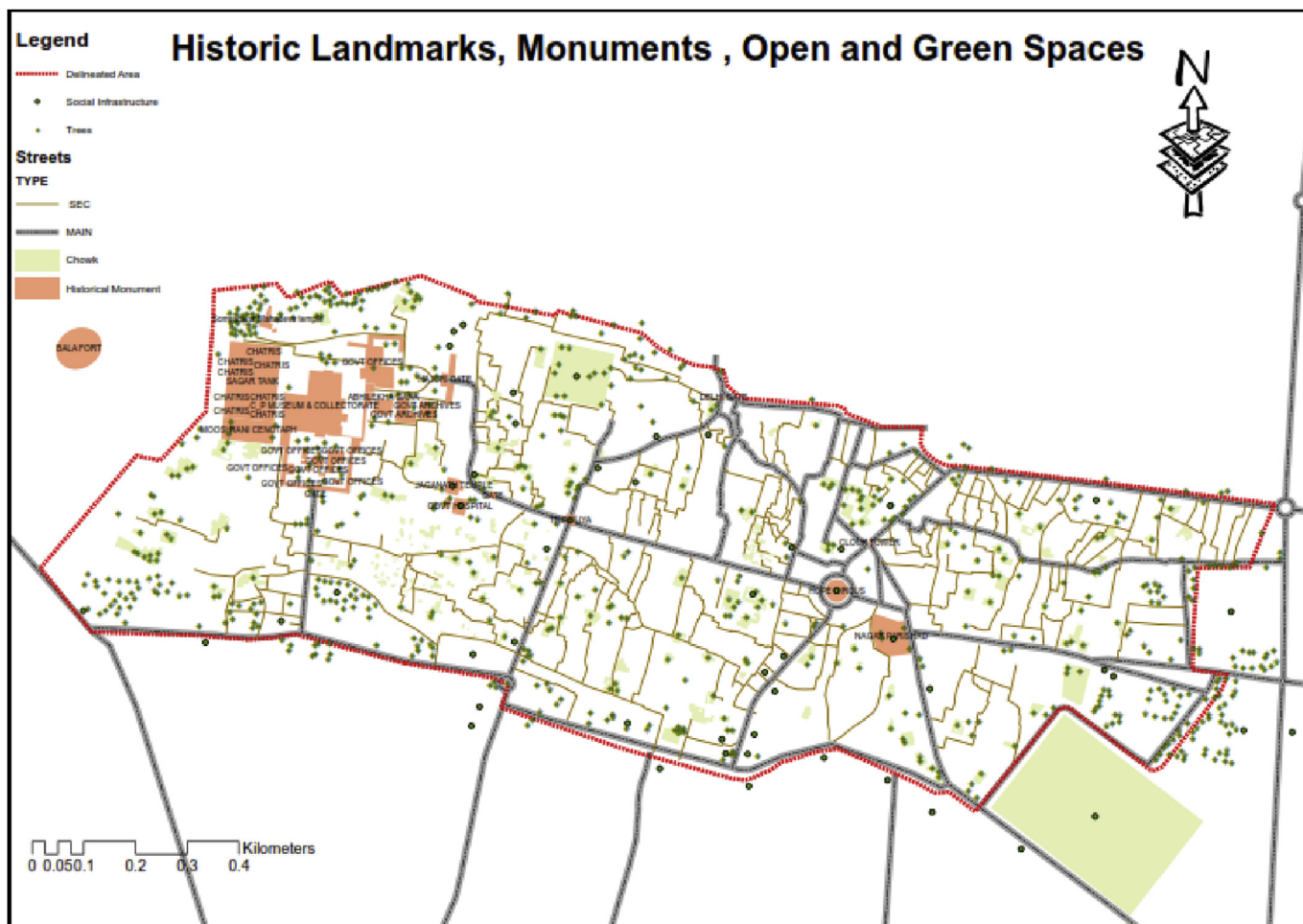


Fig. 7. Map showing historic landmarks and monuments in old walled city of Alwar.

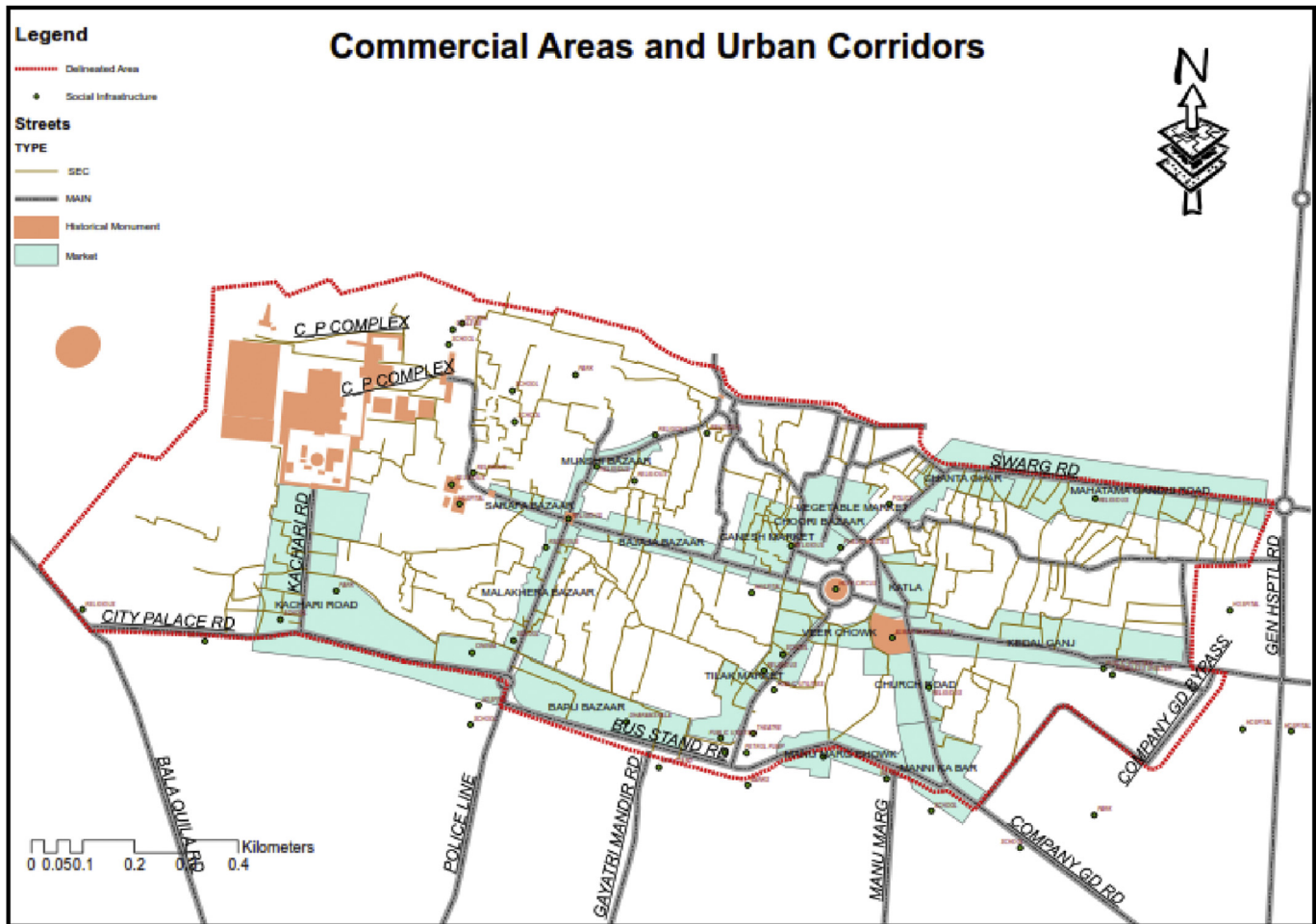


Fig. 8. Map representing commercial areas and urban corridors in old walled city of Alwar.

between the neighbours.

Their nomenclature is usually based either on a dominant professional group inhabiting the area in past such as Mohalla kumharo ka (potters Mohalla) or a religious area such as Bhairu Baux Mohalla (Mohalla where Bhairu Temple is located) or presence of an old well or an urban element, such as Toli ka Kuan (Mohalla with Toli well) or names of local heroes and eminent personalities during old times such as Manni ka Barr (Mohalla with a lady named Manni and her tree of Barr). Nevertheless the main role of an Indian Mohalla is to maintain its traditional social and cultural values.

Structurally, a traditional Mohalla maintains a square known as “Chowk” which are either important religious place for the inhabitants or prominent commercial area or junction with several streets or some tree or well or some landmark bringing it a unique identity. One of the most important contributions of these open spaces was to consolidate local community and promote collective participation, forming an important public place in the historic city’s landscape. The integrated clusters of houses with open spaces ensures a high level of interaction among neighbours and discussions based on the community activities. Most of these areas observe shifting pattern of construction style, land use, and housing needs. These changes sometimes lead to an incongruent development pattern in the city, further raising issues of gentrification and social exclusion. Fig. 9b shows the typical character of chowks or open spaces in the old neighbourhood’s layout. However, the idea of older and historic neighbourhoods in India conjures an image of dilapidated buildings, narrow twisting lanes, and traffic congestion.

Besides above discussed physical urban elements of the historic city, Intangible heritage forms an important element to bestow uniqueness and vitality to its older communities. Culturally, the city is rich in its traditional reserves of artisans’ skills and way of living. Fig. 10 shows a map of intangible heritage assets spatially in the historic city of Alwar.

4.3. Development trends analysis

According to the income poverty survey of AMC, the poverty level in the city was 35% in 1994. The majority of the poor reside in the old city area, covering an approximate area of 4 sq. km and having the highest density in the city (Lall, 2001). The typical housing situation is affected in the process of decay, conversion, and sub-division of structures. These settlements have been predominated by the under-privileged class of people, many of whom are settled there for generations, going beyond 200 years (Lall, 2001). Few of such settlements were classified as slums in 1981 due to very poor conditions of the settlements and lack of basic facilities.

The primary survey was conducted within the delineated soft boundary to gather cognitional, perceptual and perpetual data from its local community. Around 160 household’s surveys and 50 shopkeepers’ surveys were conducted from May to August in 2013. The sample composition is comprised of approximately 44% male, 19% female, 34% old and 3% young respondents as shown in Fig. 11a. From intense primary surveys, it has been observed that 69%

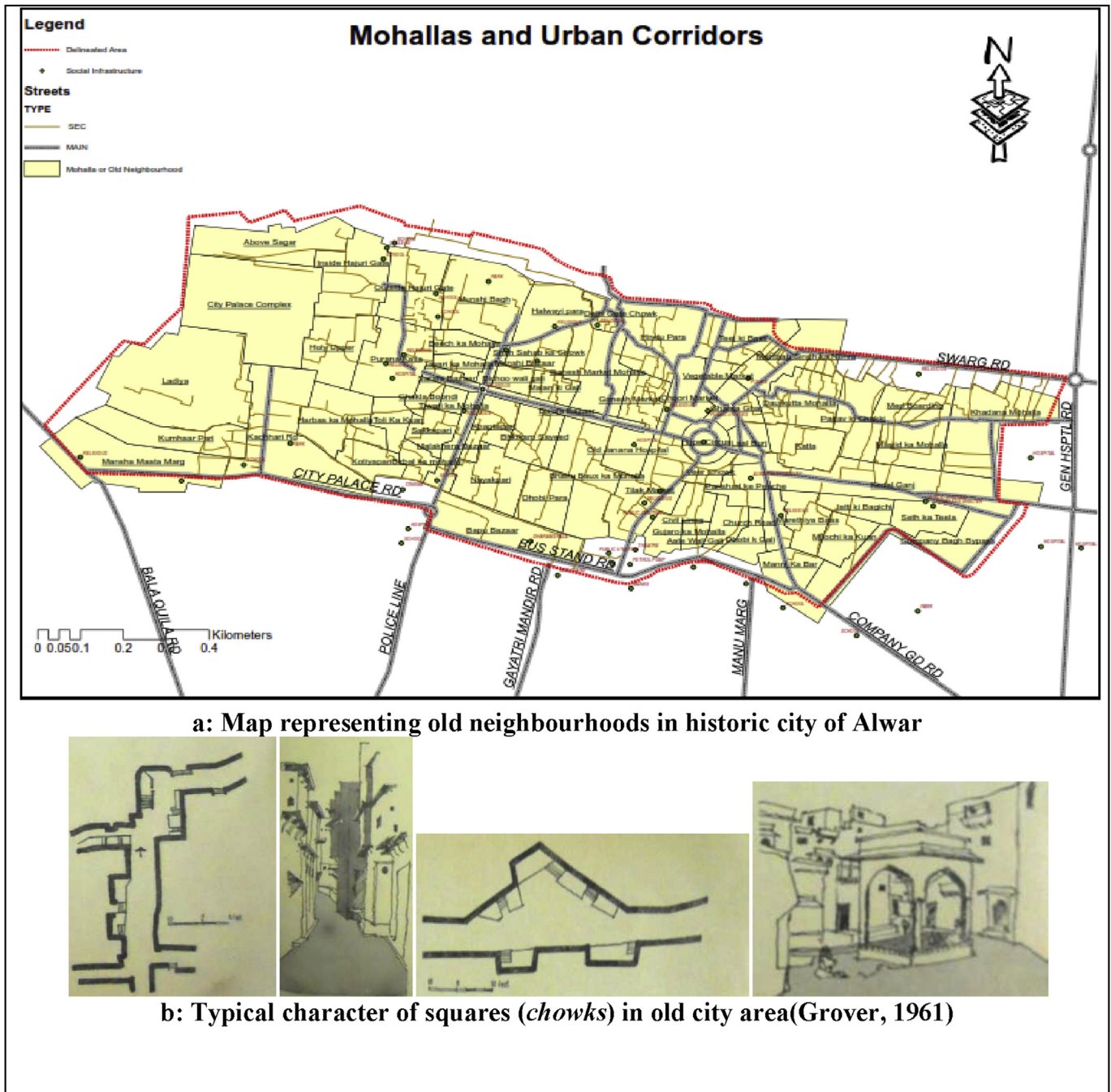


Fig. 9. Map representing old neighbourhoods (Mohallas) and characteristics of chowks in old walled city of Alwar.

houses belong to regular settlements and 28% belong to organic settlements, which are now inhabited by a large number of poor families (Fig. 11b). Multiple subdivisions of the structures are common in these settlements which have led to very high residential density. These settlements are characterized by inadequate infrastructure, basic services, and dilapidated shelter conditions. The roads are as narrow as 4 feet, allowing no scope for the regular size vehicles including ambulances to pass through. In some of these settlements, operation and maintenance of basic services such as storm water drainage, sewerage, water supply and solid waste management are negligent. In these circumstances, residents make their own arrangements.

In these old settlements, predominant land use is found to be

residential (59%) followed by mixed residential land use (26%) and commercial (15%) (Fig. 12a). In many cases, it was found that the land was gifted by the royal family of Alwar to patronizing local artisans which account for 30% of houses (Fig. 12b). The residents of these settlements had the original title to their land, which at present is shared by the heirs and with the passage of time, the ownership of the residences has been multi-faceted, leading to a low per capita space and increase in the service deficiency. Issues of multifaceted ownership have led to the neglect of old buildings and resulted in dilapidated housing conditions. Around 33% properties are found to have 3 owners, 32% properties have 2 owners, 23% have a single owner and rest 12% have 4 owners (Fig. 12c). Also, the joint family structure seems to prevail in these settlements with



Fig. 10. Map representing intangible heritage of historic city of Alwar.

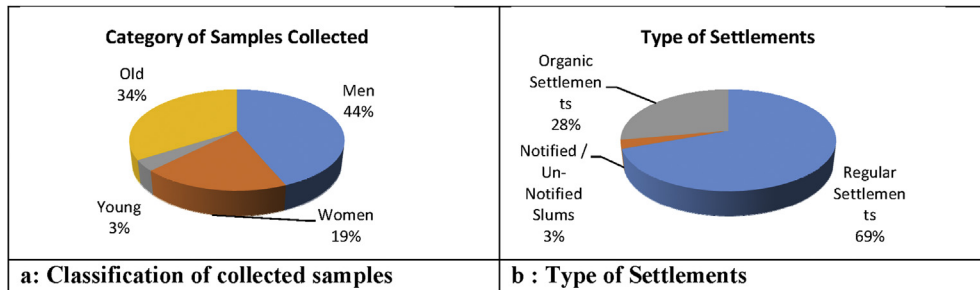


Fig. 11. Composition of samples for primary household surveys.

66%, followed by 27% single family and 7% multifamily structure (Fig. 12d). This finding is further substantiated by their responses to accommodate housing extensions and transformations for the growing number of family members and their modern lifestyle.

Analysis of occupancy of these settlements reveals that 49% local residents are from old city areas and 45% of them had migrated from nearby towns and villages within the same district (Fig. 13a). It has also been observed that around 45% of the properties were occupied in the 1970s, which observed major industrial boom in the city, 27% in 1980's and 22% in 1940s i.e. during partition phase of India (Fig. 13b). Periods of 1940s and 1970s portray distinct patterns of land occupancy in the old city, with a shift towards mixed residential and commercial land use (Fig. 13c). Many open spaces have been modified or removed to accommodate more living space during the 1980s. The open spaces which include wells, trees and squares show tremendously degraded and abandoned functions (Fig. 13d). It is also observed that people have small home-based enterprises and workshops on the ground floor and their families live on upper floors. Alterations in existing older housing include

adding more habitable rooms, raise in the level of floors, adding an outside staircase for tenants in case of a rental or multifamily housing and renovation of the outer facade as per contemporary construction practices (Fig. 13e). To add to the problem, violation of building by-laws is observed in the walled city area (Fig. 13f). There is no regulation on the height and area of the buildings in the old city. People follow rampant and irresponsible construction activities. The approach of the local authorities to the other settlements not identified as slums and which were once upon a time legal settlement, is ambiguous. In these areas, it is very common to find informal economic activities which are primarily household based small-scale industries spilled on the roads; further creating inconvenience to the pedestrians and to the shopkeepers (Lall, 2001).

5. Key findings

Historic neighborhoods of the city portray the rich Rajputana style of architectural elements such as Jalis, Jharokhas, and

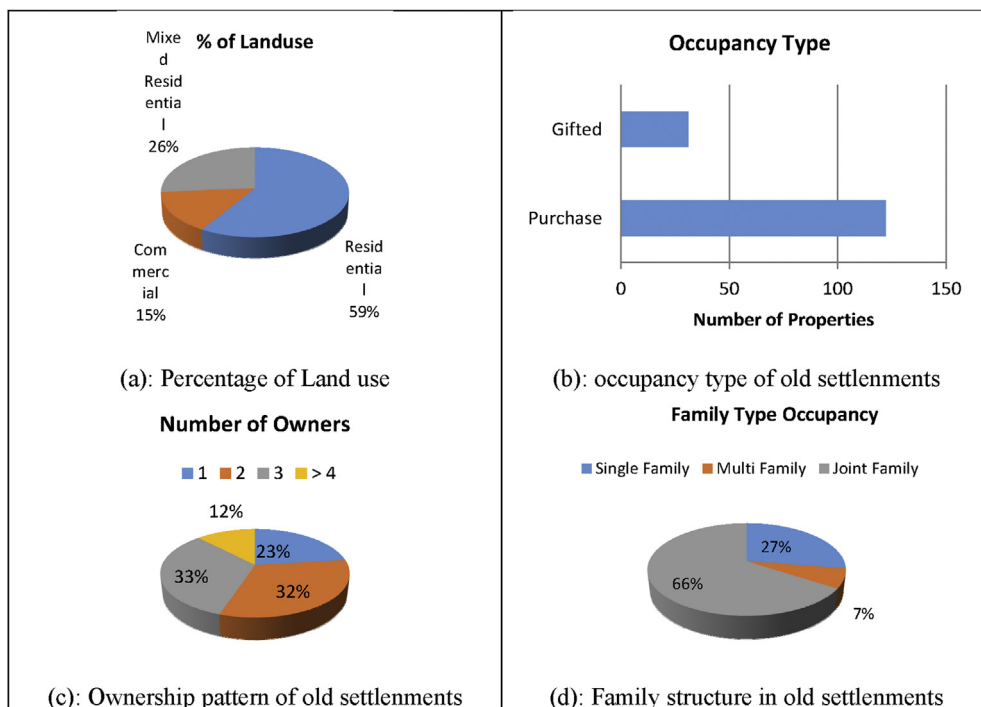


Fig. 12. Social composition in old walled city of Alwar.

courtyard system of planning which are found to be sustainable for the local climatic conditions of the city. However, with the passage of time, the city has faced the tremendous pressure of urbanisation especially after the partition of India in 1947 and industrialisation in the 1970s. The Figure Ground Analysis of the delineated study area reveals a compact and walkable urban fabric with closely knitted old communities. The old neighbourhoods still demonstrate a traditional way of life showcasing mohalla culture. The squares and open spaces were crucial meeting places for the community of the mohalla, bringing a high level of public participation. However, now these squares are in the bad physical state due to negligent attitude of local authorities. There is a strong need of behavioural mapping and analysis to understand the baseline situation of these squares and accordingly adopts an appropriate micro level intervention.

The five core urban elements which have been spatially mapped using GIS are urban corridors/street network, old neighbourhoods/mohallas, open spaces/chowks, commercial areas/bazaars, and historical monuments. Also, intangible heritage component associated with each mohalla is being mapped to make it inclusive in terms of the traditional economic activities. The primary surveys and local consultation of local residents, shopkeepers, visitors and focus groups help in analysing the trend of the development of the area. Analysis of the historical timeline and urban transformation of Alwar walled city reveals evolution of the region from prehistoric times to its present day regional significance in NCR. The entire Alwar city has evolved from its compact pattern of organic settlements to sprawled new housing areas. However, a haphazard and incongruent urban development is clearly visible in the old walled city leading to a degraded quality of life of its inhabitants. This, in turn, has also affected the residential culture and their traditional way of living which is still prevalent in the old walled city of Alwar.

Rental and multifamily housing pattern is common which raises the concern of gentrification in the near future. Issues of multifaceted ownership have led to the neglect of old buildings and resulted in dilapidated housing conditions. A strong need to

accommodate housing transformations is also realized during the primary surveys. A disharmony in the old and modern architectural styles and practices is prevalent demanding appropriate Development Control Regulations and Urban Infill Guidelines.

6. Conclusions

The importance of the historic core of an old city is a well-established fact from historical, economic as well as cultural point of view. Over the decades, a shift in ideology and attitude towards the revitalization of these unique old city areas is evident from a passive approach to the preservation of individual structure to a more responsive conservation approach of entire historic urban fabric which considers its architectural, archaeological, cultural, historical, social and ecological values in a holistic manner. The historic walled city of Alwar is analysed as representative of a historically significant medium sized Indian city. Its unique heritage values and prominent regional setting demand special assistance to redirect it towards a harmonious and inclusive way of planning.

For the macro-level characterization of HUL of old walled Alwar city, a comprehensive methodology employing extensive data collection at a secondary and primary level is undertaken. The GIS-assisted spatial mapping of identified historic urban elements is carried out for the delineated study area of around 3.80 sq. km, based on which a figure-ground analysis of historic urban fabric was done. The primary data collection helped in analysing the development trends in the city. In spite of the distressed state of infrastructure in the old city area, Alwar still has a large potential to harness its strengths in the right direction. There are many new planned housing schemes under UIT, RHB, and private developers in Alwar with the NCR plan 2021 targeting it to develop as an important magnetic centre in the region. This raises further concern how the core city area will be treated under this new phase of development with different sets of objectives and priorities.

The study concludes that the need for revitalization in old cities like Alwar which have traditional social and urban fabric should not

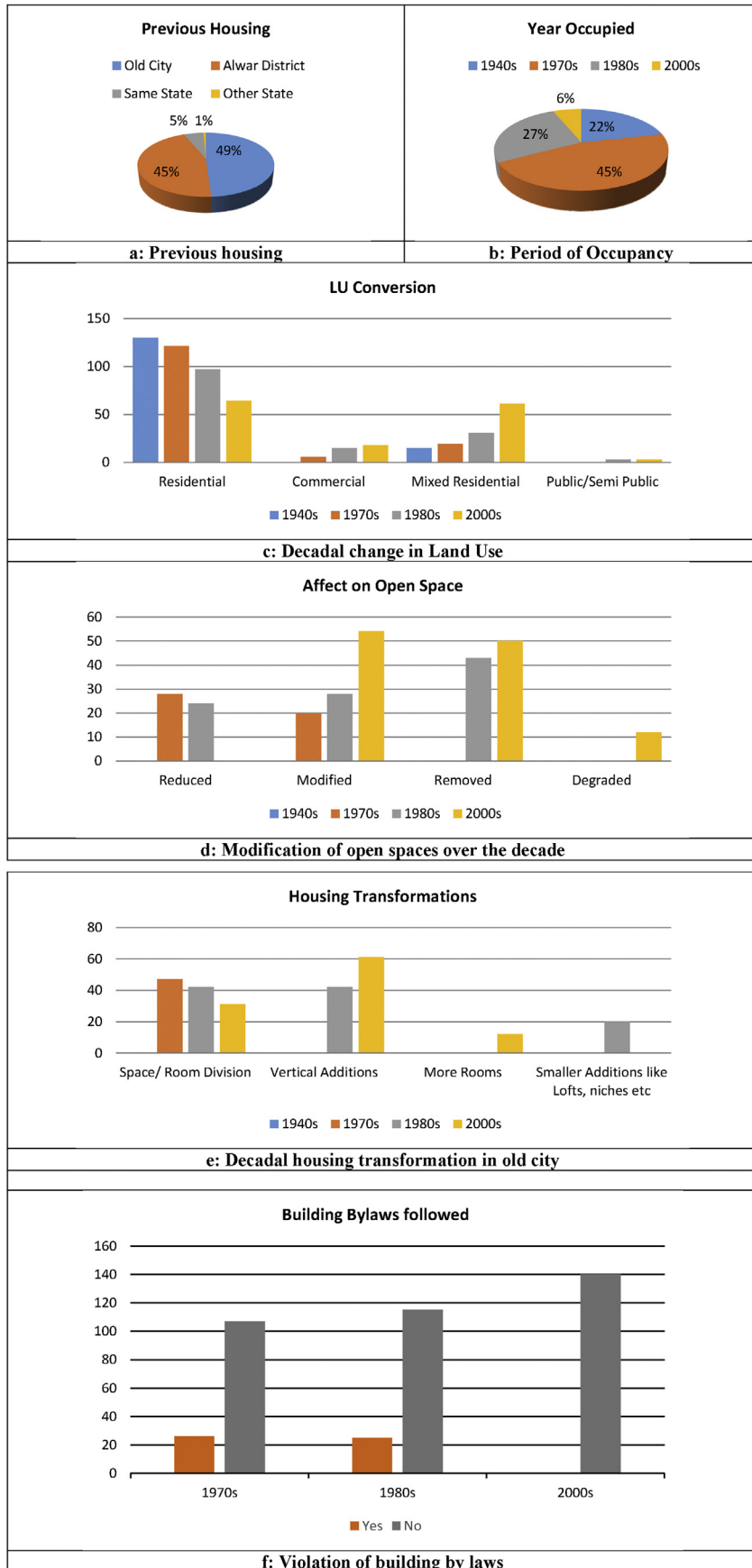


Fig. 13. Temporal analysis of old settlements over the years.

be merely tourism based intervention, but the focus should be more on local communities to achieve long-term sustainability. The study realises that the historically significant cities in India and other developing nations need a more holistic approach of urban revitalization inclusive of the cultural, social, environmental and economic values of its old settlements. Instead of looking merely at the physical attributes and architecture of the buildings, there is a dire need to look at the needs of the local communities, particularly families of modest means, and their lifestyle.

For future research, authors propose that the macro level characterization of such historical settlements should be taken to the next level of the micro level framework. Such a micro level planning at neighbourhood level may ensure proper assessment and evaluation of the quality of life of its people. Authors are very optimistic about the new urban mission of building smart cities in India and hope to advance the inherent sustainability and efficiency of traditional settlements to the modern planning ideologies. The authors hope that the findings of this study will be useful to urban professionals as well as the policy makers.

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