"Constructed Wetland Park as Happy Public Space to Achieve Quality of life: Case Study of 10 Ramadan City"

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Abstract. Happy public park (HPS) spaces can be defined as a place that gives us a positive perception that motivates us to spend time and live an unforgettable experience in our memory. As important as the urban blue-green spaces, constructed wetland parks (CWPs) have a spread of environmental and social benefits. Constructed wetlands now are used as an environmental contrivance in many countries. It achieves many benefits like increasing biodiversity, habitats, water treatment, and decreasing pollution. In the last decade, this technology was used in Egypt as a tool for water treatment-funded projects like Manzla lakes and small-scale projects. The research aim is to identify and define the relation between a happy public space (HPS) and a constructed wetland park (CWP) and evaluate the indicators which can create a constructed wetland park (CWP) as a happy public space (HPS). The simulated data collected from an experts’ point of view. The method is to link the indicators that affect the public space especially in a Case study on the 10th of Ramadan “constructed wetland park” to be happy public space and analyzing (WTP) and (HPS) indicators through interviews, workshops, and questionnaires as were statistical analysis of the linkages between the indicators to measure the effective indicators and removing ineffective indicators, to reach a guideline which can create a happy public space in constructed wetland park.

Keywords: happy public space– constructed wetland park- New city – 10th of Ramadan- quality of life.

1. Introduction

Public Parks are in which human beings and different social corporations participate (Hajar et.al,2001), and that they make contributions to the wholesome improvement of the city, which might be the critical components of city areas to enhance the excellent of lifestyles of a society. Constructed wetlands structures are mainly appropriate for small groups in improvement, it has proved to be an appealing and strong opportunity due to their low value, and power savings [1]. Also, there may be
the benefit of multi-reason re-use of the exquisite discharge, self-remediation, and self-version to the encompassing situations and surroundings [2]. So if we describe the CWP as HPS we must ask a few questions what are the HPS? and how a CWP is an HPS? This query must be asked before the collection of any information and making analysis. many solutions will be fined whilst going through this question, and some of the imperative solutions you're much more likely to discover include: "The places used by the public and those are regularly termed in public-owned locations, those are exciting and without problems available to the network and are freed from value and no earnings motive is there at the back of the making plans of those locations [3]. to construct an surroundings to turn out to be tailored as social values evolve in response to converting economic institutions and lifestyles [4]. the purpose of this paper is to evaluate the criteria and indicators in designing CWP as a HPS. By analyzing the indicators of a HPS and CWP in a case look at at the tenth of Ramadan, the simulated information have been gathered from experts’ interviews, workshops, and questionnaires.

2. Literature Review
2.1. Public Space define (Ps), values and types

Space that is open and accessible to the people is known as a public space [5]. There are so many things included in the public spaces, such as pavements and roadsides, gardens and parks, public squares, and beaches included in public spaces [6]. The public space is a word which is sometimes misconstrued to mean a different kind of places for architecture such as a space to meet up which is among the social space's broader concept [7]. For these type of public spaces commons is one of the earliest examples

2.1.1 Public spaces (Ps) – (re)defined

Thus, it is difficult to define the public domain as a place. Many types of public space –quite varied on the face of it. So, it is misleading that something is called the public space as it stands. With all forms of qualifications, the public spaces are those where we move around and interact with other people [8]. The public places are an abstract ideology covering the fields where everyone agrees to interact.

- As urban civility banners the use of public spaces
- These public spaces also serve as the urban commons
- Income, investment, and creation of wealth or revenue is promoted with the help of these spaces.
- The environmental sustainability is enhanced as well by these public spaces
- These urban public spaces are likely to have a significant impact on transport efficiency.
- Public health is also improved with the help of these public spaces
- These public places ensure urban safety.
- Public spaces promote equity and social inclusions.
- The public places promote an age-friendly and gender-friendly environment
- The use of these public spaces promotes citizen involvement in city affairs
- Public spaces are the keys to make great cities.

2.2. Happy public space (HPS)

The definition of urban happiness is emphatically interlaced with social, natural, economic and philosophical thinks approximately and, in settlement with the short trade of methods of life, wishes and propensities, the definition is inside the put together of nonstop alter [9]. So, it’s a set of human beings and framework, be that because it may, there is a well-advanced framework in positioned to assure the well-being, comfort and exchange of thoughts, unmistakable and intangible views of a positioned and the sporting activities finished via way of means of the folks who stay and make use of them. What may be visible via way of means of the eye, heard via way of means of the ear, or a scene it really is an come upon in itself and a reminiscence and as a result making a valid enthusiastic framework, known as a happy city [10]. On the opposite hand, the definition suggests as much as be
comparative to that applied for characterizing well-being, exceptional of life, and, in a sure sense, supportability [11]. More organizations of making happy urban space according table(1)

| organization               | Definition organization                                                                                                                                                                                                 | Domains and indicator                                                                                           |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Happy city                 | The Happy City Approach is associated with the technological know-how of environmental psychology and has resulted from social psychology studies since the 1970’s with Milgram’s look at of the enjoy of living in cities [12]. | Eight principles are key element sociability, comfort, joy, healthy, Equidae, resilience, meaning, belonging. |
| Project of Pub Space(pps)  | Is a nonprofit corporation devoted to assisting human beings create and preserve public areas that construct sturdy communities, Founder through Fred Kent, 1975, Headquarters in New York, United States [8]. | Four qualities: accessible; people are engaged in activities there; the space is comfortable and has a good image; and finally, it is a sociable place. |
| GNHIndex                   | It is a dimension device used for coverage making to growth GNH. The GNH Index is likewise called the GNH Happiness Survey. It consists of the 9 domain names that are in addition supported via way of means of the 33 indicators, 2008, Thailand [13]. | 9 domains Living standards, Education Health, Environment, Community, Vitality Time-use, psychological well-being Good Governance, Cultural resilience and promotion. |
| Cities in Mot Index dimension | The IESE Driving Cities Index for Social Enterprise Improvement and Efficiency is a take a look at the usage of publicly to be had data, a surveyed index 148 cities in fifty seven nations for its 2015 report, fifty five of which might be capital. [14] | 9 indicators, human, capital, social chosen, economy, public management, governance environment, mobility, urban planning, international outreach, technology. |
| Green City Index           | Created in 2009, the Green City Index is a tool to assist towns examine their environmental performance, The advantage of this method is to lessen environmental impacts. [15] | 8 index, west land use, water, building, co2, energy, environment governance, air quality, transport.          |
| Global Comp Cities Circles Sustainability | Circles of Sustainability technique facilitates city growth to apprehend the way to achieve sustainability. It has been used by many cities, amongst them Johannesburg, Melbourne, New Delhi, Sao Paulo and Tehran [16]. | Four domains: ecology, economics, politics and culture. Each of these domains is divided in seven subdomains. |

| table 1: organizations of making happy urban space, By authors |

2.3. Construction wetland

constructed wetlands are man-made wetlands, simulating the functions of natural wetlands, the primary cause of which is water purification. The constructed wetland, a typically constructed ecosystem, was initially developed about forty years ago in North America and Europe to utilize and recover the biodegradation capacity of plants. Possessing the blessings of low production and operating costs as well as its capacity to be used alone or with other systems. Constructed wetlands’ systems are especially suitable for small communities in developing nations where potential health benefits from pathogen removal are considerable [17]. Constructed wetlands for wastewater treatment can be labeled in line with the life shape of the dominating macrophyte, into systems with free-floating, floating leaved, rooted emergent and submerged macrophytes. They can be labeled additionally in line with the hydrology of the wetland and subsurface flow [18]. Constructed wetlands have proved to be an appealing and solid opportunity due to their low cost, and power savings. Also, there may be the gain of multi-cause re-use of the high-quality effluent, self-remediation, and self-adaptation to the encircling situations and environment.[2].

2.3.1 Constructed wetland parks:

Constructed wetlands are increasingly more called as a substitute low-cost, energy-efficient, natural techniques of treating sewage, industrial and agricultural wastes, and storm water runoff at the same time as concurrently supplying the opportunity for numerous benefits[19]. Constructed Wetland Park gives the capability for integration of constructed wetlands into park and leisure systems, the wildlife habitat they offer, their aesthetic values, and the greater quality effluent that they deliver, which can be recycled for panorama irrigation or impounded in an appealing and academic pond of value in attracting wildlife at the same time as also conveying information on wetlands procedures[18].
2.4. New Cities in Egypt

The establishment of latest towns in Egypt changed into accomplished in successive stages main to the emergence of 3 generations of the brand new towns as follows: First generation: sixth October City, Tenth of Ramadan, Sadat City, 15 May City, New Borg El Arab, New Salehia, New Damietta and Touristic Villages, Second generation: Sheikh Zayed City, Oubour City, Badr City, New Noubarya, New Beni Suef and New Minya, and Third generation: Rehab, El Sherouk, New Cairo, New Assuit, Tiba, New Sohag, New Aswan, New Qena, New Fayoum and New Akhmim. Five the simple issues in the back of the introduction of latest towns range in line with the numerous structures and social, monetary and environmental conditions. At the identical time, those towns are taken into consideration as a mirrored image of positive concepts [20].

2.4.1. 10th of Ramadan city

proposed in the late 1970s. Appendix presents a summary of the current situation of the cities in 2010, the time when the strategic master plans studies took place. It share the fact that the industrial activities are the main drivers of the economy and they are located more or less at equal distances from Cairo, one at the East and the other on the West. Its achieved successful industrial development while their population failed to meet the targeted number in the original master plan. Through a review of the basic information of both cities, their current situation and then the proposed vision, objectives and development strategies proposed, a number of observations can be drawn.

- 10th of Ramadan is one of the first New Cities planned in Egypt and have developed over the past 30 years as the largest industrial cities in Egypt (e.g., 10th of Ramadan has about 1400 factories, annual production of more than Billion EGP 75.42, employing approximately 188,166 workers) [20].
- Both city suffer from serious issues related to housing, environment, urban/civic life.

The root causes point mainly at poor planning, implementation and weaknesses in legal/institutional frameworks.

3. Case study 10th of Ramadan constructed wetland park

The main idea of the project is the design and construction of a multifunction landscape project which sustainably combines landscape features and ecological functions.

In this phase, studies have been conducted on several aspects such as design, environmental and economic aspects. The aim of this phase was to instigate potentials and seeks best opportunities. The relation between our site and its surrounding was our major scope of study.

3.1 Design Zoning:

Zoning phase concluded all our previous studies and shed light on land potential and activities that can be made to serve the park. Land was divided into 5 sectors 200m each, the wetland area which is between sector 5 and 3 with consideration of water intake from water treatment plant. Sector 1 and 2 shows the area of the main park which will include most of activities. Design concept was how to convert the site proportion from this static shape to a dynamic form.

4. Research Methodology:

This research aims to achieve the guideline of design (CWP) as a happy public space in order to provide a positive contribution to urban design public parks.

This research consists of four-phase:

- The first phase is Analyzing Theoretical data and Case studies for a happy public space (HPS) to combine Indicators of (CWP) and happy public space (HPS).
- In the second phase, Expert interviews entails observing stakeholders’ and experts’ opinions through two stages: 1st Stakeholder’s interview, 2nd Stockholder’s workshop, and 3rd Questionnaire which concern Built environment, social environment, and economy which contribute to the feeling of happiness.

- The third stage, used (Multiple questionnaires) as a tool for measuring people opinions using google forms (questionnaire form, 2021), the questionnaire is divided into four main core parts, interviewee background, indicators of built environment factors, indicators of social environment factors and indicators of economic factors.

- The fourth phase, Integration Between the first phase and the second phase to achieve an effective Guideline for a happy public wetland park (HPWP).

5. finding and Results
5.1 The first phase
The first phase is Analyzing Theoretical data and Case studies for a happy public space (HPS) and Constricted wetland park (CWP) to combine Indicators of (CWP) and (HPS).

5.1.1. A happy space is set by many factors which are in turn influenced by a variety of indicator

| Built Environmental                                      | Social Environment                                                  | Economic                                                                 |
|----------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------|
| • Facilitate a healthy life                              | • Develop strong social relationships                              | • Achieving the human instinct                                           |
| • livability, felling                                   | • Affiliation of the place                                          | • creative outcome                                                       |
| • comfortable                                           | • Involvement                                                       | • investments                                                            |
| • Helping with long-term growth                          | • Achieving the human instinct                                     | • Realizing opportunities and public resources                           |
| • cultural facilities                                   | • Openness                                                          | • Encouraging economic diversification.                                  |
| • recreation facilities                                 | • Diversity                                                         |                                                                          |
| • aesthetics of place,                                   | • Spread the happiness                                              |                                                                          |
| • Facilitate a healthy life                              | • connectedness & networking                                        |                                                                          |
| • quality of space                                      |                                                                    |                                                                          |

Table 2: Happy space indicator, By authors

5.1.2 Constricted wetland park is set by many factors which are in turn influenced by a variety of indicator

According to the theoretical data and case study analysis has shown that application of constructed wetland parks is a good and economic, Social, and environmental tool to achieve sustainable development goals. These indicators concluded from all the studied projects, as shown in table (3) The more than 20 national and international case studies that has been Analyzed with a specific criteria like (Sydney Park, Shanghai Houtan, Renaissance Park, Bahr El-Baqr Constructed Wetland, Wadi Hanifa … etc.).
5.2. second phase:
In the second phase Expert interviews entails observing stakeholders’ and experts’ opinions through two stages 1st Stakeholder’s interview, 2nd Stockholder’s workshop.

5.2.1 stage 1: Expert interviews, factor list of main issues and problems
stage is an interview with Stockholders and the researcher gathering meeting and describing in a short demonstration about the construction wetland park(CWP) and happy public space(HPS), attending 20p, the outputs of this interview are:

| Issues & problem       | Description                                                                 |
|------------------------|-----------------------------------------------------------------------------|
| Making space           | placemaking inspires people to collectively reimagine and reinvent public spaces as the heart of park. |
| Quality of space       | quality spaces understand how they achieved and designed and meeting the challenges of social, economic and environmental demands. |
| The cost of establishing gardens | How to design with low cost                                                      |
| garden management      | responsible for knowing everything about garden plants, mechanical systems, and landscape structures to be able to provide you the best landscape maintenance services. |
| Outcome                | How to increase the garden's income to spend on itself                        |

Table 4: Constricted wetland park indicator, By authors

5.2.2. stage 2 Expert workshop:
A stakeholder’s workshop was held in Cairo on 6, 7 February 2021. that workshop invited academics, the city management team, designers, residents, researchers, post-graduate students, attendance was more than 80 persons and the output s of this workshop is some proposals table(5)

| Proposals                        | Description                                                                 |
|----------------------------------|-----------------------------------------------------------------------------|
| interesting                      | Different places for social interaction between age groups to raise the level of belonging to the place |
| Network interaction              | Provides an online social network                                            |
| activity                         | Creative activities for all ages                                              |
| More green space                 | The green color gives a sense of comfort in the place                         |
| Leadership and entrepreneur ship | Establishing a different advertisement for the project to attract Leadership and entrepreneur ship |
| Recycling                        | Using recycling in furniture to make difference and save cost                |

Table 5: Expert workshop output, By authors
5.3. Merge first phase & second phase

to combine Indicators of (CWP) and (HPS). the outputs are:

| Dimensions   | Indicators          | Description                                                                 | Reference (based on) |
|--------------|---------------------|-----------------------------------------------------------------------------|----------------------|
| Environmental| Water quality       | a healthy life is improved with the help of water quality in public space   | [18],[15],[6]        |
|              | Comfortable         | Feeling comfortable while using the space (visual -spatial use-...... )      | [8],[19],[12]        |
|              | Energy reducing     | Preserving the natural resources in the surrounding environment            | [18],[3],[19]        |
|              | Culture facilities  | Cultural diversity adds weight and importance to the place                 | [14],[12],[8]        |
|              | Spatial diversity   | Spatial diversity gives a sense of lack of boredom and enjoyment           | [18],[8],[12],[14]   |
|              | More green space    | The green color gives a sense of comfort in the place                      | Work shop            |
|              | Livability          | Accept the place and the desire to sit in it for more time                 | [12],[8]             |
| Social       | Social interaction  | Creating spaces for social interaction                                      | [8],[12],[14]        |
|              | Diversity activity  | The variety of activities helps to didn’t feel bored                       | Work shop, interview |
|              | Enjoy Nature        | Feeling comfortable and merging with nature                                  | [15],[8]             |
|              | Sense of belonging  | A sense of belonging helps preserve the place                               | [18],[12],[13]       |
|              | Active attractive    | The presence of attractive activities creates happiness for those who use the space | [13],[8],[12]       |
|              | Ecology participation| The interference of natural elements in the space gives a sense of comfort | [18],[16]            |
|              | Culture and art interactions | To create a spirit of creativity and diversity among the users of the space | [8],[12],[14]       |
|              | Network interaction | Provides an online social network                                           | Work shop            |
| Economic     | interesting         | Different places for social interaction between age groups to raise the level of belonging to the place | Work shop            |
|              | Creative out come   | Different ideas to increase the income of the park to spend on itself      | Work shop, interview |
Table 6: Indicators of (CWP) and (HPS), By authors based on theoretical, interview, workshop

5.4. Third phase
In the third phase, using Multiple questionnaires as a tool for measuring people opinions using google forms (questionnaire form, 2021), the questionnaire is divided into four main core parts, interviewee background, indicators of built environment factors, indicators of social environment factors and indicators of economic factors. The number people who participated in the survey was 100 and divided as follows:

| Indicator | Description | Source |
|-----------|-------------|--------|
| Tourist attraction | Encouraging different types of park to diversify and attract internal and external tourism | [18],[15],[6] |
| Leadership and entrainer ship | Attract Leadership and entrainer ship gives more opportunities to increase income | Workshop |
| Price of accommodation facilities | The park’s success helps raise its accommodation facilities value | [18],[15],[6] |
| Water Treatment saving | Wastewater desalination and its use in agriculture | [18],[15],[6] |
| Provide job opportunity | Opening new projects creates job opportunities | [18],[15],[6] |

Table 7: The number of people who participated in the survey, By authors

| sample | specialist | architects and professor | Ph.D. researcher | MS.C researcher | post -graduate students |
|--------|------------|--------------------------|-----------------|-----------------|------------------------|
| %      | 20%        | 23%                      | 18%             | 22%             | 17%                    |

5.5. Fourth phase
The results of four phase, aimed to evaluate the stakeholder satisfaction to Evaluate the criteria and indicators in design constructed wetland park (CWPs) as a happy public space (HPS).

55.1 statistical questionnaire
Use the statistical questionnaire conducted as a need of participatory design approach in the context of stakeholder – designer relationship at the design phase

5.5.1.1 The stability coefficients for the indicators
It is clear from the previous table (8) the values of Cronbach’s alpha stability coefficients for the dimensions of the study, all of which were greater than (.70), where the value of the stability coefficient for the Built Environment axis was 0.939. This indicates that if the question of the sample members is repeated again, we get the same response by 93.9%, which is a degree of Very high stability, and the validity coefficient reached 0.969, which is a high degree of reliability indicating a good understanding of the items of the Built Environment axis by the sample members.
- The reliability coefficient of Cronbach’s alpha for the Social Environment axis was 0.973, and this indicates that if the question of the sample members was repeated again, we would get the same response with a rate of 97.3%, which is a very high degree of stability, and the validity coefficient reached 0.986, which is a high degree of credibility indicating a good understanding of paragraphs Social Environment axis by respondents with a percentage of 98.6%.
- The reliability coefficient Alpha Cronbach for the Economic axis reached 0.953, and this indicates that if the question of the sample members is repeated again, we get the same response by 95.3%, which is a very high degree of stability, and the validity coefficient reached 0.976, which is a high
degree of credibility indicating a good understanding of the paragraphs of the axis Economic by 97.6% of respondents.

From the foregoing, the results indicate that it is possible to rely on those obtained opinions, and then adopt the results of characterizing the sample trends.

### Table 8: the values of Cronbach’s alpha stability in the survey, By authors

| Component                | N of Items | Cronbach's Alpha | Validity |
|--------------------------|------------|------------------|----------|
| Built Environment        | 7          | 0.939            | 0.969    |
| Social Environment       | 9          | 0.973            | 0.986    |
| Economic                 | 8          | 0.953            | 0.976    |

5.5.1.2. Evaluate the criteria and indicators

The validity of the factor analysis means the extent to which each paragraph of the survey is consistent with the field to which this paragraph belongs. The extent to which the paragraphs are saturated is measured on the total axis of the scale to which they belong. Factor analysis was used with a focus on some measures such as the adequacy of the sample KMO and Bartlett test and the interpreted variance ratio AVE.

The validity of the internal consistency was tested using the factor analysis test, to find out the most important statements that the axis could contain and with which the test assumptions were verified, in addition to the use of neural networks to determine the relative importance of each paragraph.

- **Built Environment**

By studying the factorial analysis of those items and their representation of the Built Environment axis, the results showed that the sample adequacy test coefficient KMO reached 0.910, which is greater than 0.50. The results also showed the significance of the Bartlett test (Chi Square) with a degree of freedom of 21 at a confidence level of 99%, where the significance of the test 0.000, which is less than the significance level of 1%, which indicates that there is a correlation between the phrases and each other, and therefore the factor analysis test must be conducted. The loading coefficient for each of the axis's paragraphs ranged between 0.613 and 0.935 and all of them were greater than 0.50. Therefore, these paragraphs strongly express the Built Environment axis and that none of these paragraphs can be deleted.

### Table 9: the factorial analysis representation of the Built Environment axis survey, By authors

| Component                        | Component |
|----------------------------------|-----------|
| Comfortable place                | X1.8      |
| More green space                 | X1.9      |
| Culture facilities               | X1.10     |
| Energy reducing                  | X1.11     |
| Livability                       | X1.12     |
| quality to a healthy life        | X1.13     |
| Spatial diversity                | X1.15     |

Kaiser-Meyer-Olkin Measure Of Sampling Adequacy.

| Approx. Chi-Square | 606.657 |
|--------------------|---------|
| Df                 | 21      |
| P. Value           | 0.000   |
| AVE                | 73.735  |

Table No. (10) shows the relative weight of the importance of the paragraphs within the Built Environment axis. It was found that paragraph x1.13 is the most important among the paragraphs of the axis with a relative importance of 19%.
Table 10: the relative weight of indicator, By authors

| Indicator                                | Factor Score | Neural Network Score | Rank |
|------------------------------------------|--------------|----------------------|------|
| Comfortable place                         | x1.8         | 0.173                | 0.130| 6    |
| More green space                         | x1.9         | 0.158                | 0.131| 5    |
| Culture facilities                        | x1.10        | 0.176                | 0.137| 3    |
| Energy reducing                           | x1.11        | 0.119                | 0.135| 4    |
| Livability                                | x1.12        | 0.171                | 0.147| 2    |
| quality to a healthy life                 | x1.13        | 0.181                | 0.190| 1    |
| Spatial diversity                         | x1.15        | 0.179                | 0.129| 7    |

By studying the factorial analysis of those items and their representation of the Built Environment axis, the results showed that the sample adequacy test coefficient KMO reached 0.917, which is greater than 0.50. The results also showed the significance of the Bartlett test (Chi Square) with a degree of freedom of 36 at a confidence level of 99%, where the significance of the test 0.000, which is less than the significance level of 1%, which indicates that there is a correlation between the phrases and each other.
and therefore the factor analysis test must be conducted. The loading coefficient for each of the axis's paragraphs ranged between 0.856 and 0.960 and all of them were greater than 0.50. Therefore, these paragraphs strongly express the Built Environment axis and that none of these paragraphs can be deleted.

Table No. (12) shows the relative weight of the importance of the paragraphs within the Built Environment axis. It was found that paragraph x2.24 is the most important among the paragraphs of the axis with a relative importance of 15%.

| Factor Score | Neural Network Score | Rank |
|--------------|----------------------|------|
| x2.16        | 0.125                | 4    |
| x2.17        | 0.117                | 6    |
| x2.18        | 0.124                | 2    |
| x2.19        | 0.123                | 8    |
| x2.20        | 0.126                | 5    |
| x2.21        | 0.116                | 9    |
| x2.22        | 0.120                | 7    |
| x2.23        | 0.121                | 3    |
| x2.24        | 0.130                | 1    |

Table 12: the relative weight of indicator, By authors

- **Economic**

By studying the factorial analysis of those items and their representation of the Built Environment axis, the results showed that the sample adequacy test coefficient KMO reached 0.913, which is greater than 0.50. The results also showed the significance of the Bartlett test (Chi Square) with a degree of freedom of 28 at a confidence level of 99%, where the significance of the test 0.000, which is less than the significance level of 1%, which indicates that there is a correlation between the phrases and each other, and therefore the factor analysis test must be conducted. The loading coefficient for each of the axis's paragraphs ranged between 0.763 and 0.926 and all of them were greater than 0.50. Therefore, these paragraphs strongly express the Built Environment axis and that none of these paragraphs can be deleted.

relative importance of 15% paragraphs can be deleted.
| Component                                           | Factor Score | Neural Network Score | Rank |
|-----------------------------------------------------|--------------|----------------------|------|
| Leadership and entrainer                           | x3.26        | 0.140                | 3    |
| Creative outcome                                   | x3.27        | 0.153                | 1    |
| Tourist attraction                                 | x3.28        | 0.153                | 2    |
| Recycling Furniture                                | x3.29        | 0.142                | 5    |
| Water Treatment saving                             | x3.30        | 0.151                | 7    |
| Price of accommodation facilities                 | x3.31        | 0.129                | 6    |
| Realizing opportunities and public resources        | x3.32        | 0.153                | 8    |
| Provide job opportunity                            | x3.33        | 0.126                | 4    |

Table 13: The factorial analysis representation of the Economic

Table No. (14) shows the relative weight of the importance of the paragraphs within the Built Environment axis. It was found that paragraph x3.27 is the most important among the paragraphs of the axis with a relative importance of 15%.

![Image](image-url)
6. Conclusion
This research illustrates the value of establishing public parks aimed at increasing the happiness of users of new Egyptian cities. The research proved the important of increasing the public space in new city, especially 10th of Ramadan and achieve the needs of users.
The case study proved from point and view stakeholders who participated in the questionnaire that the constricted wetland park successful way to raise the quality of life in Egypt.
From the theoretical and analytical study shows the needs for further in urbanism and landscape researches to conform with Egyptian environment.
Egyptian cities face significant urban and environment challenges, so it requires to linking scientific research to application and integration visions of stakeholders and specialists to reduce the gap between research and application on the reality.
The research output the guideline table (15) framework for establishing theses projects in Egypt to be integrated with the site co-ordination to achieve development goals.

| Built Environment | weight | Social environment | weight | economic | weight |
|-------------------|--------|---------------------|--------|----------|--------|
| quality to a healthy life | %19 | Social interaction | %15.1 | Creative outcome | %15.5 |
| Livability | %14.7 | Culture and art interactions | %13.3 | Tourist attraction | %15 |
| Culture facilities | %13.7 | Diversity activity | %12.2 | Leadership and entrainer | %13.5 |
| Energy reducing | %13.5 | interesting | %10.3 | Provide job opportunity | %13.5 |
| Comfortable place | %13.1 | Active attractive | %10.3 | Recycling Furniture | %12.8 |
| More green space | %13 | Network interaction | %10.1 | Price of accommodation facilities | %10.7 |
| Spatial diversity | %12.9 | Enjoy Nature | %10 | Water Treatment saving | %9.9 |
| Sense of belonging by activities | %9.9 | Realizing opportunities and public resources | %9.2 |
| Ecology participation | %8.9 |

Table 15: the final relative weight of indicators, By authors

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