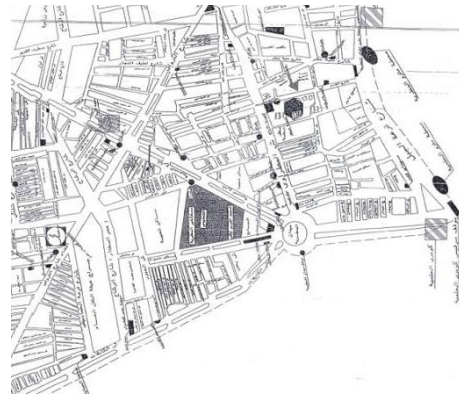
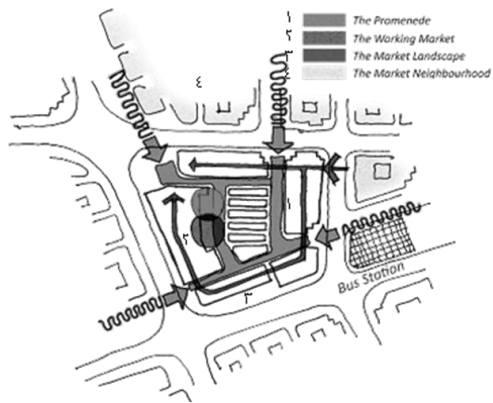




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COMMUNAL SPACES AND COMMUNITY LIFE IN GATED DEVELOPMENTS

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Abstract

Attractive communal open spaces with recreational facilities in gated residential developments are the market solution to provide collective club goods fulfilling the diverse preferences of prospective homebuyers. The issue is that communal open spaces are supposed to promote community life; it has been argued that residents moving into cohousing or developments associated with shared open spaces are likely those who are most predisposed to the idea of community life and seek to make it available. This paper develops a framework for measuring benefits of communal spaces to surrounding residents, specifically psychological effects: sense of identity, sense of community, and sense of well being. A questionnaire survey was constructed based on the review of literature. In general, the study dealt with residents of 16 gated developments from various areas in Egypt. The questionnaire results were compiled and analysed using SPSS statistical software. The first step was exploratory analysis to describe the respondents and their preferences. The second step was testing psychological values of communal spaces.

It is concluded that communal spaces could enhance the quality of life for the residents of gated developments by establishing a sense of place along with influencing their physical and psychological health and well-being. Whilst the space is not understood as a collective space; an individualized lifestyle emerges contributing to the more lenient attitude towards social activities among neighbours. The research findings constitute a comprehensive approach considering household preferences and perceptions to evaluate urban landscapes objectively.

Keywords: Gated residential developments (GRDs) – Communal/Shared open space (SOS) – Sense of community – Sense of identity – Sense of wellbeing

المخلص

تساهم الفراغات المفتوحة في المشروعات السكنية الاستثمارية المغلقة في التسويق و الترويج العقاري لهذه المشروعات بما تحتويه من خدمات متنوعة و مشتركة تلبي المتطلبات الخاصة لفئة معينة من راغبي السكن ، ويفترض أن تؤدي هذه النوعية من الفراغات المفتوحة الى إتاحة الفرصة للترابط الاجتماعي بين السكان والإسهام في إثراء الحياة الاجتماعية و تدعيم علاقات الجوار. و من الجدير بالذكر أن سكان التجمعات المغلقة دائمي البحث عن المشروعات السكنية التي يمكن أن تلبي معاييرهم الخاصة وتتطابق مع متطلباتهم بشكل أفضل من غيرها من حيث الخدمات المتاحة التي تقدمها. ولذلك تقدم هذه الورقة البحثية (باستخدام التحليل الإحصائي) دراسة تبين أهمية الفراغات المفتوحة المشتركة للسكان و التعرف على نوعية الخدمات المفضلة لديهم، من خلال تطوير واختبار منهج لقياس فائدة و أهمية هذه الفراغات العامة في حياة قاطني هذه التجمعات السكنية. و تؤسس نتائج هذه الورقة لمدخل شامل يعتمد على مدى إدراك و درجة تفضيل السكان لتنسيق الموقع للفراغات المفتوحة وصولاً إلى تقييم موضوعي لأهمية الفراغات المشتركة في التجمعات المغلقة.

1 INTRODUCTION

Human perception appears to be critical for understanding the interactions between humans and landscapes. Numerous studies have dealt with the relationship between landscape elements and human perception. For instance, (Tress & Tress, 2001) indicated that through their actions, people affect the landscape, and the landscape affects people by its appearance. Many studies also support the natural environments' benefits for urban residents. A related literature classified outdoor spaces into four broad categories (Marcus, 2003): (a) private spaces owned by individuals and accessible only to them and their guests such as yards of private homes; (b) public spaces including neighborhood parks and streets that are publicly owned and accessible to all; (c) a third intermediate category consists of spaces such as corporate plaza or a university campus; and (d) communal spaces owned by a group and usually accessible only to that group such as community gardens and the common landscaped areas of condominium developments and clustered housing.

Some studies suggest that this fourth category are spaces for community interaction, appropriate to the densities and lifestyles specially in suburban neighborhoods (Bill, 2001; Sullivan, 2006). Additionally, (Talen, 2003:78) argues that groups of residents moving into cohousing or developments associated with shared open space are likely those who are "most predisposed to the idea of community life" and consequently "most like to actively seek it out".

The subject of this study is the communal spaces¹ in gated developments (commonly known as compounds) located on the fringe of the Greater Cairo Region in new desert towns and main regional roads such as: (Cairo /Alexandria and Cairo/Ismailia desert roads). It aims to explore residents' preferences for the physical aspects of communal spaces and to assess their psychological benefits, particularly assessing the community life which is used as a marketing tool².

Before proceeding further, communal space can be defined - based on several related researches - as a type of shared space that facilitates interaction between residents of a gated development. This common shared landscape area with significant amounts of vegetation is frequently jointly owned and maintained by the residents in a type of management structure.

2 THEORETICAL BACKGROUND

Following the purpose of this study, two aspects of open spaces are discussed below, namely psychological and physical aspects.

¹ Communal space and shared open space (SOS) will be used interchangeably for the same concept.

² This paper is a revised version of hypothesis 2 (i.e. SOS has a positive impact on gated developments dwellers) of the doctoral dissertation titled: "*The Role of Urban Landscape Architecture in the Economics of the Investment Areas*". The defense should take place within three months.

2.1 Psychological Aspects

A. Supporting a sense of identity: The sense of place and identity is a feeling of being somewhere special and preferably unique, which the designers and developers need to strive in site layout planning for residential area. A feeling of being in a particular 'place', contribute so significantly to develop a sense of belonging and pride which is vital to support the sense of community.

B. Fostering a sense of community: Several studies support that the lack of semi-private shared spaces in residential projects is related with a decrease in positive social relations and sense of community. Additionally, the existence of shared spaces, well-landscaped grounds, places for taking walks and nearby nature contribute to an increased ability to exchange emotional relations with people.

C. Promoting a sense of well-being: After the Green Revolution in 1960, several researches aimed to study the person-environment relationship, specifically studying the impact of the environment on psychological well-being. These researches have proven that nature provides many benefits to human well-being. It helps reducing stress and restore directed attention and mental fatigue caused by noise and crowding. Studies have also found that dwellers do not necessarily want open spaces for specific active recreation; their first reason for using open space is the contact with nature, and just knowing that a green space is available nearby comforts them even they do not use it (Clement, 2004; Kaplan, 1983).

2.2 Physical Aspects

A. Characteristics of communal space:

The category of outdoor space that has been defined here as 'communal space' can be a highly significant component of the residential environment if it fulfills the following characteristics³:

- **Location:** Communal space should be bounded by the dwellings it serves; it should be no further than 400 metres, or five minutes walk from any dwelling (Thompson, 2008).
- **Boundaries:** There is a clear separation and easy access between communal space and private space (dwelling unit, patio, and yard).
- **Dimensions:** Communal space should always be of a reasonable size and shape. The height-to-width ratio of buildings to outdoor space should be also considered to form a human-scaled setting related to activities.

³ An important characteristic of communal space is the inclusion of "Safer by Design" elements known as "Crime Prevention". The research will not attempt to address this aspect as it is concerned with the study of open space in gated developments where the four primary principles of Safer by Design (surveillance, access control, territorial reinforcement, management and maintenance) are presented.

- **Connection:** It means a possible view of communal space from dwelling units, which provide an opportunity for parents to observe their children from indoors.
- **Setting:** Need to focus on circulation patterns, paths for wheeled vehicles, furnishings, lighting and particularly children’s play equipment (Marcus, 2001).
- **Planting:** Plant material is not an 'added extra' for decorating, but something that can alter the whole social as well as aesthetic value of the estate (Bee, 2000b). Previous researches showed that the frequently cited reasons for using outdoor space were contact with nature and relaxing (Marcus & Francis, 1997). Trees also were found to be the most effective environmental predictor for being “*at peace*” and feeling “*less distracted*” (Kaplan, 2001). Therefore, making available plants with various colours, textures, odors and shapes, as well as water features (e.g. fountains, pools and waterfalls) are essential to fulfill relaxing feelings.
- **Management:** The management controls should seek to provide a suitable level of amenity and a range of outdoor activities to encourage high usage patterns.
- **Maintenance:** Communal space should also be well maintained to ensure that landscaped areas do not become overgrown or unsafe, and the play equipment does not become broken down.
- **Sustainability:** Open space must remain viable in the long term. Design and management should respond to development aspirations, economic considerations, as well as environmental values and conditions.

B. Users’ needs within communal open space

User needs are defined as amenities and experiences that people look for to enjoy open spaces (Francis, 2003). In this sense, a consideration of what the users might need from a built environment must often be well thought-out. “*When it comes to designing and building a space, the best an architect can do is to match the needs and desires of potential users with a space that facilitates them.*” (Sullivan, 2006:6).

The process to link information about users’ needs to open space is preparing activity list of the different recreational activities needed, then establishing a setting to support these activities and allow them to occur in a pleasant and enjoyable way (Bee, 2000a).

The terms ‘active’ and ‘passive’ are used to describe the types of activities undertaken in open space areas. Active use signifies sporting and functions that often take place in areas such as sports pitches, playing fields, tennis courts, and other spaces for outdoor sports. Passive use means making use of the space without a specifically organised sporting activity such as relaxing, enjoying the view, and all other recreational purposes (Thompson, 2008). Table (1) sets out examples of amenity threshold required for residential developments en route for establishing a generic standard for open space facilities to improve opportunities for a wide range of activities suitable for all residents.

Table (1) The Amenity Threshold Required for Residential Developments.

Number of Dwellings	<25	25-50	50-75	75-100+
Amenity required	<ul style="list-style-type: none"> - Landscaped recreational area (setting out) - Active amenity open space (Ball Games) - Informal play areas. 	Providing similar activities to those mentioned on the left, as well as: <ul style="list-style-type: none"> - Areas for younger children (play ground) (min.400m²) - Areas for older children (shelter space facilities) (min.1000m²). 	Providing similar activities to those mentioned on the left, plus either of: <ul style="list-style-type: none"> - Grass sports pitch/ playing fields - Multi Use Games Area (tennis/basket ball) - Community facilities (meeting rooms, communal equipment storage, etc). 	Providing similar activities to those mentioned on the left, plus either of: <ul style="list-style-type: none"> - All weather playing pitches - Bowling Green - Skateboard/ BMX area - Tot Lot.

Source: Laois County Council. Open Space Considerations for Residential Developments.

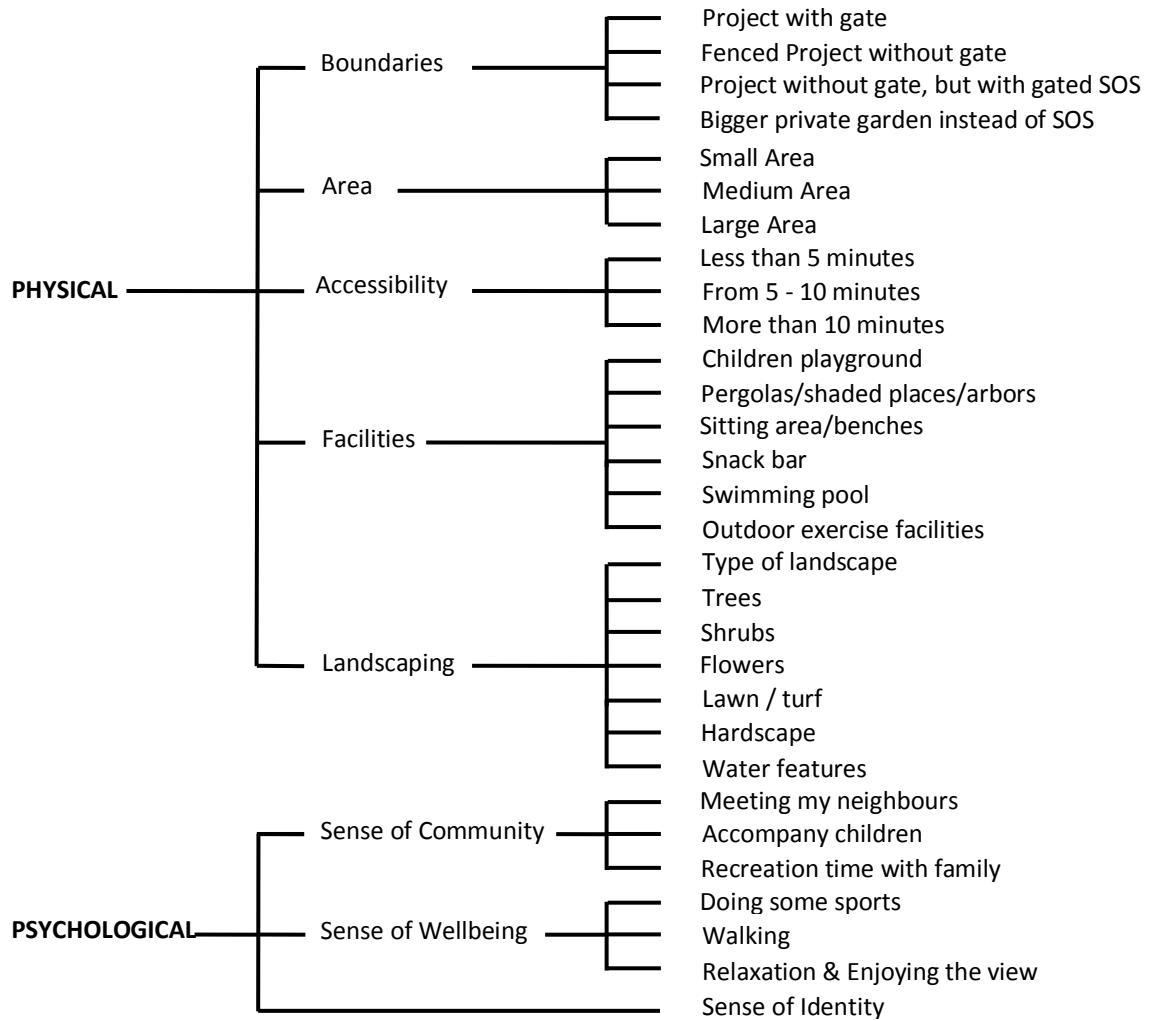
To end with, a residential development needs an integrated open space that meets the needs of residents, facilitates social interactions, encourages a healthy lifestyle and provides a variety of recreational opportunities and activities matched to the setting and environment of the area. At the same time it is important to recognise that no environment will be suited to all types of recreation plus most spaces do not serve everybody and it may be unrealistic to expect them to do so (Marcus & Francis, 1997).

3 METHODOLOGY AND RESEARCH SCOPE

The research methodology constitutes a comprehensive approach considering household preferences and perceptions. Benefits of communal space were represented by psychological aspects⁴. They consist of optional activities and social activities: Optional activities include active use (e.g. doing some sports, walking); and passive use (e.g. relaxation and enjoying the view). Social activities depend on the presence of others in open spaces (e.g. meeting neighbours, accompanying children, recreation time with family) (Gehl, 2003). (Figure 1) points up physical and psychological aspects: physical aspects were designated as independent variables including boundaries, area, and accessibility; psychological aspects were dependents variables consisting of sense of community, sense of well being and sense of identity.

⁴ A previous study presented a psychological conceptualization of residential choice where activities leading to the achievement of life values were identified as objectives (Xiaoyu, Jian, Fei, & Hokao, 2007:300).

Figure (1) Variables for Testing Benefits of Communal Spaces



3.1 Methods and data

A self-administered questionnaire⁵ was developed for conducting the Preference Survey. It was designed to assess residents' preferences for the specific physical

⁵ The self-administered questionnaire is a questionnaire that a respondent completes on his/her own, either on paper or via computer. The Preference Survey was conducted in December 2008, the target study subjects were current residents who moved to relatively new gated residential developments. The collection of data proved to be extremely difficult. The investigator first, tried to contact the facility managers of some developments and explained the purpose and procedure of the study. After several conversations, quite a few agreed to support the investigation by assigning their security staff to distribute and collect the questionnaires, but the inhabitants were cagey about answering and the questionnaires were rarely returned. Therefore, a snowball-type networking system was used with the aim of getting a better sample survey. The study dealt with residents of 16 (GRDs): Al Rehab City - Dream Land -Solimaneya Gardens- Elmohandessen Garden- Mena Gardens- Katameya Heights- Al Ahrum Gardens- Beverly Hills- Moon Land- Zayed 2000- Al Worood- Royal Hills- Hay Al Ashgar- Palm Hills- Golf El Solaimaneyah- El Shorouk 2000. The total number of valid responses was 76, however the homogeneity established in gated GRDs compensates the small sample size.

characteristics and psychological outcomes of communal spaces in gated residential developments. The questionnaire was constructed based on the review of literature in addition to questions adapted from 'Neighbourhood Question Bank'⁶. Questionnaire design and forms mostly followed Total Design Method (TDM) guidelines for questionnaire preparation.

The survey was assessed for reliability using a test-retest method to verify that responses were consistent over time (two weeks). The data collected from questionnaires were people's self-reported preferences and opinions regarding communal spaces in gated developments. Therefore, the use of parametric methods were been justified, also the reliability and normality of the survey were been tested. Both descriptive and inferential statistics were been used to analyse the same set of data by utilization of SPSS Statistics (17.0). Site visits were used also to ground-truth data analysis. Two paradigms provide different type of results contributing to the holistic understanding of the preferences and perceptions of residents for their communal spaces. The exploratory paradigm provides understanding of the preference patterns. The predictive paradigm predicts benefits by predictor variables.

3.2 Results

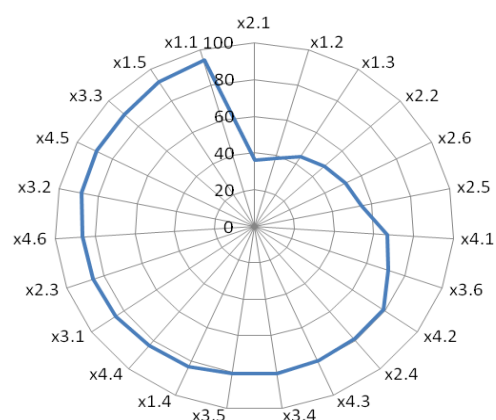
The study dealt with residents of 16 (GRDs) from various areas. The total number of responses to the resident survey was 76. Among them, 36.8% were male and 63.2% were female. The age of the respondents was categorized into three groups; 18.4% were less than 21 years old, 57.9% were in the age group of 21 to 35 years old, and 23.7% were in the age group of 36 to 60 years old. Among the 76 respondents, 33.3% were single and 66.7% were married. The family size of the respondents was also categorized into three groups; 16.2% were 1-2 members, 59.5% were 3-4 members, and 24.3% were more than four family members. A total of 43 dwelling units out of 76 were individual houses with a percentage of 56.6%, and 33 were apartment flats with a percentage of 43.4%. Since these gated projects are a new phenomenon (mostly developed after the year 2000), of those that responded, only 22.7% respondents had lived there less than one year; 44% respondents had lived there from one to three years; and 33.3% respondents had lived there longer than three years.

The most commonly reported advantages of living in (GRDs) were 'quiet space to live in' and 'privacy', while on the contrary 'sense of community' and 'price & schedule of payment' were reported as the fewer advantages. Respondents were very proud of their residential environment (sense of identity). They very highly preferred 'project with gate'; 'large sized shared space'; 'children play ground'; 'pergolas/shaded places/arbors'; 'sitting area/benches'; 'walking'; 'relaxation & enjoying the view'. As for 'meeting my neighbours', it was not very much preferred (the seventeenth preference from a total of twenty-three) (Figure 2 and Table 2).

⁶ The ESRC Centre for Neighbourhood Research (CNR), available at <http://www.neighbourhoodcentre.org.uk/bank/bank.html>

Figure (2) Weights Placed on Preference Variables

Variable	Description	Weight value*
x1_1	Project with gate	93.9
x1_5	Sense of identity	92
x3_3	Sitting area	89.1
x4_5	walking	89
x3_2	Pergolas & shaded area	88.5
x4_6	Relaxing & enjoying the view	86.4
x2_3	large area	85.9
x3_1	Children play ground	85
x4_4	Doing some sports	83.8
x1_4	Bigger private garden instead of shared open space	83.2
x3_5	Swimming pool	81.1
x3_4	Snack bar	81
x4_3	Recreation with family	80
x2_4	At a distance less than 5 minutes	79.2
x4_2	Accompany children	78.7
x3_6	Exercise facilities	71
x4_1	Meeting neighbours	66.7
x2_5	At a distance 5-10 minutes	54.7
x2_6	At a distance more than 10 minutes	51



Variable	Description	Weight value*
x2_2	Medium area	47.7
x1_3	Project without gate , but gated shared open space	44
x1-2	Project without gate	38.4
x2_1	Small area	35.9

*The weights placed on preference items are assumed to reflect the importance of these values as determined by respondents' scores.

The researchers used inferential statistics to assess the psychological values of communal spaces. These values are sense of identity; sense of community; and sense of wellbeing. The variables used were as follows:

▪ **Dependent variables (D)**

Seven continuous variables representing activities leading to the achievement of psychological values as follows:

Sense of identity
(x1_5)

Sense of community
(x4_1),(x4_2),(x4_3)

Sense of well being
(x4_4), (x4_5), (x4_6)

▪ **Independent variables (ID)**

Combination of various variable types representing 4 proxies of open space visits and 19 proxies of physical features as follows:

Communal space visits

- Outside open space visits (E_3)
- Frequency of visits to outside open spaces (E_4)
- Frequency of visits to communal open space (E_5)
- Preferred season for visiting communal open space (E_6)

Physical features of communal space

- Area & Accessibility**
(x2_1, x2_2, x2_3, x2_4, x2_5, x2_6)
- Facilities**
(x3_1, x3_2, x3_3, x3_4, x3_5, x3_6)
- Landscaping**
(x5_1, x5_2, x5_3, x5_4, x5_5, x5_6, x5_7)

Table (2) Questionnaire Responses to Preferences Variables

Variable*	Mean	Percent**					Weighted Average (w) ***	
		1	2	3	4	5	Percent	Description
x1_1	4.69	0	0	3.9	22.4	72.4	93.9	Very high
x1_2	1.93	35.5	46.1	11.8	5.3	0	38.4	Low
x1_3	2.16	27.6	38.2	23.7	3.9	5.3	44	Moderate
x1_4	4.18	1.3	2.6	21.1	27.6	46.1	83.2	Very high
x1_5	4.59	1.3	1.3	5.3	19.7	71.1	92	Very high
x2_1	1.81	43.4	35.5	13.2	5.3	0	35.9	Low
x2_2	2.41	25	28.9	28.9	13.2	2.6	47.7	Moderate
x2_3	4.29	2.6	7.9	7.9	18.4	60.5	85.9	Very high
x2_4	3.95	2.6	7.9	25	18.4	44.7	79.2	High
x2_5	2.72	15.8	23.7	30.3	19.7	5.3	54.7	Moderate
x2_6	2.56	23.7	30.3	19.7	10.5	11.8	51	Moderate
x3_1	4.24	2.6	1.3	18.4	33.4	53.9	85	Very high
x3_2	4.43	0	1.3	5.3	42.1	50	88.5	Very high
x3_3	4.45	1.3	0	5.3	38.2	53.9	89.1	Very high
x3_4	4.03	3.9	5.3	19.7	23.7	46.1	81	Very high
x3_5	4.07	2.9	7.9	17	25	46.1	81.1	Very high
x3_6	3.55	3.9	15.8	32.9	15.8	30.3	71	High
x4_1	3.34	1.3	15.8	42.1	27.6	11.8	66.7	High
x4_2	3.92	2.6	5.3	21.1	36.8	32.9	78.7	High
x4_3	4.01	1.3	7.8	14.5	40.8	34.2	80	High
x4_4	4.21	2.6	0	18.4	31.6	44.7	83.8	Very high
x4_5	4.43	0	0	9.2	36.8	52.6	89	Very high
x4_6	4.34	0	0	22.4	22.4	53.9	86.4	Very high

*Variables description (see figure 2).

**Completely disagree =1, Tend to disagree =2, Indifferent =3, Tend to agree =4, and Completely agree =5.

***The difference in each interval =19 corresponding to a verbal description: 1-20% Very low; 21-40% Low; 41-60% Moderate; 61-80% High; 81-100% Very high.

Stepwise multiple regression was performed to find the most parsimonious set of predictors that are most effective in predicting the dependent variable. In stepwise regression, the relationship will always be significant if any variables are included because the variables can only be included if they contributed to a statistically significant relationship⁷. The results of regression analyses are grouped in (Table 3), the multiple regression models and the normal distribution of residuals are presented in (Figure 3).

⁷ The SPSS computer program is allowed to choose a small set of the best predictors from the set of all potential predictors. Since variables will not be added to the regression equation unless they make a statistically significant addition to the analysis, all of the independent variables selected for inclusion will have a statistically significant relationship to the dependent variable.

Table (3) Summary of Regression Analyses

Predicted values (Dependent variables)		R ²	Variables with significant contribution (predictors)		B	SE B	β	Significance
Label	Description		Label	Description				
Sense of identity								
x1_5	I am proud that this project is my address	.258	E_3	Do you visit any open space outside your project?	.650 _(a)	.174	.395	.000**
			E_5	How often do you use communal space in your project?	-.280 _(b)	.091	-.324	
Sense of community								
x4_1	Meeting my neighbours	–	–	–	–	–	–	–
x4_2	Accompanying children	.287	x3_1	Children play ground	.439	.115	.399	.000**
			x2_4	A communal space reachable at walking distance less than 5 minutes	.298	.093	.335	
x4_3	Recreation time with family	.225	x3_1	Children play ground	.441	.117	.426	.000**
			E_6	Which season do you most often use your communal space area?	.190 _(c)	.073	.281	
			x3_4	Snack bar	-.208	.100	-.234	
Sense of wellbeing								
x4_4	Doing some sports	.224	E_5	How often do you use communal space in your project?	-.346 _(b)	.113	-.334	.000**
			x3_5	Swimming pool	.221	.090	.268	
			x5_7	Water features	-.462 _(d)	.202	-.249	
x4_5	Walking	.088	x2_6	A communal space reachable at walking distance more than 10 minutes	.157	.057	.318	.008*
x4_6	Relaxation & Enjoying the view	.113	E_3	Do you visit any open space outside your project?	-.502 _(a)	.197	-.294	.007*
			x5_4	Flowers	-.394 _(e)	.186	-.243	

*P<0.01 **P<0.001

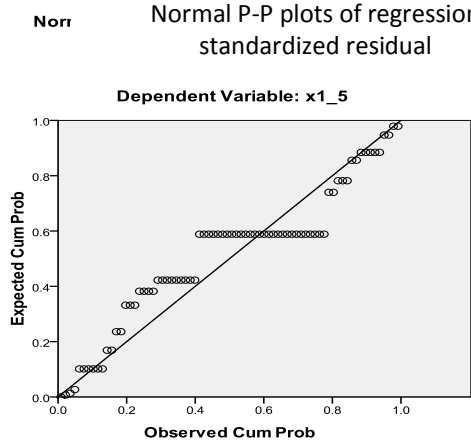
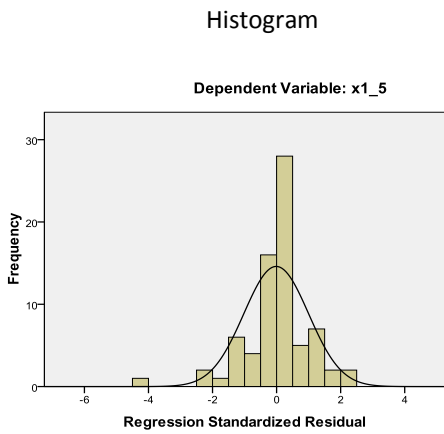
NOTE1: B = Unstandardized Coefficients Beta, SE B= Standard Error for Beta, β = Standardized Coefficients Beta.

NOTE 2: (a) +ve beta means NO, while –ve beta means YES. (b) –ve beta means more visits. (c) +ve beta means season doesn't make a difference.(d) +ve beta means static water features, while –ve beta means dynamic water features.(e) –ve beta means lot of flowers

Figure (3) Multiple Regression Models and Normal Distribution of Residuals

A. Sense of Identity

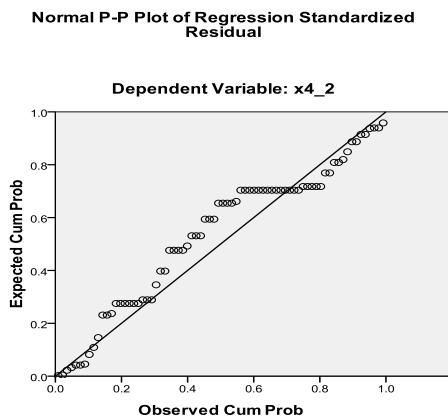
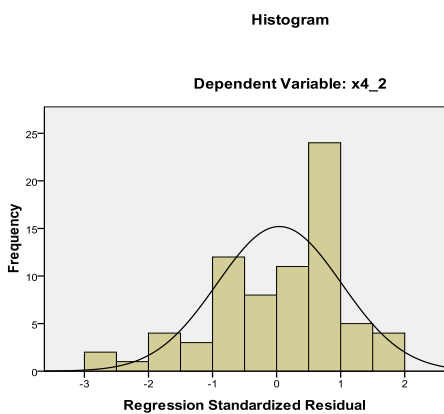
$$\text{Community Pride} = 4.110 + (0.650) \text{ Outside open space visits} - (0.280) \text{ Frequency of visits to communal open space}$$



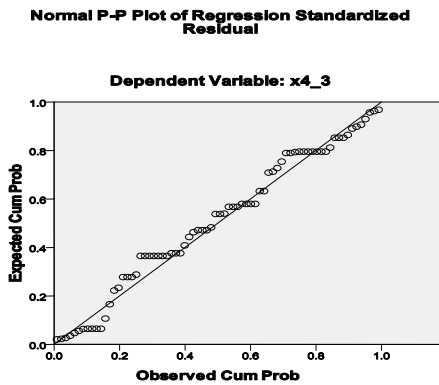
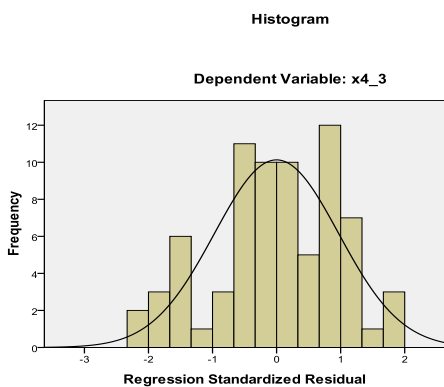
B. Sense of Community

$$\text{Meeting neighbours} = 0$$

$$\text{Accompanying children} = 0.840 + (0.439) \text{ Children play ground} + (0.298) \text{ A shared space reachable at walking distance less than 5 minutes}$$



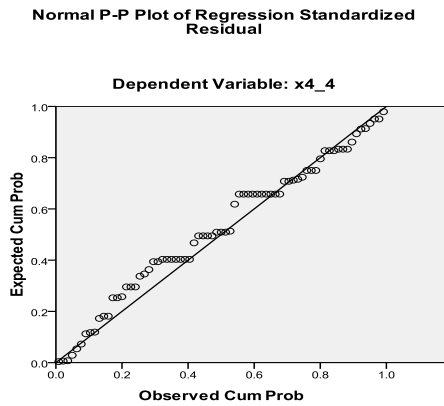
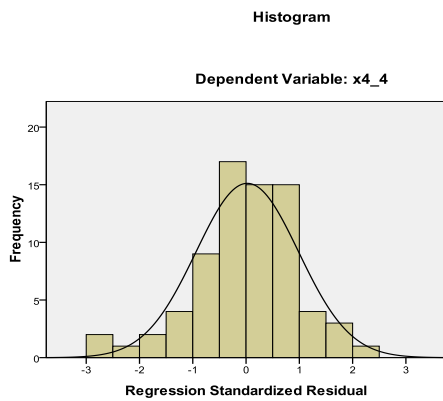
$$\text{Recreation time with family} = 2.178 + (0.441) \text{ Children play ground} + (0.190) \text{ Preferred season for visiting shared open space} - (0.208) \text{ Snack bar}$$



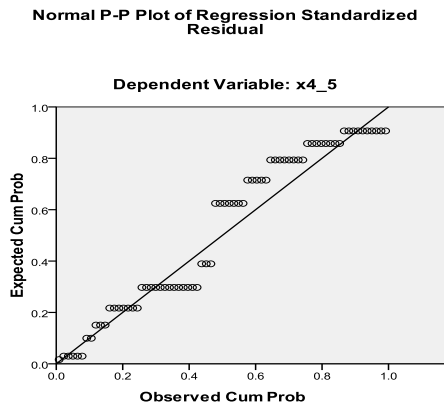
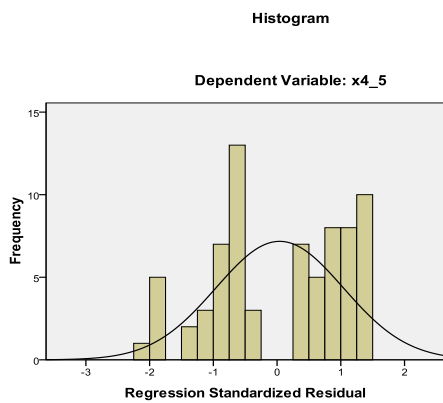
continued

C. Sense of Wellbeing

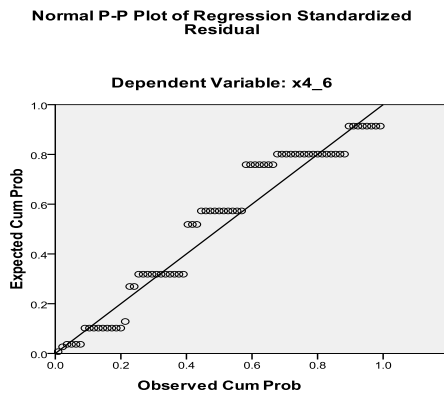
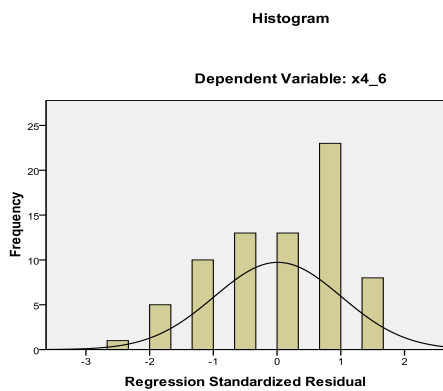
Doing some sports = 4.712 – (0.346) Frequency of visits to shared open space + (0.221) Swimming pool – (0.462) water features



Walking = 4.019 + (0.157) A shared space reachable at walking distance more than 10 minutes



Relaxation & Enjoying the view = 5.757 – (0.502) Outside open space visits – (0.394) Flowers



A. Sense of identity

Based on the ANOVA results ($F(2, 65) = 12.636, p < 0.001$), there was an overall relationship between the dependent variable 'Sense of identity' [x1_5] and two independent variables: 'Outside open space visits' [E_3]; and 'Frequency of visits to communal open space' [E_5].

B. Sense of community

- **Meeting my neighbours:** There is no significance relationship between the dependent variable 'Meeting my neighbours' [x4_1] and any of the independent variables.
- **Accompanying children:** Based on the ANOVA results ($F(2, 65) = 13.060, p < 0.001$), there was an overall relationship between the dependent variable 'Accompanying children' [x4_2] and two independent variables: 'Children play ground' [x3_1]; and 'A communal space reachable at walking distance less than 5 minutes' [x2_4].
- **Recreation time with family:** Based on the ANOVA results ($F(3, 64) = 7.484, p < 0.001$), there was an overall relationship between the dependent variable 'Recreation time with family' [x4_3] and three independent variables: 'Children play ground' [x3_1]; 'Preferred season for visiting shared open space' [E_6]; and 'Snack bar' [x3_4].

C. Sense of well-being

- **Doing some sports:** Based on the ANOVA results ($F(3, 63) = 7.333, p < 0.001$), there was an overall relationship between the dependent variable 'Doing some sports' [x4_4] and three independent variables: 'Frequency of visits to communal open space' [E_5]; 'Swimming pool' [x3_5]; and 'Water features' [x5_7].
- **Walking:** Based on the ANOVA results ($F(1, 66) = 7.433, p < 0.01$), there was an overall relationship between the dependent variable 'Walking' [x4_5] and one independent variable: 'A communal space reachable at walking distance more than 10 minutes' [x2_6].
- **Relaxation & Enjoying the view:** Based on the ANOVA results ($F(2, 65) = 5.286, p < 0.01$), there was an overall relationship between the dependent variable 'Relaxation & Enjoying the view' [x4_6] and two independent variables: 'Outside Open Space Visits' [E_3]; and 'Flowers' [x5_4].

4 DISCUSSION

The results demonstrate that sense of identity is predicted by fewer visits to outside outdoor spaces and more visits to communal spaces. In this perspective, it could be said that communal spaces contribute so significantly to develop a sense of belonging and pride which is vital in gated residential developments.

Sense of community with neighbours is not predicted by any variables, while sense of community with family is very much predicted by a high preference for children play ground. This result indicates that the space level in the sociability structure depend on people with whom one would wish to engage (family or neighbours). The

relationships between neighbours in the shared open spaces rely on occasional and superficial encounters. 'Meeting my neighbours' was not very much preferred; it was the seventeenth preference from a total of twenty-three preferences according to its weight value determined by respondents' scores. Site visits and observation of sociability patterns confirm this supposition.

As for sense of well being, 'Doing some sports' is very much predicted by more visits to communal spaces, a preference for swimming pools, and a high preference for dynamic water features (waterfalls and fountains). 'Walking' is predicted by a high preference for a communal space reachable at walking distance more than 10 minutes. Also, 'Relaxation & enjoying the view' is predicted by a preference for a large amount of flowers.

5 CONCLUSIONS AND RECOMMENDATIONS

In order to attract affluent homebuyers, developers compete with each other by providing their gated developments with attractive shared open spaces and recreational facilities (package of collective goods). In this marketplace, consumers/residents 'vote with their feet' sorting themselves into places whose bundles of amenities are desirable and choose those developments that can match their requirements better than others. In this sense, a consideration of what the users might need from a built environment must often be well thought-out.

Accordingly, the current research begins to establish the essential landscape baseline information en route for establishing a generic standard for communal space facilities based on residents' preferences, expectations and usage patterns. Simple analysis of trends shows that the most commonly reported advantages of living in (GRDs) were 'quiet space to live in' and 'privacy', while on the contrary 'sense of community' and 'price & schedule of payment' were reported as the fewer benefits. Residents very highly preferred a project with gate, a large sized shared space reachable at walking distance less than 5 minutes. Sitting areas, shaded places and children's play ground were very much approved. Walking and enjoying the view were the preferred activities, but meeting neighbours was not very much preferred.

The research findings provide considerable evidence that communal spaces could enhance the quality of urban life for residents' of (GRDs) by establishing a sense of place and community pride. Moreover, a proper management structure and well-maintained shared open spaces with vegetation add to the physical and psychological health of residents.

Concerning community life inserted in concrete local marketing context, many inhabitants of gated developments do not specifically choose a community life. An individualized lifestyle emerges contributing to a lenient attitude towards social activities among neighbours. Therefore, it is important to reconsider the idea of community life as a marketing tool.

Acknowledgements

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**THE SOCIAL URBAN SPACES SYSTEM
AS A TOOL TO SUSTAIN MARKETS IN LOW-INCOME COMMUNITIES
Case Study of El-Khamis Market in Cairo, Egypt**

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Abstract

In Cairo communities, it's noted that there's no concern for the Social Urban Spaces in the low- income communities markets. They do not even exist at all in the design program of the market in spite of their importance in achieving social sustainability. The problem of the research can be summarized in the design of the low-income community markets to achieve the largest quantity of the sale and purchase units, without recognizing the market value for the community as Social Urban Spaces that are important for the achievement of social sustainability. The research aims at understanding and analyzing the low-income communities markets in terms of types, components, areas and activities, and then deducting the system of Social Urban Spaces through relating them to the market areas as a tool for achieving the social sustainability in the low-income communities markets.

Keywords

Social Sustainability- Social Urban Spaces - Market in Low-Income Communities - Farmer's Market - El- Khamis Market in Cairo.

1 INTRODUCTION

1.1. Low-income Community Markets (Concepts, objectives and importance)

Markets in low-income communities are considered a major component of the community life that combines together all the community's real life needs, and an effective means for the local communities for addressing and promoting the social and economic development [1]. They also represent a form of Social Urban Open Spaces. They form an important part of the common social places for the public. They even go beyond that to be a space for hiking, entertainment and achievement of the common social and cultural life in such communities [2]. The market in low-income communities is a place for selling and purchasing goods that enable citizens to fulfill their needs at reasonable prices. A market may be specialized in a specific good that distinguishes it from other markets [3]. The market in Egypt is held on a certain day of the week (seasonal) such as Friday, Tuesday or Thursday Market, or throughout the week (permanent), and it takes the form of a large area, either open or roofed [4].

It is also a place that is owned by the municipality, where fresh food products in open stalls are sold, it also includes some other products and crafts. Markets are also amongst the best loved places in the world [5]. Allison Brown's definition is of particular usefulness: "farmer's markets are generally periodic markets in fixed locations where farm products are sold by farmers themselves"[6].

Other products and food products are also sold in these markets which are considered to be more than just products sales outlets as they function as restaurants and groceries. Most of the markets develop with time such as the number of vendors, and products decrease and increase in line with seasons. Accordingly, a market is considered to be a place for economic exchange and social interaction where people interact variably and formulate concepts for themselves as one group [7].

The following are some of the objectives of the low-income communities markets which reflect the issues of social justice as well as environmental sustainability [1]:

- Assistance in fulfilling the needs for the provision of food products and the food security to the community.
- Providing a source of local and culturally convenient products.
- Bringing farmers and the urban areas' consumers together in order to provide opportunities of social-economic development for both groups.
- Creating places for social and cultural gatherings in districts, and using markets as a motive for the development of local communities and other promotion strategies.

Low- income communities markets are distinguished from other types of retailers' activities by the following characteristics: [5]

- They have public objectives: such as providing retail opportunities for small companies, maintaining farmlands and utilizing places as active public places.
- The market's location provides public spaces that are needed by the community and that attract large groups of people, and is regarded as the heart and soul of the community where social activities take place.
- Market's ownership and elements are local, independent and run by their owners, and hence adds the local flavor and unique nature to the market experience.

There are three benefits of the low- income communities markets [8]:

- a. They create a vibrant social space, where people tend to interact with each other and participate. Such interaction increases people's awareness of the social, economic and environmental issues of the community.
- b. Motivating local economic opportunities for those who have difficulties in obtaining resources such as capital of the traditional institutions, such as women, new immigrants and minorities. They also protect small farmers through providing direct marketing opportunities for their products, in addition to the economic benefit that's economically achieved for the consumers as the competition among vendors keeps the prices low. They also create many job opportunities in the local community, in addition to promoting trade in the surrounding community.
- c. They create a sense of community that is instilled with the spirit of the place.

1.2. System of Commercial Activity in Low-income Communities Markets [9]

- **Vendor:** the farmers and local vendors trying to make their livings from their lands and from trading with ordinary people of low-income customers.
- **Consumer:** consumers may be divided into two categories. The first category, (which are the vast majority), are low-income residents of the area, who are nearby the market, with fixed-income and very little portion in their budgets to pay for more food. The second category: are the affluent coming from far, seeking for lower prices to compete with the supermarket [9].
- **Market:** the successful market in the low-income communities tend to be a long-term facility, and to be located very closely to where people live so that they are able to go to the market. Also, the market spaces attract people to group together in one place that is consistent with their culture. Maintaining the market then means maintaining the environment [10]:
- **Goods:** vegetables, fruit, and basically food products, in addition to all the basic needs necessary for home and family life, including new and used goods. They are a mix that reflects the cultural diversity of the community, and they are all characterized by low prices and the appropriateness for the capacities of the community.

1.3. Types of low-income communities markets

A- Types of markets in terms of nature [11]

- Covered Markets: these are covered by some types of structure.

- Market Districts: these are an area of the town or city which is allocated for certain types of markets.
- Market Halls: structures built for markets, or buildings that have been converted to house market.
- Market Associations: associations that link the State with farmer's markets in order to address the issues of health, food, food security, community development and the establishment of companies to expand the number of farmer's markets within the State or region.
- Market Network: networks that help markets to continue in low-income communities.
- Mobile Markets: are mobile vehicles that provide residents with fresh foods.
- Open air Markets: an open space in any area or street where vendors exist.
- Producer-only Market: the product is related to work in farms where it is farmed and sold in its place of sale.
- Communities markets: refer to one type of markets that operate in open spaces for the public and serve local economy.
- Wholesale Market: the market where products are bought from the farmers or producers and then sold in large quantities.

B- Types of markets in terms of structure [4]

- Linear markets: they take the form of a street, some of which allows for vehicles traffic such as Al Azhar Street, and others are allocated for pedestrian only movement only such as Khan El Khalili, Figure (1).
- Manifold Markets: linear markets that are branched from a specific commercial point or an urban space that is characterized by a specific activity (such as the Mosque's space), Figure (2).
- Consolidated markets: a gathering around an urban space where sale and purchase take place within the market, which allows for the pedestrian movement within the market, Figure (3).

Figure (1) Linear Market.

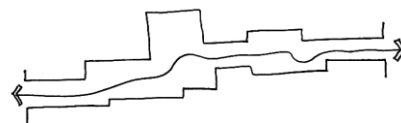


Figure (2) Manifold Markets

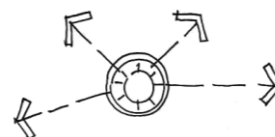
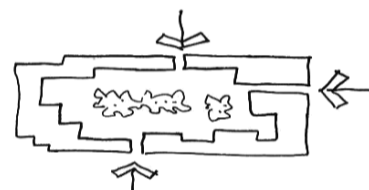


Fig (3) Consolidated markets



Low-income community markets in Egypt are considered to be low-income communities markets that may be covered with some light structures (covered markets) and they can also be in open air (open air markets) that combine farmer's market, with their products and crafts, with all goods that fulfill the real life needs of the residents, in all forms and types.

1.4. Importance of Social Sustainability for Achieving Markets Sustainability in Low-income Communities

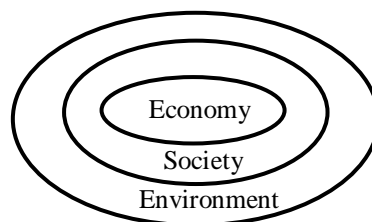
The importance of social sustainability emerges as an effective parameter in the sustainability of local communities, in particular as they play an important role in the establishment of social cohesion and the sense of community, through a group of common values that are deeply rooted in the local communities. The following are amongst the requirements that "social sustainability" is concerned to provide [12]:

- a. Fulfillment of the basic needs of citizens.
- b. Fair distribution of opportunities in community.
- c. The existence of a cheerful atmosphere, where citizens live in harmony and mutual support with each other.
- d. Providing opportunities for individuals through encouraging them to participate in civil operations (official and unofficial).
- e. Promoting cultural and social diversity.

It is noticed that all the previous requirements are necessary to be fulfilled in the community of low-income communities markets where economic activities cannot be separated from social activities in any way. The quality of urban environment represents an important standard for the performance of these two activities as being the inclusive container that combines them together. This concept is affirmed by The Concentric Circles model, fig (4), where the economic dimension is located within the society and the society in turn, exists within the environment [13].

Thus, it is clear that the economic interactions can be modified and changed through changes in social systems such as values, rules, customs, cultures and morals. Finally, all such interactions take place within the environment, as environmental impacts take place because of the economic cost in the light of the community's values and priorities. Figure (4) shows a model that indicates the zenith of our dependence on the natural environment as social and economic beings [14].

Figure (4) The Concentric Circles Model



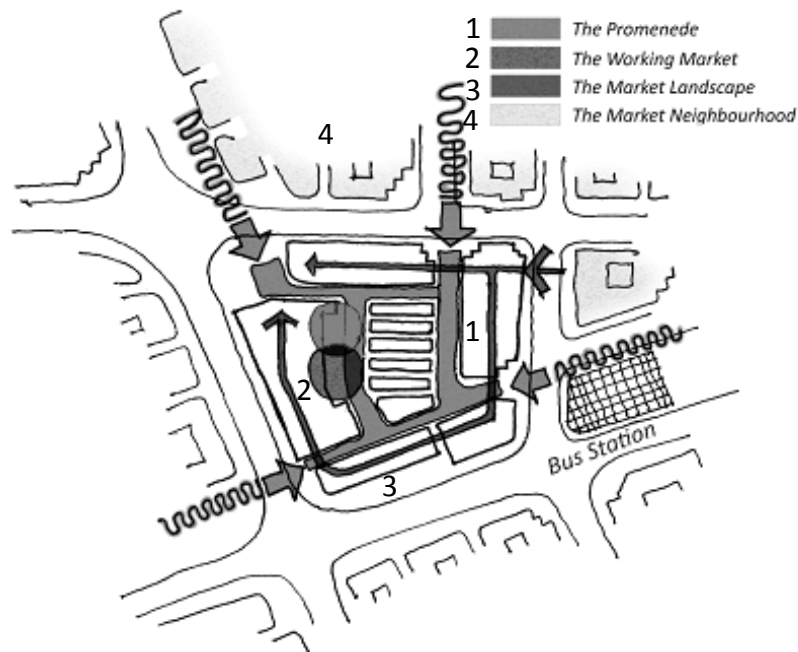
Source: L. Barron, E. Gauntlets, 2002

1.5. The physical Realms of the Low-income Communities Market.

Low-income communities markets consist of four main areas as follows, Figure (5):

- 1- The Promenade.
- 2- The working Market.
- 3- The Market Landscape.
- 4- The Market Neighborhood.

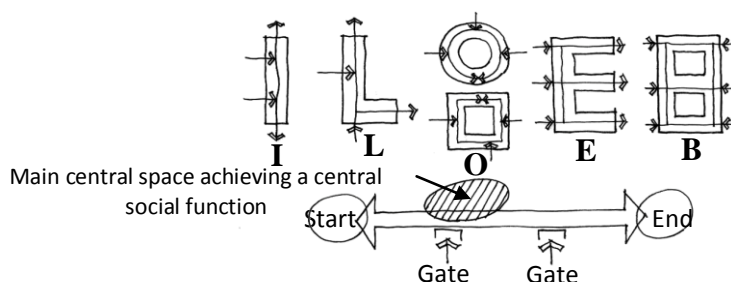
Figure (5). The Physical Realms of the Low-income Market Place



1.5.1. The Promenade

The central axis of the main market movement and the open main space of the market it contains as well as the sequential and transformational spaces for achieving entry and exit and the flow of pedestrians to the market center and walking to view the displayed items and compare prices. The promenade's width ranges from 3.60 to 12 meters and it is surrounded on both sides with various goods. Regarding its structure, it is a linear path in order to unite objectives and orientation and it is preferred not to be too wide so as to facilitate the comparison between goods and for it to still retain its intimate trait [15]. There are some design forms that achieve the longitudinal characteristic of a path such as (I, L, O, E, B). Some marketing managers prefer rotational movement patterns where visitors repeatedly wander around the market, Figure (6). Provision of the main central space for the market shall be taken into consideration for achieving a central social function. Frequent landscape features such as trees, external furniture, lighting units and sequential spaces that boost the dynamic and visual sequencing, in addition to the various tiling that contributes to the sequence of events.

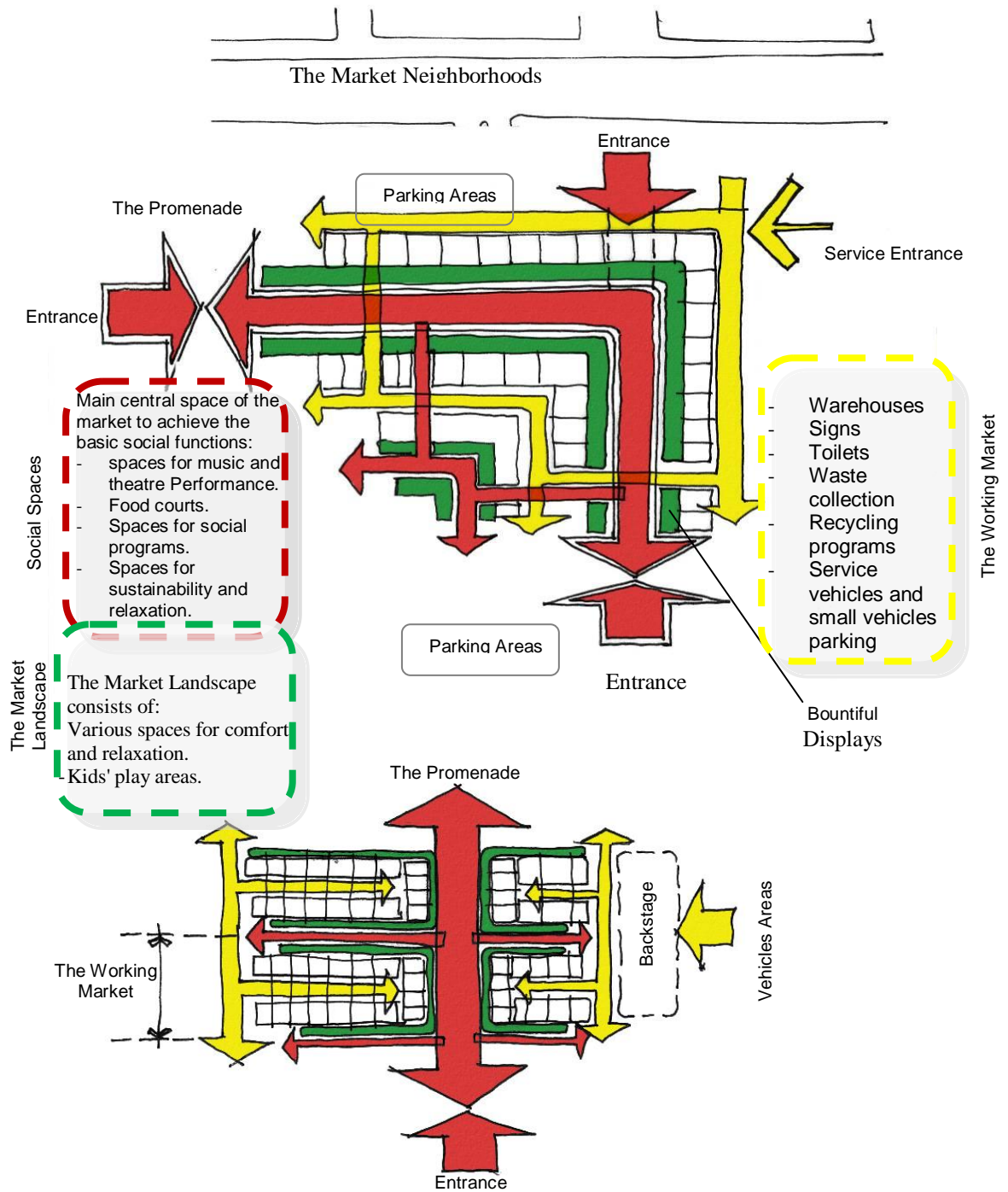
Figure (6) Design forms and the Promenade's components



1.5.2. The Working Market

They include a variety of vending spaces that are often placed on a modular grid (3*3 meters) for plot of lands that are uniformly located around the Promenade. They are linked to backstage areas for loading and unloading and the access of the vehicles and the service entrance. From the front, they are linked to the display and marketing area of the products and goods (Bountiful display), Figure (7).

Figure (7) Distribution systems for the Working Market



The following shall be provided:

- Car parking for the consumers.
- Warehouses for the seats, tables and others – signs allocated for the market and information about the market.
- Functional elements necessary for the working market, such as public toilets, information stalls, waste collection, recycling program, and small vehicles and bicycles' parking.
- Public and entertainment services such as performance spaces for music and theatre, food courts and other social spaces. They are usually at the end of the Promenade, away from the spaces for vegetable and fruit sale.

1.5. 3. Market Landscape

The open space nearby the working units area and the Promenade. It provides opportunities for leisure and relaxation, which are usually not associated with sale and purchase. The successful market is the one which provides a variety of comfortable spaces for comfort and relaxation as well as actively participating in public life, where spaces are subject to all the design principles of urban spaces concerning the supply of the various forms of landscape features, seats and the children's play areas [15].

1.5.4. Market Neighborhood

It is the urban surroundings that represent the urban context of the market. The successful market is the one which interacts with all the components of the urban context in an urban, economic, social and cultural manner, in the following aspects: planning, design, culture of the various integrating community groups, pedestrian walkways, regional transportation systems, public transit overflow parking, available public services, adjacent civil institutions and open spaces and landscapes.

2 CASE STUDY METHOD

This part of the study tackles the specification of the spaces system in the low-income community markets as urban-social spaces. The applied study sought to achieve the following objectives:

- a. Shedding the light on the social activities and interactions as well as the problems associated with the spaces in the low-income community markets resulting from the basic and social needs of the market users with their different patterns including vendors, consumers and the residents of the surrounding area.
- b. Deducing the system of Social Urban Spaces in low-income community market which are associated with the economic activities and social interactions - through connecting them to the main realms of the market which were discussed in the theoretical background (The Promenade, the working Market, the Market Landscape and the Market Neighborhood) in order to clarify the extent of the achievement of social sustainability in these markets. Then, setting a framework and a local model for the social-urban spaces system in markets so as to be a tool for activating the social sustainability in the low-income communities markets.

2.1. Applied Study's Methodology and Phases

In its methodology, the applied study relied on a set of phases that achieve the previous objectives. Therefore El- Khamis Market in El Matariyyah in Cairo/Egypt was chosen as one of the low-income community markets through which the basic and social needs of the market goers can be studied, in addition to focus on social interactions and relationships that take place within the market's spaces, in order to study the relation between the economic and social activities, and the urban spaces promoting and strengthening the market work within the low-income community.

Various methods were used for data collection and analysis as mixed-method research was adopted, using more than one method for data collection and interpretation. In-depth descriptive method was used in urban studies to define the spatial features and the urban context of the market. The qualitative and quantitative method was used in social studies through questionnaires and improvised qualitative interviews with the market users to learn about social activities and interactions as well as the behavioral observation within the market. Finally, the deductive method was used for analyzing the market space and then deducting the social urban spaces system in the market.

2.2. Land and Origin

El- Khamis market is located in El Matariyyah district – Cairo, with an area of 6.7 km². It is of a high population density (approximately 90580 inhabitants/ km²), and it is an old district with important sites such as "Virgin Mary's Tree", the obelisk of King Senusret I " Matariyyah Obelisk" and El Matariyyah Teaching Hospital. "El- Khamis Market" for vegetables, fish and poultry in El Horreya Street, is considered to be one of the oldest and largest markets in Cairo, Figure .(8). El- Khamis Market was established to serve a large segment of migrants who came from the countryside to live in the city, and who settled in El Matariyyah district as a district for low-income people, beside the luxurious Heliopolis district in order to get job and housing opportunities that are appropriate for their economic condition.

Figure (8) El Khamis Market, Matariyyah district



2.3. Reasons for Site Selection

El- Khamis Market is considered one of the oldest low-income communities markets in Cairo. The market combines the fixed Farmer Market as well the weekly market for all other needs. The market's wide expansion and breadth in the streets surrounding the fixed original part of the market, causes several problems for the community around, in addition to the spaces' problems of the market itself. The market attracts a large purchasing power of the low-income class due to the low prices and the large variation in goods, which covers almost all needs of the people.

2.4. Sample Selection

The study was conducted in the time period (2011/2012). Consideration has been given to the expansion of samples so as to cover the vendors and consumers, as well as the residents of the market area, in order to reflect a wide and inclusive scope of the needs of the market users. Sample selections considered the variation of users' patterns (consumers – residents), age groups, gender (male - female), and religion (Muslim – Christian). It also considered the variation of vendors' patterns in terms of their association with the market (full-time vendors – part-time vendors). The samples also varied to include vendors of the most products in the market.

2.5. Tools Used for Data Collection

These included multiple visits, monitoring and observation in different times of the market; meetings and dialogue with the vendors and consumers; photographing the market and surrounding streets; and a questionnaire that was conducted with the vendors, the consumers and the residents of the surrounding area.

3. FIELD STUDY FINDINGS

Findings are subdivided into three main parts:

First: Urban Studies: The Urban Context

Monitoring and analyzing the urban context of El- Khamis Market in order to define the spatial features of the market through the study of the historical development, the urban fabric of the market area as well as the land uses and the buildings heights and conditions, in addition to the movement patterns within the study area.

Second: Design Studies: Activities and Urban Spaces

Study and analysis of the market spaces and the distribution of the internal and external activities existing around the market, as well as the extraction of the problems.

Third: Social Studies

Definition of the necessary and social needs of the market users considering it a Mixed-Life Place, through the qualitative and quantitative study via questionnaire analysis, in order to identify the reason behind the consumers' demand on the market and its benefits to the community, and deducting the required urban-social spaces.

3.1. Urban Context of El-Khamis Market

3.1.1. Historical Development

El Matariyyah originated as an agricultural area that was divided into farmlands through which canals and drains passed, which, after being backfilled, turned into main and side streets. The agricultural land lots gardening boxes turned into residential blocks with their current density through the illegal building on agricultural lands.

The historical development (Figure 9) shows that El Matariyyah Market has not become central and important until after the completion of the final urban structure as the only urban space that remained was the market space and it has become necessary to serve that large community of low-income, it has then become the necessary service and the park at the same time.

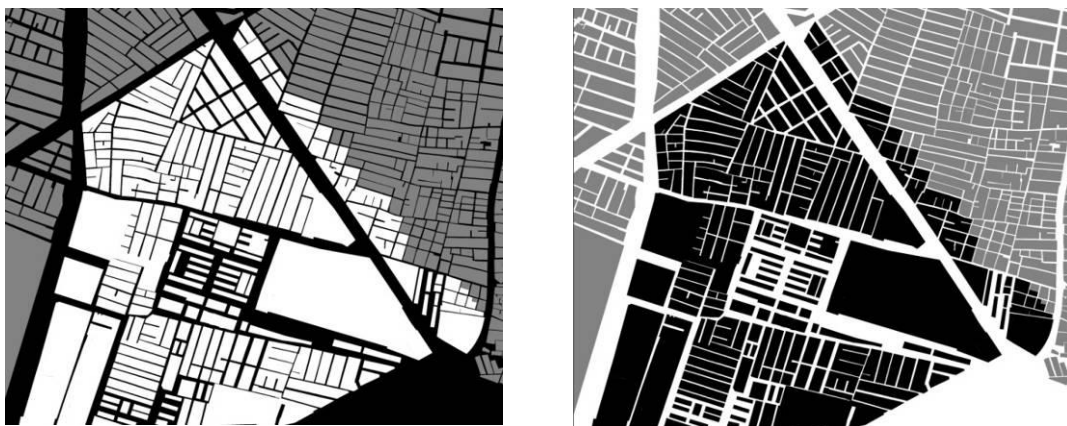
Figure (9) Historical Development of the Urban Context



3.1.2. Urban Fabric

In terms of the street network, the fabric is uniform, enclosing land blocks with elongation. It is the result of the illegal building on the agricultural lands and urban margins. Few features of manifold fabric (the irregular) also appear. Few numbers of main axes are apparent. They are insufficient for the high density which results in these axes getting crowded with people and vehicles almost continuously. The compact urban fabric reflects the high building and population density. It gives indicators for a community that lives in an urban environment with low service and entertainment. Urban spaces are few. One of these is "El Matariyyah Market" which serves the whole of this large segment of residents.

Figure (10) Urban Fabric



3.1.3. Land Uses

Most of the uses are residential-commercial and residential only, and that most of the ground floor area is commercially used as in the form of stores, which makes a large section of the scope of the study an extension of the market. Heterogeneity is noticed in the distribution and the shortage in the educational, health and social public services, green areas, open entertainment and social spaces. There are also no areas that are clearly allocated as garages and car parking.

3.1.4. Buildings Heights and Conditions

The study shows that around 87.86% of the heights ranges from (3-5) floors, and that the buildings conditions range from good to medium in terms of durability and the construction materials, not in terms of the quality of finishing or the character as most of the buildings are of reinforced concrete and they are not finished from the outside and overlook streets with narrow widths that are often up to 3 meters, which indicates that the residents of the area in general are of low-income.

3.1.5. Motor movement and Pedestrian Walkways

There is a clear intermix of the motor movement and the pedestrian movement as the vehicles streets are used as pedestrian walkways as well and there are some

very narrow streets to which the vehicles cannot enter and which were turned into pedestrian-only commercial streets for garments and fabrics. There are no spaces for entertainment parks or yards at all.

People achieve entertainment as an activity through intensive and interrelated interaction during their practice of the necessary life routine and during work in the streets, the markets, the cafés, before the street vendors and even on the sidewalks as places for standing, talking, meeting and social interaction.

3.2. Activities and Urban Spaces

3.2.1 Distribution of areas and goods in the market

The market originated as a market of vegetables, fruit, meat and fish, and this is considered the fixed market and then extended to the surrounding streets for being the most dense and attractive for people coming from and to El-Matariyyah Square. It's noted that vegetables and fruit are being sold in the streets nearby El Matariyyah Square where there is plenty of people passing by the Square and around the Grand Mosque "Al Anwar Al Muhammadiyah".

3.2.2. Areas of Extensions

The areas of extension and breadth are associated with fences of public facilities next to Alakad Primary School, El-Matariyyah Teaching Hospital and around the Grand Mosque where the place is wide so as no clashes with residents or shopkeepers down residential buildings would take place.

3.2.3. Fixed and Changing Areas

The main fixed area is the market triangle itself that is divided from inside and designed to be a market where the young vendors randomly occupied fixed places in front of the market and they do never leave it fearing that other vendors would take it out of them. As for other areas around public facilities, they are subject to removal by the municipality authority from time to time.

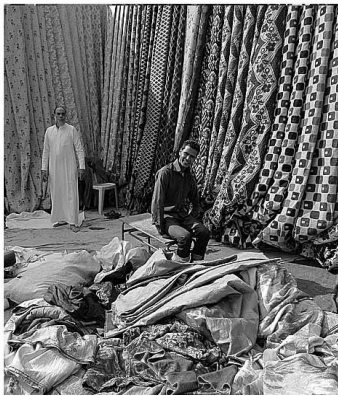
3.3.4. Covered and Open Air Areas

Only the main triangle area of the market is covered with metal sheets based on iron columns within large distances allowing for easily walking in the market and this is self-help established under the management of a number of senior vendors in the market.

3.3.4. Problems

Based on the above field study, we can conclude that there are many problems in the Markets in low-income communities represented in the case study of El-Matariyyah Market.

Fig. (11) Activities and Urban Spaces



Retailers outside the market



Arcades & coverage



Market's sub-entrance



Intermix of activities



Fruit vendors



Poultry vendors



Loading & unloading



Traffic jam across the market



Vendors in front of buildings



Cloths vendors overcrowding in front of the hospital's gate



Meat vendors

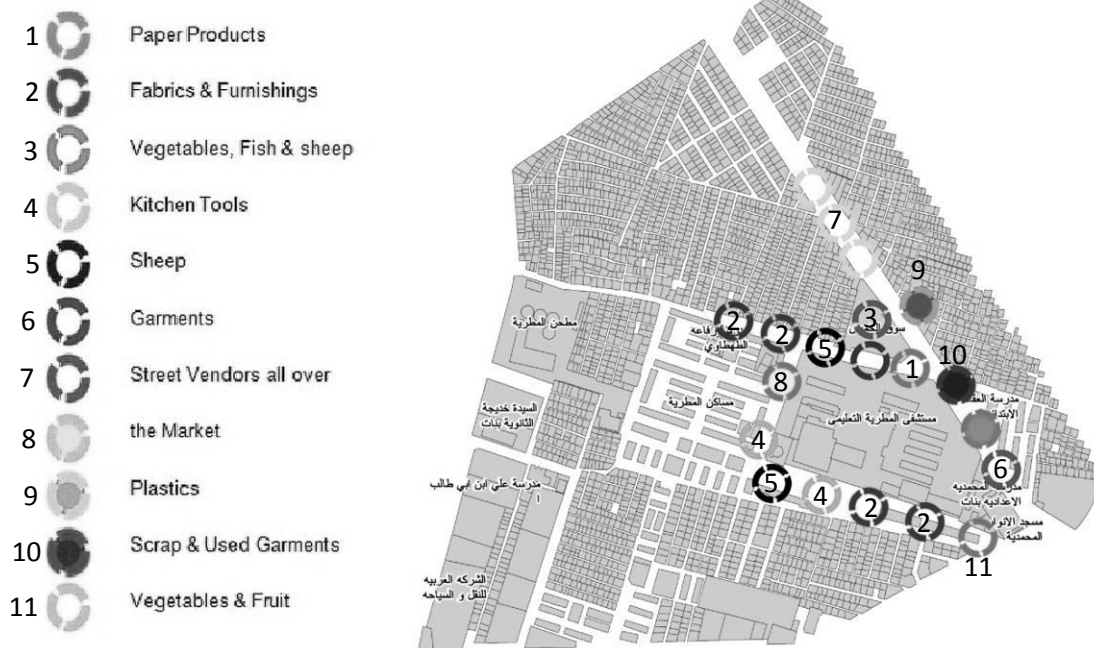


Clothing market

Fig. (13) Market and the Surrounding Area



Figure (12) Commercial Activities



a. Problems of the Market context :

- Overlapping of so many different uses
- Deterioration of urban and architectural character of the context.
- Increasing rates of population and building density
- Motor traffic interference with pedestrians.
- Lack of official parking lots
- Many traffic jams due to overcrowding, the market and indiscriminate vendors

b. Problems of the Market design:

- The market can't accommodate all such activities which can lead to the spread of street vendors and random extensions densely in the market's surrounding area.
- Lack of adequate emergency services for the market.
- Random movement of pedestrians inside the market due to lack of apparent main and sub-walkways.

- Lack of apparent main and sub-entrances whether from inside or outside the market.
- Lack of garbage collection system, which led to the spread of vendors' wastes, garbage and environmental pollutants.
- Audio, visual and environmental pollution which directly affects the market goers and patients in the nearby El-Matariyyah Teaching Hospital.

3.3.Social Studies

The questionnaires were handed out to a number of (60) persons included all types of vendors, consumers and residents of the area. The questionnaire is of three parts, the 1st part is considered a general background about the sample-group surveyed which help in collecting demographic information on the sample, while the 2nd part is an open-ended questions designed to be general in order to let individuals express their problems and the reason behind coming to El Khamis Market and market's benefits to them and society. The third and final part is close-ended questions, and they're direct for guidance and avoiding ambiguity in order to understand the patterns of vendors and know the needs of consumers. Data and information obtained from the questionnaires were analysed using frequencies and interpretive techniques.

3.3.1. Demographic analysis

A. Gender

The distribution of the questionnaire to the sample was divided among males and females regarding vendors, consumers and residents of the market area. Respondents for both vendors and residents of the area were mostly males, whereas for consumers, respondents were almost equal.

B. Age groups

The dominant age group in the sample is (35 - 49 years), followed by (18 -34 years) which indicates the lack of urban social spaces that fulfil the needs of social groups under 18 years, as well as above 50 years.

3.3.2. Analysis of Open-ended and Closed-ended Questions

The questions of the questionnaire were made as to identify three main points and were as follows:

A. Social Integration

Answers by the sample-group from among consumers were analysed based on the following question, "*Why do you come to El-Khamis market?*" as an open-ended question. "*Products*" is considered to be the main factor for which (60%) of consumers are coming, followed by "*price*" " at (20%), while "*place*" represented (16%) of the sample answers, and finally came "*People*" at (4%).

This reflects that the vast majority of consumers come to the market to get their basic needs of good and various products at low-prices that suit their economic level, while the answers of "place" and "people" reflect that there is a group of people who come to the place either (because it's near their homes and reachable, or for the general atmosphere of the place and its association with the community representing the social class of low-income people). Moreover, the group of "people" come either to meet friends, or due to the diversity of people because of feeling belonging. However, the low ratios of 16% and 4% respectively reflect that the place lacks the social attracting factor due to lack of open spaces of interacting and social activities among people so as their social needs can be fulfilled.

Answers by consumers and residents of the market's area to the question, "*What are the benefits of El Khamis Market to you and the society?*" - as an open-ended question were analysed and results were as follows. The presence of multiple and various "*products*" was recorded as the one with highest percentage at (32%), and then came "*Price*" in the second place at (28%), and "*place*" at a close percentage (22%), while "*people*" represents (12%) and "*local economy*" comes the last at (4%). Comparing the above analysis with the analysis of the answers of residents to the close-ended question in regard to "*their tendency to purchase from El-Khamis market*", and "*whether they accept moving it to another place*", we find that (95%) of the residents buy their basic needs from El-khamis market, while (80%) of consumers and residents of the area do not want to move the market away from its place. This explains the presence of "the benefit of El-khamis market's place to people due to its closeness to residents' homes, being reachable and considering it a landmark of the area surrounding.

This indicates that social integration can be achieved in El-Khamis market by means of providing "additional (social) spaces" so as the market would be social interaction attracting beside its role as a place to sell products. Previous findings stress the function of the market as a social place where people spend time with each other during purchase and sale.

B. Upward Mobility

How would the market, being a social open space, lead to an economic mobility within low-income communities? Analysing vendors' answers to the closed-ended question; "*What is the duration of your business within El- Khamis market?*" for letting them determine their own patterns whether a casual vendor or serious vendor, we find that (55%) of the sample-group are working full-time, while (45%) of the vendors are working part-time either as a result of involvement in other jobs, or other seasonal markets (Tuesday, Wednesday, or Thursday). Mobile vendors who are working part-time inside the market, sell within the market's open space and sometimes outside it (the same like street vendors). Usually, they don't expect gaining big profit but they achieve other more social goals (for their engagement with people) such as consumers going to them in particular on the days they're working. It's confirmed by some of their answers as; "*engagement with people*

coming to buy," or "I've many customers who know me and come to me ", and those vendors tend to sell in the open- air market where operating costs are low. Unlikely, the full-time vendors mainly depend on the market for making their living and thus, to get a full-time job is closely linked to the market as a "place". Consequently, those people mainly work in well-established markets where the expected profits are greater.

As for analysing the vendors' answer on *"what is the best thing of the market in your opinion?"*, answers were collected and classified into three categories. The most repeated answer among vendors was *"people"* with the highest percentage at 26% according to such group of vendors including answers like *"meeting customers who know me"*, followed by *"economics"* in the second place at 22%, reflecting the role of the market in the economic mobility of the vendors, especially those who are working on full-time basis. *"Place"* was the third at 16% and the answers included: *"market's closeness to the vendor's home"*, *"trading inside the market"* and *"special customers of El-khamis market"*.

It is clear that there is a relation between the market's place as a social space and the economic mobility inside the market. There is a variety of spaces inside the market whether open spaces that encourage mobile vendors or closed ones that encourage permanent vendors, and this affects the relation between vendors and market as a place of interaction among people, and affects the contribution to the monthly income of the vendors.

C. Sustainability of the market

Through analysing the answers of the open-ended question *"what are the problems facing you in the market?"*, the answers of the sample-group - whether vendors, consumers or residents of the area – were different and repeated. Table (1) show problems and required social urban spaces for solving them.

This analysis make it clear that there are relationships between the availability of social urban spaces that meet the needs of market's users, in the current time and in the future, and the sustainability of market's activities and success especially in low-income communities.

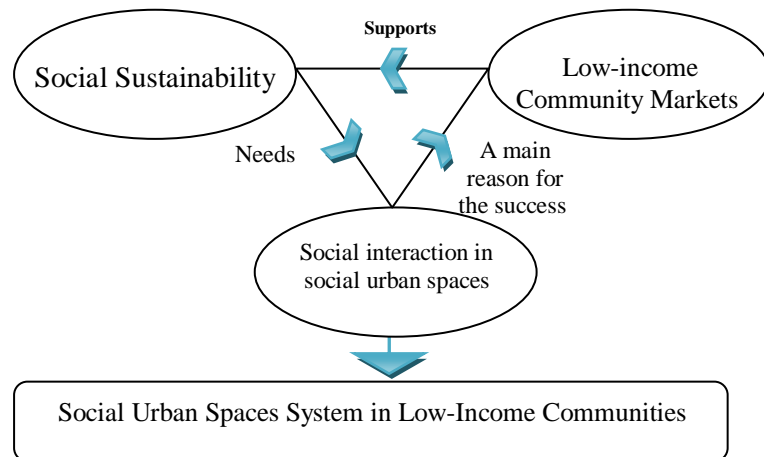
4. REQUIRED SOCIAL URBAN SPACES IN LOW-INCOME COMMUNITIES:

There is a correlation between the social and urban sustainability of the market and the presence of social urban spaces, which enable the accommodation of the activities whether necessary, optional or social. The markets of low-income communities are supporting and contributing to the social sustainability that needs a system of various public social urban spaces, which in turn represent a main reason for success of low-income community markets. Figure (13)

Table (1) Problems and Required Social Urban Spaces

Vendors' problems	Required social urban spaces
Lack of fixed places for each vendor in the market.	- Vendor's space - Open spaces for non-permanent street vendors - Closed spaces for permanent vendors
Lack of regular services for waste collection	- Unloading spaces for waste's collection and recycling
Vehicles and pedestrians roads being overcrowded and closed due to the random spread of some street vendors	- Spaces for vendors' seating
Transport, loading and unloading are difficult due to the lack of spaces.	- Loading & Unloading spaces
Lack of warehouses especially refrigerators for vegetables, meat and fish	- Spaces for products displaying & storage
Lack of daily needed services such as toilets, food sources, spaces for comfort, waiting and prayer areas	- Places for comfort and relaxation - Food court spaces
Inadequate police patrols resulting in rubbery and clashes	- Spaces for entrance and exit
Consumers' problems	Required social urban spaces
Heavily overcrowded roads to the market and inside it as a result of the random spread of some vendors on roads	- Pedestrians walkways network + intersections & transformational spaces.
Lack of parking lots near the market.	- Parking lots
Lack of the basic services such as toilets, food sources, spaces for rest, sitting and reorganizing needs.	- Spaces for comfort and relaxation. - Kids play areas - Open spaces for social festivals and programs. - Food court spaces
Lack of security, the spread of robberies and clashes as well as the vendors' bad behaviors	- Provision of secured and specific entrances and exits to the market.
Spread of garbage, pollutants, etc.	- Pleasant gardens.
Vendors' places are not ordered in addition to the lack of a guiding map or guiding panels	- Clear spaces for display for consumers.
Lack of specific places for public transportation	- Public transportation and bus stops.
Surrounding residents problems	Required social urban spaces
- Spread of pollutants of all kinds especially on Thursdays - Continuous overcrowding - Lack of parking lots especially in rush hours - Lack of security and spread of robberies and clashes	- Spaces for loading & unloading and waste collection - Pedestrians walkways network, waiting spaces, and public transportation and bus stops. - Waiting spaces - Providing police checkpoints at the entrances and exits in the active spaces.

Figure (13) System of Social Urban Spaces

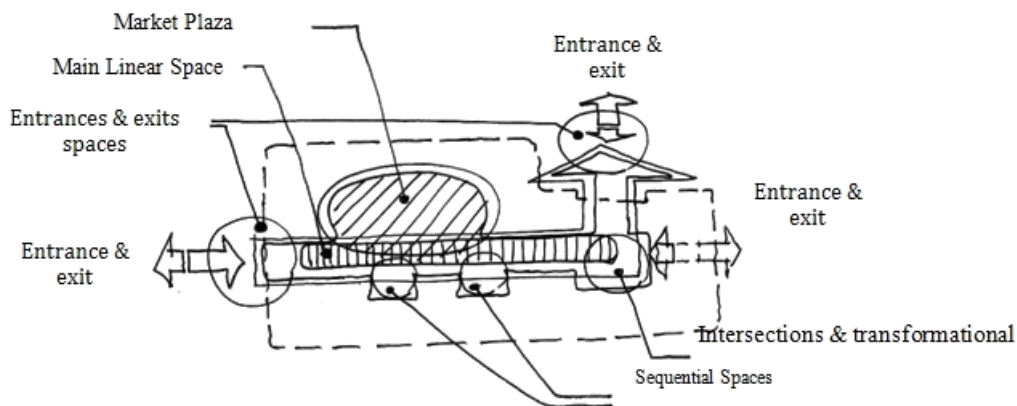


This part of the paper draws out the system of social urban spaces in low-income community markets through linking it to the areas mentioned above in part (1.5) above.

4.1. Promenade Spaces

The Promenade is considered the most important spaces of the market on which the market’s space system and concept are based in general and when looking into its space content in more details, we can classify it as follows (see Figure 14).

Figure (14) Promenade Space



4.1.1. Main Linear Space

It’s the main linear space of promenade around which people are looking at the displayed articles, where people get into interaction with each other so as to create an interacting-social atmosphere through greetings each other, chatting, discussions, problems and ideas in times they’re buying and selling. There also may be a negative social interaction through which they just keep watching people and listening to their conversations. The less the walkway width is, the more social interacting atmosphere created.

4.1.2. Entry and Exit Spaces

More relatively wider spaces sometimes enhanced with gates and through which the market areas are initially identified and the walkway is used. Such spaces should be clear and specified whether from inside or outside the market so as not to disperse people's movement in the market.

4.1.3. Sequential Spaces

It's about the provision of provides some kind of variety through the promenade and it can be supported through providing simple outer coverings, tiling, lighting and plantation.

4.1.4. Market Plaza Space

It's a central space for achieving central social functions where gathering itself is considered as an idea of public awareness, comparison between the persons of the same economic and social conditions and sharing one social work, celebrations and festivals that add joy to the market's Spirit.

4.1.5. Intersections and Transformational Spaces

It's the spaces at the junctions, crossings and transformational roads where it's better to be wider so as to accommodate people's gathering, and to be enhanced with some services and providing entrances and exits to the market.

4.2. Working Markets Spaces

4.2.1. Vendor's Space:

It's the vendor's working and movement spaces for dealing with consumers, goods and through which direct social interaction is created with the consumers. It's important to provide easy visibility and accessibility, talking and chatting. Such space is associated to another backstage areas and the main factor here is the easiness of transportation of goods via vehicle access.

4.2.2. Bountiful Display Spaces

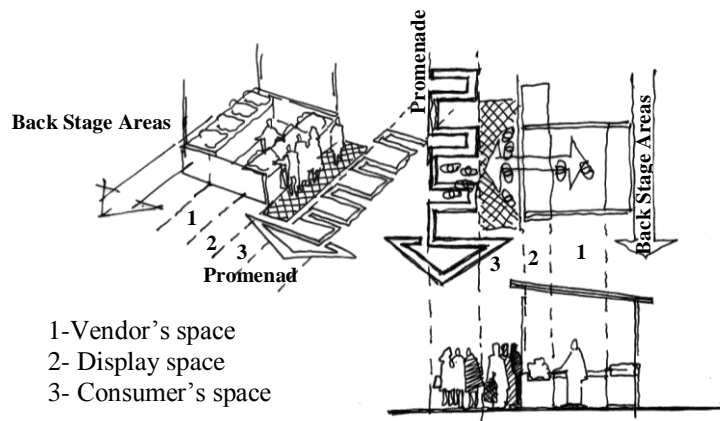
It's considered just as advertisements for the vendor and its width and height shouldn't increase so as not to affect the vendor-consumer social communication for such a social relation is considered an integrated part of the vendor's advertisement & marketing.

4.2.3. Consumer Spaces

It's the space where the consumers deal with the vendor and looks at the displayed articles as well as with consumers and neighbours with each other and with the

residents of the area and thus a variety of social relations are made enriching marketing activities, sale and purchase as well as the market's value in general. Such space may be semi-separated from the promenade or a part of it and this is implemented through some of architectural features and simple details such as various tiling or joints of the floor like flower pots, low barriers or of the ceiling such as panels and changing covers' heights as in Figure (15).

Fig (15) Associated Areas to the Market



4.3. Market Landscape Spaces

4.3.1. Comfort and Relaxation Areas

It can be provided as soon as opportunities are open in the market's spaces and it can also be equipped with a variety of seats or in the form of amphitheatres.

4.3.2. Kids Play Areas

It's important as an area for kids to play in while their families are doing shopping in the market or during their rest.

4.3.3. Natural Gardens

It'll be available in case of providing a suitable area where it'll be possible to provide the market with such planted natural areas that can reduce the severe nature of overcrowding of the market and contributes to providing rest for consumers making the marketing activities an entertainment for families.

4.4. Market Neighborhood Spaces

4.4.1. Pedestrian Walkways Network

It's the pedestrian walkways surrounding the market which should be studied and well-planned as for its shape and materials in order to facilitate the densely movement to fit gathering and standing.

4.4.2. Spaces of pedestrian gathering

It should be provided so as to accommodate such number of people gathering especially at the entrances and exits to the market.

4.4.3. Spaces for Consumers Parking

It'll encourage, when provided, coming to the market from the remote areas.

4.4.4. Transportation Stops

The lack of such spaces or intermixing with pedestrian walkways during traffic jams in addition to pedestrian movement and lack of security.

4.4.5. Loading and Unloading Spaces

It should be provided so that the traffic of trucks may not obstacle pedestrians or peoples' cars especially knowing that such trucks require waiting for long time to completely load or unload goods. Moreover, it's important to provide spaces for collection of garbage and waste in order not to accumulate and occupy the market's surrounding spaces.

Accordingly, we can conclude a framework of the social urban spaces system in low-income community markets as shown on Table (2). This framework shows the main role of such markets in low-income communities as considered social urban spaces for achieving social sustainability. Such framework also emphasizes the importance of social urban spaces which can be implemented at the public policy level with regard to El-Khamis market in particular and other local low- income communities markets in general.

5.CONCLUSIONS AND IMPLICATIONS

Through the analysis of one of the markets of low-income communities (El-Khamis Market in El Matariyyah) we can conclude that markets, in addition to marketing activity, are considered of the most important places for social interaction among people for it lead them to gather with each other and enhance the public life. Interaction and engagement with others, as well as informal conversations are being cited as considered the key factor for market's success in sale and purchase making markets of great remarkable importance and a unique rule as social spaces.

With the recently increased growth of number and popularity of such markets in low-income communities, the system of social urban spaces plays an important and key role enhancing social life.

Markets are an effective tool to revitalize neglected public spaces by achieving social sustainability through social integration and economic mobility within low-income communities in order to be a way of creating mixed-life place.

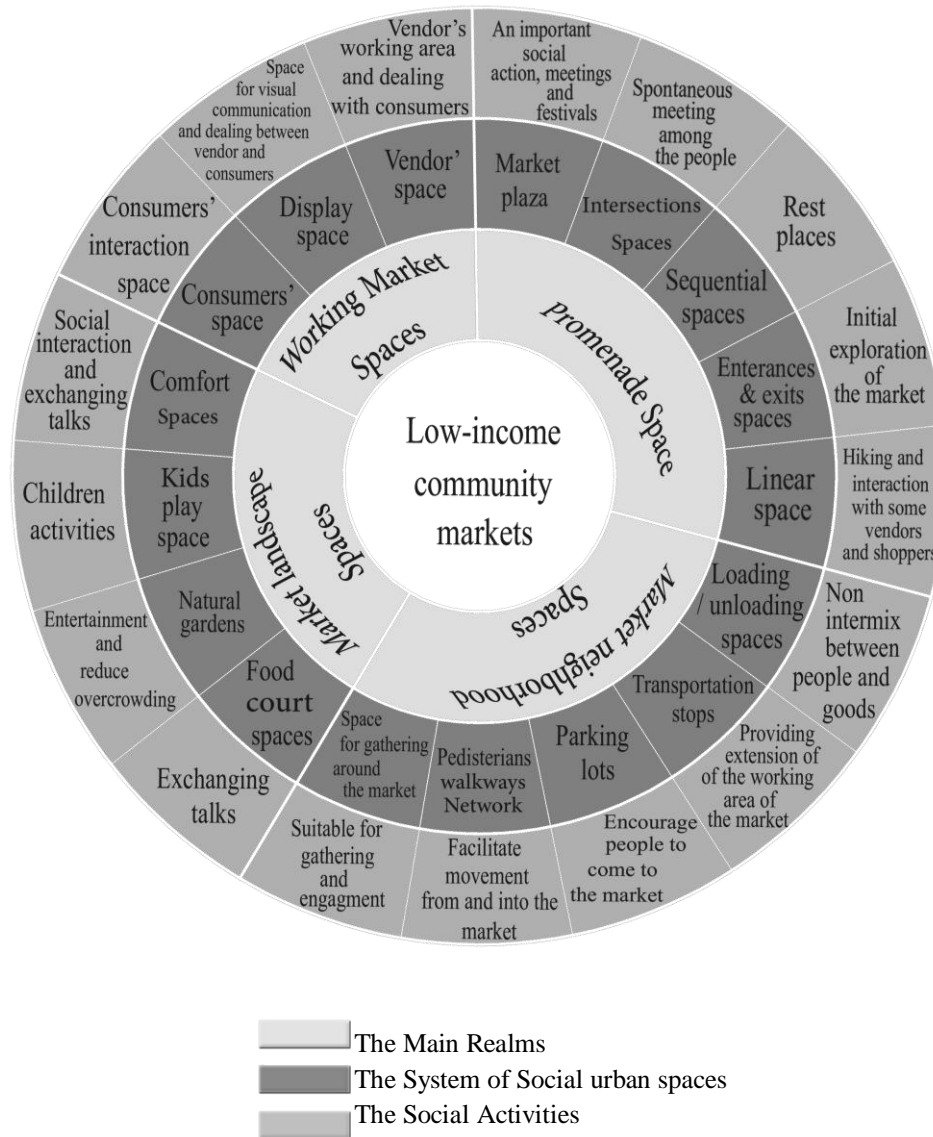
Table (2). Framework for Social Urban Spaces in Low-income Community Markets

Market's Realms	Promenade Space	The Working Markets Spaces	The Market Landscape Spaces	The Market Neighborhood Spaces
Social urban spaces	<ul style="list-style-type: none"> - Main Linear Space - Entry and Exit Spaces - Sequential Spaces - Market Plaza intersections and transformational spaces. 	<ul style="list-style-type: none"> - Vendor's space - Bountiful display space - Consumers' space. 	<ul style="list-style-type: none"> - Comfort & relaxation spaces - Kids play areas - Natural gardens - Food courts spaces. 	<ul style="list-style-type: none"> - Pedestrians walkways network. - Spaces of Pedestrian gathering around the market - Spaces for Car parking lots - Spaces group transportation stops - Loading and unloading spaces.
Activities & Social Interactions	<ul style="list-style-type: none"> - Wondering and interaction between vendors and consumers to provide initial identification of the market places for comfort. - Public Social activities - celebrations - festivals - spontaneous gathering of people. 	<ul style="list-style-type: none"> - Vendor's working space & interaction with his consumers - Space of interaction between vendor and consumers and with each other 	<ul style="list-style-type: none"> - Social interactions & conversations and exchange activities among children. - Wondering and reducing overcrowding for food and conversations 	<ul style="list-style-type: none"> - Facilitate movement from and to the market. - Suitable for gathering and getting to know each other. - Encourage people to come to the market. - Provide cleanliness of the market from outside. - Not to cause intermix between people and goods.

Through the above mentioned findings and the framework concluded from the study of El-Khamis Market, we can conclude a theoretical model of the social urban spaces in the markets of low-income communities depending on the main four areas of the market and the social urban spaces associated with daily-life activities that make the market a successful and sustainable social space. The model identify the system of social urban spaces which urban and architectural designers should take into

consideration while designing the low-income community markets and also it can be used in measuring and evaluating the existing markets. (Figure 16).

Figure (16) Model of the system of social urban spaces in low-income communities



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ECOTOURISM: TOWARDS SUSTAINABILITY OF EGYPTIAN LAKES

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Abstract

“Both human civilizations and the natural ecosystems represent integral parts of our environment”¹. With the new century planners and governments face big challenge which is population has been increasing and resources decreased. That’s why it is vital to create new methods to get new opportunities for upgrading the quality of life and to get new economic resources towards filling the gap between population increase and limited resources. Development of lakes with their distinguished nature can be a part of this challenge. Lakes are extremely sensitive environments, whose status represents the equilibrium among climatic conditions, hydrological setting and human pressure. This equilibrium is particularly fragile in arid environments.²

Lakes in Egypt are very special case because they enclose many kinds of environments: desert, water and green areas in addition to the natural protectorates with in. These protectorates saved from ancient ages and protected by law and international agreements. So upgrading waterfront of lakes is one of the important targets for researchers, scientist, architects, planners and the government. The study highlights the ability of waterfront development in Egyptian lakes to achieve sustainability. The research problem focuses on how to use ecotourism projects in upgrading waterfront areas in Egyptian lakes with caring of natural life, social life and economic needs to achieve sustainable development goals. Research methods include the analysis of the current situation of lake area in Egypt and define the problems, the comparison between international projects, and determining the steps used in planning and design upgrading lakes waterfront in Egypt.

Keywords: Ecotourism, Sustainable development, lakes, quality of life.

المخلص

كلا من الحضارات البشرية والنظم الطبيعية تمثلان جزءا لا يتجزأ من بيئتنا. من اكبر التحديات في بداية القرن الجديد تزايد عدد السكان الى جانب تناقص الموارد لذا اصبح من الضروري البحث عن وسائل جديدة لخلق فرص لتحسين نوعية الحياة والحصول على موارد اقتصادية جديدة من أجل سد الفجوة بين الزيادة السكانية والموارد المحدودة. ويعتبر تطوير البحيرات بما يميزها من طبيعة متفردة احد هذه التحديات. وتعتبر البحيرات من المناطق شديدة الحساسية والتي تمثل حالة من التوازن بين الظروف المناخية والوضع الهيدرولوجي والضغط البشري. هذا التوازن لا يزال هشاً ولا سيما في البيئات القاحلة.

وتمثل البحيرات في مصر حالة شديدة الخصوصية لأنها تضم العديد من أنواع البيئات: البيئة الصحراوية، و المسطحات المائية والمساحات الخضراء بالإضافة إلى المحميات الطبيعية. ومن هذه المحميات ما تم الحفاظ عليها من العصور القديمة ويتم حمايتها بموجب القانون والاتفاقات الدولية. ويعتبر تطوير المناطق المطلة على البحيرات أحد الأهداف المهمة للباحثين والعلماء والمهندسين المعماريين والمخططين والحكومة. وتلقي الدراسة الضوء على امكانية استخدام تطوير المناطق المطلة على البحيرات المصرية كأداة لتحقيق الاستدامة. وتتركز مشكلة البحث في كيفية استخدام مشاريع السياحة البيئية في تطوير الواجهة البحرية في مناطق البحيرات المصرية مع رعاية الحياة الطبيعية والحياة الاجتماعية والاحتياجات الاقتصادية لتحقيق أهداف التنمية المستدامة. وتحتوي منهجية البحث على تحليل الوضع الحالي لمنطقة البحيرة في مصر، وتحديد المشاكل، ومقارنة بين هذا النوع من المشاريع الدولية، وتحديد قائمة من الخطوات التي استخدمت في التخطيط والتصميم تطوير بحيرات الواجهة البحرية في مصر.

الكلمات الرئيسية : السياحة البيئية والتنمية المستدامة، والبحيرات، ونوعية الحياة.

1. INTRODUCTION

Egypt possesses one of the most developed and diversified economies in the Middle East, with sectors such as tourism, agriculture, industry and service at almost equal production levels. The Egyptian economy is rapidly developing, due in part to legislation aimed at luring investments, coupled with both internal and political stability, along with recent trade and market liberalization.

Water area is 6% of Egypt's area, divided into three kinds: seas (Mediterranean and Red Sea), lakes and the River Nile. Water front projects play very important role in touristic field, fishing, agriculture and urban life .the population in Coastal cities is 50 % of Egypt .water front projects in Egypt normally are used in touristic field, for example al Gouna resort at the Red Sea marina and Marasy at the Mediterranean Sea, river Nile beach is used in touristic cities like Cairo, Aswan and Luxor.

Egypt has a large number of inland lakes, the largest of which are the freshwater Lake Nasser and the saline Lake Qarun in Fayyoun. The coastal zone is home to numerous highly populated economic centers, such as the cities of Alexandria, Damietta, Hurghada, Port Said, Suez, and Sharm El Sheikh.

2. CONCEPT OF SUSTAINABLE DEVELOPMENT

According to the World Commission on Environment and Development "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within two key concepts: the concept of 'needs' in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."³ Environment issues are getting attention worldwide. These issues include not only updating the guidelines and regulations that enforce sustainable development, but also the economic incentives to incorporate sustainable development designs. The news media began to publicize environmental concerns nationally, and the resulting public awareness spurred major legislation, which enabled planners to incorporate ecological values.⁴

3. ECOTOURISM AND SUSTAINABLE DEVELOPMENT

The challenges confronted by coastal protected areas in both promoting highly attractive sites and preserving the natural qualities of these sites have been given a new aspect with the opportunities presented by ecotourism. Ecotourism has a great power on the environment, and it does not need widespread infrastructure in comparison to other types of tourism. Ecotourism as a concept includes a wide range of activities, from field research of flora and wildlife to weekend nature outings that combine leisure and education (Nikitinskiy, 2001).

The International Ecotourism Society in 1991 produced one of the earliest definitions: "Ecotourism is responsible travel to natural areas that conserves the

environment and sustains the well-being of local people.” It refers to low-impact, nature-based tourism that causes less negative effects on a destination’s environmental, social, and economic resources than conventional mass tourism, and it can be used as an effective sustainable development tool (Horochofski & Moisey, 2001). The World Conservation Union (1996) explains that ecotourism “is environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features—both past and present) that promotes conservation, has low negative visitor impact, and provides for beneficially active socioeconomic participation of local populations.”

This could be called, as a concept, ecotourism resources management. Ecotourism resources management is a component of the field of sustainable tourism development (Buckley, 2001, Pigram, 1997; Wight, 2001; Wood & Halpenny, 2001).

4. ECOTOURISM: FIELDS OF ATTRACTIONS

There are three groups of attraction: built, natural and social/cultural attractions.

Built refers to an enormous range of structures that includes heritage, accommodation, places for entertainment, transport infrastructure, worship, commerce, learning and government as well as zones where people gather.

Natural include areas where nature dominates or is predominate and includes shorelines, river banks, undisturbed land where natural ecosystems continue to function and parks.

Social/cultural experiences refer to those activities that focus on the human experience and while taking place within a built structure or in nature are centered on interaction between people. These forms of experiences are diverse and may include concerts, shopping, entertainment, sport, recreational activities, theatre and etc.

Visitors usually have been offered a range of built attractions and social/cultural experiences. On the other side they don't have a great diversity of natural experiences and to meet this area of tourism natural attractions may need to be developed.

5. LAKES AND ECOTOURISM

Water is an attractive element and plays an important role in recreation. Besides coastal tourism, a large number of lake and wetland destinations can be found worldwide. Lakes are extremely sensitive environments, whose status represents the equilibrium among climatic conditions, hydrological setting and human pressure. This equilibrium is particularly fragile in arid environments. Most of those lake and wetland destinations are very different in terms of morphology, climate, culture, traditions, and so on. Nonetheless, they show also several similarities concerning

their features, development potentials and the threats they are exposed to, including those caused by tourism. During the last two decades the environmental awareness of both, tourists as well as tourism entrepreneurs, has improved and due to that, concepts of sustainable ecotourism and other forms of “new tourism” have emerged.

6. INTERNATIONAL EXAMPLES OF SUSTAINABLE LAKES ECOTOURISM

Successful tourism development depends on a proper balance of the use of environmental resources - as a basic ingredient of tourist products - and the negative environmental effects tourism might cause to the environment and nature. There is quite a consensus that finite resources (i.e., beaches etc.) and their quality are limiting factors for tourism development.

A survey of the BAT-Institute published in August 2006 states, that tourism and recreation will be the motor for economic development in the 21th century. In Germany, like many other countries, the leisure, tourism and recreation business is today the largest employer by far, with over 6 Million employees. And ecotourism is the fastest growing segment of the travel industry. As a result, community groups as well as NGOs increasingly see ecotourism as an opportunity to generate income and improve livelihoods and employment, particularly in rural areas.

6.1. Example from China:

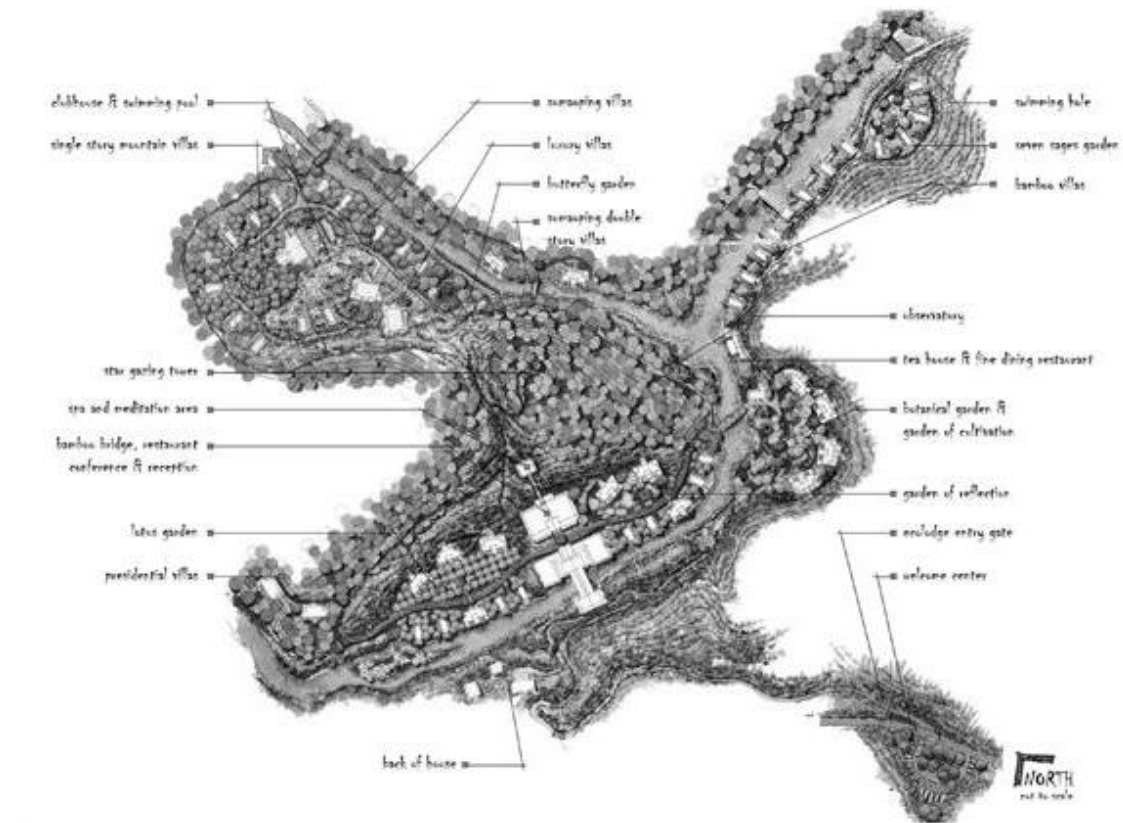
Crosswaters Ecolodge, Nankun Mountain Reserve, Guangdong Province

Throughout China, rapid industrialization is causing millions of people to migrate from the countryside to cities like Guangzhou. As urban areas sprawl outward, new development consumes open land and critical natural resources. This pattern of development is causing widespread environmental devastation and social disruption that is risking China’s long term future.

Crosswaters Ecolodge is placed within a 260-square kilometer protected forest called Nankun Mountain Reserve, 80 miles from the city of Guangzhou in southeast China. The resort has 53 suites and villas built with locally sourced materials like bamboo . A community of more than 5,000 native Keija people live within the reserve. They helped to plan, build, and operate the sustainability-minded resort. There are over 1,300 types of plants in the park with over 30 square kilometers of native bamboo. Over 74 bird species and more than 176 species of butterflies exist in the reserve. All new plantings are native species.

The resort, which is the first ecotourism destination in China, respectfully leverages the natural splendor of the land to provide guests with engaging outdoor activities, delicious local food, and breathtaking scenery. Income from the resort helps fund forest conservation. The Nankun Mountain Reserve was created in 1984 in an effort to preserve 260-square kilometers of native evergreen forest. Located within the reserve on a mountain above the Ganken River, Crosswaters Ecolodge was created as a sustainably-minded hotel and resort featuring 53 villas and suites.

Figure (1) Crosswaters Eco-lodge site plan



More than 5,000 native Keija people live within the reserve. During the planning process, landscape architects consulted the community to learn the history of the land and native culture. Local residents offered insight into the project proposal, shown above. The community planning process helped increase the community's sense of ownership and appreciation for the new development.

Figure (2) Crosswaters Eco-lodge



Figure (3) Bamboo bridge

Local Keija craftsman and artisans were employed in constructing nearly all aspects of the lodge, even complex structures like this bamboo bridge, which spans the Ganken River. Here, local workers were mentored by expert craftsman to learn new construction techniques. The community benefits as local craftsman gain new skills that can be applied on future projects.



Buildings, structures, and paving around the resort all incorporate local materials such as bamboo, clay tiles, marble, and river stones. The restaurant and lounge, shown here, feature bamboo flying buttresses that honor the traditional architecture of southeast China. Guests enjoy views from the open-sided restaurant while enjoying hearty local dishes, prepared with organic vegetables grown on site.

Figure (4) Using local materials in buildings



The local community engages with the resort on many levels, providing guests with insight into the sustainable lifestyles of rural China. Here, in the "Garden of Cultivation," Keija farmers cultivate and harvest native fruits and vegetables that supply the kitchen. Guests of the resort see and taste the advantages of local food production

Figure (5) Farmers cultivate native fruits



Guests can interact with the landscape throughout their visit, choosing among a multitude of outdoor activities including mountain climbing, boating, birding, farming, or fishing.

Figure (6) The wooden tower



At night, guests can star gaze from the outlook tower shown in Figure 6.

6.2. Example from Panama: Isla Palenque

Isla Palenque, a 434-acre Panamanian island, serves as a model for geo-responsible design practices throughout Central America, drawing upon natural, human-made and cultural patterns. The project preserves 85 percent of the island into a nature sanctuary, examines bioclimatic strategies for site-planning decisions, explores methods of ecotourism to decrease imports, and develops water and energy management plans that reduce dependency on nonrenewable resources. The project challenges existing governmental regulations, redefining regional development and conservation standards .

Preserving the island's environmental integrity took on the highest priority, limiting developing to only 15 percent of the island's coverage. The vision was to develop a model for sustainable island planning that expressed the place's true spirit. With loose development regulations throughout Central America, the vulnerability of

many pristine sites has fallen to deforestation, out-of-scale development and traditional man-made recreational activities, all causing environmental repercussions. The landscape architect was instrumental in helping the client achieve his vision by synthesizing aspects of sustainability, ecotourism, conservation and education.

Figure (7) Isla Palenque project site plan



The project tries to achieve the aspects of ecotourism, "tourism that sustains, or enhances, the character of a place—its environment, culture, aesthetics, heritage, and the well-being of its residents." Ecotourism promotes a virtuous circle whereby tourism revenues provide a local incentive to protect what tourists are coming to see, but extends the principle beyond nature and ecology to incorporate all characteristics that contribute to sense of place, such as historic structures, living and traditional culture, landscapes, cuisine, arts and artisans, as well as local flora and fauna.

The concept is effective and comprehensive. It combines the sustainable resort and eco-tourism. As part of the ecotourism concept, it seems that they spoke to the people who live there and the solutions were developed from their culture, which is very important. A comprehensive water and energy budget was developed for each project phase, comparing typical versus efficient demand to reduce dependency on utility services. 95 percent of projected energy needs will be generated by on-site solar and wind power.

Nestled into the jungle landscape, canopy homes were envisioned as light and airy structures elevated above the ground, responding to the given landform.

From their lifted position, structures capture trade winds and ocean views without compromising the integrity of the natural landscape.

Figure (8) Resort structures



6.3. Results and conclusions from international experiences

- Ecotourism, "tourism that sustains, or enhances, the character of a place—its environment, culture, aesthetics, heritage, and the well-being of its residents.
- Buildings, structures, and paving are all incorporate local materials such as bamboo, clay tiles, marble, and river stones. Reduce dependency on nonrenewable resources.
- Successful tourism development depends on a proper balance of the use of environmental resources.
- Ecotourism as an opportunity to generate income and improve livelihoods and employment, particularly in rural areas. Income from the ecotourism could help fund natural conservation.
- Eco-tourism is usually a chance to employ local people.
- The community planning process helped increase the community's sense of ownership and appreciation for the new development.
- Using materials from surrounding environment more effective and getting harmony between project and site in addition to realizing sustainability.
- Using technology and communications with green materials to get an attractive landscape.

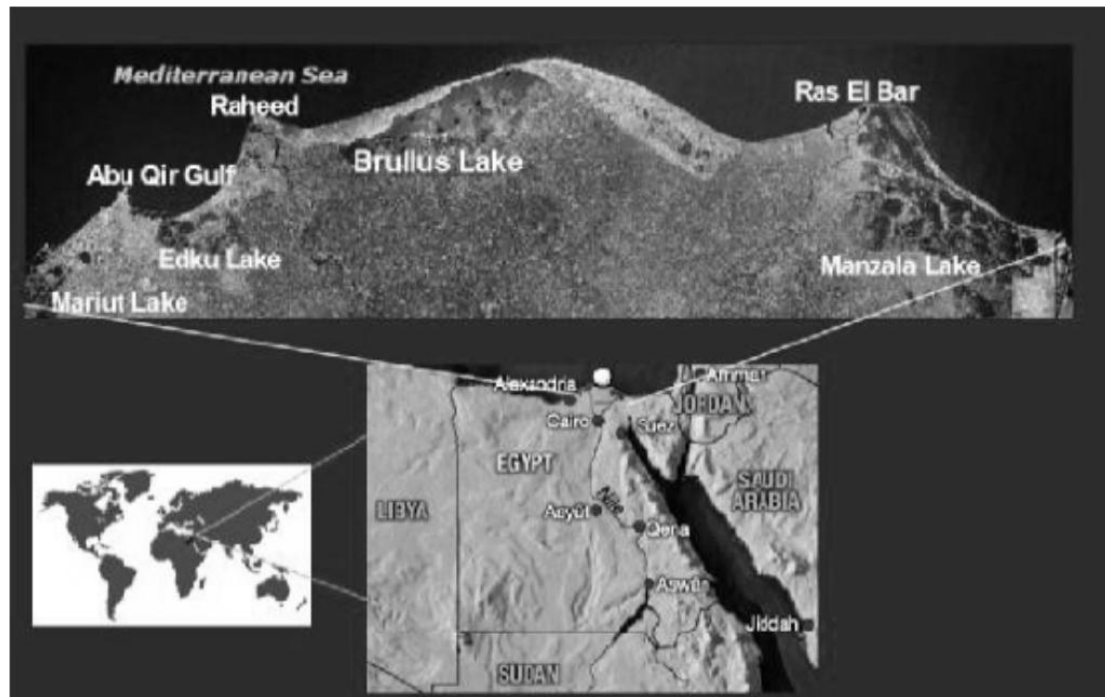
7. TOWARDS SUSTAINABILITY OF EGYPTIAN LAKES:

7.1. Egyptian lakes

"A lake is a landscape's most beautiful and expressive feature. It is earth's eye; looking into which the beholder measures the depth of his own nature."⁵ Lakes in Egypt are very special case because they enclose many kinds of environments: desert, water and green areas in addition to the natural protectorates with in. These

protectorates saved from ancient ages and protected by law and international agreements. The Mediterranean coastal shoreline of Egypt includes five large lakes, which constitute about 25 percent of the total wetlands in the Mediterranean region.

Figure (9) Egyptian Lakes on the Mediterranean Coast



7.1.1 Manzala Lake

A Salt water lake In northeastern Egypt on the Nile Delta near Port Said, Damietta, Dakahlyia and Sharqyia governorates. It is separated from the Mediterranean Sea by a sandy beach ridge which has three open connections between the Lake and the Sea. These open connections allow an exchange of water between the Lake and the Sea.⁶

7.1.2 Marriot Lake

A salt lake in northern Egypt, between Alexandria and Al-Buhira (Beheira actually is named after it) Governorates.

7.1.3 Bardawil Lake

A Salt water Lake in North of Sinai Governorate. It is said that it is named after King Baldwin I of Jerusalem of the First Crusade and that he was buried there.⁷

7.1.4 Edko Lake

Salt water Lake in Kafr el-Sheikh Governorate.

7.1.5 Great Bitter Lakes (al-Buhayrat al-Murrah)

A salt water lake between the north and south part of the Suez Canal, includes Greater Bitter Lake and Lesser Bitter Lakes and el-Temmsah Lake (The crocodile lake) in Ismailia Governorate.

7.1.6 Burullus Lake (Paralos lake)

A Salt water Lake in North shore of River Nile Delta, Western corner in Kafr el-Sheikh Governorate.⁸ Burullus Lake is considered the second largest lake of the Nile delta, which is about 53km long, 13 km wide and has water depths ranging from 0.5 to 2.5m Burullus Lake is connected to the sea at its north-eastern edge through the Burullus inlet, which is about 250m wide and 5m deep. The northern border is separated from the Mediterranean Sea by a strip of land covered with sand bars and dunes. Seven drains and fresh water canals are connected to its eastern, southern and western shores.⁹

7.1.7 Wadi El Natrun Lakes

A salt water lake in Wadi Natron area near el-Qattara depression in Matruh Governorate, salt lakes of Siwa in New Valley Governorate, and Siwa Oasis in Western Desert.¹⁰

7.1.8 Moeris or Qaroun Lake

Lake Qarun is a saline basin, located in North West of Egypt in Fayoum governorate. The lake is bounded on the east and south by the agricultural cultivated lands¹¹. Lake Qarun is also an Important Bird Area (IBA), internationally renowned for its wintering waterfowl.¹²

7.1.9 Wadi Elrayan Lakes

Salt water Lake in Fayoum governorate

7.1.10 Aswan (Nasser) Lake

A vast reservoir contain river water in south of Egypt and north of Sudan behind the High Dam of Aswan on the river Nile.¹³

7.1.11 Toshka Lakes

River water Lake in south west Part of Egypt, at el-Wadi el-Gadid or New Valley Governorate.

7.2 Potentials of Egyptian Lakes

- The biodiversity between different environments.
- The touristic attraction elements such as monuments and ancient cities.
- Lakes are near to major cities like: Alexandria, Dumiat, Fayoum and Aswan
- The water element is the most important element in developing the Egyptian urban communities.
- The diversity in natural resources: agricultural fields and Livestock.

7.3 Challenges facing sustainability of Egyptian Lakes

7.3.1 Environmental problems

Lakes in Egypt face many common environmental problems. Some problems are caused by water polices and management. Other problems are caused by lack of environmental awareness.

Water Problems

The four lagoons of the Mediterranean Coast (Maryut, Idku, Burullus and Manzala) contain high variation from biodiversity of natural plants, wetlands and birds. They have suffered from many problems such as beach erosion, land subsidence, sea-level rise, water pollution, land encroachments, water logging, and bad management.¹⁴ The western and southern sectors of Lake Manzala are supplied by drainage water from 7 main sources. Water from these drains enriches the lake with nutrients, including phosphate, nitrate, and silicate. In addition, some of these drains discharge considerable amounts of sewage and industrial wastes directly into the lake. The Ginka subbasin in the southeast sector of the lake is identified as a 'black spot'. SLR is expected to enhance diffusion in the coastal area and magnify the adverse effects of this pollution.¹⁵

Desertification

some of these lakes are facing the danger of desertification due to Sand dune encroachment like north side of Qaroun lake, ,Wadi Al Rayan lakes, Naser lake, Mora lakes and Wadi Natron lakes .¹⁶

Figure (10) Desertification surrounding lakes



Abuses of the local people

Contamination of areas surrounding the lakes of deserts and habitat due to lack of care.

Poaching

Poaching of fish, animals and birds, which pose a threat to biodiversity.

Encroachment of activities and companies

Tourism activities that violate environmental laws by encroaching on the beaches or lakes without a study plan.

7.3.2 Urban problems

These include problems related to the infrastructure of cities and towns surrounding lakes which is insufficient, as well as the mal distribution of land uses and economic activities inside the unplanned urbanization.¹⁷

7.3.3 Economic problems

These may include unemployment spreading in areas surrounding lakes, no economic benefits promotions to encourage people to develop these lakes, and no links between the lakes and highways or train lines.¹⁸

7.3.4 Social and health problems

Most of communities surrounding lakes are suffering from lack of health and environmental awareness which due to low education ratios.¹⁹

7.4 Conclusion and Recommendations

Towards realizing sustainability of Egyptian Lakes it's needed to raise the social and economic level of areas surrounding these lakes without affecting environmental system this leading to development. Ecotourism is one of the tools to achieve these aims Egyptian lakes afford several activities such as fishing, agriculture in surrounding rural areas and tourism. There are some steps to upgrade Lakes ecotourism related to:

- **Community:** training of community and providing small touristic projects that serve ecotourism
- **Urban context:** upgrading road network and infrastructure of cities and towns surrounding lakes, in addition to improvement of rural communities to receive tourists.
- **Environment:** raising the awareness of community regarding the value of environmental control and water treatment.

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