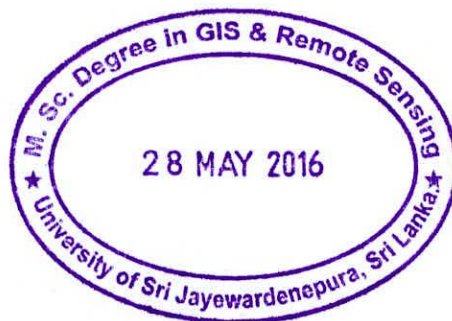


**Geospatial Analysis of Street Children
in
Colombo District**

By

Egodawela Gamage Nilantha

5998MD2014052



M.Sc.

2016

Geospatial Analysis of Street Children
in
Colombo District


By

Egodawela Gamage Nilantha
5998MD2014052

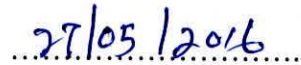
Thesis Submitted to the Faculty of Graduate Studies University of
Sri Jayewardenepura For the Partial Fulfillment of Master's of
Science Degree in GIS and Remote Sensing on 20th March 2016

DECLARATION OF THE CANDIDATE

I do hereby declare that work described in this thesis was carried out by me under the supervision of Prof. Sunethra Thennakoon and Mr. Prabath Malavige and a report on this thesis has not been submitted in whole or in part to any University or any other institution for another Degree/Diploma.



.....
Signature of Student



.....
Date

Name :-Egodawela Gamage Nilantha
5998MD2014052

ACKNOWLEDGMENT

From the beginning to the end of the course, I have been fortunate to meet many that reaffirmed the value of what was a fantastic experience. I could never list you all, but hopefully many of you know who you are.

I would like to express my sincere thanks to supervisor Prof. Sunethra Thennakoon, Head, Department of Geography, Faculty of Humanities and Social Sciences, University of Sri Jayewardenepura (USJ) and Mr. Prabath Malavige for their continued and unreserved support and encouragement at every stage of doing this research. Their academic guidance and research expertise helped me a lot to reach a successful ending.

I would like to acknowledge to Prof. R.M.K. Ratnayake, Coordinator-GIS Programme Department of Geography Faculty of Humanities and Social Sciences in USJ and all the lecturers of the M.Sc. Programme in GIS and Remote Sensing and all staff of the Department of Geography, for their contribution and facilitation throughout the whole course.

Further, I would like to give my special thanks Lt. Col. L.R.K. Kahandagamage RSP/ Chief Coordinator, IT Wing of Centre for Research and Development (CRD) and Staff for giving permission and who helped me by providing relevant information and support whenever needed to do this research.

The support and the courage received from my parents and friend are invaluable to me in this regard.

Finally, my thankfulness is offered to all the peoples and street children who consented to share their life experiences to make this research such success.

ABBREVIATIONS

CRD	-Centre for Research and Development
CPA	- Child Protection Authority
UNICF	-United Nations Children's Fund
HIV	- Human Immunodeficiency Virus
UNESCO	-United Nation Educational, Scientific and Cultural Organization
SSI	- Semi Structures Interview
SSQ	-Semi Structures Questionnaires
GIS	- Geographical Information System
AIDS	- Acquired Immune Deficiency Syndrome
DBMS	-Data Base Management System
KDE	-Kernel Density Estimation
DSD	-District Secretariat Division
GND	- Grama Niladari Division
KDE	- Kernel Density Estimation
HTML	-Hyper Text Markup Language
KML	-Keyhole Markup Language
DCS	- Department of Census Statistics
UNICEF	- United Nations International Children's Emergency Found.

CONTENT

Declaration of Candidate	i
Acknowledgements	ii
Abbreviations	iii
Content	iv-vi
List of Tables	vii-vii
List of Figures	vii-viii
Abstract	ix-x
Chapter One - Introduction	
1.1. Introduction	1-6
1.2. Study Problem	6-7
1.3. Significance of Study	7-9
1.4. Objectives	9-9
Chapter Two- Literature Review	
2.1. Introduction	10-10
2.2. Definition of Street Children	10-11
2.3. Vulnerability of Street Children	11-11
2.4. Street Children in the World	12-13
2.5. Street Children in Sri Lanka	13-14
2.6. Issues of Street Children	14-16
2.6.1. Child Abuse	16-18

2.6.2.	Effects of Child Abuse and Neglect	18-19
2.7.	The Trend in Growth of Street Children	19-20
2.8.	Children Live and Work on the Street	20-21
2.9.	Risk Behavior of Street Children	21-22
2.10.	Social Economic Profile of Street Children	22-24
2.11.	The experiences of Children's Living and Earning Money	24-25
2.12.	Approaches to work with Street Children	25-27

Chapter Three – Methodology

3.1.	Background in Colombo District	28-29
3.2.	Methodology – Structure	30-31
3.3.	Study Area	31-32
3.4.	Sampling	32-33
3.5.	Data Collection	33-35
3.6.	Data Analysis	35-37

Chapter Four –Results and Discussion

4.1	Locations of Street Children	38-40
4.2	Street Children involved in crimes	41-44
4.3	locations of Child Abuse	44-47
4.4	Hotspot analysis of Street Children	47-52
4.5	Kernel Density Analysis of Street Children	52-54
4.6	Web pages of Street Children	54-60
4.7	Creation Database for Street Children	61-63

Chapter Five - Conclusion and Recommendation

5.1	Conclusion	64-65
5.2	Recommendation	65-67
	References	68-70
	Annexure	i-xiv

List of Tables

3.1.	Population in Colombo District	29
3.2	Numbers of Street Children	32

List of Figures

3.1.	Flow chart of the Methodology	30
3.2.	Study area map	31
4.1.	Locations of Street Children	39
4.2.	Street Children involved in crime	42
4.3.	Street Children involved in crimes vs. Children involved Crimes	44
4.4.	Locations of Child Abuse	46
4.5.	Model Builder	48
4.6.	Spatial Autocorrelation by Distance	49
4.7.	Hotspot Analysis of Street Children	50
4.8.	Kernel Density Analysis of Street Children	53
4.9.	Home page of the Web	55
4.10.	Maps Page of the Web	56
4.11.	KML Viewer Page	57
4.12.	Downloads Page	58
4.13.	Search of Data page (Queries)	59

4.14. Query Results Page	60
4.15. Creation Table in Database	61
4.16. Data Structure in Database	62
4.17. View of the Data	63

List of Annexure

- 1.1 HTML code of the home page of this web system.
- 1.2 Cording system of Database
- 1.3 Child Care Organizations & related Law Acts.
- 1.4 Questionnaire

Geospatial Analysis of Street Children in Colombo District

by

Egodawela Gamage Nilantha

ABSTRACT

Street children is a term often used to describe both “market children”, who work in the streets and markets of cities selling or begging, and live with their families and, homeless street children, who work, live and sleep in the street, often lacking any contact with their families. Street children constitute a highly vulnerable; most deprived and marginalized section of the society, whose rights are constantly violated with impunity. Although, the concept of street children and problems arisen by them is most salient issue for the relevant authorities, there were limited researches undertaken on identification of specific locations where street children live and issues concentrated by using Geographic Information Systems (GIS). With this vacuum, this study was specifically geared (i) to identify the spatial patterns of street children and their issues and (ii) develop a database and web page for street children in Colombo District. This cross-sectional study was conducted in Dematagoda, Bambalapitiya, Kollupitiya, Pettah, Modara, Maradana, Borella, Slave Island, Grandpass, Dehiwala, Narahenpita, Nugegoda, Maharagama and Kottawa of Colombo District. Data and information were collected by interviewing 113 street children in the selected study sites to prepare geo spatial database and develop a web page of street children.

The study revealed that the majority of streets children are concentrated in the areas where slums and shanties located rather than other areas. There were 52 (46%) out of 113 street children lived in shanties owing to the reason that any type of relations or a guardian of them such as mother, father, grandmother or grandfather are also living in those places. The

hotspots analysis further depicted that street children are mostly spread at Kolonnawa, Modara, Rajagiriya, Borella, Maradana and Pettah than other study sites. The study ascertained that 85 (75.2%) street children out of 113 have involved in begging for their survival accompanied by one of their parents and on their own. Those who do not return to their shanties to spend the night are used to find their rest at the corners of abandoned buildings, under the bridges, on pavements in front of the shops and boutiques. Approximately, 48 (42%) of street children have involved in committed crimes in 2015. Almost all of them have committed pick pocketing and thefts whereas a few has been involved in burglaries. There were 217 of children in Colombo district have involved in crimes reported in year 2015 and among them 47 (21.6%) were street children. The study confirmed from the Hotspots and Kernel Density analysis that the majority of street children lived, most of the child committed crimes and child abuse occurred in the areas where slums and shanties are located. The relevant authorities, researchers and users can access for maps generated on street children in the developed data base and web page and it enables the decision making process and implementation of policies in terms of street children in Sri Lanka.

Key Words: Street Children, GIS, Hotspot, Kernel Density

CHAPTER- ONE

Introduction

1.1. Introduction

Many children, in a bid to escape from these appalling living conditions, have turned to the streets in search of opportunities. The rapidly growing number of street children has left many local authorities helpless, a situation which calls for urgent attention and action. The term “street children” have many definitions in different settings. Perhaps demonstrating the fact that street children are not a homogeneous group and that the particular circumstance dictates who should be included in the definition. Generally speaking, four categories of street children have been described as follows (www.ajol.info/index.php).

- a. Children on the street—Children who have no home but the street, and no family support. They move from place to place, living in shelters and abandoned buildings.
- b. Children of the street - These are children with loose family contacts who spend some nights or days, or part of the day on the streets and occasionally go back home.
- c. Children who are completely detached from their families - These children are completely detached from their families and live in gangs in temporary makeshift shelters.
- d. Children whose parents are also street children/adolescents - These children category is children of street families. Street children depend less on their families instead, they rely more on the meaningful ties they have established within their groups or gangs.

Street Children is a term often used to describe both “market children”, who work in the streets and markets of cities selling or begging, and live with their families and, homeless street children, who work, live and sleep in the street, often lacking any

contact with their families. At highest risk is the latter group. Murder, consistent abuse and inhumane treatments are the 'norm' for these children, whose ages ranged from 6 to 18. They often resort to petty theft and prostitution for survival. They are extremely vulnerable to sexually transmitted diseases (www.mexicochild-chile-link.org).

Street children are among the most physically visible of all children, living and working on the road and public squares of cities all over the world. Yet, paradoxically, they are also among the most 'invisible' and therefore hardest children to reach with vital services such as education and health-care, and most difficult to protect.

Different laws define the word "child" differently. The years 8, 10, 12, 14, and 16 have all been used as cutoff points in determining the age of a child. Therefore, when investigating an offence committed, against a child, it should be aware of the statute relevant to the particular offence and how that statute defines a child. In 2012, the estimated number of street children in Sri Lanka was 15,000. Majority of them live in Colombo city, which is the former capital and a hectic commercial hub that fulfils environmental requirements for their sustenance. Street Children are considered a social problem. In addition to obtaining provision from parents or guardians, they also earn their own income by legal as well as socially unacceptable and/or illegal means (Redd Barna and Radda Barnen, 1999).

Sri Lankan street children live in insecure and disadvantaged environments and have disrupted from their poorly functioning families resulting poor socialization. In this backdrop they are at high risk of adopting delinquent and antisocial behavior and becoming victims of abuse. Despite recognition of this as a social problem, an in-depth exploration of their behavior and its correlation has not been attempted by the relevant authorities.

Children may be born on the street, with their parents living on the street as beggars or prostitutes or having mental problems. Since such children get abused physically, sexually or emotionally and due to domestic violence, they tend to run away from

home. The availability of work and food on the street in the commercial areas or cities are the main attractions for such children.

As with many other issues that have been raised within this review, estimates of street children are unreliable and difficult to find. Many of the studies that have been undertaken on the issues are dated therefore the figures can be limited and misleading. Rather than looking at numbers, therefore, this chapter will highlight how street children have been identified in the literature and what issues are raised in trying to define this group. Children who end up living on the streets are most obviously victims of severe deprivation, but they are also extremely vulnerable and excluded from many aspects of a normal childhood. These aspects of deprivation, exclusion and vulnerability are often the 'push and pull' factors which lead to child to child living on the streets, as well as manifestations of their situation once they were thrown to the street.

Different types of social problems are prevailing in developing countries. Several of such social problems are visible in Sri Lanka too, being a developing country. The problem of street children is prominent of them. Hundreds of street children can be seen in the populous cities like Colombo, Kandy and Kurunegala. Most of them are in the age group of 5-14 year (Briefing Paper Series, 2008). The number of street children is increasing on daily basis. Why have they become street children? This situation has been arisen due to several factors prevailing in our society. Unemployment, parental death and illness and acute poverty are some of them. These factors have paved the way for these children to leave their homes in search of jobs. It is said that parental love and affection is essential for both mental and physical development of a child. All these children have lost their parental love and affection. In the absence of a caretaker, they use to roam on the street. The chief means of living of most of these children is begging. Some children are engaged in odd jobs like pushing carts, washing plates and scavenging. They earn a few rupees by doing such odd jobs. Most of these children compel to engage in illegal and anti-social activities. It has been revealed that certain affluent people employ these children in their illegal businesses such as selling drugs and illicit liquor.