I. INTRODUCTION

Communities and governments have now become more concerned with quality of life in general and quality of urban life issues. QOUL indicators have now become a widely spread tool to evaluate the current urban statement, the progress that is being made toward improving it, and the future plans that made to solve its problems. Indicators provide a solid points to understand the community issues from an outcome-oriented perspective. Quality of urban life indicators are assumed to be a valuable outcome of developing efforts. When combining these bits of information, it creates a deep understanding of what is happening in the urban environment and provide an insight into the overall direction. Yet there are not many evident attempts to express this relationship well.

Today Egypt is facing a challenge in creating and developing a new urban communities to move some of the population in its capital Cairo, the city that has one of the highest population density rates which produced a rapid, uncontrolled and unplanned housing.

This challenge isn’t only in construction but it’s in combining...
all development elements to formulate an urban area that has a good level of quality of life and a wise use of resources.

A. Research problem

In the last 30 years, Egyptian government started to develop a new urban communities around Cairo to help solve this problem. Despite of all the efforts that have been made, a gap started to be seen between multiple urban areas, some areas were constructed well and achieved a good level of quality of life for the people who moved there, such as AL Rehab City, and some areas still have low development rate and can't attract enough inhabitants, such as Badr City.

The other issue is, although there is a legal foundation helps directing the housing projects toward achieving quality of urban life, there aren’t any type of structured quality of urban life indicators to evaluate the development process.

B. Research Objectives

The purposes of the research are (1) to outline the quality of urban life indicators, Dimensions and assessment framework, and (2) state the role QoUL indicators play in the Egyptian national development strategy and Cairo vision 2050.

C. Research Hypothesis

Quality of urban life indicators are essential elements when developing a new urban communities, but they have to be (1) measurable and (2) in structured system to evaluate the indicators effectiveness at any development phase.

D. Research Methodology

- Forming a database theory of the concept of the quality of urban life indicators and outline its role and importance in the development process.
- Studying the Egyptian development plan of new cities.
- Deriving a methodology in which we depend on QOUL indicators as an approach to develop new communities.

E. Research Questions

- First, why the quality of urban life Indicators are important part of the urban development process?
- Second, how to benefit from QOUL indicators to set a methodology to improve new urban areas?

F. Research Importance

- There is a theoretical importance comes from concentration on the quality of urban life (QOUL) as an approach for developing new urban areas. This is because all local and International literature agreed upon the importance of linking the urban development process to new issues. The researcher sees that the concept of the quality of urban life, is one of the concepts which has the capacity to help in setting this approach to fulfill development goals.

II. QUALITY OF LIFE (QOL)

Quality of life concept started long ago when Aristotle (384–322 BC) wrote about “how to live well” and “How to have a good life” and how public policy should aim for quality of life. [13] Also, Seth wrote in Marshall and Banister that we must regard the quality of life as an image of the moral end not just the quantity. [7]

Also, In Kamp et al (2003) Szalai stated that quality of life refers to the degree of excellence character of life. A person’s existential state, well-being, satisfaction with life is determined on the one hand by exogenous (objective) facts and factors of his life and on the other hand by the endogenous (Subjective) perception he has of these facts and his assessment on the factors and on his own life of himself.” [7]

A. Quality of Urban Life (QOUL) Definition

The term Quality of Urban Life (QOUL) in general means the quality of the environment that surrounds a person and the wellbeing of the people in this environment. It has two types of assessments of urban living, objective assessment, and subjective assessment.

Levent (2006) defined Quality of Urban life as the level in which urban life perform towards the needs of society. In other words, Quality of Urban life refers to how excellence the urban environment is. [6]
QoUL is affected by many aspects of urban environment including built, natural, economic, and social environments.

Quality of urban life isn't a static definition. Place, time, society, and value hierarchy contribute to the definition. In other words, what people prefer and feel fulfilled with can be defined within the socio-cultural aspect of the definition. Of course, there are shared elements of quality of life among all people and cultures like health and education, but every cultural group have their level of satisfaction about their way of living. For Housing, people tend to be satisfied with the settings that enhance their state psychologically. Thus, they tend to prefer a healthy, well-planned, and supportive environment.

Most of new urban planning theories started in late 20th, New Urbanism, Urban Village, Smart Growth and other principles of contemporary theories of urban planning aimed at (A) increasing Quality of Urban life while constraining the urban sprawl and (B) at planning new urban communities that meet the needs of the people in there successfully.

These theories borrow from the best of earlier work and blend traditional and contemporary design principles in order to design new urban communities that serve the need of inhabitants. In the following table we will present the QoUL dimensions in New Urbanism and Smart Growth. [9]

<table>
<thead>
<tr>
<th>QoUL Dimension</th>
<th>NEW URBANISM</th>
<th>Smart Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>No principles dealing directly with environmental issues.</td>
<td>Preserve open space and critical environment areas. Strengthen and direct development toward existing communities.</td>
</tr>
<tr>
<td>Social</td>
<td>Provide civic building and public gathering places. Provide a range of parks. Create a range of housing types. Reinforcing a safe and secure environment.</td>
<td>Encourage community and stakeholder collaboration. Create a range of housing opportunities and choices.</td>
</tr>
<tr>
<td>Psychological</td>
<td>Architecture and landscape should be linked to context. Preserve historic areas.</td>
<td>Foster distinctive, attractive communities with a sense of place.</td>
</tr>
<tr>
<td>Economical</td>
<td>No principles</td>
<td>No principles</td>
</tr>
<tr>
<td>Political</td>
<td>Control evolution</td>
<td>Make development decisions predictable, fair and cost effective.</td>
</tr>
</tbody>
</table>

New Urbanism, also called Neotraditional Design, is an urban design theory developed in late 1980s, it’s based on the concepts of the traditional town and neighborhood design (TND). It aims to design cities, neighborhoods and buildings that create high level of QoUL while protecting the natural environment. It made set of principles to put in mind when working on land use, transportation, street network, public spaces, and housing types, and offered an alternatives to urban sprawl.

Example of new urbanism is seaside, a coastal community in Florida, the planning and design project was one of the first publicized realizations of new urbanism principles, it achieved connectivity, walkability, diversity, sustainability, and it was pedestrian friendly. [9]

Smart Growth is a recent urban design theory that presents contemporary principles Identified by new urbanism and sustainability terms; it is a development that serves the economy, the community, and the environment. It changes the terms of the development debate away from the traditional growth/no growth question to how and where should new development be accommodated.

Smart growth principles are (1) Mix land Uses, (2) taking advantage of compact building design, (3) Create range of housing choices, (4) Create walkable neighborhoods, (5) preserve open spaces, (6) provide variety of transportation choices, (7) make development decisions predictable, fair, and cost effective, and (8) Encourage community and stakeholders to collaborate in the development process. [9]
B. Quality of Urban Life (QOUL) Indicators

Within Every area and neighborhood, Quality of Urban life is affected by a number of parameters:

The natural environment (Environmental Dimension): which means accessing natural landscape and clean water and air. Also, the parameter includes minimizing energy consuming and preserving resources.

The Built environment (Physical Dimension): which means the physical environment, neighborhoods are mixed used, compacted, well interconnected streets, well defined open spaces, structured and planned houses and walkable streets.

Infrastructure and mobility: which means well-structured infrastructure and cars use alternations provided to reduce pollution and create a high QOUL.

The Social Dimension: which means planning housing for everyone and trying to achieve social justice through architecture and construction, designing affordable housing, services, low cost activities and facilities within the built environment, and minimize the gated neighborhoods number although it has a higher level of security and privacy in order to promote the integration of different housing types. [8]

The Psychological Dimension: which means preserving heritage, achieving community identity, creating socially integrated public spaces in order to increase users QOUL satisfaction.

The Economical Dimension focus on the part that describe the economic activities in the house, neighborhood, and community

The Political Dimension it includes the city policies that will flourish the concept of QOL and QoUL the extent of these policies. [4]

### Table II

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Objective Indicators</th>
<th>Subjective Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical and Mobility</td>
<td>Residential density. Housing vacancy rates. Distance to transit stop. Housing, commercial, and educational buildings rate.</td>
<td></td>
</tr>
</tbody>
</table>

C. Quality of Urban Life (QOUL) Assessment framework

In addition to the objective side of assessment, Scholars stress that subjective definition to one's lifestyle is as important as the objective parameters. Facilities, public spaces, and setting utilized for recreational purposes should be included besides the quality of housing and services to the extent in which residents will interact with the built environment regularly. Therefore, the framework that we must use in QoUL studies and researches will include two phases:

- The quality of the built environment.
- People's satisfaction of their environment.

We can test the two phases through three of the previous Indicators: (1) the Built Environment Indicator, (2) the Social Indicator, and (3) The Psychological Indicator. [7]
The QOUL assessment framework evaluates the existing residential buildings, services, and Roads, and Infrastructure elements of the city or the area that were categorized according to diversity, architectural features, accessibility, and Greenspace features. This framework is using both objective and subjective information, through collecting data from authorities, observing, and measuring the current situation, and through collecting inhabitant’s positive and negative opinions on their built environment. [12]

### III. DEVELOPMENT OF NEW URBAN COMMUNITIES IN EGYPT

As mentioned before, Quality of Urban Life framework includes 2 types of indicators, subjective and objective, and two levels of assessments, the individual level, and the community level.

<table>
<thead>
<tr>
<th>TABLE IV</th>
<th>INDICATORS AT INDIVIDUAL AND COMMUNITY LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>criteria</td>
<td>AT THE INDIVIDUAL LEVEL</td>
</tr>
<tr>
<td>subjective</td>
<td>Life satisfaction, a sense of happiness, Etc.</td>
</tr>
<tr>
<td>objective</td>
<td>Measurement of functional situations such as education, skills, Etc.</td>
</tr>
</tbody>
</table>

The challenge that is facing Egypt in general and the city of Cairo specifically right now is that the development of the new urban communities isn’t going at the required rate and it doesn’t achieve the level of quality of life on economic, Social, Environmental and Urban level, at a national level, issues still increase due to the increase of population and the decrease on occupied land. In this context, the Egyptian Government made the national strategic plan 2050 to deal with these issues by supporting new urban communities, providing a climate that attracts both inhabitants and development, creating new business, financial and educational centers that attract residents, and establishing investment and tourist centers to stimulate tourism and economic activities.[10]

<table>
<thead>
<tr>
<th>TABLE V</th>
<th>DEVELOPING NEW COMMUNITIES CHALLENGES IN EGYPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial</td>
<td>CHALLENGE</td>
</tr>
<tr>
<td>1</td>
<td>Almost 95% of the Egyptian population live on 5% of the land.</td>
</tr>
<tr>
<td>2</td>
<td>The north part of the Nile valley needs to be urbanized</td>
</tr>
<tr>
<td>3</td>
<td>The Expansion of houses over agricultural areas</td>
</tr>
<tr>
<td>4</td>
<td>The difficulty in directing urban development and growth from Nile valley into the desert</td>
</tr>
<tr>
<td>5</td>
<td>Lack of quality of urban life in new cities because of the lack of services</td>
</tr>
<tr>
<td>6</td>
<td>the adaptation of new policies to develop new urban areas that consider the different indicators of QoUL.</td>
</tr>
<tr>
<td>7</td>
<td>Eradicating unsafe areas which threatens their inhabitants’ lives.</td>
</tr>
</tbody>
</table>

![Fig. 7. population census in Cairo](image)

![Fig. 8. Approximate percentage of Areas in Egypt](image)
A. Cairo Vision 2050

Egypt is facing a huge population problem specially in Cairo. The capital of Egypt has 23 million inhabitants and expected to have 30 million by 2050, that makes Cairo facing several problems (1) Informal urban development whether it is safe, unsafe or unplanned areas (2) High density in inner city, (3) Environmental deterioration, and (4) Traffic congestion. [1]

Fig. 9. Problems and challenges facing [1]

The main concept of Cairo vision 2050 is redistributing the huge population in CG and develop the new urban communities to be attraction centers to residents. The vision has 3 development axes.

- The first one is Cairo – Suez development axis which contain the physical development of the built environment in eastern Egypt and toward Sinai Region.

- The second is the western axis which will include the development toward western desert, and it focuses mainly on 6th October city by establishing new Airport and tourist centers to train professionals in tourism sector, and creating the new 6th October city as extension to the original one.

- The third is the agricultural axis which focuses of increasing the agricultural land toward Matrouh City, to preserve green areas and develop agricultural activities. [1]

B. Components of Cairo Vision 2050

The vision of Cairo 2050 has 3 initiatives “GGC” which means Global, Green and Connected.

1- Global is the key word that describe the goal of making Cairo the gate of Africa and the best middle east capital, a regional and focal point for politics, tourism, economy, and administration.

2- Green means eliminating slums, increasing the green areas and public spaces until achieving the international standard, and having pedestrian paths.

3- Connected mean to Cairo being socially connected, physically connected by structure a well-connected road networks and public transportation, and technologically connected. [1]

C. Increasing QOUL in Cairo Vision 2050

The vision divided into 2 stages, (1) Dealing with the urban fabric inside Great Cairo and (2) Developing new urban communities.

To help dealing with the complexity of the urban mass in Cairo, a categorization has been done to divide Areas into three types. (A) Planned Areas, (B) Unplanned Areas and (C) Unsafe Areas.

• Planned Areas: to preserve planned areas regulations and building conditions has to be set.

• To deal with Unsafe areas, four degrees of unsafety has been set, (1) Areas that are extremely dangerous to people, (2) areas that are structurally unsafe, (3) Area that are dangerous to health of its dwellers and (4) Areas with no tenure documents.

Strategy towards unsafe areas is providing safe alternatives for residents whether at the same places or in other location based on consultation with inhabitants.

• Unplanned Areas: Illegally planned, has very high density, and lack of basic services, accessibility, and connectivity with planned areas. [2]

The strategy towards these areas is Increasing accessibility through Roads and corridors with minimum demolition, create alternative housing units for inhabitants within the same area or nearby, and the alternative should be before moving people out, enabling security of tenure in the area, and providing services. [2]
D. Urban development in Cairo Vision 2050

The urban area in Cairo can be divided into 3:

Main agglomeration: represents 68% of Cairo total area, divisions of great Cairo and Giza, especially urban areas on the Nile and Ring road, Governorate of Alsalam and Shubra El-Kheima from the north and south. It reached 131980 Feddans and it’s highly dense, it has almost 12.2 million residents to represent more than 75% of the total population, the total density of the main urban mass is 92 residents per feddan.

Villages and Cities represents 6% of Cairo total area, it includes villages and small agricultural areas outside the main urban area, it occupies the south west and the North West of Great Cairo.

New Urban Communities: They represent 26% of Cairo total area, it includes new urban communities established in the outskirts of the main agglomeration such as Al Sherouk City, Badr City, Obour City and New Cairo in the East. Sheikh Zayed and 6th October in the West and the 15th of May in the South. The average of total density in these areas is 31 residents per feddan.

The urban mass in Cairo continued to expand to contain the increase of population growth. The Cairo urban area reached about 191469 Feddans which is 6 times the area of the same region in the fifties. And double in the eighties. The urban development strategy includes development new urban communities as urban centers to attract people and careful intervention for areas in the main area of Cairo. [2]

The aim for Cairo planning is to create multipolar centers with polycentric poles. So, the main urban mass that used to be the only center in Cairo will be supported through new attracting centers in the new urban communities. Also, the areas between the new urban communities and main urban mass will be interfacial buffer zone that allow controlling the expansion of the main areas in GC.

The Cairo plan also aims to improve the quality of life for its inhabitants through creating sustainable districts and mixed-use buildings and utilizing low density areas and prepare for the next expansion for the next 100 years.[11]
Fig. 17. constituents of Cairo land use in 2030 [2]

The Cairo vision 2050 aims at increasing the area of green space in the empty and desert land, trying to establish new urban communities and cities in the empty land and not in the agricultural area, Doubling the size of the residential areas, and increasing the commercial, industrial and educational areas through creating multipolar areas. [2]

The aim for Cairo planning is to form a multipolar areas with polycentric poles. So, the main urban mass that used to be the new urban communities will be independent centers that will play a vital role for economic, manufacturing, and social activities. This will also Include residential activities, economic centers and recreational activities that will increase the level of quality of life. There communities will contain about 9 million inhabitants and specialized districts in every field, they will be linked through housing uses, transportations and roads, and economic activities to support their connectivity as integrated communities for quality living. [2]

Fig. 18. four axes to improve the urban fabric and four strategies for development. [2]

IV. DISCUSSION AND CONCLUSION

By presenting the Cairo 2050 development plan and QoUL indicators, a new approach to design new urban communities has emerged. This approach depends on an objective measure of the quality of life in the built environment.

The QoUL approach can be divided into three phases as follows:

1. The first stage is the assessment of the current situation by collecting and analyzing objective information and data that is available through official authorities and channels, and the subjective information that comes from the opinions of the people who live or concern about living in the area this process is made to create a deeper and comprehensive understanding of the challenges facing the development process at present.

2. The second stage is defining goals and priorities: The QoUL approach proposes defining development goals through four Dimensions, the urban dimension, the economic dimension, the social dimension, and the environmental dimension. And defining targeted areas by dividing them into sectors according to their challenges. With it, and through these fields and sectors, short, medium, and long-term development strategies can be identified. and through these strategies, concrete projects can be determined and implemented within a specific time frame.

3. The third stage is the evaluation of the development process: this is done by measuring the level of quality of urban life through objective and personal indicators at the community level and the individual level to determine the next step for urban development.

4. QoUL approach has a high focus on advancing green areas and makes sustainable solutions to urban development.

5. QoUL approach makes it necessary to set a coordination process between different sectors and decision-makers

6. Cairo 2050 vision aims to reduce the pressure on Cairo areas and move people towards new communities; also it aims towards achieving a high level of QoUL.
AUTHORS CONTRIBUTION

Omar Sayed Taqi wrote the manuscript with support from Ahmed Hosney Radwan and Mohamed M. Abdelaziz Farid.

Omar Sayed Taqi, Mohamed M. Abdelaziz Farid and Ahmed Hosney Radwan conceived of the presented idea.

Omar Sayed Taqi developed the theory and performed the data collection.

Omar Sayed Taqi and Ahmed Hosney Radwan set the methodology of the research.

Ahmed Hosney Radwan and Mohamed M. Abdelaziz Farid verified the analytical methods.

Omar Sayed Taqi and Ahmed Hosney Radwan provided the resources necessary for the research.

All authors discussed the results and contributed to the final manuscript.

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Basic format for books:
[7] Furlan, Raffaello. (The Quality of Urban Life (QOUL) of New-Salata's Neighborhood in Qatar, 14-22 TRANSIT ORIENTED DEVELOPMENT INTERFACE WITH EXISTING CITY FABRIC IN QATAR. Qatar

Title Arabic:
أهمية مؤشرات جودة الحياة العمرانية في تنمية المجتمعات العمرانية الجديدة في القاهرة

Arabic Abstract:
بعد مفهوم دقة الحياة أحد المفاهيم التي لاقت اهتماما كبيراً من الباحثين مؤخراً، ودقت مفهوم دقة الحياة العمرانية أحد أجزاء مفهوم دقة الحياة التي وصفت العلاقة المتبادلة بين البيئة المدنية وصحة الإنسان. يركز البحث على موضوع، الأول هو مؤشرات ومعايير دقة الحياة العمرانية حيث يعتمد على نوعية من التقييمات: أولاً التقييم الموضوعي لبيئة المدنية حول الإنسان، وثانياً التقييم الذاتي للفرد، وتختلف المستوى جودة حياة الإنسان الموضوعي في الاعتقاد عند تصميم المجتمعات العمرانية الجديدة في القاهرة، نحو التعامل مع المناطق غير المرتبطة بالسكن. يوضح البحث طرقاً لربط الموضوع مع بعضها البعض، من خلال منهجية تهتم معاً مع المعايير والتعريفات الخاصة بمؤشرات دقة الحياة العمرانية وتوضح أهمية تلك المؤشرات في عملية التنمية العمرانية، وثانياً من خلال استعراض رؤية مصر التخطيطية 2050 لم تقدم كيفية تأثير مؤشرات دقة الحياة العمرانية على طريقة تصميم المجتمعات العمرانية الجديدة حيث يطرح البحث كيفية تعاون ومشاركة للتعامل مع النماذج التي تواجه المصممون عند حل نماذج الإنسان في مصر.