

Perception Study on Architectural Design and Facilities of Public Markets in Colombo Municipal Council Area

**Dissertation Submitted to the University of Sri Jayewardenepura as a
partial fulfillment for the requirement of the final examination of the
M.Sc. in Real Estate Management and Valuation degree**

Name : M.C.N. Perera

Examination No : REMV 96

Registration No : GS/M.Sc./REMX/3784/09

Department : Department of Estate Management & Valuation

University : University of Sri Jayewardenepura

Date of submission :: First Submission (For Evaluation) 25th February 2014

Second Submission (Corrected Final Report) 23rd July 2014



The work described in this dissertation was carried out under the supervision of Mr. Joseph Nimalchandra Hettiarachchi, Senior Lecturer of the Department of Estate Management & Valuation and any report like this has not been submitted in whole or in part to any university or any other institute for another degree / examination or any other purpose.

M.C.N. Perera


Index No: REMV 96

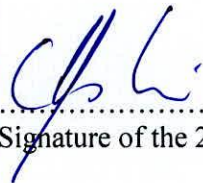
A handwritten signature in blue ink, appearing to read 'M.C.N. Perera', is written over a horizontal dotted line.

Signature

23rd July 2014

Hereby, I certify that Mr. Mirihanage Chaminda Nirosha Perera, (Reg. No. 3784/09) duly completed the research title of perception study on architectural design and facilities of public markets in Colombo Municipal Council area, under my supervision and also it is declared that, this final report has been completed according to the instruction and suggestions made by the board of examiners.


.....
Signature of the Supervisor


.....
Signature of the 2nd Examiner

.....
Signature of the Coordinator

Acknowledgement

I would like to offer my grateful thanks to Mr. J. N. Hettarachchi, Senior lecturer, Department of Estate Management and Valuation for unlimited guidance and clarifications to complete my research successfully. He let me in the correct path of study while encourage me to bring the successful of my research. I wish to thank coordinator of MSC program Professor, R.G.Ariyawansa, who encourages every time to complete this research, I would also like to thankful Ms. Nishani Wickramarachchi, Senior lecturer, Department of Estate Management and Valuation for guidance and all lecturers in Department of estate Management and Valuation. Further I am thankful to non academic staff of Department of Estate Management and Valuation for their Co-operation to make this research success.

My special thanks should go to the Dr. Dharmawardhana, Department of veterinary surgeon of Colombo Municipal Council, who gave me information about the markets. Also I wish to thank all supervisors in Borella Market, Kosgashandiya market and Thotalanga market.

I pay my gratitude to my parents, wife and friends for their encouragement and supports to do research successfully.

Abstract

The primary intent of this research is to perception study on architectural design and facilities of public markets in Colombo Municipal Council area. Importance of this research is that, if one can develop public market buildings in an efficient manner, it will be a great convenience for customers, rate payers and whole country.

Problem statement of this research is that whether public markets are failed because they have more deficiency than potentials relating to architectural design and facilities of building. The objective of study is to compare the perception of customers and shop owners on constraints and potentials of building design and facilities in public markets.

Case study area is Colombo Municipal Council area. Colombo Municipal Council has population more than quarter of the population enumerated in Colombo District. Colombo Municipal Council area had 0.4% of average annual growth rate of population for a last two decades. Colombo Municipal Council area is the most densely populated area in the island with 17200 persons per square kilometer.

Three markets namely Borella, Kosgashandiya and Thotalaga out of fifteen public markets of Colombo Municipal Council were selected as sample using stratified sampling method and used random sampling method for selection of respondent for questioner.

Mean value comparison and spearman's correlation were done to analyze the perceptions of the shop owners and customers on building design and facilities of selected public market. Frequency table and Chi square test were used to identify constraints and potential according to customers and shop owners.

Author assessed relationship of the willingness of visit to the market and availability of architectural and facilities component by using Spearman correlation and derive that relationship exist between most of architectural and facilities components attached to the building and people willingness of visited to market.

Component of architectural design and facilities are become constraints and potential of the building. That does depend on the availability of such component attach to the building. If such component available in building, it will become potential. From the analysis author identify that component of architectural design and facilities provided to majority of market concern. However Kosgashandiya market shows potential than constraints and overall analysis shows all markets have constraints over potentials.

Hence Kosgashandiya market shows potentials than constraints, most of shops have vacant. That mean it may affect another factor apart from component of architectural and facilities consider in this research. This matter can be taken as further research area.

Table of Contents

Acknowledgement	i
Abstract	ii
Table of Contents	iii
List of Tables	vi
List of Figures	ix
Contents	Page
CHAPTER ONE - Introduction	
1.1. Background of the study	1
1.2. Statement of the problem	3
1.3. Significance of the study	4
1.4. Objectives of the study	6
1.4.1. General objective	6
1.4.2. Specific objectives	6
1.5. Methodology	7
CHAPTER TWO - Literature review	
2.1 Introduction to public markets	10
2.2 Local government market places	16
2.3 The market	17
2.4 Theories, Concepts and Definitions	17
2.5 Urban land	17
2.6 Urban rent and values	17
2.7 Urban land use pattern	18
2.8 Retail location and development	18
2.9 Location of shopping centers	19
2.10 History of the public market	19
2.11 Studies on facilities	22
2.12 Functions and architectural requirements of a market place	28
2.13 Design principles of shopping centers	30
2.14 Management of a Multi-Storey Building	31
2.15 Establishing rental schedule	32

2.16	Selecting tenants	33
2.17	Conservation of a multi-storey building	34
2.18	Building operation	35
2.19	Legal background	35
2.19.1	Municipal Council act	35
2.19.2	Section 155- Provision of markets and charging of rents & fees	35
2.19.3	Section 156- Expulsion of persons breaking by – laws	35
2.19.4.	Section 157 - Sale lease and closure of markets	36
2.19.5	Section 158- Penalty for selling in market without permission	36
2.20	Duties of CMC relevant to the public markets	36
CHAPTER THREE - Research design		
3.1	Overview	38
3.2	Data and data collection method	39
3.3	Instruments	43
3.4	Participants	43
3.5	Research Design	45
CHAPTER FOUR - Case study		
4.1.	Borella public market	50
4.2.	Kosgashandiya public market	51
4.3.	Thotalanga public market	51
CHAPTER FIVE - Data analysis		
5.1.	Introduction	53
5.1.1.	Introduction to questions	55
5.2.	Identification of constraints and potential of markets	56
5.2.1.	Main entrances	56
5.2.2.	Analysis of appropriateness of the main entrance	58
5.2.3.	Parking facilities	59
5.2.4.	Quality of sanitary facilities and adequate of sanitary facilities	60
5.2.5.	Pollution of the internal environment	61
5.2.6.	Visual contact of appearance of the building	63
5.2.7.	Internal circulation of the building	64

5.2.8. Natural light and ventilation flow of the inside to the building	65
5.2.9. Impression of inside of the building.	67
5.2.10. Security condition of the building.	69
5.2.11. Analysis of security persons and security condition of the building	70
5.2.12. Location of public market.	71
5.2.13. Convenient of rise of stair case	72
5.3. Summery of constraints and potential	74
5.4. Findings of Borrella Public Markets	76
5.5. Findings of Kosgashandiya Public Markets	77
5.6. Findings of Thotalanga Public Markets	79
5.6.1. Percentage of constraints and potential of markets	81
5.7. Mean comparison	82
5.7.1. Means comparison between customers and shop owners of Borella market	82
5.7.2. Means comparison between customers and shop owners of Kosgashandiya	83
5.7.3. Means comparison between customers and shop owners of Thotalaga market	84
5.7.4. Comparison combine mean values of three market	85
5.8. Correlation of willingly visit to market and architectural component	86
5.8.1. Testing of normality of willingly visit to market data	86
5.8.2. Correlation of willingly visit to market and number of main entrance	86
5.8.3. Correlation of willingly visit to market and attractiveness of main entrance	87
5.8.4. Correlation of willingly visit to market and visual contact of look of building	87
5.8.5. Correlation of willingly visit to market and natural light and ventilation flow	88
5.8.6. Correlation of willingly visit to market and Impression of building	89
5.8.7. Correlation of willingly visit to market and internal circulation	89
5.8.8. Correlation of willingly visit to market and condition of the internal environment	90
5.9. Correlation of willingly visit to market and facilities component	90
5.9.1 Correlation of willingly visit to market and parking facilities	90
5.9.2. Correlation of willingly visit to market and quality of sanitary facilities	91
5.9.3. Correlation of willingly visit to market and sanitary facilities	91
5.9.4. Correlation of willingly visit to market and rise of stair case	92
5.9.5. Correlation of willingly visit to market and architectural design	92
5.9.6. Correlation of willingly visit to market and facilities	93
5.9.7. Nature of correlation and strongest of the correlation	93

CHAPTER SIX - Conclusion and Policy implications

6.1	Conclusion	95
6.2	Correlation of willingly visit to market and component of architectural design and facilities	96
6.3	Recommendation	97
	6.3.1. Guidelines for minimizing such constraints	97
6.4	Regular maintenance program	99
	REFERENCES	101
	ANNEXTURES	105

List of Tables

Table	Page
1.1 Public markets in Colombo Municipal Council area	4
1.2 Aspects of the research problem	8
2.1 Population in Colombo	37
3.1 Selection criteria of three markets	44
3.2 Weighting for vacant shop	45
3.3 Converting concepts into variables.	48
5.1 Types of variables	53
5.2 Tests of normality	54
5.3 Perception of main entrance – Customer	57
5.4 Decision table	57
5.5 Perception of main entrance – Shop owners	57
5.6 Decision table	58
5.7 Perception of appropriateness of main entrance – Customers	58
5.8 Decision table	58
5.9 Perception of appropriateness of main entrance - Shop owners	59
5.10 Decision table	59
5.11 Table of Chi square test for parking facilities.	59
5.12 Decision table	60
5.13 Cross tabulation of quality of sanitary facilities and adequate of sanitary facilities of customers	60
5.14 Decision table	60
5.15 Cross tabulation of quality of sanitary facilities and adequate of sanitary facilities of shop owner	61
5.16 Decision table	61
5.17 Condition of the internal environment – Customers	62
5.18 Decision table	62
5.19 Condition of the internal environment - Shop owners.	62
5.20 Decision table	63
5.21 Visual contact of appearance of building – Customers	63

5.22 Decision table	63
5.23 Visual contact of look of building - Shop owners	63
5.24 Decision table	64
5.25 Perception of internal circulation of the building – Customers	64
5.26 Decision table	65
5.27 Perception of internal circulation of the building –Shop owners	65
5.28 Decision table	65
5.29 Perception of natural light and ventilation flow of the inside-Customers	66
5.30 Decision table	66
5.31 Perception of natural light and ventilation flow of the inside – Shop owners	66
5.32 Decision table	67
5.33 Perception of impression of inside the building – Customers	67
5.34 Decision table	68
5.35 Perception of impression of inside the building – Shop owners	68
5.36 Decision table	68
5.37 Perception of security condition of the building– Customers	69
5.38 Decision table	69
5.39 Perception of security condition of the building – Shop owners	69
5.40 Decision table	70
5.41 Cross tabulation of “Security persons and Security condition” on customers	70
5.42 Cross tabulation of “Security persons and condition” using Shop owner	71
5.43 Decision table	71
5.44 Cross tabulation of “Location of this market and Building is out of date” using customer	71
5.45 Decision table	72
5.46 Cross tabulation of location of this public market and building is out of date - Shop owners	72
5.47 Decision table	72
5.48 Perception of rising of stair case – Customers.	73
5.49 Decision table	73
5.50 Perception of rising of stair case – Shop owners.	73

5.51 Decision table	74
5.52 Summery table	75
5.53 Mean Comparison of Borella market	82
5.54 Mean Comparison of Kosgashandiya market	83
5.55 Mean comparison of Thotalanga market	84
5.56 Combine Mean comparison	85
5.57 Testing of normality of data	86
5.58 Correlation of willingly visit to market and number of main entrance	87
5.59 Correlation of willingly visit to market and attractiveness of main entrance	87
5.60 Correlation of willingly visit to market and visual contact of appearance of building	88
5.61 Correlation of willingly visit to market and natural light and ventilation flow of the inside	88
5.62 Correlation of willingly visit to market and impression of inside the building	89
5.63 Correlation of willingly visit to market and internal circulation the building	89
5.64 Correlation of willingly visit to market and condition of the internal environment	90
5.65 Correlation of willingly visit to market and parking facilities	91
5.66 Correlation of willingly visit to market and quality of sanitary facilities	91
5.67 Correlation of willingly visit to market and sanitary facilities	92
5.68 Correlation of willingly visit to market and rise of stair case	92
5.69 Correlation of willingly visit to market and architectural design	93
5.70 Correlation of willingly visit to market and facilities	93
5.71 Nature of the Correlation	93
5.72 Level of the Correlation	94
5.73 Summery of spearman's correlation	94
6.1 Guidelines for prevent such weaknesses	97
6.2 Maintenance program	99

List of Figures

Figure	Page
2.1 The Collaborative Model for Sustainable Markets and Stronger Communities	16
3.1 Flow chart showing descriptive methodology	47
3.2 Conceptual framework	49
4.1 Maps for public market	52

CHAPTER ONE

Introduction

1.1. Background of the Study

This chapter is to discuss about the evolution of the supermarket concept. There has been a rapid transformation of the food retail sector in developing countries, beginning in the 1990s. This applies particularly to Latin America, South-East Asia, China and South Africa. However, growth is being witness in nearly all countries. With growth has come considerable competition and some amount of consolidation have arose. The growth has been driven by increasing affluence and the rise of a middle class; the entry of women into the workforce; with a consequent incentive to seek out easy-to-prepare foods; the growth in the use of refrigerators, making it possible to shop weekly instead of daily, and the growth in car ownership, facilitating journeys to distant stores and purchases of large quantities of goods. The opportunities presented by this potential have encouraged several European companies to invest in these markets (mainly in Asia) and American companies to invest in Latin America and China. Brook describes benefit of the public market as follows. Public markets, on the other hand, bring with them an array of important and exciting economic, social and environmental benefits. Public markets provide economic opportunity to a range of operators and entrepreneurs; properly structured they provide communities with an opportunity to revitalize, renew and refresh neighbourhoods and downtown enclaves; they can be an especially important gathering place for social interaction amongst a range of demographic and socio-economic cohorts; they provide public space; they link the community to its agricultural roots and environs and they are pathways for good health and nutrition to name but a few of the more obvious benefits that accrue with the development of a public market. Brooke (2011) public market.

Slave Island and Modara markets, there are only meat stalls. In Colombo Central market there were only fish stalls. The Kirulapone market which was constructed in 1997 has been designed properly. This market seems to be functioning smoothly. Kollupitiya market is also functioning at satisfactory level. Out of all these markets, Borella, Kollupitiya, and Kirulapone markets have separate meters for electricity. 9 out of 15 markets have market supervisors.

Considering the public markets in Colombo Municipal Council area, Borella public market is the largest public market in the capacity of space with five floors. (Annual budget statement in Colombo Municipal Council, 2008) The term public market has changed in meaning over time and still differs from place to place. Project for public space (2003), “Public markets as a vehicle for social integration and upward mobility”.

General understanding of the public market is municipal or community sponsored market active in the wholesales and or retail sale of food and other related products. Rosenberg (1995) Dictionary of Retailing and Merchandising. With the increase of the population density, the range of goods and services demanded from the markets rose up. With the increasing population and demand the market places had to expand in order to cater the swelling number of customers and traders. Market places also can identify as public markets and private market. In Municipal Council Act No.48 of 1971, the public market has been defined as follows. Public market means any place which has here to fore been a public market under any replaced enactment or which may hereafter be declared to be a public market by resolution of the council. This research is going to be discussed about constraints and potentials of the public market with special reference to architectural design and facilities. In Sri Lanka specially in Colombo public markets were established in places where large amount of people are commuting and engaging with businesses. Therefore Colombo Municipal Council area can be introduce as high income people living area (Household income and expenditure survey 2007, Department of census and statistics)

In general Borella, Maradana, Pettah, Kollupitiya, Bambalapitiya Kirulapane areas have high rise residential buildings including condominiums.

However problem is most of the public markets belong to Colombo Municipal Council area are not successfully maintained or operated. As an example, most of cubicals of Borella, Kosgashandiya and Thotalaga markets are vacant.

A supermarket, a large form of the traditional grocery store, is a self-service shop offering a wide variety of food and household products, organized into aisles. It is larger in size and has a wider selection than a traditional grocery store, but is smaller