Experiential Landscape as a Tool to Enhance Behavioral Response of users in Urban Parks

Case Study of Al-Azhar Park

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***Abstract*: Numerous studies have demonstrated the ability of natural places to positively influence individual well-being. Even brief views of nature have been found to speed recovery from surgery, and enhance one's ability to function effectively. And designing the landscape is an endless process of movement and change, which respond to environmental conditions and human activities. Therefore, the purpose of this paper is to analysis the relation between the historical landscape of open parks in old districts within the city and activities and behaviour that occur inside it, and how we can develop it by the comprehensive use of landscape elements in the space. The paper vehicle is to present the idea of experiential landscape as a tool to evaluate the user's perception in the park. Alazhar Park in Cairo (Egypt) is used as a case study to explore the social patterns within the local area, and existing social and anti-social behavior in the park, the results are based on the observation and recording the people's response towards historic landscape elements, beside applying a questionnaire to selected sample of park users to investigate their opinion.**

Key words: behaviour and activities, experiential landscape, urban parks, landscape perception

I. INTRODUCTION

The idea of experiential landscape was discussed by Kevin Thwaites and Ian Simkins[4]. They believe that it is very important to look at the human-environment relation in more depth, setting out its philosophical and theoretical context and then describing some of the methodological components that help us to understand it more. The research will review their approach which being used and examined in open spaces, in order to apply it on urban parks.

Few years ago, the environmental physiologists Steven and Rachel Kaplan[5] highlighted the problem. They saw it was that although enlightened design practitioners recognized value and relevance in the research findings of environmental physiology, they simply couldn't translate the

research literature into usable recommendations. The solution to this was to appeal to the structure of Alexander's pattern language[6] as a framework with operational potential, and they proposed their own matrix of patterns and themes to present solutions for the design and management.

II. IMPORTANT AND AIM OF THE RESEARCH

The benefits of the research topic is very helpful to the field of landscape, it introduce the concept of experiential landscape and how it can be applied on urban parks to predict the human perception based on their current attitude.

The paper tries to investigate behavioral response in urban parks towards landscape design through the tool of experiential landscape.

III. HYPOTHESIS AND METHOD OF THE RESEARCH

The research assume that by the effective using of landscape elements in urban parks we can direct and enhance human behaviour for users

The focus of the research on innovative practices and landscape design techniques, drawn from the case study of Alazhar Park in Cairo Egypt, and will suggest revisions to practice in better way to human responses . This will be achieved through:-

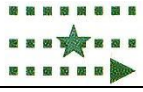
- Site visit's at different use periods, with monitoring and evaluation of behavioral patterns, with documentation by photographs and diagrams..
- Structured interviews with a selected sample of the users, an analyze it to understand patterns of uses.

IV. VOCABULARY OF EXPERIENTIAL LANDSCAPE

Table 1 provides the fundamental basis from which the experiential landscape concept can begin to be explored in the field.

The paper will look more closely at the components as an emergent vocabulary potentially capable of describing the characteristics of experiential landscape.

Table 1 Table of CDTA symbols and themes [7] (adapted by Researcher)

Experiential place	type	symbol	description
Center	Social imageability		Red open circle or polygon
	Social interaction		orange open circle or polygon
	Restorative benefit		green open circle or polygon
Direction	Movement		Green dashed line, with a star or arrow
	view		Blue asterix and blue target with dashed line
Transition	Threshold		Two thick and parallel lines
	Corridor – segment - ephemeral		Red polygon hatched in one direction
Area			Purple open polygon

A. Center

Some of the environmental attributes that seemed to induce the predominant sensation of location it called Center. Hiller and Hanson[8] have associated convex spaces with social potential in residential settings, and they use an adaptation of this to explore the spatial characteristics of the sensation of Center.

Another of the principal attributes of settings that seemed to deliver prominent Center experience was that settings that appeared locationally significant, as opposed to isolating, tended to be close to routes that encouraged passer-by.

Fig. 1 shows the different types represent different ways in which people come to attach significance and value to locations.

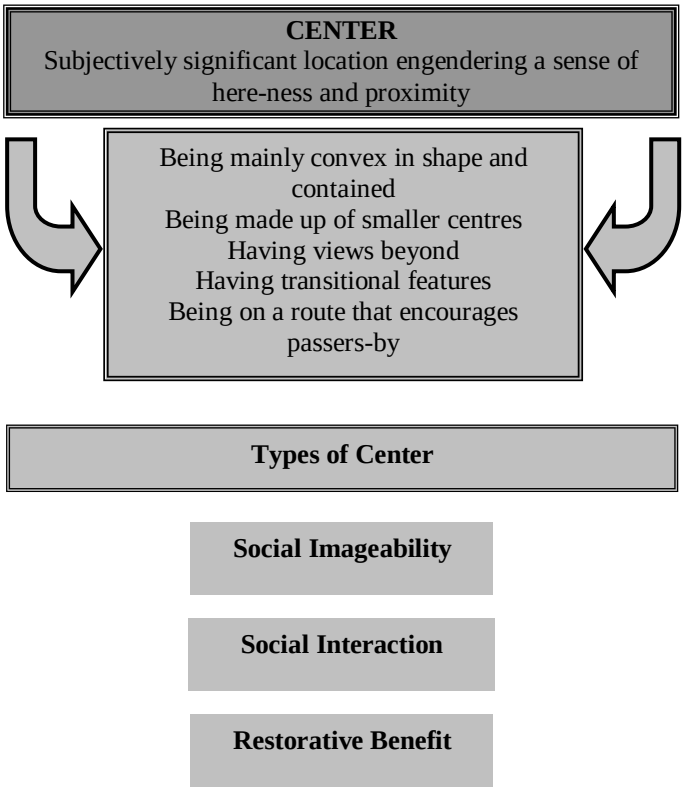


Fig. 1 Conceptual model for Center

The environmental characteristics of centers significant for restorative benefits can be summarized into:

- Separation from distraction.
- Comfort and shelter.
- Provisions for rest.
- Presence of nature (trees – water – natural materials).

Finally, the environmental attributes that is especially associated with centers significant in people's lives because of social interaction include the following:

- Significant convergence of routes.
- Presence of features for waiting.
- Seating in social groupings.
- Presence of features encouraging comments.
- Revealingness (low garden boundaries. Etc).
- Places of arrival, departure.

B. Direction

The discussion about the development of Center characteristics highlighted that centers don't exist in isolation to other kinds of spatial experience. Gordon Cullen[9] understood this relationship when he said in his exploration of the structure of townscape that:

> *"No sooner do we postulate a **here** than automatically we must create a **there**, for you can't have one without the other"*

The explorations of Kevin Thwaites and Ian Simkins[10] showed that sensation of direction can be conceptualized by three interconnecting categories of experience which link together the here and there, which is:

- *Linear containment*, this refers to a general sense of containment that draws attention to a spatial continuity, and this is influenced most by attributes of the enclosing surfaces.
- *Route*, it extends beyond the awareness of a potential continuity to the actual act of going from here to there. In this category, environmental attributes that predominate are those that relate to ease of movement.
- *Anticipation*, it provides the motivation for moving from here to there. Environmental attributes that seem most to stimulate the sense of anticipation include what we see and hear, and what we can imagine. Fig. 2

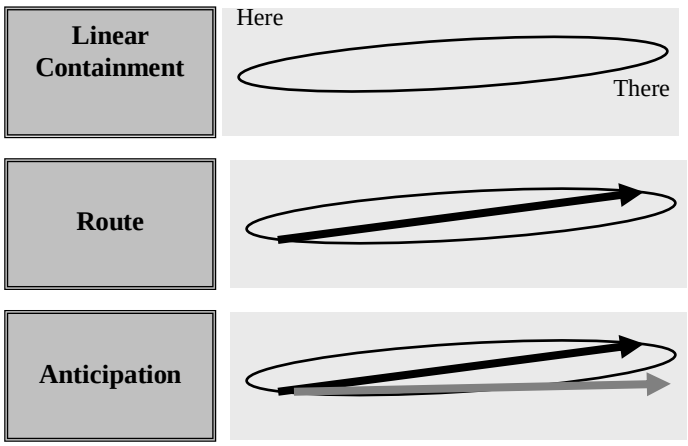


Fig. 2 The three categories of experience in direction

Fig. 3 shows the conceptual model for direction, which summarize all the components of it.

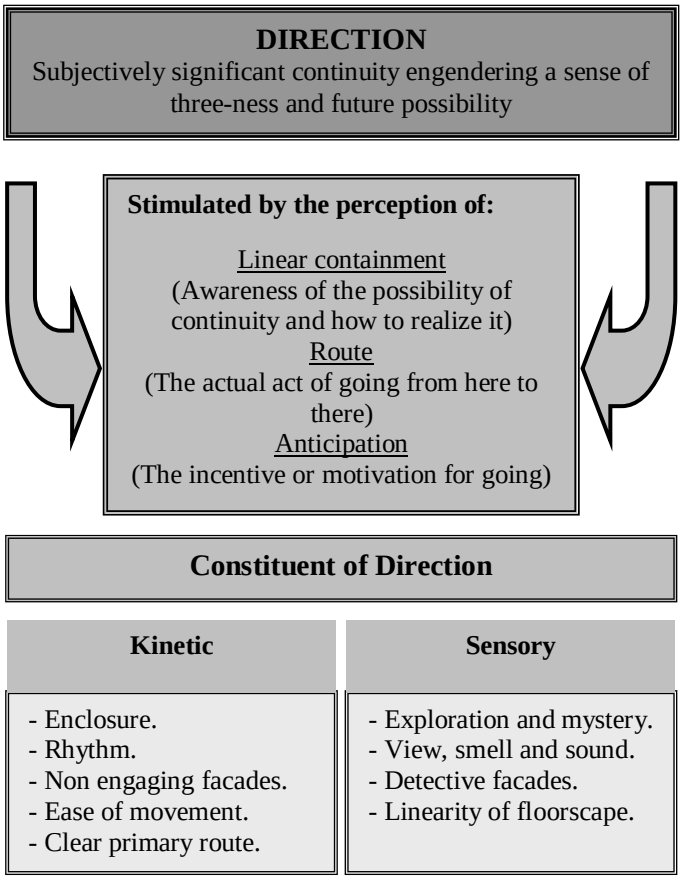


Fig. 3 Conceptual model for Direction

C. Transition

The sensation of transition is what allows us to experience difference between adjacent places. This appears to be the view was taken by Norberg-Schulz [11] when he describes transitions as the glue that binds together other spatial components to form a coherent whole.

From Kevin Thwaites and Ian Simkins investigations[12], they have identified four distinguishable types, which are: Fig. 5

- *Threshold*, the simplest form of transition because it occurs in an instant defined usually by quite an abrupt contrast on either side of it.
- *Corridor* is spatially more expansive than a threshold in that it delivers its transition experience gradually rather than abruptly, it usually takes the form of a restricted and directed passage.
- *Segment*, more complex kind than threshold and corridor. A segment recognizes that sometimes a strong sense of transition might be accompanied by a sensation that there are also locational qualities present as well; segments are usually formed from the overlapping of two adjacent spaces.
- *Ephemeral*, it recognizes qualities of the environment that can generate strong transitional sensations but are not permanent features. These include in particular the transient effects of sun and shade patterns, variations in temperature, and wet to dry in rainy weather.

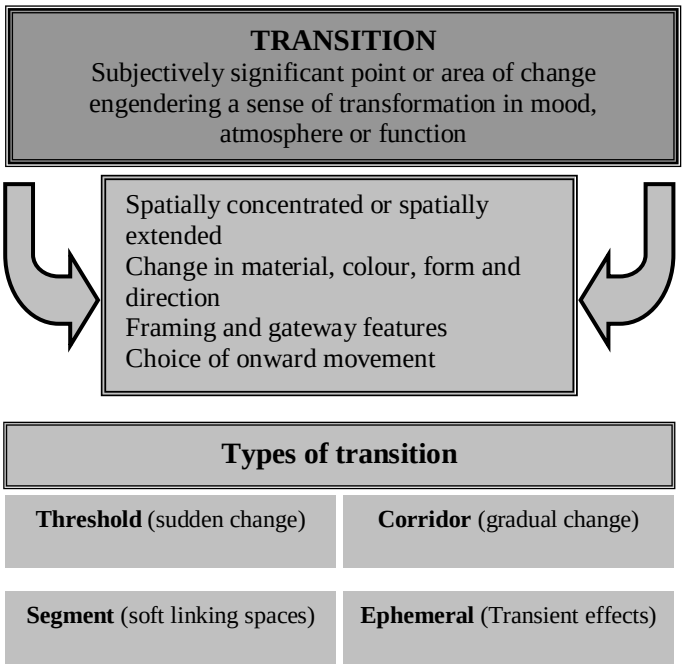


Fig. 4 Conceptual model for Transition

Fig. 4 shows the conceptual model for direction, which summarize all the components of it.

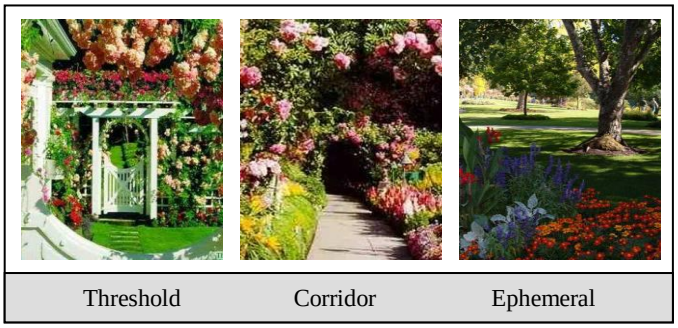


Fig. 5 Different types of transitions

D. Area

The last component in the experiential landscape concept is perhaps more general and less tangible than the other three, and it has a different role. Area has a similar characteristic to Center in that areas can be experienced within areas. As just as the sense of location can be strengthened is there is a range of locational experiences in roughly the same place[13]. Fig. 6 shows the relation between Area and other experiential landscape elements.

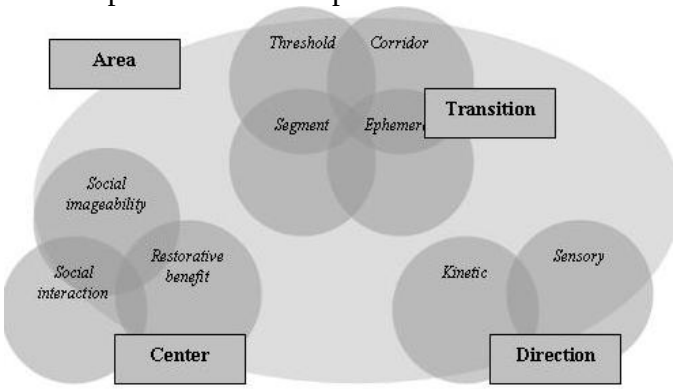


Fig. 6 Holistic relationship of CDTA

Fig. 7 shows the conceptual model for direction, which summarize all the components of it.

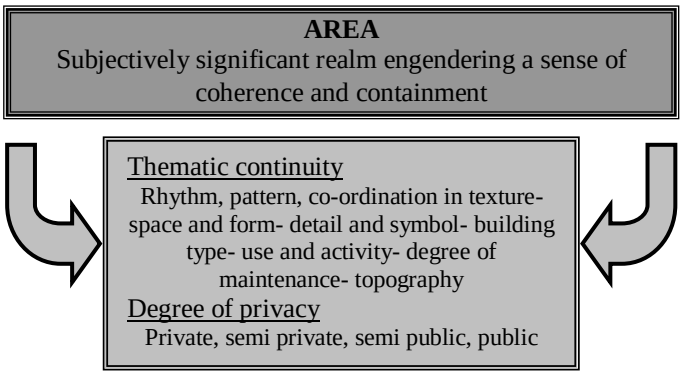


Fig. 7 Conceptual model for Area

V. READING THE EXPERIENTIAL LANDSCAPE

Perception of landscape is not an objective clear in the sense that is already exists out there to be discovered, revealing and then interpreting it is a primarily qualitative pursuit[14]. If 10 trained and experienced landscape or urban design professionals were asked to record their space perceptions of a particular settings they will give ten different answers, even if instructions given to them about how they should interpret the concept of space perception is very precise[15].

In order to answer the question of how we can reveal and read the experiential landscape, there is an approach developed by Kevin Thwaites and Ian Simkins[16] on the idea or layering information drawn from individuals and given a graphical representation.

A. Non participant observation

According to Flick[17], This technique involves the passive observation for the activities of groups or individuals with the intention to understand practices, interactions and events which occur in a specific context. It provides access to the cultural mechanisms of a space as well as the spatial relationship that the site users have with their surroundings, and can give detailed insights into the social life and relationships of people.

B. Conversation

This technique is usually possible in public places, through, to ask some one of the users about some detailed information about the space not always possible by observation of the place[18]. In this method, usually it is unstructured interviews and casual conversations, more friendly discussions about the space to understand the reasons for the existing behavioral patterns.

C. Semi structured interviewing

This particular technique is a method frequently used in qualitative research when it is necessary to allow participants to range as naturally and freely as possible in their response to questions.

The way this usually works is to have predetermined topics that guide conversation allowing new questions or insights to evolve as the discussion develops[19].

D. Information recording

The information gathering stage yields voice recordings and transcribed text, along with supplementary notes, diagrams, that record details of the place perception according to the theoretical principles of the experiential landscape.

This raw material need to be interpreted to term of CDTA, and this is achieved by coding parts of the transcript in relation to their correspondence with how CDTA are defined[20].

VI. READING THE EXPERIENTIAL LANDSCAPE IN AL-AZHAR PARK

The main purpose of producing a composite experiential landscape map is to reveal in diagrammatic form the spatial distribution of certain kinds of human experiences across the space. To draw these maps, the study will start to investigate user's behaviour an interaction with historic landscape features through some steps, which are:

- *Non-participant observation.*
- *Conversation.*
- *Semi structures interviewing.*
- *Questionnaire results.*
- *Questionnaire results correlation.*

A. Non-participant observation

It is one of the effective ways to record people's behaviour in a space, for the purpose of evaluative methodology in the research, many visits were organized to observe users attitude and reactions in the park spaces, these visits were during all the day times and distributed within normal days and weekends. Fig 8

Fig. 8 Examples for observation visits to the park (Researcher)

B. Non-participant observation

The performance of park facilities were evaluated through meeting with people and discuss their opinions about it[21], these interviews were unstructured and all around park zones.

C. Semi structures interviewing

To investigate the user behaviour and preferences in the park, the research will conduct a questionnaire to apply on the park users. In order to calculate the size of the samples to work on, it was a must to analysis the number of visitors to the park since it was opened late 2004 to 2007, and to predict the number in 2009 based on the available data and expectations from the park administrators.

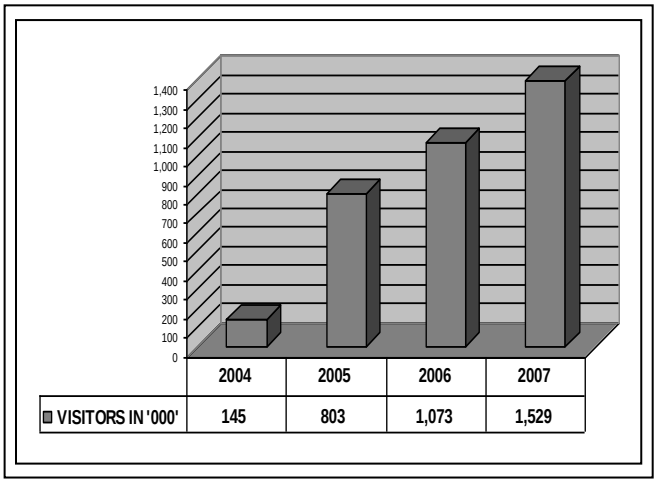


Fig. 9 Visitors Number in Al-Azhar Park from 2004 to 2007 [22]

Fig 9 shows the visitors till 2007, which is 1.529 million people, expected to reach 2,500 million by the end of 2009. Based on this assumption the daily visitors number enter the park is almost 7000 persons, taking in consideration the huge number of visitors in special days like EID and summer weekends.

Table 2 Calculating sample size for users survey in Al-Azhar Park

	Average	**Chosen**
Confidence level	(90-99) %	**95 %**
Population size	7000	**7000**
Margin of error	5-10	**9**
Sample size		**120**

Table 2 is the result of using the special software designed to calculate sample size, after choosing the other variables in the table the number of sample will be out, these variables are:

- Confidence level[23].
- Margin of error[24].

The sample size will be distributed the local user and non local user, also according to the time of visiting either in the morning or night, and the sample designed to be all around the park layout (lake side – main entrance – north side).

D. Questionnaire results

The users survey was divided into five main parts to examine the previous discussed points in this chapter, these parts are:

- *General questions about the park.*
- *Park accessibility to the community.*
- *Comparative analysis of park design.*
- *Evaluation of designed historic landscape.*
- *Types of activities inside the park.*

The paper will present some samples of user's answers from all the questionnaire five parts, followed by the correlations for it.

1) General questions about the park

Regarding the question (At what time in the day you like to visit the park?) as a sample, the users answers are in Fig. 10.

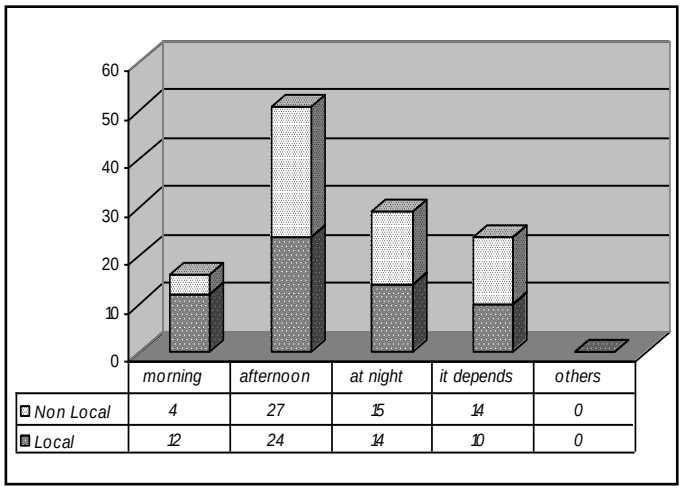


Fig. 10 Users answers to the survey - part 1

42.5% of all sample prefer to visit the park at afternoon, it is distributed among local and non local equally, then 24.17% like to visit the park at night. The research will try to investigate the reason later in analyzing the questionnaire.

2) Park accessibility to the community

Regarding the question (Your overall evaluation for the park with its diversity of activities and cultural events?) as a sample, the user's answers are in Fig. 11.

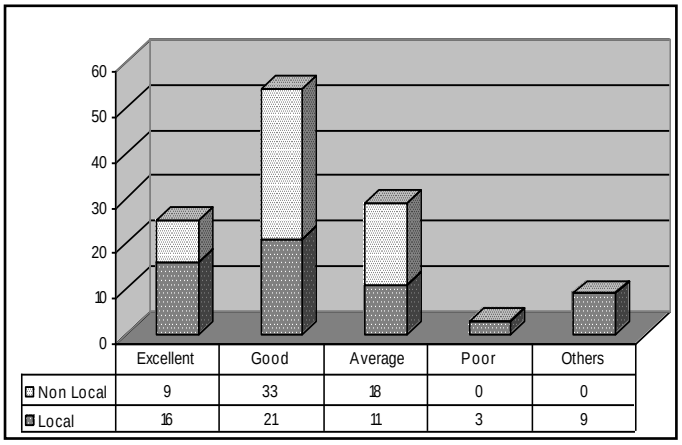


Fig. 11 Users answers to the survey - part 2

45% sees the park is good, 24.17% thinks it is average, while 20.83% of the sample rank the park as excellent. Only 2.5% choose poor, and 7.5% don't know how to evaluate it, all of them are from local users.

3) Comparative analysis of park design

Regarding the question (What is most important from the following features to the historic character of the Park?) as a sample, the user's answers are in Fig. 12.

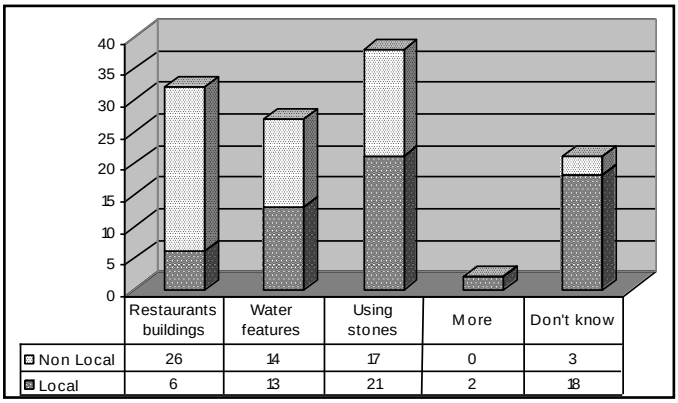


Fig. 12 Users answers to the survey - part 3

31.67 % believe that using stones what gave the historic theme to the park, and 26.67 % answered it is the architectural character for the restaurants buildings, while 22.50 % choose water features. Yet 17.50 % don't know what the answer.

4) Evaluation of designed historic landscape

Regarding the question (what is the most area inside the park you feel safe in it?) as a sample, the user's answers are in Fig. 13.

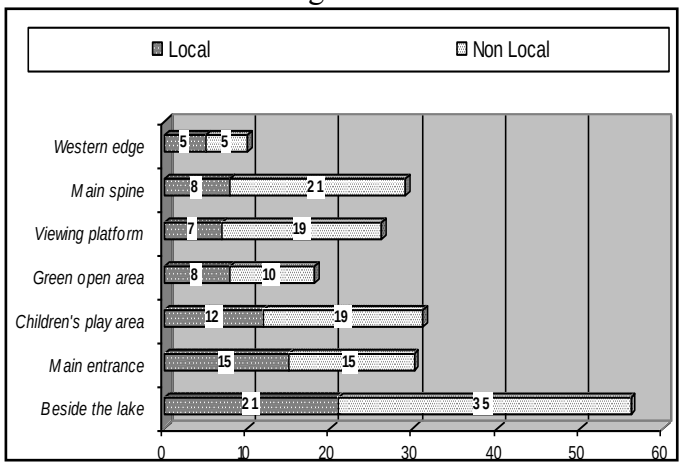


Fig. 13 Users answers to the survey - part 4

28 % feels safer beside the lake, 15.50 % choose children's play area, and 15 % pick the main entrance, 14.50 % choose main spine. 13 % feels safe in viewing platform point, while 9 % choose green open area. Only 5 % pick the western edge.

5) Types of activities inside the park

Regarding the question (Within the park, do you have a favorite location you like to visit?) as a sample, the user's answers are in Fig. 14.

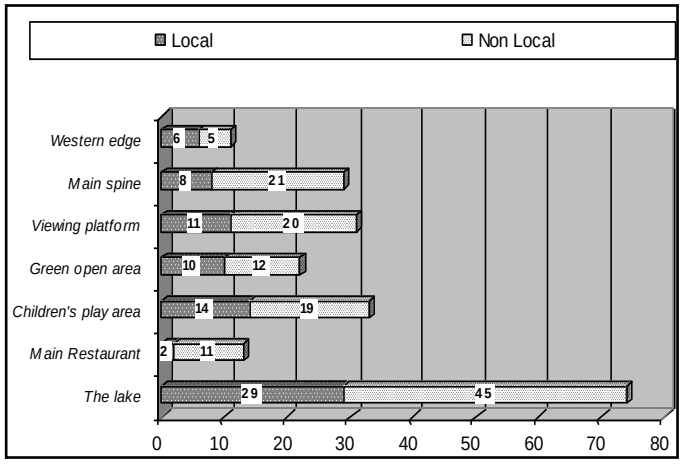


Fig. 14 Users answers to the survey - part 5

About 35 % from the answers goes to the lake, 15 % of people choose children's play area and viewing platform, while 14 % likes the main spine. 10 % enjoy visiting green open area, and 6 % choose the main restaurants, only 5 % choose western edge.

Regarding the question (Why is this place your favorite?) as a sample, the user's answers are in Fig. 15.

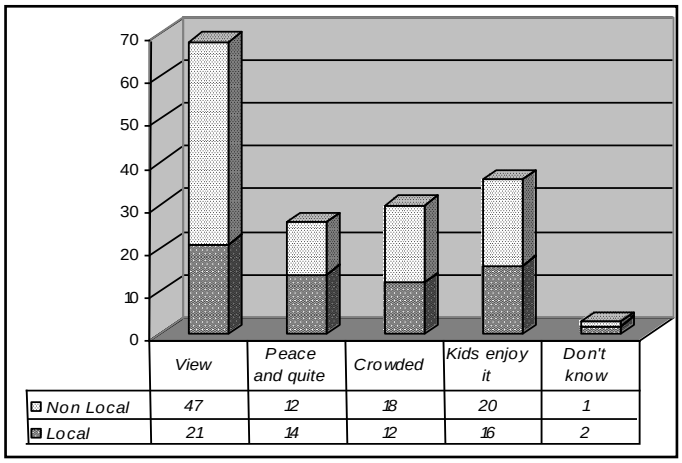


Fig. 15 Users answers to the survey - part 6

E. Questionnaire results correlation

After displaying the results of the questionnaire which was distributed to the users of Al-Azhar Park, the research will analysis the results more deeply to understand the correlations between some selected questions and each of:

(Age groups – local and non local users – time for visiting the park), by using SPSS program, as shown in Fig. 16.

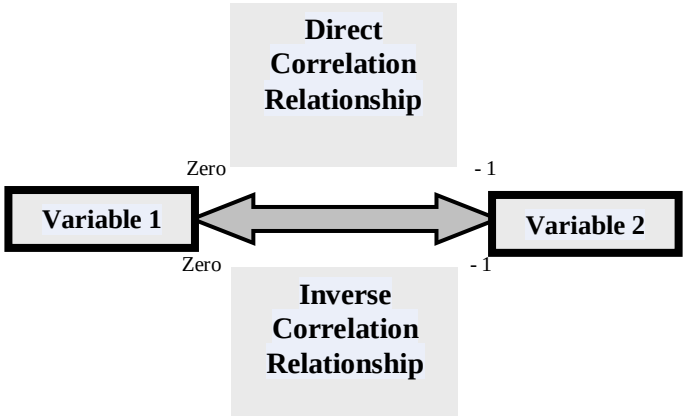


Fig. 16 Diagram to show the correlation between two variables in the questionnaire

Table 3 shows the strength of relation between evaluation the park with its diversity of activities and each of age groups, local or non local users and the time of visiting.

Table 3 Correlation for evaluation for the park and its diversity of activities

	Excellent	Good	Average	Poor	Others
15-25	-0.049	**0.145**	-0.059	-0.111	0.005
25-45	**0.150**	-0.141	-0.037	-0.003	0.062
45-65	-0.102	0.000	0.096	**0.113**	-0.067
local	0.109	-0.134	-0.184	0.138	**0.245**
non local	-0.117	**0.114**	**0.185**	-0.128	-0.228
morning	-0.080	**0.081**	0.008	-0.063	-0.019
afternoon	0.099	-0.110	-0.092	**0.186**	0.139
at night	-0.098	-0.055	**0.182**	-0.090	-0.013
it depends	0.051	**0.124**	-0.088	-0.080	-0.142

Table 4 shows the strength of relation between the historic landscape features used in the park and each of age groups, local or non local users.

Table 4 Correlation for most important from the following features to the historic character of the park

	Restaurants buildings	Water features	Using stones	More	Don't know
15-25	**0.185**	0.095	-0.243	-0.090	0.008
25-45	-0.156	0.033	**0.152**	0.043	-0.054
45-65	-0.027	-0.127	**0.089**	0.046	0.047
local	-0.435	-0.102	0.150	0.112	**0.396**
non local	**0.365**	0.140	-0.143	-0.104	-0.370

From the initial readings of the questionnaire results, some results can be addressed:

- *Group's and families are the main type that visits the park more than individuals, which confirm the idea that the park could attract families with all social classes again to open spaces.*
- *The best time to visit the park according to most of people's answers (42.5%) was afternoon.*
- *Social and cultural events were the major item could attract people more to visit the park many times.*
- *Non local users were the most willing to share in park development and redesign, generally more than 60 % shows the willingness and proposed some ways to be a part of the park redesign.*
- *Both local and non local users agreed that there are not enough shelters in the park, especially among who come in the mornings.*
- *The most place people feel safe in it within the park is beside the lake, which affect their choice for the best place they like.*
- *Almost 60% from the user's answers choose the mosque as the main thing they miss in the park.*

After conducting deeper analyzing for the questionnaire results using SPSS programs to understand the correlations between questions variables, the results can be listed as followed:

- *Non local users and people who come in the afternoon were attracted more to the vegetation of the park, and it could encourage them to visit the park again.*
- *Most of the age group (15-25) chooses that developing sport areas will attract them more to visit the park, while non local users choose more information signs, and last for people who come at night choose restaurant.*
- *Most of the age group (15-25) shows acceptance to share in a plan to develop the park, also the majority was from non local users.*
- *Confirming the results that afternoon is the best times to visit the park, most of the people who visit the park in the afternoon evaluate the park as excellent with its social and historic context.*
- *Local users didn't agree on the main reason that gave the historic character to the park, while most of non local users choose the historic architectural style of buildings and landscape features.*

- *Most of the non local users find it difficult to explore landscape facilities in the park.*
- *Most of the age group (15-25) feels safer in the western edge of the park, while the group (45-65) choose children play area.*
- *After correlating the user's choices for the most places they feel safe in it and their best place among the park, there is a strong relation between both.*
- *Most of the age group (15-25) choose the western edge as their favorite place because of peace and quite, which confirm the idea that some parts of the park holds negative activities, while the group(45-65) choose the kids play area mainly because kids enjoy it.*
- *After correlating the time of visiting the park with the reason for choosing the best place, the results were very significant to people evaluation for the park, most of the visitors in the morning choose their place because it is peace and quite, and visitors in the afternoon choose it because of the view, at last for people visiting at night they choose their best place in the park because it is crowded.*
- *Most of the age group (15-25) likes to walk, while the group (45-65) chooses playing with kids.*
- *The answer of local users varied between all kinds of activities, while non local users choose visiting restaurants and enjoying the historic scenery.*
- *Visitors who come in the morning mainly choose playing with kids, who come in the afternoon choose relaxing and reading. Last, visitors at night choose visiting restaurants and attend festivals and cultural events.*
- *After correlating the most likable place to users with their activities, the result were:*

  The lake, (enjoying historic scenery – social events).

  Main restaurant, (visiting restaurant – observing people).

  Children's play area, (cultural events – playing with kids).

  Green open areas, (enjoying the green area).

  Viewing platform, enjoying the historic scenery).

  Main spine, (observing people – walking).

  Western edge, (relaxing – walking).

Fig. 17 The historic scenery from the viewing platform in Al-Azhar Park

VII. DRAWING EXPERIENTIAL LANDSCAPE MAP (CDTA) FOR AL-AZHAR PARK

After investigating all the first steps to explore experiential landscape in Al-Azhar park, the final step in the evaluative proposed methodology for the thesis is to draw the CDTA[25] maps for the park to clarify how the design of landscape affect the behaviour patterns in the park. Each of components will be drawn separately.

A. Centers (Al-Azhar Park)

In this map, all kinds of people gathering centers will be shown with all each type, most of the centers varied between:

Social imageability (ceremony – presence of facilities – physical features)
Social interaction (social group seating – arrival places – low boundaries)
Restorative benefits (presence of nature – rest – rest and shelters)

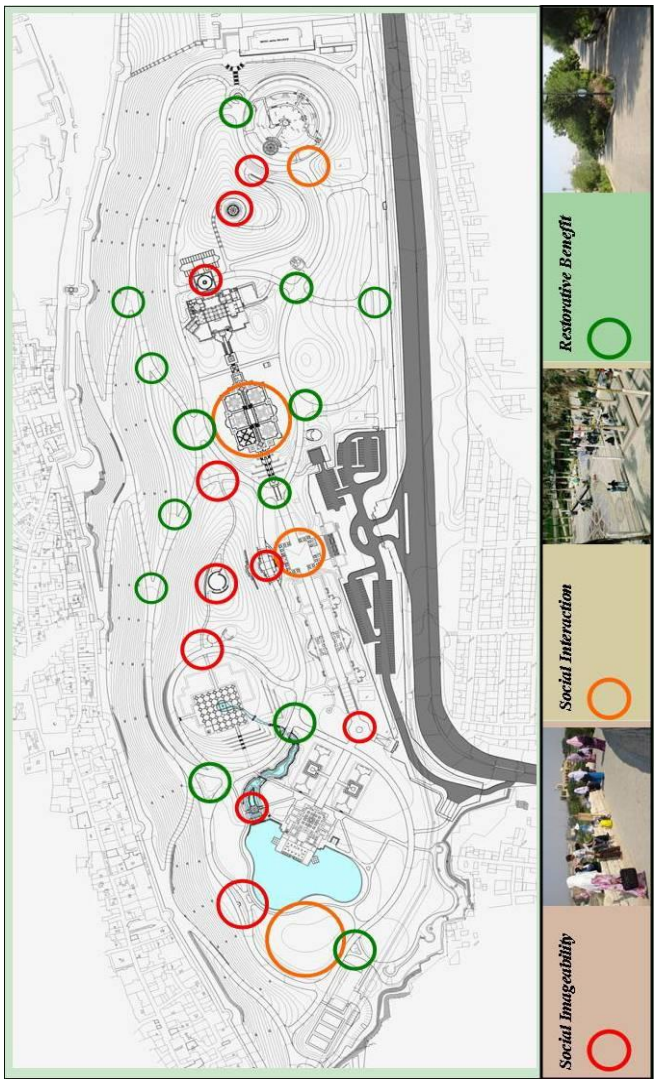


Fig. 18 Centers for experiential landscape map of Al-Azhar Park (Researcher)

B. Directions (Al-Azhar Park)

In this map, all kinds of people main paths will be shown with all each type, the main two kinds of Direction are:

Kinetic direction (enclosure – clear route – rhythm)

Sensory direction (exploration and mystery – smell and sound)

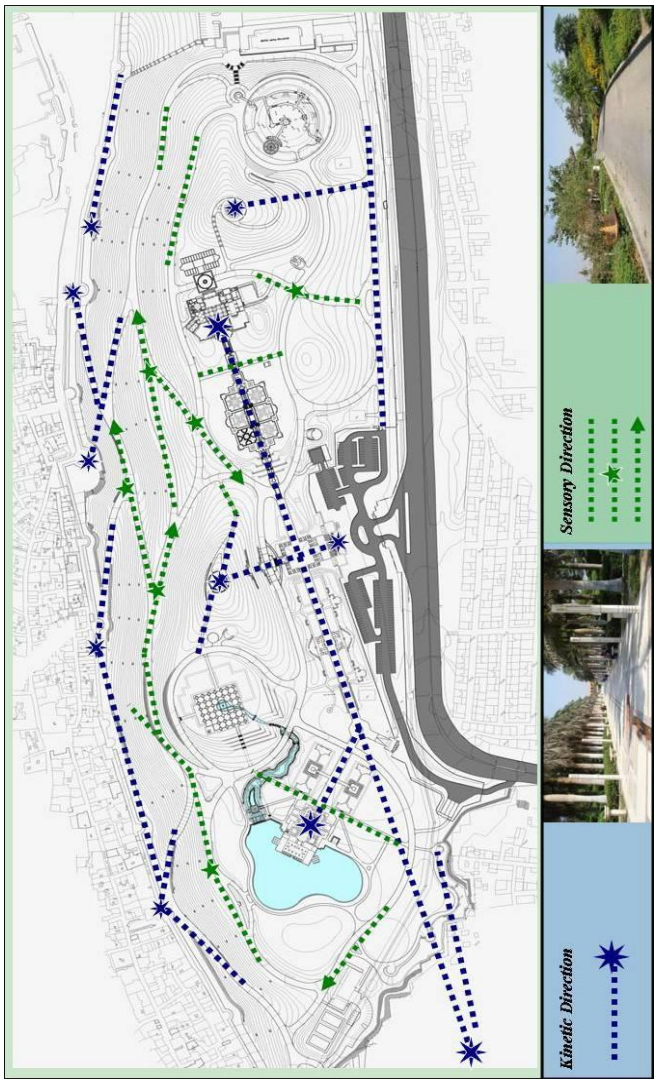


Fig. 19 Directions for experiential landscape map of Al-Azhar Park (Researcher)

C. Transitions (Al-Azhar Park)

In this map, all kinds of people transition places will be shown with all each type, most of it varied between:

Threshold (frames and gateways –change in color and material)

Corridor / segment / ephemeral (short distance and framed views – choice of direction and central vocal point – sun to shade, light to dark).

Fig. 20 Transitions for experiential landscape map of Al-Azhar Park (Researcher)

D. Areas (Al-Azhar Park)

In this map, all kinds of clear areas n the park will be shown with all each type, most of the centers varied between:

Physical boundaries (clear walls – landscape features)

Hidden boundaries (social group gathering – topography)

Fig. 21 Areas for experiential landscape map of Al-Azhar Park (Researcher)

E. Conclusions of CDTA maps (Al-Azhar Park)

After drawing the experiential landscape maps for Al-Azhar Park in Cairo, some points can be concluded as shown in Fig. 22.

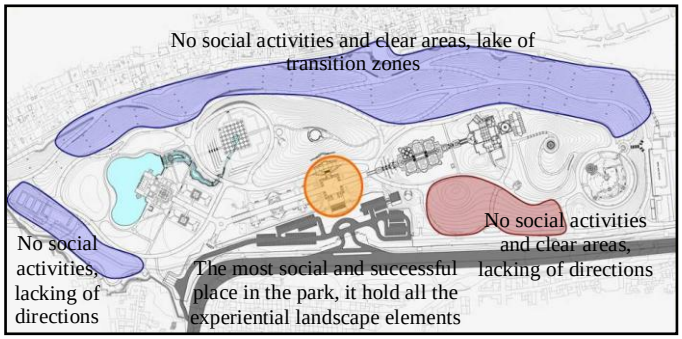


Fig. 22 Conclusions of CDTA maps

VIII. RECOMMENDATIONS

- To pay more attention to the local users living around the park, and starting to organize more events to interact with both local and non local users as the park started when it started in 2004.
- Allocate a temporary place for praying, as it was mentioned from most of the users it is the main thing they miss in the park.
- More lighting elements in the park could encourage more visitors to explore a lot of hidden spaces in the park especially at night.
- Increase the number of direction and information maps within the park paths, to make it easier for the visitors to explore.
- Upgrading the children play area with more interacting and educational games for the children to attract educational trips especially in the morning when the park is normally empty.
- Create more gathering places and landmark nodes on the western edge, which might change the user's perception for this place as it is a place for negative activities and the least area in the park they feel safe in the park layout.

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20 This point will be discussed in more details in chapter 7.

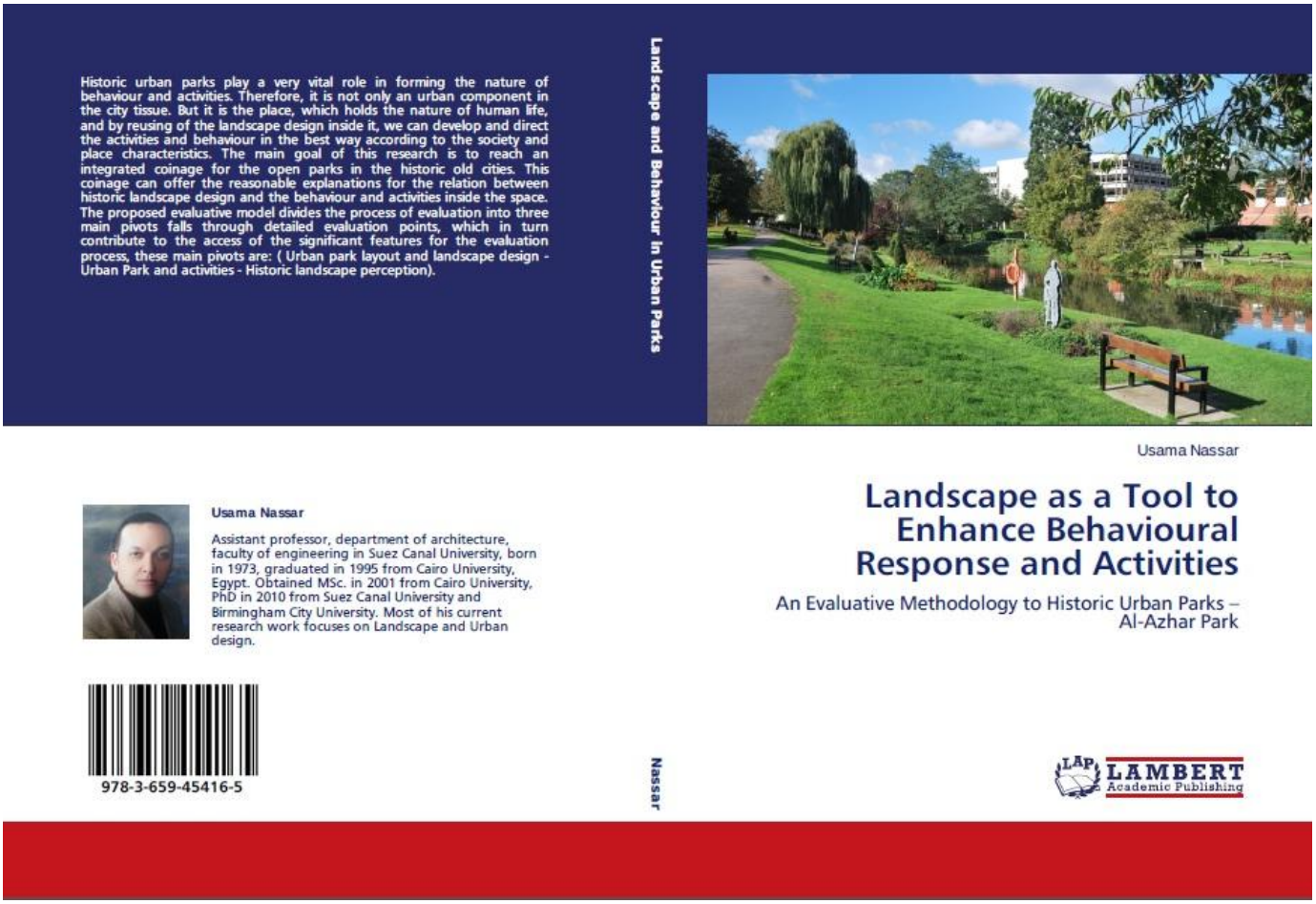
21 Key Performance Indicator Handbook. World Bank (2000). Washington, D.C.

22 Al-Azhar park administration office.

23 The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone..

24 The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.

25 CDTA stands for Center, Direction, Transition and Area maps for the park.



For more information regarding this topic, all the detailed analysis and maps could be found within the published book named:

Landscape as a Tool to Enhance Behavioural Response and Activities

An Evaluative Methodology to Historic Urban Parks – Al-Azhar Park

Links:

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