IDENTIFICATION OF PUBLIC PLACE ATTRIBUTES USING MEAN-END CHAIN RESEARCH MODEL

BENTALHODA FOOLADIVANDA

UNIVERSITI TEKNOLOGI MALAYSIA

Identification of Public Place Attributes Using mean-End Chain Research Model

BENTALHODA FOOLADIVANDA

A dissertation submitted in partial fulfillment of the requirements for the award of the degree of Master of Urban Design

Faculty of Built Environment

Universiti Teknologi Malaysia

January 2012

I hereby thank my truly honorable Father,

My lovely Mother,

My kindhearted brothers,

and those who love nature and their motherland

ACKNOWLEDGEMENTS

ASSOC. Prof. Dr. Mahmud bin Jusan, shows the way, gives my patience and the will to supervisor for this dissertation. I would like to express my greatest gratitude to my supervisor for her great support and guidance in helping me to complete the thesis. I also would like to give my appreciation to my parents, for collaborating me to do this thesis and over the years they have continued to support and motivate me in my studies. Not to forget, my friends who helped me directly or indirectly.

ABSTRACT

In this study, criteria to recognize successful public places' attributes have been studied from different theoretical perspectives. In great public places, the social and economic exchanges take place, friends run into each other, and cultures mix. When such places work well, they serve as a stage for our public lives. In this study, we investigated the influence of users' value on public place design. We studied motivational factors as determinants of stated preferences for public space attributes. Moreover, the relationship between these factors has been studied from the meansend theory perspective. This research sets out to examine findings reported in the literature that PPS mentioned as four attributes of successful public spaces. PPS have worked over 2,500 communities in 40 countries and all 50 US states. A semistructured interviewing technique called laddering is used to measure means-end chains and to analyze laddering as a technique of qualitative research and emphasizing the procedures for data collection, analysis and interpretation. "Laddering refers to an in-depth interviewing technique used to develop an understanding of how users translate the attributes of place into meaningful associations with respect to self, following means-end theory" (Reynolds & Gutman, 1988, p. 12). The critical literature review shows that laddering is useful in studies on human behavior, especially those related to the Means-End Chain (MEC) model. Our results are based on a stratified sample of eleven students with different nationality in UTM. The students took apart in an one-hour interview and they were asked about their preferences over public places' attributes for various types of public places. The results of evaluating MEC model on public space design confirm the PPS four key qualities for successful public places. The results show that person-environment congruence can support users' values and their expectations in successful public place design.

ABSTRAK

Dalam kajian ini, criteria untuk mengiktiraf atribut kejayaan sesuatu tempat awam telah dikaji melalui perspektif teoritikal yang berbeza. Dalam tempat umum yang baik, perubahan social dan ekonomik mengambil tempat, kawan-kawan berlari kearah satu sama lain, dan budaya-budaya bercampuran. Apabila sesuatu tempat bergerak dengan baik, ia berkhidmat sebagai pentas untuk orang awam berkehidupan. Dalam kajian ini, kami menyiasat pengaruh nilai pengguna terhadap rekabantuk tempat awam. Kami mengkaji faktor-faktor motivasi sebagai penentuan untuk menyatakan keutamaan kepada atribut tempat awam. Tambahan lagi, hubungan antara faktor-faktor ini telah dikaji daripada perspektif teori minakhir.Kajian ini dilakukan untuk memeriksa penemuan-penemuan yang dilaporkan dalam literatur bahawa PPS mengatakan 4 atribut kejayaan sesuatu tempat umum itu. PPS telah bekerja bersama 2,500 komuniti dalam 40 buah negara dan keseluruhan 50 negeri di US. Satu teknik semi-struktur temubual yang dipanggil sebagai "laddering" digunakan untuk mengukur "Means-End Chain (MEC)" dan untuk menganalisa "laddering" sebagai teknik kualitatif penelitian dan menekankan prosedur-prosedur dalam pengumpulan data, analisis dan tafsiran. "laddering" merujuk kepada teknik temuduga mendalam yang digunakan untuk membangunkan kefahaman bagaimana pengguna menterjemahkan atribut-atribut sesuatu tempat kepada asosiasi bermakna sehubungan dengan diri sendiri, mengikut teori "Means-end" (Reynolds & Gutman, 1988, p. 12).Imbasan kepada literatur yang kritikal menunjukkan bahawa "laddering" adalah berguna dalam kajian-kajian terhadap sikap manusia, terutamanya perkara yang berkaitan dengan model "Means-End Chain (MEC)". Hasil kajian kami adalah berdasarkan kepada sampel berperingkat iaitu 11 pelajar UTM yang berbeza nasionalitinya. Pelajar-pelajar itu mengambil bahagian dalam 1 jam sesi temubual dan mereka disoal tentang keutamaan mereka terhadap atribut beberapa jenis tempat awam. Hasil daripada penilaian model MEC terhadap rekabentuk tempat awam megesahkan 4 kunci kualiti tempat awam yang berjaya. Hasil kajian menunjukkan bahawa penyesuaian individu-persekitaran boleh menyokong nilai-nilai pengguna dan tangggapan-tangggapan mereka terhadap kejayaan rekabentuk tempat awam.

TABLE OF CONTENTS

С	CHAPTER		TITLE	PAGE	
		DECLARATION		ii	
		DEDICATION		iii	
		ACKNOWLEDGEMENTS		iv	
		ABSTRACT		V	
		ABSTRAK		vi	
		TABLE OF CONTENTS		vii	
		LIST OF TABLES		xii	
LIST OF FIGURES LIST OF APPENDICES		LIST OF FIGURES		xiii	
		LIST OF APPENDICES		xiv	
1	СНА	PTER 1			
	INTI	RODUCTION			
	1.1	Introduction		1	
	1.2	Statement of the Problem		1	
	1.3	Scope of the Research		4	
	1.4	Method		4	
	1.5	Research Aim		5	
	1.6	Research Objective		6	
	1.7	Research Questions		6	
	1.8	Structure of Thesis		7	

2 CHAPTER 2

LITERATURE REVIEWS

Introduction

Dout	1. Definit	ion and Concert of Derson Environment in Context of	flining
	Part 1: Definition and Concept of Person Environment in Context of Lining		
	ironment		10
2.1		ion the concept of Person-Environment Congruence	11
2.2		n between Person and Environment	11
2.3	Person		12
	2.3.1	Person Perception	12
	2.3.2	Person Behavior system	12
	2.3.3	Person Satisfaction	13
	2.3.4	Person Need and Preference	13
2.4	Environ	ament	14
2.5	Congrue	ence	14
2.6	Satisfac	ction as criteria of expectation of Congruence	15
2.7	PEC is a	achieved when built environment design meets user values	15
2.8	Conclu	sion	16
Part	2: Criteria	a to Appropriate Public Space Design Based on the T	heory of
PEC	and MEC	Research Model	17
2.9	Definit	ion of Public Urban Space	18
2.10	Value o	of Public Spaces	18
2.11	Place A	Assessment	19
2.12	Theory	y of Place	19
2.13	Humar	n Needs and Urban Design	22
2.14	Human	Needs in Public Space	23
2.15	Attribu	te of Successful places (They have four key qualities)	23
	2.15.1	Access & Linkages	25
	2.15.2	Comfort & Image	26
	2.15.3	Uses & Activities	26
	2.15.4	Sociability	26
2.16	Conclu	sion	27

Part 3: PEC and MEC Relationship28		
2.17	MEC Research Model to identify person-environment relationship	o 29
2.18	MEC and the concept of person-environment Congruence	29
2.19	Means-end theory	30
2.20	The Definition and Concept of Value	32
2.21	Conclusion (Attributes Influence of User Preference's on Public Space)	35

3 CHPTER 3

RESEARCH METHODOLOGY

	Intro	duction		3	8
3.1	Rese	earch Str	ategy		40
3.2	Intro	oduction	of case study		41
	3.	2.1	Brief History		42
	3.	2.2	Lake (Open Space)		44
	3.	2.3	Faculty of Built Environment (FAB Square)		45
	3	.2.4	Agoura		45
	3	.2.5	Justification of case selection		46
3.3	Met	thod			46
3.4	Sam	npling			47
3.5	3.5 Instrument of MEC methods and data collection process development and				
valid	ation				48
	3.5.1	Descrip	tion of the data collection		50
	3.5.2	Elicitat	ion and selection of attributes and attribute levels		50
	3.5.3	Ladde	ring interviews		52
	3.5.4	Data r	ecording Techniques		53
3.6	An	alysis			54
	3.6.1	Conter	nt Analysis		54
	3.6.2	Constru	acting means-end chains: from interviews to ladders		55

	3.6.3	Coding	56
	3.6.4	Constructing the summary Implication Matrix (SIM)	56
	3.6.5	Constructing the Hierarchical Value Map (HVM)	56
3.7	Inter	pretation of the hierarchical value map	57

4 CHAPTER 4

PUBLIC SPACES ANALYSIS BASED MEC RESEARCH MODEL

	Introduction		
	4.1 Data A	nalysis	60
	4.1.1	Content Analysis	60
	4.1.2	Attribute's Content Analysis	61
	4.1.3	Consequences' Content Analysis	61
4.2	The Implication	ion Matrix	64
4.3	The Implica	tion Matrix Analysis between Attribute and Consequences	64
4.4	Constructing	the Hierarchical Value Map	66
4.5	Cut of Lev	el	67
4.6	Determining	Dominant Perceptual Orientations	73
4.7	Conclusion	1	74

5 CHAPTER 5

PUBLIC SPACES INTERPRETATION & FINDING BASED MEC RESEARCH MODEL

Intro	oduction	75
5.1	Values Influencing Public Spaces Design	75
5.2	Important Attributes in Public Spaces (Insight of user preference)	78

REFERENCES	82
APPENDIX.1	85
APPENDIX.2	99
APPENDIX.3	100
APPENDIX.4	102
APPENDIX.5	105
APPENDIX.6	107
APPENDIX.7	109

LIST OF TABLES

TABLE NO). TITLE	PAGE
2.1	Composite Place Model (Montgomery, 1998)	21
2.2	Attributes Influence of User Preference's on Public Space	35
4.1	Summary of Content Codes	63
4.2	Summary of Perceptual Orientations	73
5.1	Values Influencing Public Spaces Design	76
5.2	Influence of "HE" on Public Spaces Attribute	77
5.3	Measuring Attribute Priorities	78
5.5	Weasuring Attribute I nonnes	70
5.4	Measuring Direct Relation of Attribute Priorities	78
5.5	Measuring Indirect Relation of Attribute Priorities	79

LIST OF FIGURES

TITLE

FIGURE NO.

1.1	The Structure of Thesis	7
2.1	The Structure of Literature Review	9
2.2	Canter's Place Model	20
2.3	The picture shows the example of quality public spaces. Sources: Jan Gehl, Public Spaces Public Life, 2001	24
2.4	Attribute of Successful places by PPS is used in this Study	24
2.5	Original means-end chain model	31
3.1	The Structure of Methodology of Research	39
3.2	Johore Situation in Malaysia	41
3.3	UTM situation in Johore Bahru	41
3.4	Universitu technology of Malaysia with surounding access	43
3.5	Location of 3 places in UTM. Lake , Agoura and FAB Square	43
3.6	Location of Lake in UTM. It placed between main gate and	44
	second entrance of university	45
3.7	Different Perspective of Lake	
3.8	Agoura Strategically Location	45

PAGE

4.0	The Structure of Data Analysing	59
4.2	Indirect Linkage between A1-FeX	64
4.2	Indirect Linkage between A1-FeX	64
4.3	Direct Linkage between A1-FeX	65
4.4	Indirect Linkage between A2-VA & Indirect Linkage between A2-VA	65

4.5	Hierarchical Value Map	68
4.6	Two Different Path from "B" to "HE"	70
4.7	One Path from "B" to Two Different Values "HE" and "SE"	70
4.8	Two Different Path from B to "HE"	71
4.9	Relation of Two Attributes to Two Different Values	71

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
1	Construction of Laddering from Interview	85
2	Summary of Coding	99
3	Attributes Coding	100
4	Consequences Coding	102
5	Summary of Implication Matrix	105
6	Hierarchal Value Map	107
7	Perceptual Orientation	108

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter presents the overall structure of the research and framework in which the results of the enquiry are presented. First the research background and problem statement will be discussed. The second section outlines the scope of the research. The next section presents the relevance of this research. And overall structure of the thesis will be presented in the final section.

1.2 Problem Statement

When we look at the most beautiful towns and cities of the past, we are always impressed by a feeling that they are somehow organic. This feeling of "organization "is not vague feeling of relationship with biological forms. Each of those towns grew as a whole under its own low of wholeness and we can feel this wholeness (Alexander, 1987). This feel-good effect has no reason except congruence between living environment and people expectations and their value. It means there is an invisible shadow of satisfaction after all (Hutchison, 2010). Today we live in an urban world which this quality does not exist. Responsive spaces are those that are designed and manage to serve the need of their users. The primary needs that people seek to satisfy in public space are those for comfort, relaxation, active and passive engagement and discovery. Public space can also be a setting for physically and mentally rewarding activity, such as exercise, gardening or conversation (Ulrich.1979, 1984) .When outdoor areas are of poor quality, only strictly necessary activities occur. When outdoor areas are of high quality, necessary activities take place with approximately the same frequency – though they clearly tend to take a longer time, because the physical conditions are better (Matthew Carmona, 2007, p. 146).

The quality of the places we live in has an impact on all aspects of life. How well they are designed will influence how safe we feel, how easy it is to walk round, whether we have shops, community facilities and schools nearby, whether our children have safe places to play. It will also affect whether there is good access to public transport and a good choice of homes in which to live. It is essential that the places we create and improve embody the principles of good urban design. Good public space design is essential to deliver places which are sustainable on all counts: places that create social, environmental and economic value. Ensuring that places are well designed should be a priority of everyone involved in shaping and maintaining the built environment (Llewelyn-Davies).

To solve formidable urban problems, there is the need not only for the usual coterie of experts—city planners, architects, engineers of all types, economists, law enforcement specialists, traffic and transportation experts, educators, lawyers, social workers, and political scientists—but for a number of new experts. Psychologists,

anthropologists are seldom, if ever, prominently featured as permanent members of city planning departments but they should be. Because the nature of human being which need more attention in today's modern town and cities. Planner, architecture, engineers and ... work more with the physical and visual aspect of built environment however we should think more about people behavior, need, value , culture and their design expectations in their living environment . User's design expectations have been seen as directly influencing the physical modification of living environment.

The first we should discuss the importance of meaning which rightly stresses is not in environments or things themselves but in people. Environments, as Professor Rapoport would agree, have no meaning in themselves - without people. Environments maker should centers on people's behavior in living environment related user's values. People living and spending their time in the towns are the most important member of living environment so, great attention to their need, culture, believe and value should be consider. Based on findings they posit that values are one of the determinants toward a more suitable living environment.

As Rokeach said Objectives and values play an important part in the behavior of people in general .They directs the everyday activities not only in small scale (at house) but also in large scale (in public). There are the vast range of activities that every day takes place in different part of town and city. One of the main parts is public space in towns which are the place of people gathering and various activities happen. People believe everyday activities to be the primary means to achieve life values. We are looking for a relationship between public spaces attributes and values are considered to be mainly indirect with everyday activities as the intervening factors. The aim of this research is prove the beliefs and values underlie people's evaluations of public urban spaces attributes. As an extension to the research, the application of MEC model can be tested in public urban spaces toward a more suitable living environment. Currently, there are no defined good criteria for designing urban spaces, but it is agreed that success spaces are that satisfies the user's needs at a given stage of development. Lack of designers attention to urban places attributes and providing user's need is main problem of this research. The succesibility and degree of acceptable of public urban designing by people depends on whether the space meets the user needs in term of life cycle change and life style.

1.3 Scope of Research

Scope of study is a general outline of what the study will cover. The critical literature review shows that laddering is useful in studies on human behavior, especially those related to the Means-End Chain (MEC) model. A semi-structured interviewing technique called laddering is used to measure means-end chains and to analyze laddering as a technique of qualitative research and emphasizing the procedures for data collection, analysis and interpretation. Our results are based on a stratified sample of eleven students with different nationality (Iranian, Malay, and Chinese) in UTM. The students took apart in a one-hour interview and they were asked about their preferences over public places' attributes for various types of public places in UTM. These places include lake area of university, Agoura and FAB square.

1.4 Method

Preferences for housing attributes have been studied from different theoretical perspectives and with a great variety of methodological approaches. Coolen and

Hoekstra's (2001) pilot study on housing preference. Their research centers on people's behavior in choosing living environment by relating unit's attribute with user's value. Base on the findings, they posit that values are one of the determinants in housing selection. Mahmud (2007) has experimented the research model in housing research to explore people's behavior in changing their living environments (housing-personalization).

But in urban design science it is unfamiliar. So this context pursues people's value in urban places. The relationships between such motivational factors as values and goals on the one hand and preferences for public space attributes on the other are considered from the perspective of means-end theory. The aim of this research is to apply MEC in urban design science to investigate motivational factors in public open spaces project.

The research model was found to be appropriate for built-environment researches based on the fact that built-environments are also expressed in term of their attribute where the relevance of the attribute is judged by value system of the users. The model is potentially useful in identifying user's personal design preferences.

1.5 Research Aim

The aim of this research is to make comparison between attribute of successful public space and collected attribute through PEC research model in this pilot project in public spaces in UTM in order to support person environment congruence (PEC) in urban design science.

1.6 Research objective

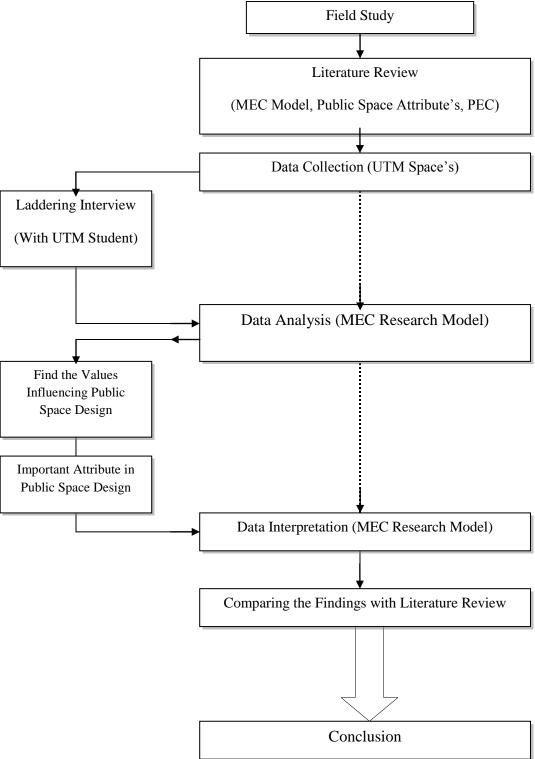
- 1) To link public spaces attributes with user values in UTM
- 2) To identify user values which determine the design of public space
- 3) To identify the attributes which influence user's preference
- To establish design consideration for urban public spaces based on user-value associations with public spaces attribute

1.7 Research question

The key research question of this thesis is:

How does user's expectation influence the design of public urban spaces? How can user's value influence the public urban spaces attribute?

1.8 Structure of Thesis





Bibliography

Al-Soliman, M. (1990). *The Impact of the Surrounding Environment on People's perception of major urban environment attribute*. Riyadh,Saudi Arabia : King Saud Univ. Vol. 2, Architecture and Planning.

Antonio Aiello, R. G. (2010). Evaluation and Program Planning 33. *Neighbourhood planning improvement: Physical attributes, cognitive and*, 264–275.

Arnold Spokane, E. M. (2000). Person–Environment Congruence and Holland's Theory: A Review and Reconsideration. *Journal of Vocational Behavior 57*, 137–187.

Campbell, S. (2003). *Case Studies in Planning: Comparative Advantages and the.* Michigan: University of Michigan.

Canter, D. (1997). *The Facets of Place.* New York: Plenum Press, Advances in Environment, Behavior, and Design.

Chartrand, J. (1999). What Should We Expect from Congruence? *Journal of Vocational Behavior 55*, 136–146.

Coolen, H. (2001, June). Values as determinants of preferences for housing. *Journal of Housing and the Built Environment*, 285–306.

Erkul, K. F. (2009). A CROSS-CULTURAL ANALYSIS OF NEW URBANIST NEIGHBORHOODS IN THE US AND TURKEY. *The University of Michigan*.

Eva Kahana, L. L. (2011). Person, Environment, and Person-Environment Fit as Influences on Residential Satisfaction of Elders. *Environment and Behavior*, 434-453.

Frumkin, H. (2006). The Measure of Place. *American Journal of Preventive Medicine*, *31*(*6*), 530-532.

Gerring, J. (2007). *Case Study Research: Principles and Practices*. New York: Cambridge University Press.

Groat, L. (2000). A Conceptual Framework for Understanding the Designer's Role:Technician, Artist or Cultivator? New York: Wiley: Design Professionals and the Built Environment.

Krier, R. (1991). Urban space. Michigan: Rizzoli International Publications.

Kristin Lovejoya, S. H. (2010). Neighborhood satisfaction in suburban versus traditional environments: An. *Landscape and Urban Planning*, 37–48.

Lang, J. (1987). *Creating Architectural Theory: the Role of the Behavioral Sciences in Environmental Design.* New York: Van Nostrand Reinhold Co.

Lang, J. (1974). *Designing for Human Behaviour*. Pennsylvania: Dowden, Hutchinson & Ross Inc.

Liu-Qin Yang, E. L. (2008). Person–environment fit or person plus environment: A metaanalysis of studies using polynomial regression analysis. *Human Resource Management Review 18*, 311–321.

llewelyn, d. (2010). *urban design compendium*. English partnerships, The housing corporation.

Llewelyn-Davies. *urban design compendium*. english partnerships, the housing corporation.

Mahmud. (2007). Identification of User's expectation in mass housing Means-End Chain Research Model. *Jurnal Alam Bina*, 1-19.

Martine de Boer, M. M. (2002). Means-End Chain Theory Applied to Irish Convenience Food Consumers. *National University of Ireland, Cork (UCC), Department of Food Business and Development, Ireland*, 59-72.

Matthew Carmona, S. T. (2007). Urban design reader. Architectural Press .

Misun Hur, J. L. (2010). Neighborhood satisfaction, physical and perceived naturalness and openness. *Journal of Environmental Psychology*, 52–59.

Montgomery, J. (1998). Making a City: Urbanity, Vitality, and Urban Design. *Journal of design*, *3*(1), 93-116.

Neuman, W. L. (2006). *Social research methods: qualitative and quantitative approaches.* Michigan: Pearson/Allyn and Bacon.

Philip Kotler, K. L. (2009). Marketing management. Pearson Education, Limited, 2009.

Reynolds, T. J. (1984). Advertising is image management. *Journal of Advertising Research*, 27-36.

Reynolds, T. J. (1988). Laddering theory, method, analysis, and interpretation. *Journal of Advertising Research*, 11-31.

Sekiguchi, T. (2004). Toward a dynamic perspective of Person Environment Fit. Osaka Keidai Ronshu, Vol.55, 177-190.

Sime, J. D. (1995). Creating Places or Design Spaces? London: Academic Press.

Stephen Carr, M. f. (1994). Public Space . Cambriddge University Press.

Tak, J. (2011). Relationships between various person–environment fit types and employee. *Journal of Vocational Behavior 78*, 315–320.

Tiesdell, M. C. (2007). Urban Design Reader. Architectural Press an imprint of Elsevier.

University of São Paulo, S. P. (2006). Discussing Laddering Application by the Means-End Chain Theory. *The Qualitative Report Volume 11*, 626-642.

Valette-Florence, P. &. (1991). Improvements in means-end chains analysis: using graph theory and correspondence analysis. *Journal of Advertising Research*, 30-45.

Watt, D. (2007). On Becoming a Qualitative Researcher. *The Qualitative Report Volume 12 Number 1 , 12,* 82.

Yin, R. K. (2003). *Case Study Research: Design and Methods*. Thousand Oaks, California: Sage Publications.