



Department of Town & Country Planning  
University of Moratuwa

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# IMAGE OF A CITY THROUGH THE LENS OF GEO-CODED SOCIAL MEDIA DATA: COLOMBO, SRI LANKA



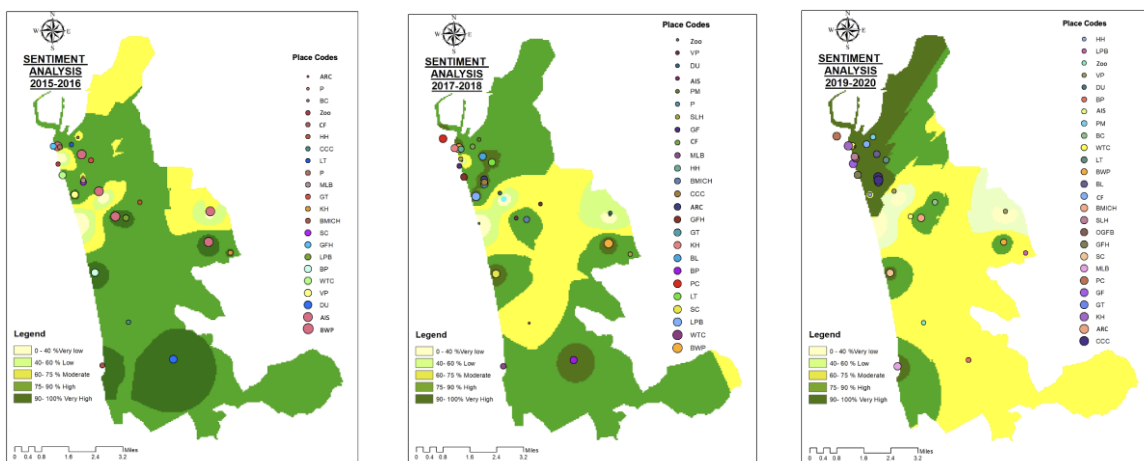
Name : A.M.S. Abesinghe

Supervisor: Dr. Nayomi Kankanamge

## Abstract

Image of a city represents the sum of beliefs, ideas, and impressions that people have of that city. Mostly, city images are assessed through direct or indirect interviews and cognitive mapping exercises. Such methods consume more time and efforts and limited to a few numbers of people. However, recently people tend to use social media to express their thoughts and experiences of a place. Taking this into consideration, the paper attempts to explore city images through social media data considering Colombo, Sri Lanka as the testbed. The aim of the study is to examine the image of a city through Lynchian elements—landmarks, paths, nodes, edges, districts—by using community sentiments expressed and images posted in social media platforms. For that, study conducted three analyses. They are descriptive analysis, image processing, sentiment analysis, popularity analysis, and using geo-coded social media images and texts collected from Instagram and Twitter social media platforms. The findings revealed that: (a) The community sentiments towards the same landmarks, paths, nodes, edges, and districts change over time; (b) Decisions related to locating landmarks, paths, nodes, edges, and districts make significant impact on community cognition in perceiving cities. The study informs urban authorities in their placemaking efforts.

**Keywords:** *city image; Lynchian elements, image processing, sentiment analysis, social media analytics, Colombo (Sri Lanka)*





# PUBLIC OPEN SPACES' CONTRIBUTION TO QUALITY OF LIFE OF LOCAL COMMUNITY IN SMALL TOWNS OF BATTICALOA

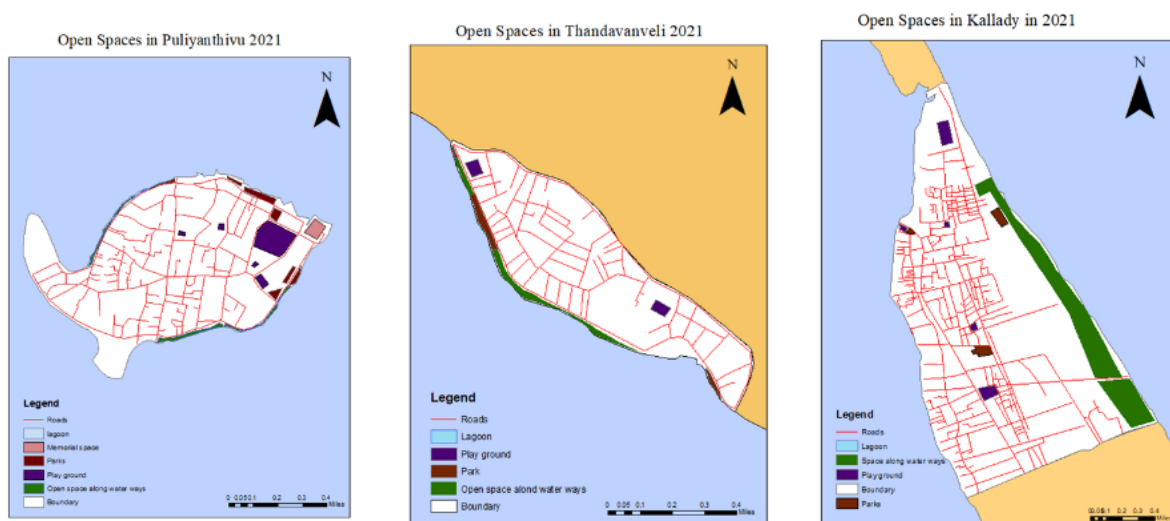
Name : Aksaya.s

Supervisor : Dr. Emeshi Warusavitharana



## **Abstract**

Need of open spaces is increased when more people are migrated to urban areas. They contribute on improving the quality of life of local community in urban areas. Batticaloa is a recently developed town in Sri Lanka. The main objective of developing more open spaces in Batticaloa is to improve the living standard of the people. Therefore, this research is an attempt to investigate the contribution of open spaces on quality of life of local people in small towns in Batticaloa. Puliyanthivu, Kallady and Thandavanveli towns are the selected case study areas for this research. This study is focused on two main questions and objectives. The first research question is mainly focused on identifying available public open spaces in small towns of Batticaloa. The second research question is focused on investigating the contribution of public open spaces on quality-of-life local community through a statistical approach. Data required for this study was collected from Batticaloa Municipal Council, interviews and questionnaire survey. Parks, playgrounds, open space along water ways and memorial spaces are the identified open spaces in the three case study areas. Sample size of the research is 150. Through the statistical findings, an R-squared of 53% was received which indicates a 53% of data fit the regression model. F value is 165.168 and p value is significant at 1% level as  $0.000 < 0.01$ . Hence there is a significant relationship between dependent and independent variables. The t test explain there is a significant positive variation between dependent and independent variables.



INVESTIGATING THE FACTORS INFLUENCING THE SOCIAL  
MOBILITY OF PEOPLE LIVING IN LOW-INCOME  
SETTLEMENTS IN SRI LANKA

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Supervisor : Dr Suresh Shanaka Kariyawasam



**Abstract**

In many developing countries, the urban poor lives in low-income settlements that have become increasingly congested as the population and urbanization grow. The residents of the low-income settlement are experiencing "social stratification." People who progress vertically in their wealth ladders of social mobility from lower to upper levels by achieving higher levels tend to migrate to better areas.

This research is being carried out in Poornawatta West in Mahaiyawa, a low-income settlement in Kandy, Sri Lanka. The goal of this research is to identify social mobility factors and determine whether there is a difference in vertical social mobility upward between non-low-income and low-income settlement communities, as well as the challenges that contributed to this difference. There were two or three generations of people who lived in this area.

The key methodology for the study was based on a questionnaire survey method, expert opinion surveys, in addition to observations, were the most effective primary data collection methods. Questions for the questionnaire were based on the literature review and 368 communities are participating. Yamane methods and stratified sampling methods were used to determine the sample size. The sample was chosen using a systematic sampling technique.

The main finding of this study is that respondents with the highest level of education, their parents' education, having assets, and their parents' highest service category are statistically significant influence factors for vertical social mobility in low-income settlements. According to the Independent, T-Test analysis shows that low-income and non-low-income communities have different levels of social mobility. The main factors that contribute to this difference are the lack of equal opportunities.

The findings of this study will also be beneficial to planners. By identifying the root causes of the problems that have hampered social mobility in low-income communities. When addressing the challenges of decreasing social mobility, planners can make recommendations to make natural migration of low-income settlements into non-low-income communities.

**Keywords:** *Low-income settlements, social mobility, Neighborhood, Veridical Mobility, Intergeneration mobility*

IDENTIFICATION OF EFFECTIVE FEATURES, USER  
PERSPECTIONS AND EXPECTATIONS OF ROADSIDE PARKS  
IN SRI LANKA. “CASE STUDY OF ROCK TUNNEL PARK  
KADUGANNAWA”

Name : T.G.P.D.Dharmarathna

Supervisor : Dr. N.M.Rizvi



### **Abstract**

Roadside Park is considered one of the most important infrastructures connected to transportation sector and spatial planning. When it comes to foreign countries, it can be noted that the transportation agencies in collaboration with the local administrations at crucial nodes in the highways establish roadside parks as top priority, ever, in the Sri Lankan Context is not given due consideration and even such park categorization is not popular in transport oriented open space types. It is understood that the latter could be one of the reasons for many road accidents, traffic jams and travel fatigues in Sri Lanka. Sri Lanka is having a rapid urbanization process and as such intercity connections through proper transportation will become a serious concern in the future. With such developments, the demand for urban parks will increase.

In this background, the main objective of this research is to understand the situation and importance of Roadside Parks in Sri Lankan context. Kadugannawa Rock Tunnel Park has been selected as case study in this research since it has some characteristics of Roadside Parks and can be potentially developed as it. The investigation also focuses on finding out effective characteristics that will encourage people's usage of roadside parks in the Sri Lankan context, to find out the new services and features required by the travelers who could use the Roadside Parks in Sri Lanka from their perspectives.

Questionnaire Surveys, Observations and Interviews were conducted in this study. Semi-structured questionnaire responses were received from 203 respondents who either have been the visitors of the site during the study or have visited the site previously. Previous visitors were identified through close contacts and the survey responses were received online. In order to gain local community perceptions, three interviews were conducted amongst people who live in the surrounding area of the park. Photographic analysis, word-coding analysis and word cloud analysis were used to analyze collected data. The findings suggest that comfort and good image of the place with previous experience mainly affect the travelers' decision to use this roadside park and they use that place as rest space, but they state that the usage would be high if sanitary (mainly water, toilet and trashcans... etc.) Facilities are provided in roadside parks. Other features of the roadside park as identified in the literature such as also influence travelers' decisions at varied levels. However, such features also lack consideration in the case study site. Therefore, it is observed that the Kadugannawa Rock Tunnel Park is currently in an underutilized state, but it has high potential to be developed as a roadside park benefitting the huge number of daily commuters along the highway and also the local community through various economic opportunities.

**Key words:** *Roadside Park, Effective Features, User Perspective, Traveler Expectations*



ANALYSE THE COMBINED INFLUENCE OF ACCESSIBILITY  
AND CAPACITY OF ROADS ON URBAN DENSITY, LAND  
USE MIX AND VITALITY

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Supervisor : Dr. Amila Jayasinghe



**Abstract**

Cities are managed by analyzing its behavior, characteristics and dynamics of the key elements of urban form and their relationships. It is an essential to assess and understand on their impact of the one element on each other for the success of urban planning projects and its practice. Research is focused to analyses and identify the logics to explain the factors behind the change of urban form and its inter-sector relationship. Based on the literature and theories such as natural movement theory, Graph theory and Transport land use feedback theory, four (04) main urban form elements have derived as Road network, land use mix, density and vitality as the basement of the research. Road network is a combination of accessibility and capacity of road which also can refer as topological and mobility character. Although Most of the planers identify theories and impact of the relationship, but never captured combined influence of topological and mobility parameters of road network at the numerical platform. Researchers have identified accessibility, land use, density and vitality as main elements of the urban form and explains the relationships between main components and accessibility as the main influencing topological property in road networks, without considering the geometric properties/mobility of the roads such as capacities of roads. So it is required to analyze and quantify the Combined Influence of Accessibility and Capacity of Roads on Land Use Mix, Urban Density, and Vitality to identify the behavior of urban form.

This research is conducted on Colombo, Kurunagala and Mawanlla cities. The results explain the individual influence of the one element on each other and combined influence of accessibility and Capacity of roads to change land use, density and vitality. MATLAB 3D scatter plot graphs have used to plot these values to see the numerical relationship with each other elements. SPSS regression tool and correlation analysis use to model real ground data. All results explain a strong relationship with each other elements. All of the cities have tested with Accessibility and Capacity of road parameters on land use mix, Urban Density and Vitality. The study has identified that the accessibility influence varies from 50% - 60% and influence of Capacity of Roads varies from 30% – 45%. It shows the combined influence of Accessibility and Capacity of roads on Land use mix, urban Density and vitality. Land-use zoning, land subdivision and regulations are prepared by considering the individual influence of accessibility and capacity of roads. This study can use for local and urban planning and will be a guide while preparing future plans and regulations.

**Keywords:** *Accessibility, Capacity of Roads, Urban Density, Land use Mix and Vitality.*

IDENTIFY THE RELATIONSHIP BETWEEN THE  
LOCATION OF SCHOOL WITH SPATIAL STRUCTURE OF  
THE HUMAN SETTLEMENTS IN SRI LANKA

Name : R.M.D.M. Dissanayaka

Supervisor : Dr. Chamali Hewawasam



### **Abstract**

This research examines and analyze the relationship between the locations of schools and spatial structure of the human settlements in Sri Lanka. Education is an important factor in our society. It makes strong foundation for the nation's development process. Educational Infrastructure facilities are the most essential factor to improve the quality of the learning and teaching process in education. Quality of these infrastructure services differ from rural to urban context. The quality elements studied were taken from the educational infrastructure's location, management, economic, environmental, and physical features. There is a circular and it mentioned 50% of marks give based on the proximity when enrolling new students to primary section of any school in Sri Lanka. According to the circular no. 29/2019, there are several factors considered in enroll new students to the grade one of schools in Sri Lanka. Proximity basis was very important factor that considered in enroll new students to the grade one of schools in Sri Lanka. Therefore, this study helpful for the analysis the authenticity of that standard in Sri Lanka. Under the Qualitative research method Thematic research method to be used to identify the relationship between the locations of schools with spatial structure of the human settlements in Sri Lanka. The qualitative research method was used to conduct this investigation. The aim of this method was to comprehend the fundamental concepts and assumptions that underpin location of schools and human settlements as well as the causes and consequences of this developing phenomenon. The method of informal interviews from the principals is used in the framework of a primary data collection. Informal interviews were used as a primary research instrument. Research used population data as secondary data from the department of census and statistics in Sri Lanka. Used Arc GIS 10.7.1 software for secondary data analyses process. By using Arc GIS software, mapped out the locations of schools and households in entire country of the Sri Lanka. All the spatial data converted in to Arc GIS database and then the data mapped out and overlay with the locations of the schools in Sri Lanka. Output of these analyses can be used as findings to achieve aim of the research. These analyses more essential for the planners and designers to investigate the appropriate plans and policies to manage and shape the settlement structures leading to sustainable development in Sri Lanka.

**Keywords:** *Human Settlements, Population, Population Density, Educational Infrastructure, Migration*

## DETERMINANTS OF THE THERMAL COMFORT IN URBAN OUTDOOR GATHERING PLACES IN KANDY, SRI LANKA

Name :D. M.S. D. K. Dissanayake

Supervisor : Dr. Sri Rohana Rathnayake



### **Abstract**

The liveliness of the city protects by the outdoor places where people gather, such as bus stands, marketplaces and other open spaces. The quality of outdoor spaces become the highest discussible topic in the current era due to rapid urbanization and climate change in the world. The usage of outdoor spaces, the efficiency of the city and the quality of outdoor spaces will be directly affected by the outdoor thermal comfort of those places. The rapid urbanization and the urban heat island effect causes the decrease of outdoor thermal comfort of the city. The outdoor thermal comfort of the city can be identified as the people's satisfaction with the thermal environment of the city. Therefore, this study aims to provide an understanding of the current thermal environment of the outdoor gathering places in Kandy city core by simulating the climate factors and the personal factors which affect the outdoor thermal comfort, by using ENVI met - a holistic 3D microclimate model and preliminary surveys conducted via online platform and observation survey. Climate factors used to run the simulation are, hourly temperature, relative humidity, wind direction, average wind speed, cloud cover and the personal factors used for the analysis are ISO standard human data of the metabolic rate and clothing insulation. By the guidance of the online survey and observation survey Kandy central market area, the Good Shed Bus stand area, and the clock tower bus stand area were identified as a commonly used gathering places during the day. The results of this analysis can be utilized for creating OTC (outdoor thermal comfort) based guide-lines for urban development while highlighting the factor of considering requirements of people and qualities of local climate should be carefully considered when designing outdoor gathering places in future cities.

**Keywords:** *Outdoor thermal comfort (OTC); outdoor gathering places; Mean radiant temperature(MRT); Relative humidity; wind speed*

EVALUATION OF THE RELATIONSHIP BETWEEN URBAN  
PLANNING REGULATIONS, GENDER & PERCEIVED  
STREETSCAPE SAFETY: A CASE STUDY FROM BADULLA  
DISTRICT

Name : R. Dushiya

Supervisor : Dr. D.M.W.L. Gunawardena



**Abstract**

It is an important factor that planners and urban planning experts need to understand how physical elements of streetscape contribute to the perception of safety in streetscapes. While the building regulations and development plans are amending due to the increased urbanization process. It is important to pay attention and maintain the safety of urban areas. However, the developers do not capture the overall perception of people in the street environment and the relationship between the urban environment and safety perceptions. Thus, most studies related to build environment target to increase women's safety with enhancement of physical elements. However, there is little concern on how building regulations impact the perceived safety. Not many researchers did the perceived streetscape safety align with the building regulations. Thus, this study was an attempt to find out the interrelationship between the perceived streetscape safety and regulations, examine the relationship between perceived safety and gender and identify limitations on implementing building regulations in real ground.

The data collected from in person interviews from urban planning experts, questionnaire surveys from pedestrians (man & women) and the photographic surveys from respective streetscapes. Descriptive statistics methods used for data analysis. In addition, the Spatial Data Analysis, Text Search Analysis and word cloud analysis from Nvivo, Logistic regression from IBM Statistics and street profile analysis done through Adobe Photoshop were undertaken. The height of street structures, building line, permissible land uses and zone factor are considered in case of building regulations for selected streetscapes. The perceived safety is dependent on few urban design qualities and those are the reflection of the physical setting of environment. Thus, the physical environment incorporates urban planning regulations and their implementation process. In that, planning regulations and their implementation procedures and perceived safety are interconnected. Whereas, interrelationship between the gender and perceived streetscape safety depend on the characteristics of the physical environment. Thus, building regulations are impacting the perceived safety by gender differently. The findings of this study help the urban planners, experts and relevant authorities to design the streetscapes with the consideration of regulations and design qualities and the safety. Further, this study argues that the urban design qualities are the reflection of physical settings and those physical settings are highly incorporated with building regulations.

**Key words:** *Planning regulations, Gender, Perceived Streetscape safety, Urban Design Qualities*

# DEVELOPMENT OF AN INDEX TO EVALUATE THE REGIONAL SOCIOECONOMIC AND INFRASTRUCTURE DEVELOPMENT DISPARITIES: A CASE STUDY OF SRI LANKA



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Supervisor : Dr. Chathura Kovida De Silva

## Abstract

The major spheres connected with any region's prosperity are socioeconomic and infrastructure development; disparities in these sectors can stymie the development in certain scenarios. Infrastructure development is dependent on resource allocation, which is generally unequal across regions. Socioeconomic volatility results from such development disparities, which in turn affects decision-making procedures aimed at achieving sustainable development. Having identified the importance of comprehensive methodology to evaluate the existing socioeconomic and infrastructure development disparities and, repercussions of the absence of such mechanism, this study has developed a composite index to quantify and demonstrate the development disparity in spatiotemporal dimensions considering 'district' as a unit of analysis employing the Wroclaw Taxonomic method in 2010,2012,2016. This study also has adopted two different approaches to assess its' validity; has compared the results with recent studies and, the calculated composite indices were matched with the provincial per capita GDP values which were frequently used in the local context to analyze the regional disparity in Sri Lanka. Moreover, linear forecasting based on a scatter plot was employed to forecast the disparity trends. The proposed methodology is also robust enough to employ further data indicators and, can be updated with the latest data from the same or different development sectors.

| Province                 | District     | Health |      |      | Education |      |      | Income |      |      | Housing |      |      | Socio Economic |      |      | Infrastructure |      |      | Overall |      |      |
|--------------------------|--------------|--------|------|------|-----------|------|------|--------|------|------|---------|------|------|----------------|------|------|----------------|------|------|---------|------|------|
|                          |              | 2010   | 2012 | 2016 | 2010      | 2012 | 2016 | 2010   | 2012 | 2016 | 2010    | 2012 | 2016 | 2010           | 2012 | 2016 | 2010           | 2012 | 2016 | 2010    | 2012 | 2016 |
| Western Province         | Colombo      | 0.02   | 0.12 | 0.13 | 0.23      | 0.24 | 0.06 | 0.05   | 0.16 | 0.06 | 0.29    | 0.28 | 0.31 | 0.27           | 0.25 | 0.16 | 0.33           | 0.28 | 0.20 | 0.41    | 0.25 | 0.18 |
|                          | Gampaha      | 0.52   | 0.61 | 0.58 | 0.37      | 0.17 | 0.05 | 0.15   | 0.29 | 0.20 | 0.18    | 0.22 | 0.20 | 0.33           | 0.37 | 0.25 | 0.49           | 0.51 | 0.31 | 0.49    | 0.42 | 0.36 |
|                          | Kalutara     | 0.54   | 0.63 | 0.63 | 0.36      | 0.53 | 0.18 | 0.16   | 0.34 | 0.15 | 0.13    | 0.16 | 0.15 | 0.32           | 0.45 | 0.25 | 0.56           | 0.56 | 0.37 | 0.51    | 0.50 | 0.37 |
| Central Province         | Kandy        | 0.29   | 0.31 | 0.35 | 0.52      | 0.53 | 0.41 | 0.84   | 0.79 | 0.33 | 0.22    | 0.20 | 0.14 | 0.83           | 0.79 | 0.36 | 0.53           | 0.56 | 0.33 | 0.82    | 0.76 | 0.41 |
|                          | Matale       | 0.51   | 0.60 | 0.61 | 0.64      | 0.28 | 0.48 | 0.33   | 0.26 | 0.77 | 0.15    | 0.26 | 0.22 | 0.50           | 0.37 | 0.74 | 0.57           | 0.48 | 0.41 | 0.58    | 0.42 | 0.72 |
|                          | Nuwara Eliya | 0.62   | 0.69 | 0.86 | 0.73      | 0.26 | 0.38 | 0.17   | 0.21 | 0.37 | 0.80    | 0.79 | 0.91 | 0.62           | 0.48 | 0.70 | 0.67           | 0.83 | 0.52 | 0.67    | 0.62 | 0.74 |
| Southern Province        | Galle        | 0.47   | 0.53 | 0.54 | 0.46      | 0.26 | 0.23 | 0.46   | 0.21 | 0.41 | 0.16    | 0.18 | 0.17 | 0.52           | 0.31 | 0.42 | 0.56           | 0.55 | 0.32 | 0.60    | 0.40 | 0.44 |
|                          | Matara       | 0.57   | 0.67 | 0.63 | 0.49      | 0.30 | 0.40 | 0.76   | 0.76 | 0.61 | 0.07    | 0.09 | 0.08 | 0.77           | 0.75 | 0.59 | 0.64           | 0.58 | 0.42 | 0.85    | 0.74 | 0.59 |
|                          | Hambantota   | 0.53   | 0.65 | 0.61 | 0.57      | 0.31 | 0.40 | 0.75   | 0.52 | 0.43 | 0.10    | 0.10 | 0.29 | 0.77           | 0.55 | 0.51 | 0.45           | 0.47 | 0.44 | 0.74    | 0.55 | 0.50 |
| Northern Province        | Jaffna       | 0.81   | 0.66 | 0.49 | 0.53      | 0.30 | 0.51 | 0.31   | 0.52 | 0.69 | 0.71    | 0.51 | 0.68 | 0.60           | 0.57 | 0.77 | 0.78           | 0.34 | 0.41 | 0.72    | 0.55 | 0.73 |
|                          | Mannar       | 0.63   | 0.54 | 0.55 | 0.84      | 0.30 | 0.57 | 0.28   | 0.53 | 0.71 | 0.64    | 0.54 | 0.23 | 0.66           | 0.61 | 0.69 | 0.66           | 0.46 | 0.26 | 0.71    | 0.60 | 0.64 |
|                          | Vavunia      | 0.42   | 0.40 | 0.31 | 0.52      | 0.32 | 0.57 | 0.12   | 0.36 | 0.43 | 0.43    | 0.80 | 0.74 | 0.41           | 0.59 | 0.66 | 0.46           | 0.42 | 0.39 | 0.46    | 0.55 | 0.62 |
| Eastern Province         | Mullaitivu   | 0.80   | 0.81 | 0.58 | 0.26      | 0.38 | 0.54 | 0.68   | 0.76 | 0.37 | 0.64    | 0.58 | 0.61 | 0.76           | 0.81 | 0.52 | 0.86           | 0.70 | 0.78 | 0.85    | 0.83 | 0.68 |
|                          | Kilinochchi  | 0.75   | 0.62 | 0.67 | 0.73      | 0.38 | 0.50 | 0.63   | 0.81 | 0.62 | 0.64    | 0.61 | 0.61 | 0.82           | 0.88 | 0.69 | 0.80           | 0.76 | 0.68 | 0.86    | 0.88 | 0.77 |
|                          | Batticaloa   | 0.61   | 0.68 | 0.58 | 0.45      | 0.37 | 0.36 | 0.46   | 0.54 | 0.46 | 0.50    | 0.63 | 0.39 | 0.59           | 0.67 | 0.54 | 0.78           | 0.75 | 0.77 | 0.70    | 0.74 | 0.69 |
| North - Western Province | Ampara       | 0.41   | 0.53 | 0.46 | 0.45      | 0.40 | 0.43 | 0.32   | 0.54 | 0.64 | 0.20    | 0.26 | 0.18 | 0.43           | 0.57 | 0.61 | 0.62           | 0.76 | 0.35 | 0.54    | 0.66 | 0.59 |
|                          | Trincomalee  | 0.57   | 0.62 | 0.64 | 0.57      | 0.39 | 0.41 | 0.37   | 0.43 | 0.30 | 0.48    | 0.60 | 0.60 | 0.55           | 0.58 | 0.57 | 0.59           | 0.63 | 0.62 | 0.60    | 0.63 | 0.65 |
|                          | Kurunegala   | 0.57   | 0.65 | 0.65 | 0.49      | 0.42 | 0.49 | 0.34   | 0.41 | 0.18 | 0.09    | 0.09 | 0.28 | 0.45           | 0.47 | 0.39 | 0.63           | 0.57 | 0.53 | 0.58    | 0.53 | 0.46 |
| North - Central Province | Puttalam     | 0.53   | 0.68 | 0.70 | 0.55      | 0.41 | 0.38 | 0.16   | 0.22 | 0.23 | 0.41    | 0.21 | 0.37 | 0.48           | 0.36 | 0.43 | 0.58           | 0.50 | 0.68 | 0.54    | 0.42 | 0.53 |
|                          | Anuradhapura | 0.62   | 0.66 | 0.67 | 0.79      | 0.55 | 0.54 | 0.11   | 0.28 | 0.25 | 0.08    | 0.12 | 0.38 | 0.47           | 0.42 | 0.48 | 0.56           | 0.56 | 0.57 | 0.55    | 0.48 | 0.55 |
|                          | Polonnaruwa  | 0.57   | 0.60 | 0.50 | 0.57      | 0.55 | 0.47 | 0.34   | 0.41 | 0.15 | 0.16    | 0.15 | 0.53 | 0.47           | 0.49 | 0.51 | 0.48           | 0.47 | 0.43 | 0.52    | 0.50 | 0.51 |
| Sabaragamuwa Province    | Badulla      | 0.51   | 0.61 | 0.65 | 0.63      | 0.65 | 0.73 | 0.27   | 0.35 | 0.28 | 0.36    | 0.33 | 0.28 | 0.49           | 0.49 | 0.44 | 0.75           | 0.77 | 0.80 | 0.64    | 0.61 | 0.65 |
|                          | Moneragala   | 0.54   | 0.62 | 0.62 | 0.79      | 0.68 | 0.66 | 0.29   | 0.22 | 0.52 | 0.04    | 0.13 | 0.19 | 0.54           | 0.42 | 0.59 | 0.70           | 0.65 | 0.71 | 0.64    | 0.51 | 0.69 |
|                          | Ratnapura    | 0.55   | 0.69 | 0.67 | 0.56      | 0.89 | 0.64 | 0.18   | 0.41 | 0.35 | 0.16    | 0.21 | 0.25 | 0.43           | 0.58 | 0.48 | 0.80           | 0.71 | 0.57 | 0.61    | 0.65 | 0.55 |
| Kegalle                  |              | 0.55   | 0.65 | 0.68 | 0.49      | 0.93 | 0.86 | 0.32   | 0.26 | 0.67 | 0.07    | 0.10 | 0.21 | 0.44           | 0.50 | 0.73 | 0.64           | 0.70 | 0.55 | 0.59    | 0.59 | 0.73 |

Figure - Calculated final composite indices, ( $0 < i < 1$ ), (nearer to 0 has the least disparity)

**Keywords:** Composite Index, Socioeconomic and infrastructure development, Spatiotemporal analysis, Regional development disparity



# AN INVESTIGATION OF BARRIERS FOR EFFECTIVE MUNICIPAL SOLID WASTE MANAGEMENT (SPECIAL REFERENCE TO ANURADHAPURA HERITAGE CITY)

Name : H.M.A.P.Herath

Supervisor : Ms. Malani Herath



## **Abstract**

This study focused on determining the barriers to effective Municipal Solid Waste Management (MSWM) in the Heritage City of Anuradhapura in Sri Lanka. Anuradhapura Heritage City gets as a special reference as a representative example for this study. And most of the heritage cities in Sri Lanka have been facing Municipal Solid Waste Management issues and there are identical barriers to effective Municipal Solid Waste Management in Heritage Cities. Under this research find out the three main research questions and three research objectives. In 1st objective of the study have been identified barriers to the effective Municipal Solid Waste Management in Heritage Cities reference to the Anuradhapura Heritage City. And 2nd objective observed community recommendations for the improve effective Municipal Solid Waste Management in Heritage Cities in reference to Anuradhapura Heritage City. In 3<sup>rd</sup> objective review the literature and find the affecting factors to waste generation, collection, and Management in Heritage cities. The 1st and 2nd objectives were achieved through semi-structured interviews (18 semi-structured interviews) and field observations. Identified findings were analyzed by using Content Analysis, Word Cloud Analysis, and Word Query Analysis. The 3rd objective was analysis by Reviewing Literature. All of those findings were analyzed according to the Qualitative Approach. Under the 1<sup>st</sup> objective, there were found barriers according to as Physical barriers, and Socio-Cultural barriers. When engaging with this study used Arc GIS and NVIVO software.

**Keywords:** *Heritage city, Municipal Solid Waste, Community Recommendations, Barriers, Affecting factors*

## AN INVESTIGATION ON FACTORS INFLUENCING THE REGIONAL DISPARITIES IN SRI LANKA

Name : H.M.S. Wageesha Herath  
Supervisor : Dr. S Shanaka Kariyawasam



### **Abstract**

Sri Lanka is one of the countries with large regional inequalities in South Asian, and these disparities owing to the failure of authorities, policymakers, and planners to pay attention to the factors that cause regional imbalance. Despite the numerous strategies implemented over the past decades, Sri Lanka continues to face regional development disparities among the regions. Accordingly, this study aims to look into the dynamics and main determinants that contribute to regional development inequalities in Sri Lanka using a time series analysis. Temporal dynamics of regional disparities were analyzed using Williamson index, prosperity index, and Night-Light Landsat Images which show the fluctuating trend of regional development disparity in Sri Lanka from 2004 to 2020. Additionally, the factors influencing regional disparity were analyzed through an expert opinion survey and a multiple regression analysis with 2010-2020 time-series data.

In literature review has used social and economic indicators as factors with data available to identify lagging and emerging sectors to address each region's development. As a result, the most common indicators utilized in the literature research were included as factors in multiple regression analysis to identify negative and positive sectors. To overcome this problem, an opinion poll was conducted in research to determine qualitative other factors. Based on multiple regression analysis, the GDP share of main sectors, industry and service sector employment rates, infrastructure level, and education have a positive impact on regional disparity, whereas agriculture employment and the percentage of poor households have a negative impact on regional disparity in Sri Lanka. Furthermore, opinion polls have revealed various qualitative findings, including political influence, poor infrastructural facilities, the impact of new economic geography, low investment attraction, policies and planning concerns, and so on. Furthermore, the Night - Light Landsat images will show how development concentration transitions from dry to wet zones. In addition, mapped the GDP per capita variance of 9 regions to see how they have changed in terms of development, both positive and negative. Northern has been characterized as a lagging region in previous decades, but according to the current GDP trend, Northern has advanced as a growing region and can be predicted to continue to expand in the future. However, the Southern region, which was previously regarded as a growing region, is now showing signs of declining trends. In addition, the NW, which was considered a moderate-growing zone, has become a bit of a fast-growing region, while Central and North Central are moderate-growing regions. In addition to Sabaragamuwa, showing declining trends and Uva, Eastern has continuously slow growth according to the current trend.

**Keywords:** *Regional Disparity, Development, Factors, Time series data, Williamson Index*

# INVESTIGATION OF APPLICATION OF THE GREEN INFRASTRUCTURE PRACTICES FOR STORM WATER MANAGEMENT IN URBAN AREAS: A CASE STUDY OF DIYATHA UYANA AND ITS SURROUNDING



Name : I.D.M.P. Iddamalgoda  
Supervisor : Dr. Emeshi Warusavitharana

## Abstract

With rapid urbanization, uncontrolled storm water runoff is one of the major problems facing urban areas at the present. Therefore, it can induce flash flood events and water quality degradation in urban areas. In the Sri Lankan context, this same problem can be seen in urban areas. One of the issues facing urban areas are inadequately storm water drainage systems and limited space. Therefore, this study is basically focused on Storm Water Management in urban areas. At present, most urban areas have broadly used Green Infrastructure (GI) to reduce this situation in developing countries as an innovative and sustainable storm water management approach. This Research is focused to examine the capability of reducing the impact of surface runoff using Green Infrastructure. When examining the capability of reducing the impact of surface runoff using GI, this research is mentioned the runoff retention index, runoff volume per watershed (m<sup>3</sup>), and runoff retention volume per pixel (m<sup>3</sup>) of the study area considering before- after situations. As a second attempt to focus the InVEST- Urban flood risk mitigation model as a tool for the definition of adaptation planning strategies to cope with flash flood events due to extreme rainfalls in an urban area. Finally, this research provides recommendations for future researches and studies.

**Keywords:** *Storm water management, Green Infrastructure, Urban runoff, Runoff retention, Runoff volume, Urban flood risk mitigation*

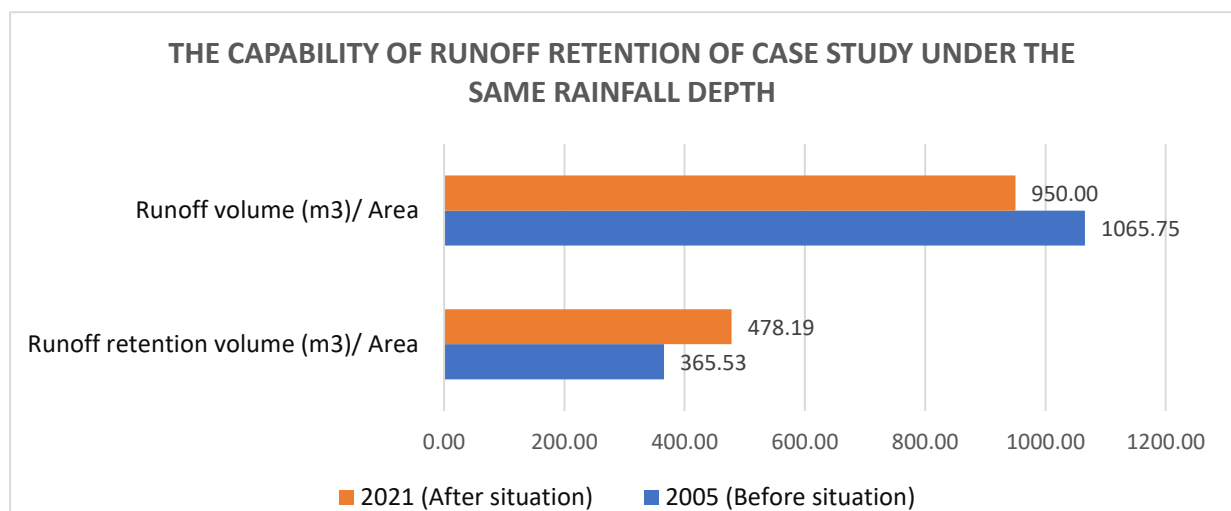


Figure: The capability of runoff retention of the case study under the same rainfall depth based on UFRMM

AN INVESTIGATION ON LINKING SOCIAL BEHAVIOR  
AND PLASTIC RECYCLING AND MANAGEMENT IMPACT  
INTO THE CITY BEAUTY: A CASE OF NEGOMBO CITY

Name : Dilsha Jayamaha

Supervisor : Ms Malani Herath



### **Abstract**

Plastic Waste Management (PWM) is a topic that is constantly discussed and focused on every year. However, with the growing population, it is also a matter that is becoming increasingly problematic. With urbanization, Municipal Councils are finding it difficult to carry out the process of garbage collection to disposal as Municipal Solid Waste (MSW). They find it difficult to dispose of waste by making good use of the space available without social and environmental pressure. A developing country like Sri Lanka needs the help of many parties in plastic management. Therefore, the formal disposal of plastics and polythene is essential. Analysis of literary facts also helped in this. Based on these facts, the necessary facts could be prepared to implement a system that suits for Sri Lankan Context. As a planning student, it is critical to consider the social implications of any improvements before implementing them. As a result, I did a study on the public's preference for this Plastic recycling and management procedure based on the facts acquired from experts and the literature. For this purpose, a successful survey was carried out in the Negombo Moratuwa Municipal Council area under the random sampling method and interviews with experts. It also obtained information on the waste collection and disposal process currently being implemented by the Municipal Council. They were indeed able to develop a method of permanently resolving its difficulties. From this, I was able to gather all the facts for the analysis of the data required for the study. The data were analyzed using the multiple linear regression model and the relative importance analysis. It could aid in determining the significance and connections between Social Behaviors. In addition to that, these analyses and discussions confirmed that value addition to waste can be successfully formally implemented in the Western Province. It is a method of appreciating waste as a resource.

**Key Words** – *The Behavior of Planning theory. Municipal Solid Waste Management (MSWM), Multiple Linear Regression Analysis*

IMPORTANCE OF URBAN AGRICULTURE FOR A  
MULTIFUNCTIONAL CITY TOWARDS URBAN RESILIENCE  
AND URBAN SUSTAINABILITY WITH SPECIAL REFERENCE  
TO HOMAGAMA, SRI LANKA



Name : J.M.H.L. Jayasekare

Supervisor : Dr. G.M.W.L. Gunawardena

### **Abstract**

With rapid urbanization, many cities in the world are increasingly turning into the concept of urban agriculture. It focuses on securing access to adequate and nutritious food for urban people, creating urban resilience and urban sustainability. Urban agriculture has been identified as a solution to the problems in urban areas caused by food supply failures and rising food prices. By improving the local production process and developing opportunities for short supply chains, the likelihood of food supply disruptions in urban areas can be reduced. Given these circumstances, the study focuses on the involvement of the urban planners in identifying urban agriculture as an obvious way which can contribute to the resilience of the city and increasing food security at home and throughout the city.

Although Sri Lanka is a leading country in terms of agriculture, it is facing food security issues in the wake of pandemic situations and other crisis situations. Food safety and food security in particular affect the people living in urban areas. The availability of adequate and quality food is severely curtailed. As a result many urbanites are increasingly developing interest in cultivating their home gardens and other possible spaces for their own consumption. Due to this, urban agriculture is given considerable priority at present in many countries. Thus, this study analyzes the situation of urban agriculture in Sri Lanka at present and tries to understand the role of planners in promoting urban agriculture as a solution for the urban food shortages.

The study was conducted mainly focusing Homagama urban area and several other urban areas were also studied for further verification of findings. First depreciation of agricultural lands was analyzed from 1983 to 2016 time period. The analysis shows, with the urbanization, most of the lands with perennial crops have converted into settlement areas in the study area and the large land areas have subdivided into small land plots. Through filed surveys and questionnaires, it was identified that some of the urban dwellers do farming as their livelihood while high percentage are not involving in agriculture at present. However, with the COVID 19 pandemic, most of the people (62%) tend to cultivate their home gardens as a solution for food shortage and as an activity to spend time and to release stress.

Through various questionnaire surveys, and interviews with planning expertise and agricultural expertise, the issues related to urban agriculture and related policies and the planners' role in promoting agriculture in urban areas were identified.



# ASSESSING THE EFFECT OF VISUAL POLLUTION TOWARDS THE DEPRECIATION OF THE VISUAL ENVIRONMENT OF A CITY: CASE STUDY -KURUNEGALA TOWN AREA



Name : D.M.N.H Jayathilaka

Supervisor : Dr. G.M.W.L. Gunawardena

## **Abstract**

Visual pollution is one of the main pollutions and the discussions about this pollution become formulated within recent decades. This field of study has investigated in minimum literature and in practical scenarios. Visual pollution is mainly linked with the visual quality of public and community spaces. Most of the developing countries pay minimum attention to the visual pollution in visual environment. Identifying the visual pollution objects is more important in quantifying the visual pollution. Quantification of the visual pollution (visual pollution assessment) is somewhat challenging, due to lack of standards methods and techniques. The aim of this study is to understand and identify the effect of visual pollution objects on the visual environment and how it leads to deteriorate visual environment of the cities in Sri Lankan context. This research has a main objective and two sub objectives to achieve the aim of this research. The main objective is to assess the effect of visual pollution towards the depreciation of the visual environment in Sri Lanka and sub objectives are to identify the elements of visual pollution in Sri Lankan context and to give a simple definition for visual pollution in Sri Lankan context. The mixed method approach and deductive approach were used to achieve the objectives. The questionnaire survey designed for getting public opinion and expert opinion regarding visual pollution objects. AHP technique is used for pairwise comparison of the answers of five experts who contributed in this study. According to the public opinions and expert opinions on visual pollution objects, 57% percentage of responses mentioned physical barriers are the most contributor for visual pollution rather than the mental barriers. Accordingly, “Hanging wires and outdoor advertisement” become the main visual pollution object which cause high visual pollution in Sri Lankan context. Visual pollution score was used to analyze the ten location sites on the case study area using MS excel and Saaty Likert scale. According to the score, the study area was categorized in to “High visual pollution environment, moderate visual pollution environment and low visual pollution environment” based on the recorded score, scale of the criteria’s and visual pollution objects in the environment. Further, visual pollution has more power to destroy the peacefulness of the mentality of inhabitants in a city. Therefore, it is essential to finding a way to reduce the visual pollution in urban areas to improve the quality of life of urban inhabitants and to have a proper urban fabric towards city beautification.

**Key words:** *urban environment, visual pollution objects, visual environment, visual quality*

AN INVESTIGATION OF INHABITANTS SATISFACTION  
ON NEIGHBORHOOD: SPECIAL REFERENCE OF  
MAHAWELI SETTLEMENTS



Name : H.D.A.G Karunathilaka

Supervisor : Dr. Chathura De Silva

### **Abstract**

The objectives of this research are to identify the existing satisfaction level in the Mahaweli neighborhood from experienced by inhabitants & to understand the major requisites of neighborhoods for a better life & for improving living conditions for inhabitants. Neighborhood concept evolved as planning concept, due to the social and environmental conflicts that occurred with the industrial revolution. To address those, Clarence Perry introduced the concept of neighborhood in 1910. From time to time, the purpose of the studies the definition of the neighborhood was changed. The working definition is “The public Place takes as the center of neighborhood unit and within 400m radius of households consider as a neighborhood”. This research focused on neighborhood satisfaction by considering services, land & housing condition, and neighborhood environment including physical and social features. Also, identified expectations for a better life of inhabitants. Mahaweli neighborhoods are the focused neighborhood types during this study. The reason for the selection is, Mahaweli project is one of the massive project and largest resettlement project implemented in the country. Covering two Mahaweli systems, have taken two separate neighborhoods. Evaluated 85 households using a questionnaire survey. Based on the thematic analysis and word cloud analysis happen the reviews the qualitative analysis. Using survey data found satisfaction level assessing features and the reasons what affect for the satisfaction is changed sometimes within both case studies. The satisfaction levels of inhabitants were assessed using the Likert scale. The existing level of satisfaction in case study one, has a high satisfaction level on electricity, moderate level satisfaction on the road, maintenance, dissatisfied on water supply. Positive level satisfaction on land & housing, positive level satisfaction on physical environment excluding health facilities and social environment expect trust. In case study two, satisfied on water, mutual level satisfaction on network, electricity, maintenance, dissatisfied on roads within the neighborhood. Inhabitants have high positive satisfaction on safety, housing units, and satisfied with land extent. Physical development is a significant requirement that, requested by most of the inhabitants to have a better life. A considerable level of responders have mentioned it is necessary for a good social environment for a better life.

**Key Words:** *Neighborhood, Inhabitants Satisfaction, Neighborhood Environment, Mahaweli Development project*

THE ROLE OF THE BUILT ENVIRONMENT IN SHAPING  
PUBLIC HEALTH AND WELL-BEING BEFORE AND DURING  
COVID 19 - A CASE STUDY OF HIGH-RISE RESIDENTIAL  
ENVIRONMENT, COLOMBO



Name : K.A.N.N. Kasthuri Arachchi

Supervisor : Dr. A.L. Susantha Amarawickrama

### **Abstract**

The Corona virus disease (Covid 19) has demanded significant changes in high-rise residential living globally, bringing the question of user-building relationships during the time of the pandemic to a debate. Yet there are many knowledge gaps to understand how exactly the physical environment of high-rise residential apartments supports the user's activities and behaviors in the local context. This research examines the relationship between apartment-built environment factors and the health and wellbeing of the users during Covid 19 compared to the pre-Covid 19 periods taking two case studies selected from Colombo Municipal Council, Sri Lanka.

A mixed-method study was adapted for this empirical research. 40 questionnaires were used in each case to examine the relationship between the built environment and the user's thoughts about health and well-being. A correlation analysis was done using SPSS software. Further, 12 semi-structured interviews were conducted in each case study to comprehend the complement the findings from the correlation analysis. Findings were concluded using content analysis. Results suggest that the satisfaction with social connections, leisure, income, and happiness of apartment dwellers were factors, impacted during Covid 19 compared to the pre covid 19 while some other factors namely the risk of obesity, anxiety, back pain, and headache were increased during Covid 19. Larger circulation space was associated with positive health and well-being outcomes during Covid 19. Economic status (unemployment or loss of income) of the marginalized community, had a greater impact on their well-being. Ultimately urban planning, housing, and relevant policies should carefully focus on mitigating consequences in urban high-rise residential environments to face sudden attacks.

**Keywords:** *Health, Well-Being, User-building relationship, High-rise residential environment, COVID-19, Mixed-method approach*

# IMPACTS OF COVID-19 ON INDIVIDUALS' BEHAVIOUR & PERCEPTION IN PUBLIC SPACE: A CASE STUDY OF COLOMBO, SRI LANKA

Name : B.G.U.N Kumari  
Supervisor : Prof P.K.S Mahanama

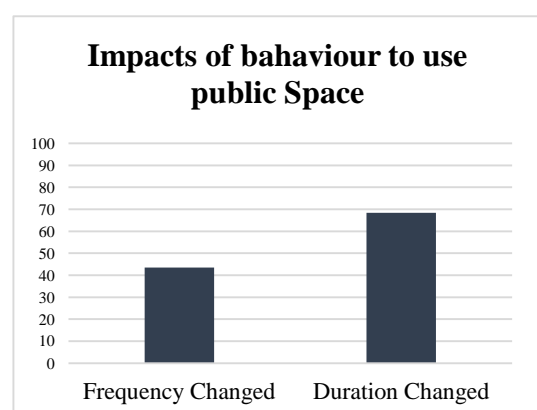
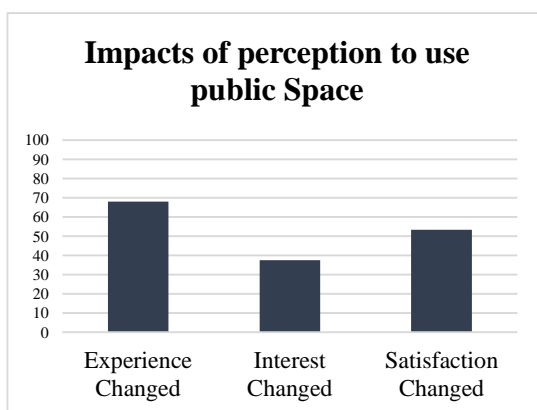


## **Abstract**

SARS-CoV-2 has become a global pandemic while impacting most of sectors including public space (PS). In citizens-view, PS have become unfamiliar places with distant social interactions in pandemic. This study aimed to investigate the impacts of covid-19 on individuals' behaviour & perception in PS. Limited studies attempted and different context find out the different results, make curiosity to apply it into the Sri Lankan context with case studies of Galle Face, Pettah Railway Station, World Trade Centre and Independent Square. Using semi-structured interviews carried out data among 27 participants. Concepts of Protection Motivation Theory, Theory of Planned Behaviour & Theory of Reasoned Action were applied.

Public perception measured using changes of experience, interest & their satisfaction level. Individual behaviour measured using Frequency of visiting place and time duration spent there. According to the results, 92.6% of respondents have a enough understanding of pandemic. Therefore, they adapt their behaviour to reduce the risk and protect themselves. Because even 62% respondents answered that they feel insecure in place than before pandemic, 56.5% did not change their frequency of visiting the place. But 68% respondents changing their spending time. Physical distancing to be the easy choice for people to make a safe and secure environment. Because the observations show that, people mostly use, move, and react in wide places without crowded. This study will provide guidelines for planners and designers to introduced new design, new regulations, and new standards for public space to meet public need in line with safe and secure environment while it making as part of virus eradication process.

**Keywords:** *Public Perception, Individual Behavior, Public Space, Covid 19, Protection Motivation Theory, Theory of Planned Behaviour, Theory of Reasoned Action.*



Impacts of public perception and behavior to use public space due to the covid-19, based on survey results

AN INVESTIGATION OF THE PROCESS OF COMMERCIAL  
GENTRIFICATION & OPTIMUM UTILIZATION OF LAND AT  
NEIGHBOURHOOD LEVELS. (A CASE STUDY OF NSBM  
GREEN UNIVERSITY NEIGHBOURHOOD)

Name : K.A.D.H. Lakprasadini  
Supervisor : Dr. Rizvi Noordeen



### **Abstract**

Planners & Urban developers generally prefer to bring the facilities & financial opportunities to residential areas through commercial activities. It induces the process of neighborhood change in residential areas. Gentrification is the fundamental concept of neighborhood change. The spatial transformations resulting the transformation of ordinary settlement to commercial users play a major role in urban expansion & growth. Optimizing the benefit of this land-use change is important in spatial planning while addressing the negative implications. In doing so, it demands an in depth understanding of the process at neighbourhood level for such changes originate and spatially manifest in an unprecedented manner at such scale. Meanwhile, spatial planning also requires this scalar focus for making and meaningful interventions. This research focuses on the process of commercial gentrification taking place with the establishment of an educational institution in a prevailing residential neighbourhood. It is also intended to identify the spatial implications of such gentrification process through user perceptions and the possible spatial planning response to optimize the benefits of induced land use changes at neighbourhood levels. Rent gap theory and innovation diffusion model were used in this research to guide the conceptual framework of the investigation. NSBM Green University neighborhood located in the Colombo Suburb was selected as a case study. This included 50 questionnaire surveys amongst a wide range of commercial users in the neighbourhood, 13 Key informant Interviews, 30 Semi – Structured interviews with local residents, Focus Group Discussion with students, Document Reviews including Google images and field Observations. Data analysis was done using Arc GIS & NVIVO software. Kernel Density Estimation and Standard deviational ellipse were used to identify the pattern of commercial gentrification and the associated spatial transformation process with specific focus on the temporal dimensions. Word query and Cloud analysis methods were used to comprehend the data gathered through qualitative methods. The process of commercial gentrification was identified in terms of the changes in building use, spatial implications, spatialities of the process and the economies of commercial gentrification. The findings of the study demonstrate that the process of commercial gentrification taking place in the neighbourhood has been driven by three major contextual factors; a large supply of accommodation facilities, higher increasing rents of land values and the development potential in the area. Further, the study reveals a pattern of commercial cluster formation in the neighbourhood with distinctive characters. There is also evidence for disparity between the potential and actual ground rent, which highlights the opportunities for optimization in spatial and economic terms. Finally, in light of the above findings, this paper elaborates the need for a neighbourhood level planning intervention by suggesting strategies to promote equitable development with mutual benefits amongst competing land users and to maximize the benefit of neighbourhood transformation associated with commercial gentrification.

**Key Words:** *Commercial Gentrification, Neighbourhood Change, Spatial Transformation, Optimum Change of Use*



EVALUATION OF THE IMPACT OF MULTIPLE FACTORS,  
ELEMENTS, AND NEIGHBORHOOD PATTERNS ON THE  
SPREAD OF DENGUE & COVID-19: SPECIAL REFERENCE  
TO COLOMBO 15



Name : R. A. Daneesha Madumadhi Ranasinghe

Supervisor : Dr. Gayani Prasadika Ranasinghe

### **Abstract**

This study has evaluated the impact of multiple factors, urban elements, and different neighborhood patterns on the spread of covid-19 and dengue taking the Colombo-15 area as the case study.

The author has mainly considered field observations and secondary data obtained through questionnaire surveys to identify the different urban planning measures, trends, elements, and neighborhood patterns in the Colombo-15 area together with the covid-19 and dengue victims reported from the areas. Using the “NDVI and NDBI analysis” the impact of the urban area on increasing UHI that causes health issues has been figured out. Then, using the “Living Condition Diamond” the living conditions in different case study areas have been evaluated. “Cluster analysis” has been used to identify the impact of multiple factors and neighborhood patterns on the spread of dengue and covid-19.

When considering the spread of diseases based on housing characteristics, huts, shanties, and single house single-story houses with no front space and rear space are highly vulnerable to the spread of both dengue and covid-19 than other areas. When considering flat type housing, mostly the spread of covid-19 is higher than the spread of dengue, but lack of ventilation can cause the high spread of dengue even in flats. According to NDVI and NDBI analysis, the increasing building density that causes decreasing vegetation has affected to have a high spread of disease in the Colombo – 15 area.

**Key Words:** *Covid-19, Dengue, Neighborhood Patterns, Cluster Analysis, Urban Planning*

## JOBS/HOUSING IMBALANCE AND LONG COMMUTING TIME IN COLOMBO

Name : M.H.Dinusha Diwani Mendis  
Supervisor : Dr. Chameera De Silva



### **Abstract**

Jobs Housing balance is matching the workplace with the residential place which came up with an urban planning tradition. Commuting is a major activity in a society that cannot be ignored. It is an important task for job workers, school children and other commuters. Colombo is the main commercial city in Sri Lanka. The longer commuting is commonly seen in the major cities in Sri Lanka. People used to travel to Colombo from the suburbs and the countryside. It leads to a longer commuting time.

Map series analysis is involved in the comparative analysis of the Colombo district. Jobs Housing ratio is almost the same in all areas. But mean less travel time areas spread toward the Colombo. Colombo Sri Jayawardhanapura, Maharagama, Kaduwele such kinds of areas have higher J/H ratios. Because of Number of job opportunities (Jobs rich areas) are higher than the number of residential units. As well as Hanwella and Padukka areas have fewer J/H ratios (Housing rich areas). Those areas are almost recognized as Colombo suburban areas under the National Physical Plan. Map A has indicated the jobs & housing imbalance and its variations in the suburban areas in Colombo.

This research paper aims to find Is Job/Housing imbalance affected by a long commuting time?" quantitatively. It tries to demonstrate the relationship between Jobs and housing and commuting time statistically. According to the analysis, the research found that there is a relationship between job housing imbalance and long commuting time relevant to the case study of Colombo. In line with the analysis, Jobs's housing imbalance in Colombo has led to creating long commute times. The result of the study is almost similar to the past studies that were done by past researchers.

**Keywords:** *Jobs Housing imbalance, longer commuting time*

A STUDY OF THE IMPACT OF SPATIAL AND NON-  
SPATIAL CONFIGURATIONS OF AN URBAN BUILT  
ENVIRONMENT ON THE SPATIAL COGNITION OF ITS  
INHABITANTS



Name : V.T.N. Munasinghe

Supervisor Name : Prof. Jagath Munasinghe

### **Abstract**

How an urban area is known to its users and how they aspire to see it in the future is considered an important aspect in the current planning and urban design practices towards sustainable development. Still, spatial cognition, which guides the inhabitants' knowledge of their living environments, has been paid less regard in the current urban planning and design processes. Over the last few decades, urban planners tactically changed the urban configuration and enriched the image of the city in certain ways. But there can be identified many evolving problems in the urban context and immediate urban planning strategies should be initiated to solve these evolving problems. Therefore to create a better city for its inhabitants, the inhabitants' perception of their cities and what they want to see in their cities is a crucial thing to concern for creating a sustainable life for all. Past studies on spatial cognition proved and investigated how spatial configuration shaped the inhabitants' spatial cognition. At the same time, many scholars quoted that inhabitants' cognition always filtered the values and settings diagonally with the urban environment. However, only limited studies can be found in the relationship between these two and especially concerning its application of planning and urban design. In that context, this study focused on the impact of physical and non-physical aspects of the spatial cognition of an urban built environment. This study investigates the relationship between the spatial cognition of the inhabitants in three different urban areas namely, Kadawatha, Rathnapura, and Kandy, and the spatial configuration of their built environments. Spatial cognition is investigated through a cognitive survey carried out with 50 inhabitants from each urban area. The space syntax method is used to study the spatial configuration in each urban area. The result shows that non-spatial aspects play a vital role over and above the spatial configurational aspects in these three urban areas. This study provides a greater perception for city image that society values, meanings, and habits always shape the cognition of its inhabitants and those places also should be integrated appropriately to achieve a stronger spatial image in its' inhabitants. Therefore this study suggested that urban planners should consider the value, meaning, and habit that attached to a certain area is crucial for representing the real inhabitants' image in urban areas.

**Key Words:** *spatial cognition, spatial configuration, urban built environment, space syntax, urban planners*

## THE IMPACT OF SPATIAL CONFIGURATION ON STREET VENDORS' DISTRIBUTION AT PUBLIC SPACES

Name : W.K.D. Nadeesha  
Supervisor : Dr. Emeshi Warusawitharana



### **Abstract**

The spatial configuration of an urban grid connects to pedestrian circulation and economic activities, according to existing studies. Few studies have noticed that street vendors (an informal and movable economic activity) regularly occur on a typical street where many people walk, especially in small cities. This study was started with the intention of investigating the impact of spatial configuration on the distribution of street vendors in cities, especially at main public roads, transportation terminals and other public places. The Negombo city was selected as the case study area for this research. The spatial configuration of the city was examined using the Space Syntax method. The street network was examined through Space Syntax segment angular analysis, containing Integration, Choice and Combined Centrality properties at three scales. Moreover, on-site observations were carried out to investigate the pedestrian movement patterns. In addition, some interviews were conducted to identify the other factors which influence for distribution of street vending activities. According to the results, street vendors are located near the entry and exit plots and also in street segments where the integration is high. The study helps to understand how the street vending activities are distributed in proximity to transportation terminals and also in other public places.

When considering the findings regions that are integrated with a strong general urban backdrop are more capable of generating small commercial business opportunities. Street vendors more than areas that are segregated from the urban context but the roads that most people choose have not had much of an impact on street vendors to choose their location. The pattern of employing areas such as terminals and other public places creates an incentive for more pedestrian activity, which aids in the generation of unanticipated general street vendor's activities that are widely accessible. When considering pedestrian movement most vendors have chosen their outlets between the bus station, the railway station and city center. Formal commercial activities also contribute to vendors distribution. Locally accessible streets enable the creation of unique destinations that street sellers take use of to suit the demands of passers-by. Social factors influencing the choice of a suitable place to trade, it was learned that they chose that place based on the success of those who traded the place before they came to that place and they inherited that place.

**Keywords:** *Street vendors, spatial configuration, pedestrian movement.*

# A NOVEL FRAMEWORK FOR QUANTIFYING URBAN MORPHOLOGY BASED ON ARTIFICIAL INTELLIGENCE & GEOGRAPHIC INFORMATION SYSTEM.

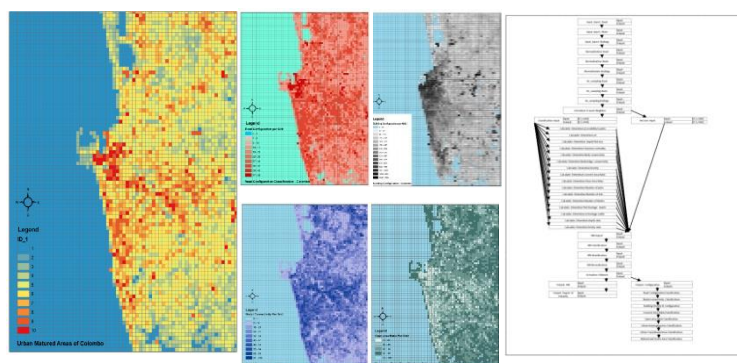


Name : Nilantha Randeniya  
Supervisor : Dr. Amila Jayasinghe

## **Abstract**

The study develops a novel framework to map Urban Morphology and Degree of Urbanity in urban areas: based on Artificial Intelligence (AI) and Geographic Information System (GIS) technology and open data and software while overcoming the constraints noted in the existing practices and methods. The existing Urban Morphological Quantification Frameworks (UMQF) are the expensive, time-consuming, labor-intensive, inefficient, inaccurate and extremely limited application for Urban form and identify the Urban Morphology and Degree of Urbanity. Accordingly, the study proposed a new Urban Morphological Quantification Frameworks (UMQF) to map form Morphological Configuration Classifications utilizing the AI and GIS.

There are 4 case study areas such as Colombo, Kurunegala, Galle and Jaffna. Finally, Authentication of Model via effectiveness and Applicability for SL context of UMQF. Further, in final stage had been evaluating the accuracy of data with stranded accuracy testing methods such as confutation matrix, f1score, recall and precision. In assessment had 86% of confusion matrix accuracy for the overall model. And testing accuracy 0.76 (r2) and train accuracy 0.89(r2). Finally, the framework recorded accepted final output confusion matrix accuracy on case studies accordingly, 73% for Colombo, 78% for Kurunegala, 73% for Galle and 71%. For Jaffna. Moreover, a study compiled 8 major classifications. Develop a UMQF. The study comprised four main stages. In the first stage, the study conducted literature reviews on existing LU mapping practices worldwide and Sri Lanka (SL). In the second stage, the study develops the framework with Data preparation and Training. as the third stage, Case Study Selection and Testing of ML Model was done. There are 4 case study areas such as Colombo, Kurunegala, Galle and Jaffna. Finally, Authentication of Model via effectiveness and Applicability for SL context of UMQF. Further, in final stage had been evaluating the accuracy of data with stranded accuracy testing methods such as confutation matrix, f1score, recall and precision. In assessment had 86% of confusion matrix accuracy for the overall model. And testing accuracy 0.76 (r2) and train accuracy 0.89(r2). Finally, the framework recorded accepted final output confusion matrix accuracy on case studies accordingly, 73% for Colombo, 78% for Kurunegala, 73% for Galle and 71%. For Jaffna. Moreover, a study compiled 8 major classifications. Develop a UMQF.





A STUDY ON THE FACTORS THAT PROMOTES TOURISM  
ATTRACTION OF AN AREA WITH SPECIAL REFERENCE  
TO FOUR COASTAL AREAS IN SOUTHERN SRI LANKA.



Name : P.A. Ayoma Nuwandi  
Supervisor : Prof. Jagath Munasinghe

**Abstract**

According to the past recordings in the SLTDA (2017), early 30% of tourists visit Sri Lanka for holidays in select coastal destinations. (Research & International Relations Division Sri Lanka Tourism Development Authority, 2017) The Coastal line presents a big part of Sri Lanka tourism with its scenic beauty and calm beaches. Sri Lanka has heavily influenced the economy through the tourism industry. At the national and regional levels, numerous tourism-improvement projects were underway. Many of these projects fail in the end. Those projects did not succeed in the destinations until they understand the destination's attractive factors. There is a critical requirement to understand those factors before suggesting the development plans. Nevertheless, all areas along the southern coast are not equally attractive despite, the potential projects indicated in local development plans. This study will examine the few places that have been promoted as potential tourism development sites by respective local development plans and test the level of their attractiveness for the purpose.

This research data collecting process on reports, observations, images, videos, and informal interviews. Under those methods collected data was analyzed through Analytical Hierarchy Process (AHP) analysis method for analyzing these selected six factors (- Accommodation and catering, Activities in destination, Natural features, Destination aesthetics, Environmental preservation, Destination marketing) impact tourist attraction in four case study areas. This method is a Multi-Criteria destination Making Process. Prof. Thomas L. Saaty originally developed this method. This is the pair comparison method. It helps to derive subjective opinions such as satisfaction, preferences, feelings, safety, and other measurable things like weight, price, distance, and like things. Because of that, this method used for this analysis. The selected variables gave values to four destinations as six Likert scale values.

The research findings identify that Weligama has the most destination attractive factors like Natural features and destination aesthetics. Unawatuna got higher attraction from their activities, and Accommodation & catering. Then Yala got the highest attraction from environmental preservation in the destination. According to these four case studies, areas identified potential features increase these areas' attraction. When moving to Tango got the lowest value from Natural features and accommodation & catering, activities. Improving those Criteria value factors can improve those areas' tourism attractions. Accordingly Identifying correct attractive factors in the areas, will be built a path for the most sustainable tourism site developments.

**Keywords:** *Attractive factors, Tourism, Economy, Destinations, Development projects*

# AN INVESTIGATION OF URBAN PARKS AND IT'S INFLUENCE FOR PHYSICAL ACTIVITIES. (CASE OF COLOMBO URBAN PARKS)



Name : J.A.C.L. Perera

Supervisor : Archt. Kokila Sooriyagoda

## **Abstract**

Urban parks are an essential component of every metropolis. They help to minimize pollution, encourage biodiversity in the city, and regulate the city's temperature and moisture. Which are vital to the environment's well-being. Environmentally, artistically, recreationally, psychologically, and commercially, it benefits urban communities. 2007 (Loures, Santos, and Thomas Panagopoulos). The position of urban parks as a source of social services ensures that urban sustainability is prioritized. People are more likely to move and actively engage with the environment and the social aspects in urban parks with physical activities. "Parks are democratic "commons" that bring people together from all walks of life, fostering a feeling of community and social vibrancy that has been eroding in recent decades while also supporting human health, environmental protection, and economic strength." (Thomas Panagopoulos, Luis Loures, Ral Santos). People can usually get a taste of human activity, recreation, and nature by visiting parks dedicated to physical activities. When it comes to resolving the country's existing health concerns, the task is more difficult. We need to consider society's public health statutes. For that, we need to identify the well-being of people. The research basically focuses well-being concept, mainly the physical and social wellbeing of the people with their urban park activities. Also here study the influence of UDA PORS guidelines with park elements. By questioning the most influential elements and characteristics in a park that affect physical wellbeing and social wellbeing and amended parts of the selected parks to cater to the physical wellbeing and social wellbeing as per the UDA Public Outdoor Recreation Space (PORS) standards are major research questions of this study. Research Objectives are to identify the most influential Urban park elements and characteristics that influence physical activity and social activity and to identify what aspects, need to be amended in these parks to cater the physical wellbeing and social wellbeing as per the UDA Public Outdoor Recreation Space (PORS) standards. This research is done by using doing the multi method approach and findings are mostly the elements of the natural environment, given priority (rated for 12% of people.) by do analysis the data from questioner. Due to the Unpleasant environment in city of Colombo, which people live in, it is possible that trees have been given priority for outdoor activities due to urban park elements and characteristics such as rising temperatures and declining greeneries. Furthermore, by giving amendments for the guidelines of PORS and low features of the urban parks of Colombo have given another finding of the research.

**Keywords:** *PORS Standards, well-being concept, physical well-being, social wellbeing, urban park, park element*

INTEGRATION OF FORMAL AND INFORMAL SECTOR IN  
WASTE MANAGEMENT SYSTEM IN SRI LANKAN CITIES,  
SPECIAL REFERENCE TO HOMAGAMA

Name : L. H.R. Perera  
Supervisor : Dr.Gayani Ranasinghe



### **Abstract**

Solid waste management has been identified as a massive problem in especially developing countries, and there is no specific solution found for that. It is also a topic that gradually comes with a growing population, rapid urbanization, and fast development. Urban SWM is regarded as one of the most critical environmental issues affecting cities in developing countries. There are two parties involved in waste management activities in the developing world, the formal sector and the informal sector. Both sectors play a specific role in the solid waste management process, but there is no official contact between these two sectors, which has an impact on the weekly wastemanagement process. The informal sector plays a significant part in this process, but it is not taken into account in the development of the SWM system. The integration of both sectors affects increase the recycling rates provides benefits for both sectors, the public, health, and the environment.

The purpose of this study is to investigate the formal and informal sectors' contributions to the waste management system, the importance of informal sector involvement in solid waste management, and to identify opportunities for integrating both sectors into the waste management process. Here, mass balance analysis is used to identify the waste flow within the boundary, and an integrated visualisation tool is used to identify possibilities for integrating formal and informal sectors in this MSWM process. The integration visualisation tool consists of four categories of intervention. This is not a one-dimensional or one-step process, and an ideal solution must balance all four-intervention categories. According to the findings, most of the interventions are at a considerable level in the present context. Homagama local authority area was selected as a case study area. Data were collected through the semi-structured interview and questionnaire survey from formal sector professionals, waste pickers, and informal sector waste collectors. The result suggests the potential for integrating these two sectors in the municipal solid waste management system. It will provide mutual benefits for both sectors, public, health, and environment. In addition to that, the waste management index is at a moderate level. Based on the findings, integration of both sectors will be a better solution for the solid waste management system in Sri Lankan cities.

**Keywords:** *waste management, formal sector, informal sector, integration, mass balance analysis, the integration visualization tool*

## URBAN PARKS FOR LIVABLE CITY: A STUDY OF COLOMBO

Name : K.G.D.Piyumali  
Supervisor : Archt. Kokila Sooriyagoda



### **Abstract**

Cities are considered the engines of economic growth. The industrial revolution and consequential economic-social deviations and urbanization directed the conversion of residential patterns and living patterns. This research aims to determine the level of influence made by urban parks for a livable city. And this research investigates different design elements (public space, movement, locality, and landscape) to understand the influence of livability at an urban park. This research was conducted mostly considering the people's perspectives; also it includes the other theories that are involved livability and urban park. Here indicated good condition influence adds to the city livability from the studied urban parks. And identified the aspects that need to improve in the urban parks to enhance livability. Conducting this research mostly addresses people's thoughts about urban parks. Because livability is a concept that plays with the thoughts (emotions) and feelings of the people. Happiness, satisfaction, and convenience are the main factors that affect livability. Therefore, this research was conducted mostly considering the people's perspectives; also it includes the other theories that are involved livability and urban parks (descriptive analysis). When considering the results of the questionnaire survey and the analysis, landscape and vegetation are the most significant design elements for increasing the livability of an urban park. In addition, interest in public spaces as a design element is a significant role in determining the urban park's livability.

According to the observation of Vihara, Mahadevi Park has the most design elements compared to the other parks. Maybe Vihara Mahadevi Park also has the ascent of Europe (Patrick Geddes's garden city concept). Accessibility for the neighborhood is also a factor improves the livability of urban parks. Better accessibility for the neighborhood is causing enable efficient movement for the people that visit the urban park, which is can be entitled as permeability. Social engagement is also used as a measure to assess an urban park's livability. Also highlighted is the need of encouraging lifestyles that have a minimum environmental effect and allow opportunities for a wide range of activities also identified the 72% of good condition influence add to the city livability from the studied urban parks. And identified the aspects that need to improve in the urban parks to enhance livability.

**Keywords:** *Livability, Sustainable city, Happiness, Satisfaction, Convenience, Permeability, Design elements*

# INVESTIGATING URBAN AGGLOMERATION FOOTPRINTS THROUGH A MULTISOURCE GEOSPATIAL BIG DATA FUSION APPROACH IN SRI LANKA

Name : I.K.N. Priyashani  
Supervisor : Dr. Nayomi Kankanamge



## **Abstract**

Urban agglomeration is a continuous urban spread, generally comprises of a main city and its adjoining developing areas. This is a very critical phenomenon and number of studies have conducted worldwide to understand this phenomenon. Most of the conducted research and the studies highlighted that understanding, effective management and long-term planning of urban agglomeration is very much critical to first understand the trends and patterns of urban agglomeration and then to address the issues such as environmental degradation, poverty and so on.

Urban agglomeration is studied using different concepts, theories, models, criteria, indices, and approaches, which mostly used population distribution and its associated characteristics as the main parameters. However, use of geospatial big data sources to demarcate urban agglomeration is an emerging, but an understudied area of research. This study aims to explore the use of multisource geospatial big data fusion approach as a novel method to demarcate urban agglomeration footprint. The research uses Southern coastal belt of Sri Lanka as the testbed. The methodological approach considers both urban form and functions related parameters of cities in defining urban agglomeration footprint. It utilises near-real time data in defining the urban function related parameters. The results disclosed that employing urban form and functions related parameters delivers more accurate demarcation outcomes than single parameter use. Hence, utilisation of multisource geospatial big data fusion approach for demarcation of urban agglomeration footprint informs urban authorities in developing appropriate policies in managing the growth.

**Keywords:** *urban agglomeration; urban form; urban function; sustainable urban development; big data fusion; Sri Lanka*



# AN INVESTIGATION ON STATUS OF DISASTER PREPAREDNESS BASED ON RISK REDUCTION ATTITUDES & BEHAVIOURS IN LOW-INCOME SETTLEMENTS: CASE ON GAMPAHA DISTRICT



Name : M.D. Ramanayaka  
 Supervisor : Prof. Rangajeewa Rathnayake

## Abstract

A disaster is an unforeseen event that causes severe damage or loss of life as a result of natural or man-made destruction. Floods, landslides, lightning, high winds, and other natural disasters frequently threaten Sri Lanka, as they do in every third-world country. The most vulnerable groups are the most important to manage when it comes to catastrophe risk reduction. Community participation in disaster risk reduction is increasingly being used in Sri Lanka. However, community behaviour is not taken into account as much as it should be in the DRR approach. According to this, "Social Cognitive Theory" is a theory that focuses on low-income settlements and includes prior experience, perceived behavioural purpose, and how to measure individual behaviour. It can be used to reduce disaster risk directly.

The purpose of this study is to apply the SCT to evaluate community behaviour in disaster risk reduction in the Ingammaruwa settlement in the Gampaha District. The Gampaha district low-income community was chosen as the research area based on the Disaster Management Center's Flood Risk Profile Development Project findings. Based on this information, governmental agencies in Sri Lanka can form opinions about disaster management. It's easy to identify the low-income communities getting involved in catastrophe preparedness. According to this, theme analysis and sentimental analysis can be used to show the aspects of the integrated state with disaster preparedness significant predicting variables, based on theoretical application. Essential factors, cloud analysis, and cluster analysis are utilized to determine the low-income community's requirements and expectations for disaster risk reduction based on a theoretical basis.

**Keywords:** *Disaster, Disaster Risk Reduction, Disaster Resilience, Social Cognitive Theory, Social Vulnerability*

Figure 1 : Location of the selected site area



| Indicator                               | Sub indicator                   | Very negative | Moderately negative | Moderately positive | Very positive |
|---|---------------------------------|---------------|---------------------|---------------------|---------------|
| The severity of the previous experience | Physical damages                |               |                     |                     |               |
|   | Social influences               |               |                     |                     |               |
| Risk perception                         | Perceived likelihood occurrence |               |                     |                     |               |

|                                 |                                   |  |  |  |  |
|---------------------------------|-----------------------------------|--|--|--|--|
|                                 | Sense of recurrence               |  |  |  |  |
| Community disaster preparedness | Responsible parties 'engagement   |  |  |  |  |
|                                 | Status of community response      |  |  |  |  |
| Disaster preparedness behavior  | Intention of individual           |  |  |  |  |
|                                 | Intention of community            |  |  |  |  |
|                                 | Using private adaptation measures |  |  |  |  |
|                                 | Proposed suitable strategies      |  |  |  |  |

Table 1 : Summary of the highest response level of each indicator

# AN EXAMINATION OF HETEROGENEOUS HOUSING DELIVERY MODELS FOR RESIDENTIAL APARTMENT DEVELOPMENT IN SUBURBAN AREAS IN SRI LANKA.

Name : R.K.D.P.D.Ranaweera

Supervisor : Dr. A.L Susantha Amarawickrama



## **Abstract**

Housing represents one of basic needs of human being. In the country's growth, real estate sector has played an important role. Due to speedy development in this sector, currently, there is a huge competition between private developers that leads to use deferent strategies to overcome problems and reach the Sri Lankan suburban market. However, many concerns were highlighted regarding the consequences of living in residential apartment development in suburban areas. Consequently, different types of housing delivery models are being developed to enhance the well-being and the interactions among the developers, dwellers and planners. Subsequently, the aim of this study is to identify housing delivery model characteristics and heterogeneous housing delivery models for residential apartment development in suburban areas in Sri Lanka.

This study focuses on 40 residential apartment development in suburban areas. Data was collected through direct observations and questionnaire and interviews. Finally, the identification of eight housing delivery models allows developers to identify models and different characteristic that can configure appropriate models to improve their market share. New property developers can have an understating about what types of models they should focus on effective modules in terms of concerning efficiency, cost recovery and consumer acceptance to secure their return from the projects. From consumers' end, they can find choices that can achieve their self-satisfaction. Especially in planning perspective, effective apartment development contributes to Sri Lankan economy in terms of capital flow, growth in the construction industry and increased supply in the residential real estate sector. The models identified are important to get holistic idea about investment decisions in the residential real estate market and operational effectiveness for the developers concerning site selection, land extent, design and construction of the residential environments including amenities and other facilities.

**Keywords:** *Residential apartment market, Housing, Property Development strategies, Housing delivery models, Business models, Real Estate Sector.*

PEDESTRIANISATION OF A COMMERCIAL STREET  
RECLAIMING PUBLIC SPACE A SITUATION ANALYSIS OF  
MAIN STREET IN GALLE



Name : P.M.V.P. Ranjalee  
Supervisor : Dr. Chamali Hewawasam

**Abstract**

As my individually supervised research project, I conducted the "pedestrianization of Commercial Street" study to evaluate the possibility of changing a commercial street to a "pedestrianize street." Galle is a "bustling" town that inhabitants, visitors from other regions of the nation, and potential tourists see as a shopper's paradise. Main Street is Galle's earliest, prominent, as well as most visited shopping area. Main Street is located in Galle's CBD and is the city's main commercial district. Most of the longstanding structures on Main Street with the time demolished to construct shopping stores. Main Street was once a bustling street with much space for people to interact. However, as the purchasing power parity of the average person has increased, automobiles from foreign markets have progressively gained popularity in the town and have undoubtedly taken up all accessible public space. Main Street has suffered as a result of growing motorization, since automobiles have quickly reduced available space. Walking is now a challenging task; it is impossible to envisage people socializing on the streets nowadays. The allure of Main Street as a "shopper's paradise" is eroding as a result of automobile encroachment on the street. The purpose of this research is to better understand Main Street merchants' and customers' perspectives on the necessity and practicality of making Main Street a pedestrian-only street.

According to the survey, consumers prefer shopping in malls because of the convenience of having many varieties of choices at a one area, and the ability to move around freely and securely due to the lack of automobiles. As a result, the scope of the research is broad; it is supporting the research's objectives in order to increase pedestrian safety and rights on Main Street. Wherever there is a pedestrian-friendly street, shopkeepers' first reaction is always hostility out of fear of losing revenue. From previous experience, it is evident that merchants will only assist you if they see the benefit to them. This has been true in all cases, regardless of how good the experience. As a conclusion, it is anticipated that this research would highlight the reasons for contemplating pedestrianizing Main Street, as well as the possible advantages. Below mentioned six chapters and three appendices are provided the importance of this study.

**Keywords:** *Pedestrianization, Bustling*

ASSESSMENT OF THE PHYSICAL DISABLED  
ACCESSEBILITY LEVEL OF BUILDINGS AND PHYSICAL  
ENVIRONMENT A CASE STUDY OF DEHIWALA  
MOUNT LAVINIA



Name : R.M.C.N.K Rathnasinghe

Supervisor : DR.Chamali Hewawasam

### **Abstract**

In order to model disabled people's access to important services in the Dehiwala Mount Lavinia area, this research methodology integrates Multi Criteria Decision Analysis (MCDA)-based Geographic Information System (GIS) and Problem Oriented Method (POM)-based Weighted Sum Method (WSM) techniques. The accessibility level in this location is illustrated by the generated graph and map. It emphasizes sections of public urban space and outlines the current situation of disabled people's access to important services. These sections are more likely to be visited by the disabled, giving them a better chance to move around and live independently. The lack of focused services provided has a negative influence on the overall degree of accessibility of disabled people's services, with many of these services being inaccessible to disabled residents of the study region.

This study focuses on disabled people's access to key services, which can help with accessibility decisions and locating services and facilities. The data for specific comparisons and the construction of a disabled-oriented urban design model were collected using a case study technique. It also serves as a diving point for building policies, regulations, and a long-term planning framework, indicating that, given the strong legislative foundation, implementation, oversight, and monitoring are insufficient.

According to the results of this study, buildings and the surrounding physical environment in the DMMC area frequently lack the necessary criteria for disabled people's needs. The conclusions of this study on accessible urban planning will help to create more accessible urban planning, design, and development around the world.

**Keywords:** *Physical Disable, Accessibility, GIS based Multi Criteria Decision Analysis, Problem Oriented Method*

APPLICATION OF SUSTAINABILITY MEASURING INDICATORS  
TO ENSURE THE VIABILITY OF TRANSPORT LIVABILITY  
SPECIAL REFERENCE TO COLOMBO METRO REGION



Name : S.D Rathnayake  
Supervisor : Dr. Chameera De Silva

**Abstract**

Transportation is a major component in city mobility, and sustainable transportation is major concern these days. Sustainable strategies and applications are important to balance human behavior with the environment and climate change in a practical manner. Therefore, the identification of the existing transportation crisis is more crucial to finding sustainable solutions to build a sustainable transportation system.

The aim of the research is to concentrate on monitoring and evaluating transportation operations in the Colombo Metro Region using the Transport Sustainability Indicators. The next phase of the research focused on determining the sustainability of transportation by analyzing data from a variety of existing transportation-related datasets. In the Colombo area, a number of both positive and negative indicators have been observed.

This study used the method of reviewing the literature to identify the research gap in this area and then analyzing the entire process with SWOT analysis. Finally, this research gives recommendations to improve sustainable transportation in a practical manner.

The data on the few indicators examined suggests that Colombo is moving away from sustainable transportation and towards a middle ground. In the case of Colombo, where no sustainability measurement framework exists, this research study will pave the way for sustainability assessment not just in transportation but also in other sectors.

**Key Words:** *Sustainable, Transportation, SWOT, Indicator*



# A PROPOERTY VALUATION MODEL TO IDENTIFY THRIVING REAL ESTATE OPPORTUNITIES, BASED ON SPATIAL FACTORS

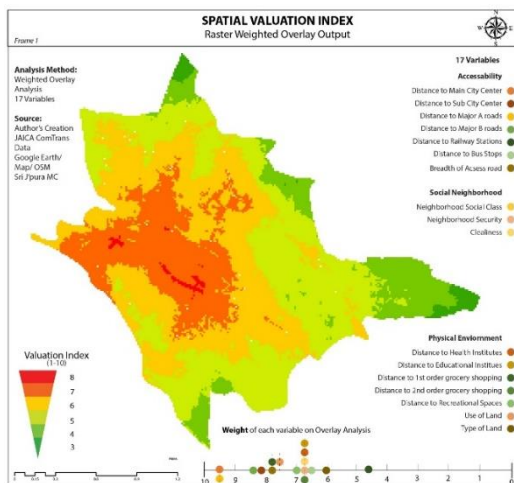


Name : S. S. Senadheera  
Supervisor : Dr. Emeshi Warusavitharana

## Abstract

Traditional valuation techniques are used to evaluate the value of a property in most developing countries, despite the fact that the world is expanding with new technical developments in every discipline, including spatial science. These traditional techniques are primarily biased on physical and economic variables of an individual property, but not on another key element: spatial variable. Hence the purpose of this study is to investigate the gap in practice in advanced valuation approaches that can grasp the impact of spatial variables on a property's value. This study is an attempt to understand what spatial variables (E.g. distance to main city, distance to infrastructure etc.) has higher or lower impact on a property's worth and to what extent has it been impacting. In order to experiment it, a valuation model using Geographical Information System and Multi linear Regression has been created for an urban local area. This model would generate the outcome of the spatial variation of property value. Further, the multi linear regression equation generates an estimation on each plot's property assessed value. This model could serve as a starting guidance tool for valuers, brokers, property agents, and other parties involved in the real estate sector to estimate property values based on spatial variables.

**Keywords:** *spatial variables, valuation model, property assessed value*



**Derived Equation:**

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + \dots + b_nx_n$$

$$Y = 181.612 - (4.479 x_1) + (0.738 x_2) - (2.096 x_3) + (1.644 x_4) + (3.848 x_5) - (4.602x_6) + (0.938 x_7) - (2.055 x_8) - (2.066 x_9) - (1.443x_{10}) + (1.959 x_{11})$$

| $b_n$    | Value   | $x_n$    | Variable                         |
|----------|---------|----------|----------------------------------|
| $b_0$    | 181.612 | -        | -                                |
| $b_1$    | -4.479  | $x_1$    | Distance to Main City            |
| $b_2$    | 0.738   | $x_2$    | Distance to Sub City             |
| $b_3$    | -2.096  | $x_3$    | Distance to A road               |
| $b_4$    | 1.644   | $x_4$    | Distance to B road               |
| $b_5$    | 3.848   | $x_5$    | Breadth of Main Access road      |
| $b_6$    | -4.602  | $x_6$    | Distance to 1st order grocery    |
| $b_7$    | 0.938   | $x_7$    | Distance to 2nd order grocery    |
| $b_8$    | -2.055  | $x_8$    | Distance to Health Institutes    |
| $b_9$    | -2.066  | $x_9$    | Distance to Education Institutes |
| $b_{10}$ | -1.443  | $x_{10}$ | Distance to Bus Halts            |
| $b_{11}$ | 1.959   | $x_{11}$ | Distance to Railway Stations     |

Final visual & numerical model results for the case study of Nugegoda

EXAMINE THE IMPACT OF URBAN GREEN  
INFRASTRUCTURE DEVELOPMENT PROJECTS IN  
ALTERING THE THERMAL DISCOMFORT IN LOW-INCOME  
HOUSING IN URBAN AREAS



Name : H.P.T.S.Silva

Supervisor : Dr. Nayomi Kankanamge

### **Abstract**

Thermal discomfort is one main way to make urban lives uncomfortable, stress and in long term could lead towards significant climate change impacts. It has become a problematic situation to the global. The main reason for this problematic situation is the anthropogenic activities which have done without thinking about the future such as, road development projects, rise of the usage of vehicles, high rise building development projects, destruction of forests for development purposes etc... (Shah et al., 2021)

In the other hand, such developments are important for a country to meet the development goals such as attracting investments and so on.

As a solution, the significance of the Urban Blue and Green Infrastructure (UBGI) Development Projects is being considered and how they can give solutions for the thermal discomfort in urban areas is under investigation. However, to which extent and what kind of UBGI strategies are effective in addressing the thermal discomfort in urban areas is an understudied area of research. Accordingly, this paper attempts to disclose the significance of Urban Green Infrastructure (UGI) to address the thermal discomfort in low-income housing settlements like flats etc.

Low-income people whom suffer from global warming and climate changes worst manner than other because of their living condition and the places they live. As well as the materials which they have used such as iron sheet roofing, wood covering walls etc. and construction methods to build their houses directly affect to thermal discomfort into their lives. And also, the most common character of these lo-income settlements is overcrowding inside the house because majority of these houses has one room to all. Maybe it will be the all of the house such as living room, dining room and the bed room (Hashemi et al., 2015). This paper disclose how Green Infrastructure can mitigate the thermal discomfort by simulating data by using Envi-met software by applying to low-income settlements

**Keywords:** *Urban Blue and Green Infrastructure, Thermal discomfort*

A STUDY ON INFLUENCING OF URBAN PARK ATTRIBUTES  
ON PARK USER BEHAVIOURS: A CASE STUDY ON MATARA  
BEACH PARK



Name : S.S. Siribaddana

Supervisor : Prof. Rangajeewa Rathnayake

## Abstract

Urban green areas, such as parks are very important component of the densifying cities. Urban parks encourage people's physical, social, recreational and relaxation activities and that promote the well-being of the society. In that context, Planning and designing of the urban park is most important as well it should be aline with the park users' preferences to provide the maximum experiences for them.

This study aimed to investigate the Influencing of urban park attributes on park user behaviours with the research objective as to understand about park attributes based different user behaviours in urban parks to increase the park planning potentials in Sri Lanka. Selected case study of this research was Matara Beach Park. To achieve the mentioned objective of this research, qualitative research method was used. In depth interviews and on-site observations used as data collection methods and as qualitative data analysis method, NVIVO analysis and Kernel density tool were used.

This study found that different kind of user groups have their own preferences on different park attributes. That preferences determined by the based on the several factors of the attribute. As well research found that limitless structured attributes attracted numerous kinds of user groups than the other permanent structured attributes. Therefore, findings of this research can be used to design the urban park to get its maximum performances.

It can be concluded that the findings of the study developed a framework, which can use to understand about the interrelation between park attributes and park user behaviors. There were identified main factors as Characters of the attributes, positioning of the attributes and inter connectivity between different attributes lead to the park users' behaviors and urban park performances.

**Keywords:** *Park Attributes, User Behaviors, User Preferences*

ROLE OF URBAN PLANNING & DESIGN INTERVENTIONS  
IN STRENGTHENING THE SENSE OF PLACE OF  
HISTORIC SITES IN KURUNEGALA, SRI LANKA

Name : S.M.V.U. Subasingha

Supervisor : Dr. Rohana Ratnayake



**Abstract**

Every location has strong symbolic aspects and holds distinct significance for both individuals and the collective. An urban project that alters the built environment or current functions of the location in which it is implemented has the potential to change the meaning of that location, particularly for those who live there. The study focuses on growing concern about the role of planning and design intervention in strengthening the sense of place in historic sites in Kurunegala town center. As an old city, implementation of renewals has investigated the cultural-historical debate on whether the changes have negatively or positively affected the identity of the city. Similarly, the 2021 development plan has also indicated that one of the major issues is the loss of the identity of the town regarding the historic and cultural value. The research question describes here the current planning & design interventions do help to create the sense of place of historic and cultural sites in Kurunegala.

Using a questionnaire survey, explored the structure of sense of place based on the relationship between planning and design intervention in the historic city. Qualitative analytical methods such as comparative analysis, content analysis, and thematic analysis were used for data analysis. Here 35 samples were surveyed to get the average of community perception for the focus study, and it has consisted of students, workers, nonemployees, and businessmen. Field study and documentation were helpful to identify the people's attitudes and behaviours comparatively. As the result of the study few categories were identified from the collected data and calculated the percentage values for each project. Considering the place meaning of the Lake circular project majority of respondents stated attraction-related ideas while rajapihilla park represents the attachment relate ideas. This identified the basic dimensions of the sense of place.

Research study reflects the sense of place and place image are identified under the frame of three components, Design & planning interventions, Place meanings, and feelings. That stated the Lake round is getting a higher percentage under the most frequently visited, most memorable, closest, and finally the most memorable historic places. But the second project which is ongoing in Rajapihilla takes the lowest percentage in every chart. Finally, the result suggests that community perception towards planning intervention is a great measurement to take suitability of the projects. Discussing the place, place meaning, beliefs, and feelings across the specific location during or before initiating the project could contribute significantly to successful design.

**Keywords:** *Sense of place, place, planning intervention, historic place, memory*

# A METHODOLOGICAL APPROACH TO RE-IMAGE THE CITY; THE CASE OF GALLE CITY

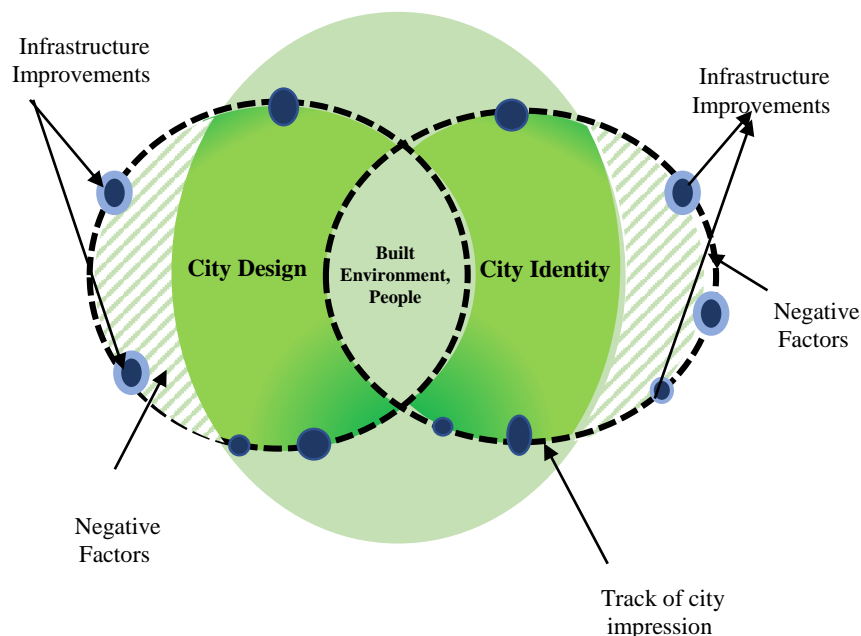


Name : M.H.H.S.Tharaka  
Supervisor : Dr. Rohana Ratnayake

## **Abstract**

This paper explores a methodological approach to re-imagining the cities by identifying the city impressions which become a key factor in city re-imagining. However, the methods of city image measuring that used so far have explored the lack of city impression identifications. Existing literature suggests that the city image has been evaluated only towards the physical structure of the city. There is being debated whether these methods are addressing new demands, growing needs, and aspirations of the locals. The photo-based methodology; Visual collage technique & web-based photo identification survey has been used as a new methodology in this study. Identifying the way to re-image the cities is important to investigate urban planners and designers responsible for making the city's actual impressions favorably. It will help to reconsider their city needs and suggest strategic intervention for promoting city brands according to the current demands.

**Keywords:** *City Impression, City Image, City Design, City Identity*





A STUDY ON FACTORS INFLUENCING THE SUCCESS AND FAILURES OF POST WAR ECONOMIC REHABILITATION IN NORTHERN PROVINCE

Name : Vinoja Thangarasa

Supervisor : Dr. Shanaka Kariyawasam



**Abstract**

Post-conflict rehabilitation is complicated, comprehensive, and multifaceted, requiring simultaneous efforts to improve the military (law and order), politics (administration), economy (restoration and development), and society (justice and reconciliation). The goal of post-war rehabilitation is to create a new life in the ancient ruins caused by the war and bring the community to adapt to a better life. Post-war rehabilitation focus on three key areas as, reconstruction, stabilization and peace building with a purpose to appearing the direction of the durability and upgrading of post-war society (OWP, 2017). The research study focuses on post-war economic rehabilitation in Northern Province while analyzing how economic indicators have influenced the post-war economic rehabilitation. Economic rehabilitation of post-war affected communities mostly led in Northern and Eastern provinces of Sri Lanka. The focus of the research is to identify the factors influencing the success and failures of the economic rehabilitation of the post-war community in Northern Province using two GND areas of Mullaitivu district. There were economic rehabilitation programs implemented to rehabilitate the post-war community. But the inadequacy of the projects led some economic areas to be failures whereas some areas have been done successfully. Objective of the research is to analyze the factors influencing the success and failures of post-war economic rehabilitation in the Northern Province of Sri Lanka. It is significant to use appropriate methods to accomplish the objectives of the research. This research is looking to estimate the factors influencing the success and failures of post-war economic rehabilitation in Northern Province using economic rehabilitation indicators. Sampling methods, the survey methods used for the research and the analysis according to the research question. The analysis and findings of the research focused on answering the research questions. Correlation analysis, Multinomial logistic analysis, independent sample t-test analysis, Chi-square analysis and cluster analysis has been applied to find the result for the research question while achieving the objective of the research study. Through the analysis, the study has been identified there is a significant relationship between economic indicators and of economic rehabilitation using the case studies of Kallppadu GND and Thannimurippu GND. Finally the output has stated that, there is a relationship between economic indicators and contributors of economic rehabilitation. There are several factors impacting the postwar economic rehabilitation comparing Kallppadu GND and Thannimurippu GND, Kallppadu GND is progressing better than Thannimurippu GND in terms of the influencing factors of rehabilitation. The clear statement of the research is economic growth and economic backwardness depending on the rehabilitation factors. There are few recommendations through the research analysis of the study. When the rehabilitation programs plan for a community there should be a clear idea about their livelihood and sector they are working. And also uneven development between two communities is not suitable. The rehabilitation programs should be measure the final outputs from the development. As a community, there should be development in each sector and it will improve the society and will contribute benefits to the economic growth of the country.

## INVESTIGATION OF TOD-NESS OF SMALL AND MEDIUM TOWNS IN SRI LANKA

Name : G.V.T.P. Wanigasekara

Supervisor : Prof.P.K.S. Mahanama



### **Abstract**

Transit Oriented Development (TOD) has been a promising planning concept which strengthen the land use and transport integration for a sustainable development.as per the concept benefits of TOD are manifold but it may differ for each stakeholder in planning. However, several studies related TOD concept further reveal that there is lacking part in spatially evaluation process of TOD concept. Addition to that there is no generally accepted process for or set of study and identify the pattern of TOD ness. This issue directly impacts on planners, decision makers and practitioners while getting the perception of existing physical and functional conditions of areas which they are planning to develop, upgrade or maintain. In the way of decision-making process in planning to encourage transit-oriented development(s) in a place, it is essential terminology to have a well direct analytical process to quantitatively access the current status of TOD ness with related indicators at a location and in an area.

Consequently, in this study investigates the TOD ness of selected small and medium towns in Sri Lanka. According to the study, able to identify the four main indicators and based on those variables (built-up density, closeness centrality (LI)&(GI) and land use diversity) empirical study continue the analysis process with two different perceptions. Initial study was done based on buffer (100m by 100m) zones from TOD node. Based on that potential TOD index has been derived for each case study. Second phase was done based on along the identified main road in case area starting from TOD node. Initial phase of the study mainly accesses with novel combination of compactness level (Clark model). Here study finding suggest TOD ness can be addresses within functional compactness level under pre-defined conditions. This can be novel measuring way compare to contemporary literatures. Further relationship analysis has done validation process to each variable and study area. At later in fractal analysis find the geographical dimensional relationship, between three main indicators in each case study area, evaluate both urban maturation process and TOD ness within one framework.

Overall, the procedure worked well and has potential to be adapted in different scales. On one hand the findings of the study can be useful in for urban and regional planners in sri-Lanka, in physical planning practices. Mainly study can focus to support at the analysis period and strategy formulation period. (To assess the feasibility of future proposed projects). Here study go through based on transport terminal of the town center, Furthermore, findings show that what kind of behavior can be identified within the scope of transit terminal incorporation with considered factors for study. With the identification of behavior of surrounding land use mix, density and accessibility, planners and decision makers can do more potential impact on future city planning to achieve successful transit-oriented development through sustainable urban development in small and medium towns in Sri-lanka.

**Keywords:** *transit-oriented development, TOD-ness, compactness level, fractal geometry, urban maturation*

# EXAMINE THE LOCAL STAKEHOLDER PERCEPTIONS ON RURAL PLANNING IN SRI LANKA: USING THE SUBSTANTIVE THEORY



Name : W.M.B.D Weerasekara

Supervisor : Dr. Chathura De Silva

## **Abstract**

In recent years, rural planning has been forced to the frontiers of planning theory and practice. Despite growing urbanization, the rural population remains large and politically significant. As a result, the global population pattern and makeup of rural areas must be considered. Sri Lanka, as a developing country, places a lower priority on rural development and instead focuses on urban planning. Rural areas in Sri Lanka are still disregarded by current planning methodologies and professionals, who see rural areas through the lens of traditional food production, and the government lacks a suitable definition of urban and rural areas, which are defined by administrative boundaries. Rural areas are currently underserved in terms of planning and development. Rural areas, on the other hand, are unique from one another, and rural economies play a major role in the country's overall economy. As a result, rural planning is extremely important in a country. The majority of rural development research findings are provided in a variety of forms. Land-use change, rural development and poverty alleviation, economic implications of the rural development site, and so on. However, little research on stakeholder participation and its impact on rural planning has been found. As a result, improving and empowering rural planning through robust stakeholder participation is a vital concern, and this study investigates stakeholder perspectives in rural planning to emphasize the relevance of stakeholder engagement. This study aims to determine the current status of rural planning practice in Sri Lanka & identify the most critical driving forces related to rural area planning in Sri Lanka based on the Stakeholder perceptions. Semi-structured interviews & document reviews were used to collect the data & a qualitative approach is used & thematic analysis for the data interpretation. This study explores stakeholder perspectives of rural planning and the primary driving forces in planning procedures in the context of rural planning in Sri Lanka. This study examines the government's present focus on rural development, as evidenced by budget allocations and completed projects, as well as awareness of rural planning, as evidenced by replies from local planning groups and community perspectives. The main critical driving forces for the rural planning sector in Sri Lanka are identified as improvements in local economy and livelihoods, agriculture development, proper coordination, value-added industry development, integrated planning process, mutually supportive regulatory framework, and supportive administrative powers.

**Keywords:** *Rural Planning, Agriculture Development, Stakeholder Perception, Substantive Theory*

EXAMINATION OF THE SPATIO-TEMPORAL URBAN GROWTH PATTERNS USING DMSP- OLS NIGHT-TIME LIGHTS DATA: AN EXPERIMENT IN URBAN AREAS,

SRI LANKA.

Name : R.D.W.S. Yapa,  
Supervisor Name : Dr. D.M.W.L. Gunawardena



**Abstract**

Understanding the direction and pattern of the urbanization process is important in urban planning and management. The spatial pattern of urban growth reveals the behavior of the socio-economic, environmental, and physical aspects over time. It is important to examine the spatial patterns of urban areas earlier to facilitate the decision-making process in sustainable urban growth. Therefore, urban planners use diverse conventional and non-conventional data portals to investigate the spatial patterns of urban growth. However, in developing countries like Sri Lanka, information of the space over time becomes inaccessible. To overcome this shortcoming and to show the usefulness of new technologies, satellite-based Nighttime Lights (NTL) data were used in this study to identify the urban development pattern within the existing infrastructure environment. Therefore, the purpose of this study is to show the applicability of “DMSP-OLS Nighttime Lights” (NTL) data for identifying and analyzing urban growth patterns of major towns in Sri Lanka as a support to the decision-making process in urban planning in Sri Lanka.

The results reveal the urban areas extracted using NTL data in Sri Lanka under the optimal threshold method was with an average overall accuracy (OA) of 70% and an average Kappa of 0.66. Therefore, it represents the substantial agreement for using NTL data to investigate the spatial patterns of Sri Lanka. This paper explores and guides NTL data processing, urban area extraction with different methods and considers the prospects and challenges relevant to Sri Lankan context. It further verifies the accuracy with Regional Light Index (RLI) and regression models. According to this analysis, there was a good relationship between light intensity and the Spatio-temporal aspects, GDP, and population. Thus, there is no doubt in using NTL data for urban analysis for the Sri Lankan context.

**Keywords:** *Night-Time Light data, Urban Growth Patterns, Decision-Making Process, Spatio-temporal Aspects*

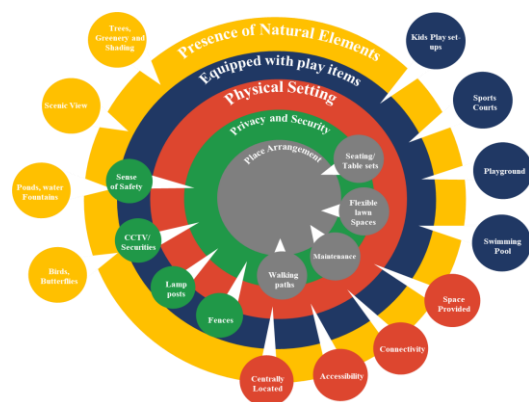
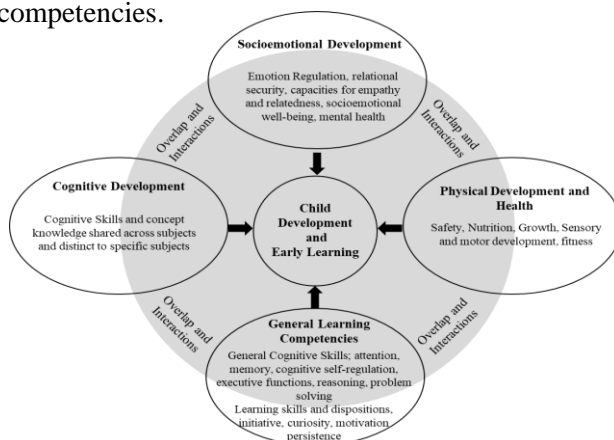
# AN INVESTIGATION ON THE OPEN SPACES AND THEIR IMPACT ON CHILD INTERACTIONS IN HIGH RISE URBAN ENVIRONMENTS: A CASE OF THE CITY OF COLOMBO



Name : Koushani Amarasinghe  
 Supervisor : Prof. Rangajeewa Rathnayake

## **Abstract**

The term interactions can be defined as a behavior that encompasses a set of messages exchanged among a set of objects/living beings to accomplish a particular purpose. Most of the contemporary research on child psychology has studied the importance of child interactions in child psychology and personality development. But, so far, very limited researches were carried out to understand the blend between child psychology, natural environment, and placemaking. Since the residential environment can be seen as the primary place of child development, there is much to be explored on what makes open spaces succeed or fail concerning the level of child interactions in high-rise condominiums. This study investigates to what extent open spaces in high-rise condominiums promote child interactions and what open space characteristics and elements catalyze such interactions. The study employs a child-centered multiple method approach combining observations, informal interviews, and two visual data production strategies (Photo voice and cognitive drawings). Three condominiums are selected from three income categories assuming these three cases may have different implications on open spaces and child interaction with different characters. The research findings align with decades of child psychology theories such as Bronfenbrenner’s socio-ecological theory (Bronfenbrenner, 1980) which discusses how complex systems of social relationships affect child development. The results depict that the open spaces can act as a room for connecting children with their family, friend, and loved ones, attach to the natural environment, wider neighborhood communities while enhancing opportunities for self-actualization and routines. The study reveals that children’s usability and high intensity of child interactions are supported by the presence of natural elements, equipped with play items, physical setting, privacy and security, and place arrangement. Supporting the assemblage theory (Dovey, 2010), the results highlight that with the assemblage of all the elements such as buildings, greenery, seating, walking paths, people collectively support positive interactions of children which recommend planners to design spaces that are assembled as a functional sub-system of the main system. Finally, the study delivers recommendations for the appropriate design ideologies and suitable policy interventions in promoting child-friendly open spaces in high-rise condominiums to assist early child development competencies.



**Keywords:** *Child Interactions, Child psychology, High-rise condominiums, Site planning and Development*



## STREET AS A PLACE: A STUDY OF SENSE OF PLACE IN COMMERCIAL STREETS OF JAFFNA, SRI LANKA

Name : Kethusha Krishnaraja  
Supervisor : Archt. Kokila Sooriyagoda



### **Abstract**

Commercial streets are the places and heart of our cities that are most intertwined with people's everyday routines. They are facilitating many activities, movements, and social interactions than the general streets. The previous studies have researched the streets' characteristics and qualities to enhance and evaluate the image of the streets and places. But, the studies on commercial streets are less focused on the research area in the Sri Lankan context. First, the research addresses this gap and then it discusses the alternative way to study the commercial street based on the concept of sense of place by discussing other contexts. This study aims to identify the attributes that influence the people's sense in the commercial streets and to investigate the most influential aspect (physical, activity, and meaning) which needs to be considered in facilitating the sense of place.

The study has focused on two commercial streets of Jaffna city. The qualitative approach was applied in this study. The data were collected through the on-site observation, questionnaire survey, and semi-structured interviews. Nine attributes namely access, number of people, street vendors, variety of shops, trees and vegetation, walkways, lighting at night, pedestrians, and wall arts are found as influencing attributes for people's sense in the selected two cases.

The research has newly explored the attributes that are influencing the people's sense in the commercial street by discussing other contexts. This study will help the people who are involved in the plan and place-making process such as urban planners, architects, and designers to create and arrange the commercial streets as a meaningful place where people can experience their environment. The finding of this research is a new beginning for further researchers. The conceptual framework of this study can be used to test the findings in other parts of commercial streets in the Sri Lankan context.

**Keywords:** *Commercial streets, Sense of Place, Attributes, Sri Lanka*



## AN ASSESSMENT OF LIVABLE COMMERCIAL STREETS IN CITY OF NEGOMBO, SRI LANKA



Name : C.H.W Fernando

Supervisor : Dr. Chamali Hewawasam

### **Abstract**

Streets are the most significant element of urban space through which people experience a city. Physical features with pedestrian activities ensure the level of quality of a street. The quality of persons and environment relationship reflects through the Livability of a commercial streets, which is in what level available road infrastructures, services and built environment along the commercial streets fulfill the pedestrians' needs and expectations.

Spatial planners need to have a deep understanding on how pedestrians and other street occupiers' sense on the commercial streets in a city and how it should be designed according to the users expectations. It is important to understand that only providing walkable amenities, street furniture with micro environmental features is not enough. Perceptions or experience that feel by the commercial street uses also important to create livable commercial streets in a city. Most of the Sri Lankan cities tend to be more compact with permanent structures with unbearable automobile movements. But the real flavor of a commercial street in the city should be more favorable for the use of pedestrians.

Researcher aims to specifically assess how well the commercial streets accomplish the pedestrians' necessities and anticipations with special reference to the city of Negombo, Sri Lanka.

The aim of this research is to have an overall assessment to the livability of commercial streets in the city of Negombo through public interest. Data collection is done through pre-prepared pedestrian perception questionnaire surveys.

Findings of this research might be important to evaluate the level of livability of commercial streets in city of Negombo while assess features of a quality commercial street impact on functions of the commercial streets, urban form, commercial users and communal attached to Negombo city for the ultimate purpose of strengthen the quality of existing shopping streets in Negombo.

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**Keywords:** *Livability, commercial streets, public interest, commercial users*