A STUDY ON KANCHIPURAM TOWN MORPHOLOGICAL AND REVOLUTION OF CULTURAL DUE TO HISTORICAL GROWTH OF TEMPLE CITY IN TAMILNADU, INDIA

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ABSTRACT

The objective of this research is to study on culture of both tangible and intangible levels. It analyses the formative and transformative process of culturally rich temple town of Tamilnadu, through the case study of Kanchipuram temple city. This process is studied at two levels of settlement level and street level. The typomorphological approach is employed for this research using the three sample cases namely settlements and streets around different temples of the city. This research was carried out in an inductive method with the research question of ‘Does the tradition continue and sustain in traditional settlement during urban transformation?’ The study describes the formation of the urban morphological character of the historic temple town and explains how transformative changes in urban morphology have taken place due to urbanisation and find if there exists any continuum of the characters. The study further explains the factors responsible for the changes and the reasons for the continuing tradition. Kanchipuram being the temple town how the religious expressions play a role in retaining the character of the city is analysed. This paper also addresses the environmental issues like pollution and degradation of natural water bodies and temple tanks located outside temple precincts due to urbanisation and urban transformation. From the study it was concluded that, amongst the rapid transformation of the temple city Kanchipuram, there still exists the tradition and cultural heritage essence which has been the roots of this historic temple town.

Keywords: Urban Morphology, Culture, Environmental Effects, Historic Temple Town, Urban Transformation

I. INTRODUCTION

India is a culturally strong country and well known for its rich heritage. Tamilnadu is a southern state of India contributing to India’s cultural heritage by its significant temples and temple towns. One such Temple town is Kanchipuram, which is one of the holy city of India and historically prominent city from 3rd century existing till date. Kanchipuram witnessed many dynasties wherein the kings who have ruled had built gigantic temples, small shrines and other architectural wonders. Under the Pallavas, in the sixth century, it became a royal centre and also an important craft centre. Hinduism is the primary religion followed in Kanchipuram, though there were other different religions like Buddhism, Jainism, and Islam. The Hinduism has many divisions. Saivism, Vaishnavism and Shaktism are the prominent ones. The city of Kanchipuram is famous for two important reasons today, one its temples-its position as an important Shakti Peedh in this part of the country, the importance of its Shiva and Vishnu temples for which people from different parts of the Country visit Kanchipuram and two, the exquisite silk sarees with intricate patterns and outstanding quality. This paper analyses, the tangible aspect of culture as the urban morphological transformation and intangible aspect of culture as temple based religious events, taking
three sample cases namely settlements and streets around Varadaraja Perumal, Ekambareswarar and Kamakshi Amman temples.

II. LITERATURE SURVEY

2.1 Culture

The cultural heritage expresses continuity between the past and the present, introduces the idea of cultural identity [1, 2]. While defining cultural heritage states that, cultural heritage relates to people’s sense of belonging and cultural identity. The sustainability of culture is most important for maintaining the safety as well as green environment for the society [3-5].

2.2 Geographical Location of Kanchipuram

Kanchipuram lies within the Kanchipuram district of Tamil Nadu as shown in Figure 1. To the north of the district lies Chennai, and to its south is Vellore. The Bay of Bengal bounds the district on the east while the Vellore and Thiruvannamalai districts are towards the west.

![Figure 1 Geographical Location of Kanchipuram District and City (Source: Official Website of District Court of India, Maps of India)](image)

2.3 About Kanchipuram

Kanchipuram also called Kanchi was the capital of Pallava rulers from 2nd century and it was the Pallava period Kanchipuram on its glory in terms of religion, literature, art and architecture. The predominant religion was Hinduism, both Saivism and Vaishnavism were at its peak by building several temples and encouraging several scholars to write many important literatures of South India. Apart from Hinduism Kanchipuram also witnessed Buddhism and Jainism by building many monasteries and shrines till date it is evident by the archaeological remains at Thiruparuthikkundram near Kanchipuram [6].

III. METHODOLOGY

This research was done as an inductive method with the research question of Does the tradition continues and sustain in traditional settlement during urban transformation? Kanchipuram, a temple city has been taken as the case for this research paper. Initially the paper explores the tangible aspects of culture in the form of urban morphology (structure and evolution of the traditional cores) of the city. Theories of urban morphology had been studied through literature reviews and typo-morphological approach is chosen for analysis. The city structure of Kanchipuram is researched and settlements and streets around three important temples namely Varadaraja Perumal, Ekambareswarar and Kamakshi Amman temples are taken as sample cases to understand the formative process of the city in two levels namely settlement level and street level. Further Kanchipuram city is researched for its transformative process. Secondly in addition the current scenario of intangible cultural aspects is studied. Based on the analysis and discussion, the research question is answered in the conclusion.
IV. ANALYSIS

4.1 Tangible Culture - Settlement and Street Level

As tangible culture this paper explores the morphological structure of the city of Kanchipuram which is poly nucleated. Originally the nucleus is being the Shiva, Vishnu and Shakti temples with varying size and significances. Most of the saivites settled around the most significant Siva temple, Ekambaraeswarar temple, in the North West part of Kanchipuram and hence called Siva Kanchi. Most of the Vaishnavites settled around the most significant Vishnu temple, Varadarajar Perumal temple, in the East part of Kanchipuram and hence called Vishnu Kanchi. The devotees of Shakti settled around the most significant Amman temple, Kanchi Kamakshi temple, located in the centre of Kanchipuram. These are three main temples as far as the significance is considered. The streets and settlements around these three temples are selected as samples to analyse the urban morphology through the elements of typology, form, patterns, hierarchy and use in streets. The satellite map of Kanchipuram City, highlighting three temples taken as samples for this study is as shown in Figure 2.

![Satellite Map of Kanchipuram City, Highlighting Three Temples Taken as Samples for Study](image)

As far as the size of settlement is considered, the settlements with Ekambaraeswarar temple and Varadarajar Perumal temple as nucleus are the major settlements, whereas settlement grown with Kanchi Kamakshi temple as nucleus is medium in extent as shown in Figure 3. There are other minor sizes of settlements developed around Pandavathooda Perumal temple and Ulagalantha Perumal temple and other small Shiva and Vishnu temples. Though there are more than 100 other temples does not act as a nucleus for settlements but exits as a neighbourhood temples developed by various rulers over a period of time. The temples acted as nucleus and they have Sannidhi Street in front of the Main Gopuram (Entrance gate way in the form of Pyramidal Towers) connecting with other parts of the city and the North, south, east and west Mada streets surrounding the temples in the respective direction. These were inhabited by the Brahmins caste (system of social stratification) people, many of whom served the temples. These were called ‘Agraharams’ and not open for other caste people.

4.2 Typo Morphological Analysis (Typology in Streets)

Streets functions as basic unit of urban tissues, forming urban form in the morphological structure of any city. Kanchipuram displays typology of streets like Sannidhi Street, Mada Street and Raja veethi. Sannidhi streets are typical streets that run axially to the main entrance gopuram of the temple nucleus as shown in Figure 4. As mentioned like medieval towns of Tamilnadu, Kanchipuram also expresses a high degree of axially along the Sannidhi Street, Gopuram and Vimana in the temple cores [7]. Sannidhi streets had row houses on both sides with the Gopuram as focus. They had row houses with common walls between them. A stretch of thinna is and sloped roof with a continuous eaves line and skyline formed the image ability of Sannidhi streets. Mada streets are the concentric rectangular streets formed around the temple as nucleus. These streets have the temple Prakara wall in
one edge of the street and the other edge of street formed with traditional Tamil houses with tiled sloped roof and pillared thinnais.

Figure 3 Map Showing Highlighted Sannidhi and Mada Streets of Varadharaja Perumal, Ekambareswarar and Kamkshi Amman Temples

The ‘Raja Veethi’ acted as the ritual path in which ‘Ther’ (the chariots) of all the temples were taken in procession during the auspicious days, to mention a few: Brahmotsavam of Ekambareswarar temple in the month of March, Garuda Seva of Sri Varadaraja Perumal Swamy temple in the month of May 2019. Typology in buildings as religious establishments in Kanchipuram includes ‘Vedapadasala’ where Hindu Vedic scripts to younger generation, ‘mutts’ pertaining to the respective sects of the religion to sustain their respective religious practices, ‘Chatrams’ which are religion based accommodation for the pilgrims who came on pilgrimage to visit the temples existed at Kanchipuram.

Figure 4 Sannidhi Streets of Varadaraja Perumal, Ekambaraeswarar and Kamatchi Amman Temples

4.3 Formative Process

Figure 5 shows the formative process of the street and settlement typology in the traditional cores of Kanchipuram. First the formation of temple as nucleus happened in different stages like, formation of Garbha griha where the deity is placed, followed by development of Mandapa (pilled hall) and Dwajasthambam (flagmast) in front of the garbhagriha establishing the axiality. This was followed by the formation of prakara suvar (precinct wall) encompassing the Prakara suttru (circum ambulatory spaces) to facilitate the ritual of going around the Garbhagriha. The four cardinal directions were accnetuated by the Gopurams (entrance towers) by punctuating the precinct wall, enhancing the axiality. Axiality is further strengthened by locating a Mandapam (pillared hall) outside in front of the main Gopuram to facilitate the ritual of placing the deities for public dharshan (viewing). Further developing the axiality the sannithi streets were formed perpendicular to the main Gopuram, flanked on both sides by Tamil traditional house of priests who served the temple and other building typologies that formed the religious establishments like, the Mutt, Vedapashala, Chatrams. As the Brahmin community devoted to the specific temples grew, the Mada streets were formed surrounding the Prakaram wall, in concentric pattern with temple as nucleus. The Sannidhi and Mada streeets formed the Agraharam (traditional settlement of Brahmin community).
4.4 Transformative Process

4.4.1 Transformation at Settlement Level

Kiruthiga while discussing temple towns in India mentions that, ‘Historical towns have confronted new challenges and changes over the last few decades’ [8, 9]. Similar situation prevails in Kanchipuram. In the city of Kanchipuram due to rapid urbanisation caused as a resultant of religious (pilgrims visiting temples) and commercial tourism (buyers for silk saree) the following changes are observed: change in land use, introduction of new commercial establishments, introduction of new building typology, non-use and misuse of traditional structures, environmental pollution and degradation of natural resources, formation of unplanned and unorganised slums, squatters, urban sprawl and incorporation of technological advancements.

Earlier temples were more for the religious practices of the native people of the place and now due to media, technology and transportation temples attracts devotees all over India and abroad leading to a high level religious tourist population. This is reflected in growth of commercial and hospitality industry in the form large number of hotels of varying sizes to cater to different economy of tourists. This growth tends to the reduction and replacement of traditional ‘Chattrams’ (traditional boarding and lodging facilities) and ‘veedus’ (houses) due to the need for provision of modern services and conveniences. Agricultural lands, water bodies and barren land along the periphery of the city had turn into built area. This Urban sprawl facilitates introduction of new building typology of apartments in the urban fringes as shown in Figure 6. Earlier ‘Mandapams’ (the pillared halls) affiliated to temples used for social, religious and cultural activities. But now many of it are in dilapidated condition, few of it camouflaged with commercial establishments at the front make it lose its heritage value and historic and architectural appearance. Few of it is even used as parking for vehicles, temporary shelters for homeless as shown in Figure 7.
The important river Palar flowing through Kanchipuram had dried at present and the river Vegavathy had been dumped with garbage and used as let out for sewer lines. Lakes and ponds had been polluted with garbage and sewer. On Urbanisation there is a shift in nucleus around which settlement grew. Earlier temple acted as a nucleus of the settlement, currently due to migration, low economic level and non-affordability these lakes, ponds and River Vegavathy had started acting as nucleus gravitating settlement around it as shown in Figure 8.

The same scenario continues around the temple tanks affiliated to certain temples like Sarva Theertha Kulam but located outside the temple precinct in the form of residential and commercial encroachment to an extent that it is lost its visibility from outside, in addition the hoardings and bill boards adding to the visible chaos as shown in Figure 9. Whereas the temple tanks located within the temple precinct are well maintained and used for the religious and ritual practices. In addition new technologies like air conditioning have been introduced in both temples and houses. Temples also introduced with new technological advanced instruments like electrical
‘Mangalavathiyams’ (replacing the traditional drums). In spite of the above mentioned changes a few continuum also are observed as ‘Vedapadasalas’ like Sankara Mutt, still exist and continues to train the younger generation of the Brahmin community with traditional rituals, practices and procedures. Many ‘Chatrams’ still exist either given a face lift or pulled down and new contemporary construction built on it.

4.5 Transformation at Street Level

The townscape elements of streetscapes and skylines, not only adds to aesthetics, giving a sense of belongingness but also acts as an expression of history of the place. There are other influences on image ability, such as the social meaning of an area, its function, its history, or even its name [10, 11]. The streets as unit of town plan, building fabric and building and land use, are tripartite division of townscape, considered [12-14]. The typology of Sannidhi streets and Mada streets were originally occupied only by the Brahmin community and other caste were strictly forbidden to live there. Now due to outward migration the Brahmin community shifted out to urban centres within India and overseas for education and profession and giving way to other caste to live here and also been rented or leased to government and private establishments like bank and other commercial shops (silk saree shops) leading to change in building use as shown in Figure 10.

Transformation in land use from primary residential to mixed residential and commercial is seen more in Sannidhi Street and comparatively less in Mada streets. Traditionally the Sannidhi street was characterised by tiled sloped roofed row houses with same building height leading to uniform and continuous skyline, eaves line (sloped terracotta tiled roof) and building line (Thinnais) on either side of the main Gopuram striking with strong image ability. Currently, new buildings with the changed fabric and varying building heights interspersed in the Sannidhi street, breaks its uniformity and image ability as shown in Figure 11.

4.6 Intangible Culture
While defining tangible and intangible heritage discusses, ‘immaterial heritage as uses, representations, expressions, knowledge and techniques that communities, groups, and, in some cases individuals, could recognize as an integral part of their cultural heritage, and mentions examples of that categories like Social practice, rituals and festive events’ [2].

4.6.1 Religious Rituals and Festive Events Athivaradhar Mahotsavam

The Varadaraja Perumal Temple is the biggest and the most important Vishnu Temple in Kanchi. Varadaraja is a name of Lord Vishnu and it literally means The Lord of Boons. There is a unique feature of this temple and that is the ‘Athi Varadar’ or manifestation of Lord Vishnu on the wood of a Figure 12 (Athi) Tree. This is a nine feet statue of Lord Vishnu that remains in a special vault submerged inside the temple tank called the Anant Saras for 40 years. After every 40 years, Athi Varadar is taken out and for public darshan (view) for 48 days as per the ‘Agama’ (Vedic Script) procedures. For the first 30 days, the idol is placed in reclining position and placed upright for the remaining 18 days. Thereafter the Lord will be placed in a container with armour of preservatives and put back in his Anant Saras water abode for another 40 years. This had been celebrated as ‘Athi Varadhar Mahotsavam’ from 1st July to 17th August 2019. This ritual will be repeated in the year 2059.

Figure 12 Athi Varadhar Mahotsavam
(source: News Papers - Deccan Herald, Times of India, July to August 2019)

4.6.2 Temporary Transformations during the Festive Event

Traditional houses served a variety of roles- a part of the houses were rented to pilgrims, at instances the entire house acted as a lodge, many houses functioned as a eating outlet for the pilgrims. The entire place was impregnated with the spirit of Athivaradhar Utsavam to an extent that even a petty coffee shop had changed its name board to hold an image of Athivaradhar to contribute to the sense of the place. Mobile toilets, drinking water points, info booth, security booths and police booths were temporarily arranged to assist and serve the crowd gathered. Money vending machines and medical assistance were positioned on Sannithi street and even within the temple. New temporary staying places with toilet facilities had been introduced by the Government for the benefit of the pilgrims. On the contrary, to these positive arrangements there had been instances where many streets became inaccessible to it's own residence. In spite of the good planning of crowd management, one instance of stampede had occurred.

V. RESULTS AND DISCUSSIONS

5.1 City Structure and Urban Tissue

The streets give greater resistance to transformation than buildingsfabric and use [15-17]. This is found true in the case of temple city of Kanchipuram, which is evident through the street pattern, landuse and building fabrics observed in Sannidhi and Mada streets. The pattern and relationship of streets as Sannidhi and Mada streets with the temple as nucleus have not undergone changes. But change in land use from primary residential to apartment residential and commercial is observed as the traditional houses in Sannidhi Street have been changed to
commercial uses like saree shops and lodging facilities to cater to the needs of religious and commercial tourist population. Change in the building fabric from tiled sloped roof, single storied row houses with continuous skylines and thinnais (raised platform outside main door) that accounted to the original traditional fabric to commercial buildings either facelifted from the traditional house or new constructions of RCC flat roofs devoid of thinnais and interrupted skyline of multiple storeys as shown in Figure 13.

5.2 Formation of Fringe Belt

Due to the urbanisation, industrial corridors and IT corridors have developed around the city leading to inward migration of people from other places and becomes the cause for urban sprawl leading to the formation of the fringe belt. As part of the transformation new developments have taken place in the form of larger institutions, real estate developments and introduction of new typology of housing type in the form of apartments along this fringe belt. Satellite map of old and new town boundaries of the city displaying its extension are shown in Figure 14.

5.3 Environmental Issues

The inward migrants who gravitate towards this city for occupation due to the recent new commercial ventures like silk saree shops, hotels that have come up to cater to the needs and conveniences of religious and commercial tourist population and introduction of SEZ, settle around the natural water bodies and temple tanks located outside temples to which they are affiliated, as squatters settlements and slums due to their low economic status and un affordability to own or rent a proper housing within the city core. These masses dump their solid wastes, drainage and sewerage into these water bodies. Dyeing sections of many silk saree making industries pump out their effluents into the natural water bodies like Vegavathy river, lakes, ponds and tanks. All the selead to environmental pollution and degradation, which would be a check to continuum of the culture as these natural resources would no more be available for any of the daily life rituals and temple based religious rituals related to them.
5.4 Religious Expressions

The temple city of Kanchipuram supports people belonging to three major sects of Hinduism, namely Shaivism, Vaishnavism and sakthism. People use iconography to express their identity, affiliations and belongingness to their particular sect. Iconography being the visual images is seen in temples as well as in houses in Kanchipuram as shown in Figure 15. The vasinavite temple has the ‘Namam’, ‘Sangu and Chakkaram’ as the depiction of Lord Vishnu on the temples and houses. There are two of types of ‘Namams’ has worn on the foreheads to express their respective affiliations to the Thenkalai and Vadakalai sections Vaishnavism.

The Shaivite temples have the ‘Nandi’- the holy bull on its precinct wall as well as three horizontal bands of white colour with the yellow dot in the centre, overlaid by the red dot representing the holy ‘Vibhuthi Pattai’, ‘Chandanam’ and ‘Kunguma Pottu’. This is seen on the forehead of the shaivite people as iconography on the temple and rarely seen on houses. The temples dedicated Shakti has Lion and ‘Trisulam’ as their mark of identity mostly seen only in the temples. Though the material in which iconography is executed had been changed from stone and stucco art to tiles, metals, glass and plastics, the ideology of expressing their belongingness to a specific sect of religion through their symbolism on their buildings (temples and houses) still continues. These expressions are evident even in the name boards of coffee shops.

5.5 Socio-Economic and Cultural Expressions

The historic centres that served purely for religious land use had grown and accommodated commercial land use contributing to the economic growth of the city [18-20]. This is observed true in the Sannidhi streets and Mada streets of the traditional cores of Kanchipuram in order to cater to the growing requirements of tourists contributing to the economic growth of the city. The introduction of the Special Economic Zone by the government has resulted in the inward migration of people from different of Tamilnadu and India leading to the urban sprawl and construction of apartments in the peripheral areas on like Orikkai. In addition many lakes, ponds and agricultural lands have been transformed into housing colonies. Infiltration of Non Brahmins in Agraharams also had parallelly occurred.

Kanchipuram is famous for its silk sarees right from its historical times, which continue till date. In spite of the continuation of our cultural Milieu of purchasing wedding sarees only from Kanchipuram, a huge transformation in the weaving industry has occurred. Traditionally weaving happened at the handlooms and was a family occupation where the entire family was involved at the various stages of the process, and the house form was dictated by occupational requirement like pits to accommodate the ‘Thari’ (loom). Today more handlooms got converted in to power looms and weaving is no more a family occupational charisma as the youngsters are not interested in the family occupation due to low profit margins and less attractiveness of the job. In contrary, many agencies and business families are involved in the establishment of power looms and training youngsters to run the power looms. Many entrepreneurs of Chennai and other cities within and outside Tamilnadu own their own
power looms here had let to vanish the traditional family occupation of handloom weaving of silk and cotton. This resulted in socio and cultural changes manifested as migration of younger generation to nearby towns and cities for education and occupation leaving only the older generation at the city of Kanchipuram.

VI. CONCLUSIONS

Study on urban morphological and cultural transformation caused by urbanisation of historical temple town of Kanchipuram was carried out in this research. Based on the study and analysis the following conclusions were arrived.

Considering tangible culture, the city of Kanchipuram though manifests change in building fabric and building use, it exhibits continuum in the city structure in the form of patterns established through typology of streets. At building level, sustenance of many vernacular buildings in spite of few being pull down, few given a face lift, few continuing with an adaptive reuse, prove the continuity of the past in to the transformed present.

Considering intangible culture, religious rituals and practices at temples and houses of the people on auspicious days, the Ther processions along the ritual paths of Sannidhi streets, Mada streets associated with the temples and Raja Veethi, the nature worship of the snakes, holy trees, rivers and other water bodies like temple tanks, the ‘Athi Varadhah Mahotsavam’ continued once in forty years as per the agama (Vedic scripts) procedures expresses continuum. Further the continuum is evident through the continuation of iconography as religious and cultural expression, in spite of change in materials.

The existence of doll and idols making families, Thacchars (carpentars) families making wooden artefacts for the Thers, active Chathrams mutts and Vedapadashalas further exemplifies the fact of continuance of the tradition. This is also proved by the existence of handlooms still, in spite of the converted power looms, because of the persistence of families still insisting on the roots of handlooms, though in smaller groups.

The factors responsible for the transformation of the city are changes in the land use, commercialisation of the heritage buildings and precincts, changes in the building typology and fabric. And the reason for the continuum is the heritage value of the people of this historic city. It is found that religious, socio-cultural and economic expressions at both tangible and intangible levels are the basic factors of sustenance.

This co-existence of tangible and intangible heritage along with changed building typologies and fabrics, new materials and construction methods, incorporation of technology in traditional structure like ac, electronics systems and CCTV cameras stands testimony of the balance between continuums of tradition with the transformation due to urbanisation.

Kanchipuram city is getting the changes like new commercial establishments, misuse of traditional structures, environmental pollution and degradation of natural resources, formation of unplanned and unorganised slums due to fast urbanisation.

Hence, this study concludes that, amongst the rapid transforming urban settlement of Kanchipuram, there still exists a high semblance of traditional essence which has been the roots of this traditional temple based urbanised settlement, which declares the existence of continuum in layers manifesting time.

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