THE IMPACT OF TRANSFORMATION OF CULTURAL LANDSCAPE ON SOCIAL BEHAVIORAL PATTERNS IN JAFFNA

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Abstract

Jaffna city contains a distinctive social identity. The recognition of the Jaffna historical towns and their character as well as living atmospheres have been under threat since 1980, as a result of civil war, urbanization, and some other intangible factors.The meaningful environment features should be the sense of community and its attachment, recognition, continuity and longevity with the atmosphere we live in. The meaningful environment should be prevailed even though the social behavioral patterns and cultural landscape are being changed. Unfortunately, all the features that make a city unique and add value to the community are continuing to disappear. Therefore, it is imperative to ascertain the reasons behind the changes and provide necessary solutions through findings.The Information Processing Theory and the Place Identity Theory are being applied to analyze and strengthen the transformation of the cultural landscape and thesocialbehavioralpatterns.Thereareseveralattributesthatimpact on thebehavioralpatterns of thepeople. Case study areas are selected to analyze and visualizethe transformation of cultural landscape for it often changes periodically. Considering all these factors, a proper landscape management is desperately needed to preserve the character of Jaffna and its social identity in order to enhance the future of Jaffna.

Keywords: *Urbanization, Place attachment, Identity, Continuity, Cultural landscape, Information processing theory, Place identity theory, social behavioral pattern.*

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Introduction

Scientists often treat land-use as a homogenous area with respect to environmental and anthropogenic factors, but heterogeneity within a land use often exists because of different building types and social contexts. According to statistics, it is used to capture urban morphology and generally includes residential, transportation, industrial, commercial, recreational, institutional, and landscapes means that include natural cover and agricultural land.

Similarly, the beautiful landscape could be seen and experienced in Sri Lanka. Shaped like one of its best loved fruits, the mango, Sri Lanka has the stem of Jaffna peninsula which is naturally attached to the mainland by a strip of sand to the east of the Elephant Pass. It is artificially attached by the causeway on which lies the highway and the train track. In fact, at times of storms, the rain water and the waves of Bay of Bengal intermingle with it, and continuity of these natural functions are going to make Jaffna a genuine island and temporarily remove the stem from the Mango.

As mentioned above, Jaffna is unique, not only with its topography, but also with rich culture. Dravidian architectural, especially Hindu religious and traditions etc. Jaffna transforms of the landscapes which resulted a rapid and periodical changes in the culture. The transformation of the cultural landscape changes in Jaffna bring a negative impact of fragments or obliterates the natural vegetation, habit loss and isolation, which resulted in the transformation of the social behavioral patterns of Jaffna people. Therefore, the study particularly focuses on "The impact of the transformation of cultural landscapes on social behavioral patterns", which alter the spatial arrangements of cultural landscape components and modifies heterogeneity thereby disrupting cultural pathways. Furthermore, it modifies the behavior by creating an alien social behavior of Jaffna. These changes often result in the loss of native unique character of Jaffna.

A landscape is the visual features of an area of land, its landform and how they integrate with natural or man-made features. Generally, a landscape comprises the physical elements of geophysical define landforms such as flat terrain, mountain, hills, water bodies, rivers, lakes, ponds and the sea. Living elements of land cover is including indigenous vegetation, human elements of different forms of land used, buildings and structures and transitory elements such as lighting and weather conditions may have included. When out of these elements, human is an active element which could change the landscape and remains close to landscape.

"Study nature, love nature, stay close to nature.
It will never fail you."
– Frank Lloyd Wright

Frank Lloyd Wright simply describes the landscape as well as give a brief description of what social behavior means. It's the composite demographics of a defined area, which consist of its ethnic composition, wealth, educational level, employment rate and regional values.

Social behavior directly links with the human activity. Due to the human involvement in both the landscapes and the social behavior are inter-connected. It was being argued by the world of Thompson (1999/6) "That main source of positive values in landscape are to be found in three areas – The aesthetic, ecological and the social." According to Thompson, in the event where people are separated from beauty and ecology, they will not appreciate them and contribute to the conversation and sustainability threat. All these begin and end by the people because they

are the one who use the spaces, designers create, and therefore, they will affect them one way or another. If thedesign and planning were to begin with the social aspects, here is to look at the ways of encoring people to live with kind, respect the beauty of the nature. It would result a successful change in the landscape. So, it precisely says howthe social behavior and the landscapes are closely connected of a particular area or space.

A variety of factors caused problem to the original outlook of Jaffna, some of them are civil war that lasted for 30 years, modernization, and unplanned construction for commercial purpose. Most significantly, they ignore the cultural, social and community values.

Problem Statement

Studying those impacts on the social behavioral patterns and to identify the factors that are on frequent transformation, changing the cultural landscape of Jaffna. Jaffna hasa unique social identity with many historical sites. However, currently, the outlook and its cultural landscape have been threatened by several factors. An efficient management team may need to be formed up to have better control and to overcome this problem.

Research Objective

The key objective of this study is to ascertain the number of factors which could be considered as reasons for the transformation of the cultural landscape and social behavioral patterns and the impact of the changes. Two case studies were selected to analyze this transformation.

Significance of the Research

Landscape research consist not only ecological research, but also research related to social behavioral. The latter, often deals with the multi- faceted inter-relationship between the cultural landscape and society. According to the observation of the author, changes are being carried out time-to-time in the landscape of Jaffna. The study further recommends a wide range of solutions through its findings to retain the original outlook of Jaffna to bring back landscape that have already been ruined by the cultural landscape and social behavioral patterns. A practically workable mechanism needs to be established to create awareness among the people or inhabitants about the value of landscape, social behavioral patterns and the uniqueness of Jaffna in comparison.

Scope and Limitation

The case study areas are selected based on two major conditions;

- ➢ The two case study areas are key locations at the focal points of Jaffna, and well-known by everyone. Historically, those places had been kingdoms.
- ➢ Case study areas have high influence with the study of transformation of cultural landscapes and social behavioral patterns.

This research focuses only on identifying the cultural landscape and the social behavioral pattern.The factors identified by the author as the theory based is agood attempt to strengthen the research.

Understanding the transformation of Cultural Landscape

Landscapes reflect the interactions between people and their natural environment over space and time. Since humans generally modify the landscapes in which they live, and because they attached names, myths, and affective value to features of the territory they inhabit, the landscape of past cultures may also qualify as cultural resources (Lipe 1984).

This reflects that the cultural landscape has a long-term interconnection with the humans. Hence, when considering the change of cultural landscape, it destroys the long-term identity of the landscape with its people. Cultural landscape has undergone quite drastic changes in many territories with external factors (De Aranzabal et al., 2008).

When the cultural Landscape changes, it affects, either directly or indirectly, the social behavior of the area. It clearly explains how cultural landscape interacts with the social aspects. Abandonment of traditional agriculture give rise to serious cultural, economic and ecological losses—erosion, habitat destruction, loss of biodiversity, more forest fires, diffused agricultural pollution, general deterioration of the millennial cultural landscape (Ferna´ndez-Ale´s et al., 1992; Bischoff and Jongman, 1993; Baldock et al., 1993). In the agricultural field, changes in different sectorshave an overall effect on the cultural aspects.

Study of Social Behavioral patterns

People usually interact with their environment for a purpose. Therefore, they select spatial information related to that purpose ("Landscape Perception | IntechOpen," n.d.). Socio-economic structure, characterized by an increase in industrial investment, is seen to be associated with landscapes with evident signs of abandonment and encroachment in the landscape.

Fig 1 explains the overall Landscape structures and its components. If any one of the components get affected, the total picture of the landscape starts to slowly change. Fig 1 shows how the Cultural landscape changesaccording to changes in social behavioral patterns. Changes can be clearly identified by the Visual Landscape perception.
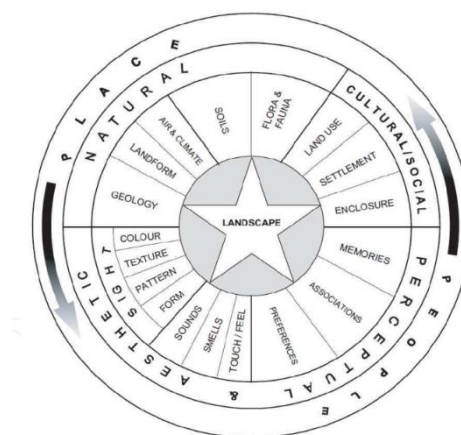

Fig 1*: What is Landscape (Swanwick, 2002)
Source: Landscape Perception | IntechOpen," n.d.

Study of social behavioral pattern in accordance to transformation of Cultural Landscape

Peoples aim to create livable, pleasant and sustainable outdoor environments according to their needs. However, by creating a new landscape by changing the existing landscape it affects the culture of that early existing landscape, and due to that cultural landscape changes. Social behavioral pattern of the people, too, changes with the space and time. There is a mutual relationship between people and their physical environments which influences each other ("Landscape Perception | IntechOpen," n.d.).

Normally, landscape pattern is fundamentally associated with social process. Land management decision should be based on the unity of social benefit, economic revenue and ecological effectiveness (Zaizhi, 2000). Therefore, it is clear that when it comes to human-dominated landscapes, change is mostly determined by socioeconomic factors (Etienne et al. 1998; Farina 1998), which are often ignored in studies of landscape change (Gardner and Turner 1991).

By understanding the cultural changes, it should clarify "how the cultural landscape effects on the change of the Social behavioral pattern". It is clear that cultural landscape changes have huge influence on the social behavioral pattern, either directly or indirectly.

Application of Theories

The research deals with a variety of interrelationships between the cultural landscape and society or individuals. The social aspect of cultural landscape becomes increasingly significant over the years, and it would become further important in the future.

Two theories are taken into the consideration. They are Information processing theory and the Place identity theory. These theories are used to comprehensively understand the importance of the human role in the transformation of cultural landscape on social behavioral patterns that has been ignored thus far.

Application of Information processing theory in the transformation of Cultural Landscape

As a result of either common procedures or human mediation, natural and cultural landscape, including natural (objective) and masterful (subjective) stylish qualities, changes from time to time. To underscore the change of cultural landscape, the Information processing hypothesis is connected. Kaplans' information processing hypothesis (1979) is among the most persuasive and surely understood speculations on landscape preferences.

For the research result Kaplans built up a preference

Table 10: Preference Matrix

	Understanding	Exploration
2-D	Coherence	Complexity
3-D	Legibility	Mystery

By the preference Matrix, change application on the cultural landscape is brought up with the 2-D and 3-D information.

Coherence of a setting is about the request and association of its components. On the off chance that a place is rational, at that point individuals can undoubtedly bode well out of the setting.

Complexity alludes to the level of decent variety of landscape components. The more complex a domain is, the more information it includes. Legibility: The idea of intelligibility is about introduction. Way-finding is critical for an individual as far as feeling secure and safe is concerned. It is tied in with perusing nature and appearing well and good out of it.

Mystery is the segment of preference identified with investigation. It is about the setting's capability of promising information. Mystery requires an inferential procedure (S. Kaplan, 1975).

The Kaplans propose that situations that include all the four segments clarified previously are generally favored. They likewise underscore that data should be focal in natural design and management.Be that as it may, taking care of and overseeing information can likewise be unpleasant for individuals. As indicated by Kaplan et al. (1998), our ability for coordinated consideration is constrained, and mental weariness happens in the event that one is compelled to get and oversee information over his ability. Mental exhaustion may cause troubles in or loss of focus, incautious activities, impulsive actions, anger, and irritability. Subsequently, the creators ought to know about the dangers of making settings that offer an excessive number of information.

Application of Place identity theory in the change of Social behavioral patterns

Customarily, human social behavior has been clarified and investigated from different points of view including biological, psychological, sociological, and social psychological. In spite of the fact that likenesses exist in these different points of view, in general, the points of view kept up contrasts in their way to deal with the understanding and comprehension of social behavior.

Social- psychology is characterized as the logical investigation of human social (or group) behavior. Be that as it may, as pointed out by Hogg and Abrams (1988), customary social-psychology had a tendency to consider a gathering to comprise of little accumulations of people commonly collaborating inside a comparative time and place.

The exhaustive comprehension of a landscape system obviously characterizes the part of human in the system and that they are the ones who are dealt with for the change of the environment (destruction). The social behavior pattern of human plays a major role in providing an identity toward their specific circumstance.

Concept of the social identity has been created and broadly tried in the extent of Social Psychology. In literature, it is quite conceivable to recognize no less than three alternate points of view of place personality that are identified with the research. Normally, the spatial identity of the space is specifically relied upon the culture (landscape and people). From Tajfel's (1981), perspective, a person's social identity is therefore seen as that part of the self-concept, which normally contains qualities that speak to the social gatherings or classes to which one has a place. The identity is derived from their insight into their participation inside a social gathering together with the esteem and emotional significance attached to that membership. Erickson

(1946) presented the idea of "spatial identity", and includes spatial aspects, such as place status, as defining the factors of identity. In the field of environmental psychology, the concept of place identity was introduced by Proshansky and (Proshansky, Fabian & Kaminoff, 1983, p. 59). The authors underline two primary issues.

The first is that advancement of self-identity isnotjust considering individual, relational and social procedures, yet in addition stretches out to the physical condition, making the place a central part of individual personality. The second issue needs to do with the possibility that place identity changes to some degree over the lifecycle, due to changes in the physical and social condition. Be that as it may, regardless of the significance of the idea, there is no assertion concerning the conceptualization and operationalization of place identity in the writing, it is conceivable to distinguish no less than three alternate points of view or conceptualizations of place identity that are identified with three research themes (cf. Droseltis and Vignoles, 2010, who distinguish four points of view).

Methodology
Data collection tools

The following tools were used for the research study purpose and contribution by each tool on the research purpose.

- Preliminary observation: Identify the best area for the case study by the transformation of cultural landscape on social behavioral patterns and feasibility study of the selected area.
- On site checking: Use the city form structures from the early period to understand the integration and social behavior and visual checking by observation gives up clear view of present situation.
- Geographic Information System (GIS): A Geographic Information System (GIS Software) is designed to store, retrieve, manage, display, and analyze all types of geographic and spatial data. GIS software lets you produce maps and other graphic displays of geographic information for analysis and presentation.
- Pictorial Analysis: Use as Existing evidence to show the condition such transformations happen with the selected area. And compare with old pictorial evidence conditions.
- Questionnaire: Use indirect questionnaire to clarify the ideas of locals and get to know the local's perception on certain area.
- Periodical Map: Its shows clearly how the area changes periodically.

Validation: Interview professionals in related areas of the study – Urban Development Authority, the Municipal council area, University of Jaffna and department of Archelogy.

Note- The area of study related to the impact of transformation of cultural landscape on social behavioral patterns.
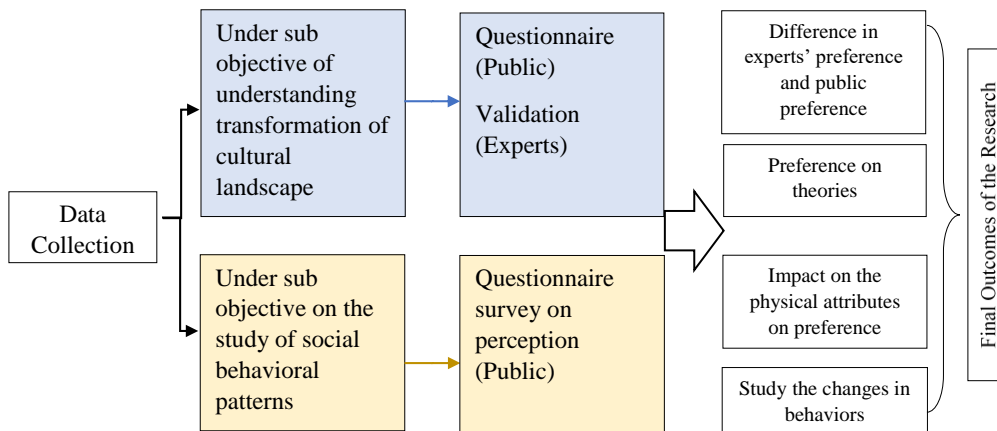
Data collection Method

Fig 2: Data collection method to final outcomes
Source: Author

Theoretical framework analyses tools on case study areas

The following tools were used for the research study purpose with theories on site checking.
On site checking through

- Questionnaires;
  Coherence, complexity, legibility and mystery are become the outcome of it. And the self- perception and the identity also considered.
- Validations;
  Experts' perception on the study area considered.
- Observations;
  Mainly the individual perceptional view identified and analyzed.

Outcome of data collection

To gain the aim and outcomes for thesub-objectives,

I. Understanding the transformation of cultural Landscape – Primary
    Analyze the resources to clarify the area of case study with the tools of literature, observations, land use maps, periodical maps and pictorials.
    Aim: With the literature, get to know the clear picture of Jaffna's historical, cultural and social behavioral background.
    Observations and pictorials derive an idea of the reality of the areas.
    Land use maps and periodical maps gives a clear picture how the landscape gets transformed.
    Outcome: Remarks the transformation of cultural landscape on case study areas.

II. Study of social behavioral patterns – Primary
    Analyze the data statistically with the tools of direct observations, Validations and Questionnaires.

Aim: With all three tools, one can get a fully matured result of the character of social behavioral patterns changes.

Outcome: Summarize the spatial characters of social behavioral patterns on case study areas.

III. Study of social behavioral patterns in accordance to transformation of cultural landscape – Secondary

Study both results by using the all the tools for the comparison.

Aim: Ensure the result is accurate by studying and identifying the main impacts.

Outcome: Finalize the impacts of the study.

Method of Research Study

After the selection of the case study areas, the impact of transformation of cultural landscape was studied and the social behavioral patterns were analyzed with the all three sub objectives by using the tools and fins the comparative study made on.
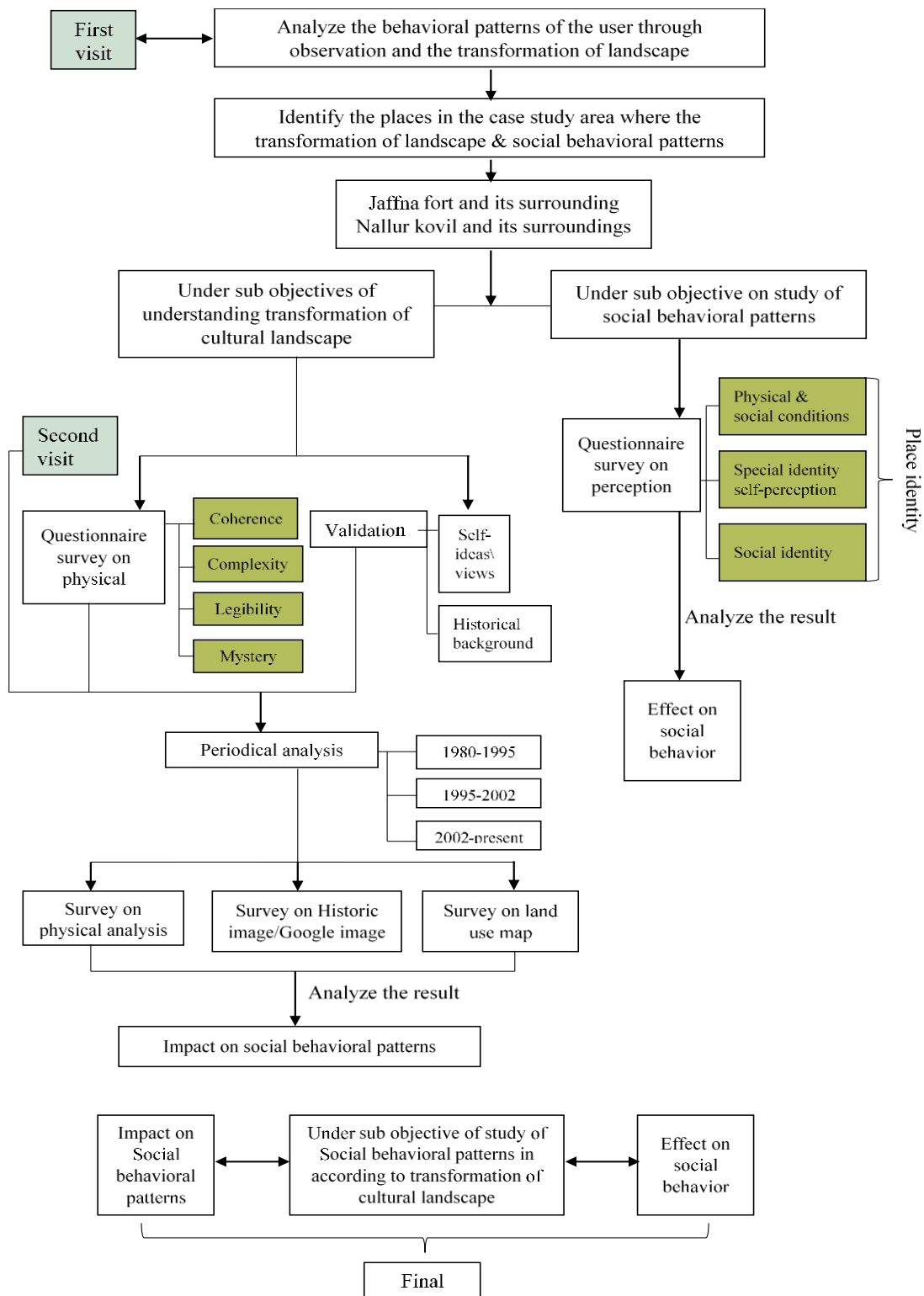
Research Design

Fig 3: Way of the Research design
Source: Author

Finding Analysis & Discussion

The literature was mainly based on Jaffna and validations were made, and a clear general understanding of Jaffna in Cultural landscape and social behavioral patternswas obtained and how it was maintained in early years, making it easier to make the comparative study.

Analysis was done based on periodicals from 1980 to 1995. Due to war, the whole of Jaffna faced migration from their native land and then, from 1995 to 2002, during the war time, and then again towards the end of it. The final analysis is from 2002 to present.

Overall result identified by the Public from 1980s up to present with the transformation of cultural landscape and the impacts by that transformation are listed below,

Analytical Result in transformation in Cultural landscape and impacts on the social behavioral patterns in Jaffna fort and its surrounding and Nallur Kovil and its surrounding.

Transformation in cultural landscape;
➢ Destruction of religious places in and out of the area.
➢ Destruction of the traditional archeological evidences.
➢ Newly emergence of contemporary architecture.
➢ Loss of celebrative and functional spaces.

Impacts on social Behavioral patterns;
1. Modernism
   -Recreational Behavioral patterns can be seen
   -Entire patterns of the life style get changed.
   -Busy life style
   -Spaces used in other way round
   -Dressing and the food styles get changes
   -Emergence of caste system
2. Religious impacts
   - Loss of cultural & traditional values and believes.
   - Transgress of other religious & cultural activities.
   - Involvement in the religious activities get reduced and focus on the entertainment activities not related to tradition and culture.
3. Loss of Behavior's
   - Health Depravity
   - Non-discipline acts in public places.
   - Drug additions and increase in use of alcohols.
   - Increase of sexual abuses
4. Loss of identity
   - Social interaction among people reduced.
   - Identity gets ruined.
   - Emergence of modern architecture
   - Disappearance of traditional architecture.

The above identified changes directly or indirectly made an impact on the social behavioral patterns in the Jaffna Dutch fort area and its surrounding. Furthermore, the impact of social behavioral patterns, before and after war, is widely discussed. Some pictures belong to old category before 2000, and others indicate the present situation.

Analytical Study of the Impact on Social Behavioural Patterns of the Case Study Areas

To identify and analyze the impacts, some measures were taken into the consideration in both areas.

Measures taken for the analysis are listed below,

- Loss of social interaction
- Emergence of other caste system
- Emergence of other religion
- Involvement in religious and traditional activities
- Socio economic status pattern
- Health depravity
    - Use of drugs
    - Sexual abuse
- Disappearance of traditional architecture
- Emergence of modern architecture
- Contribution of women to the income for their family
- Dressing pattern
    - Men
    - Women
- Food style
- Public gathering
- Morning
- Night

Only 40 samples are taken for the analysis of the study by considering the time.

Table2: Analytical result on each measure of the samples

Measure	Yes	No
Loss of social interaction	34	06
Emergence of other caste system	29	11
Emergence of other religion	36	04
Involvement in religious and traditional activities	33	07
Socio economic status pattern	30	10

Health depravity
   o Use of drugs
   o Sexual abuse
	
	28
	40
		
		12
		00

Disappearance of traditional architecture	35	05
Emergence of modern architecture	35	05
Contribution of women to the income for her family	30	10

Dressing pattern		
o Men	32	08
o Women	28	12
Food style	25	15
Public gathering		
o Morning	20	20
o Night	35	05

Overall summery of the Analytical Measures

Landscape surrounding of Jaffna fort and Nallur Kovil are changing more in accordance with cultural landscape changes, which has ruined the historical and the unique identity of the Jaffna. The idea of the 40 samples in 15 types of measures are taken into consideration to prove that the transformation of cultural landscape impact on the social behavioral patterns. As a result, the following graph precisely indicates the identification, acceptance and feeling of the social behavioral patterns indicated in blue colour stripes, and key selected fifteen measures give the result in the positive signs for the research. Overall, the research is successful, as it shows that the transformation of cultural landscape has impacted the social behavioral patterns, which is clearly indicated in Fig4.
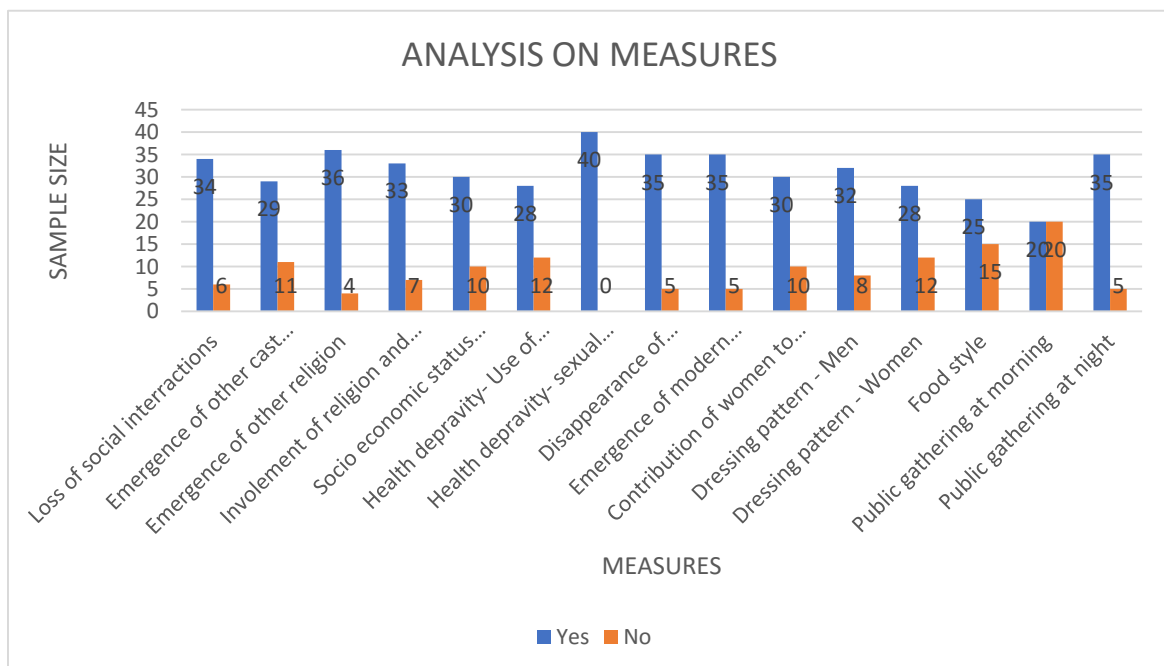

Fig 4: Analytical result of the all measures
Source: Author

Conclusion

The study outlines the impacts on the social behavioral patterns in accordance with the transformation in the cultural landscape It was proven that the case study areas have the positive contribution of the transformation of cultural landscape and at the same time it gives negative impacts on the social behavioral patterns of the people. The war conflict, urbanization, increasing construction for commercial purpose, and the population density have had considerable impact on the transformation of the cultural landscape.

The study identifies twelve main measures linked with the human beings; loss of social interaction, emergence of other caste system, emergence of other religion, involvement in religious and traditional activities, socio-economic status pattern, health depravity, disappearance of traditional architecture, emergence of modern architecture, contribution of women to the income for her family, dressing patterns, food style and public gathering. These twelve measures proved that the social behavioral patterns were negatively impacted due to the transformation of cultural landscape, and, the image of Jaffna and the traditional identity was particularly ruined by these continuous changes.

The overall study identifies that the changes in the social behavioral patternslead to 'Dying Unique Social Context in Jaffna', 'Loss of Spatial Arrangement of Landscape Component', 'Threatened Social and cultural background of Jaffna', 'Threatened Historical Character of Jaffna', 'lack of Proper Conservation Mechanism' and 'lack of Proper Landscape Management'. In order to preserve the Social behavioral patterns changes, Landscape architect's role in Jaffna city is simply to re-establish the identity of the city in innovative ways. Establishing identity emphasis on bringing the historic is image back to the city. The study provides a guide to spatial planning strategy which could be followed by urban landscape architects and planners. Therefore, in Landscape planning and design, one of the effective ways to establish cultural landscape within fragmented cultural habitats by the periodical transformation concern with the social behavioral patterns which leads to effective changes in the Jaffna identity. The strategy used here is to bring it out the unique identity, historical character; proper management and the way of people treat depend on the study of the case study areas.

In order to further strengthen the study, through the information processing theory and place identity theory, the reality of the cultural landscape and the social behavioral patterns were identified. Through deep analysis, the patches of the land cover, inland water bodies and the emergence of the building patterns were discovered. Due to loss of land cover and the emergence of the new buildings, these areas were observed to have the cultural values which can change periodically. Therefore, it can be concluded that it affects the cultural landscape of the city. Final findings proved that the transformation of cultural landscape impacted the social behavioral patterns in Jaffna.

As a whole, 78.3% of the citizens in Jaffna are not happy with these changes, but they welcome modernization while preserving the character and identity by maintaining the Cultural and social behavior and maintaining the uniqueness of Jaffna through the social behavioral patterns. On the other hand, 21.7% residences welcome the changes, yet they also want to retain the identity of Jaffna for coming generations.

Overall, the changes are welcomed by the citizens of Jaffna, yet they insist that the uniqueness of city, cultural and traditional aspects should continue to be considered and safeguarded.

References

Cullen, G. (2012). Concise Townscape. *Concise Townscape*, 200.

De Aranzabal, I., Schmitz, M. F., Aguilera, P., & Pineda, F. D. (2008). Modelling of landscape changes derived from the dynamics of socio-ecological systems. *Ecological Indicators*, *8*(5), 672–685. https://doi.org/10.1016/j.ecolind.2007.11.003

Fátima Bernardo, *. a.-O. (May, 2013). The Role of Place Identity in the Perception, Understanding, and Design of Built Environments. *Place identity, place attachment and the scale of place: The impact of place salience*.

Goonetileke, H. (n.d.). *A Bibliography of Ceylon volume I,II,III,IV,V,VI.* Switerland: Center documentation company AG ZUG, Switerland .

Gritharan, V. (2011, july 22). *Nallur Rajadaany: Nagara amipu*. Retrieved from Geotamil: http://www.geotamil.com/pathivukalnew/index.php?option=com_content&view=article&id=33 58:2011-07-22-03-49-38&catid=13:2011-03-03-17-27-10&Itemid=50

Holmes, W. R. (1980). *JAFFNA (SRI LANKA) 1980.* Jaffna: The Christian institue for the study of religion and society of Jaffna college.

Kunarasa, K. (2003). *The Jaffna Dynasty: Vijayakalingan to Narasinghan, Dynasty of Jaffna .* Colombo: Kings Historical Society.

Kunarasa K. (2005). Nallur kandaswamy Kovil. Jaffna: Kamalam Publishers.

Kunarasa, K. (2006). *Yaalpaana Thesam.* Jaffna : Varathar Publishers.

Landscape Perception | IntechOpen. (n.d.). Retrieved May 30, 2018, from /books/landscape-planning/landscape-perception

Lynch, Kevin. (1981). *A theory good city form*. Cambridge, Ma: MIT press

Mandawala, V. P. (May, 2011). *WORKSHOP ON THE REVITALIZATION OF JAFFNA HISTORICAL CORE.* Jaffna: NORTHERN PROVINCIAL OFFICE DEPARTMENT OF ARCHAEOLOGY .

Martyn, J. H. (2003). *Martyn's Notes on Jaffna.* Chennai: Asian Educational Services

Nelson, W. (1984). *Dutch Fort In Sri Lanka, The Military Monument of Ceylon.* Edinburg: Conogate.

News, A. (2015, september 21). *History of Nallur*. Retrieved from YouTube: https://www.youtube.com/watch?v=ox21WzUaooE&feature=youtu.be

Nik Mastura Nik Mohammad*, M. S. (September, 2013). A Sense of Place within the Landscape in Cultural Settings. *A Sense of Place within the Landscape in Cultural Settings*.

Pathmanathan, S. (1978). *The Kingdom of Jaffna - Part I.* Jaffna: Arul M. Rajendran.

Pushparatnam, P. (2012). *TOURISM AND MONUMENTS of Archaelogical Heritage in Northern Sri Lanka.* Jaffna.

Ratnavelupillai, M. (2003). Understanding the Architectural Tradition od Jaffna. *The Sri Lanka Architect: War and Architecture, 104*(01), 21-28.

Sitrampalam, D. S. (1992). *Yalppana Iracciyam (kingdom of Jaffna).* Jaffna: University of Jaffna Publication, Thirunelvely .

Suseendirarajah, S. (1980). Religion and Language in Jaffna Society. *Anthropological Linguistics, 22*(08), 345-362.

Thanges, P. (2007). *Yalpanach chamookam: Sathi Inathuvam Muthaliya Katturaikal.* Jaffna: KRIBS.

Tuan, Y.-F. (2011). *Space and place: the perspective of experience* (7. print). Minneapolis, Minn.: Univ. of Minnesota Press.

Turner, M. G. (1987). Spatial simulation of landscape changes in Georgia: A comparison of 3 transition models. *Landscape Ecology*, *1*(1), 29–36. https://doi.org/10.1007/BF02275263

Zaizhi, Z. (2000). Landscape changes in a rural area in China. *Landscape and Urban Planning*, *47*(1–2), 33–38. https://doi.org/10.1016/S0169-2046(99)00069-9