



Factors Affecting the Residents' Perception of the Development of Burullus Lake in Kafr El-Sheikh Governorate

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ABSTRACT

This research aimed to study the factors affecting the residents' perception of the development of Lake Burullus in Kafr El-Sheikh Governorate. Data were collected from a total of 855 respondents through a personal interview questionnaire. The results indicate that many areas after the development of Lake Burullus still witness clear deprivation in all services and a delay in the development of its human, natural, and economic resources, which ultimately led to poor life quality. Evidence provided was the lack of all the services that the study dealt with, even the population's main needs for their living, such as health facilities, educational services, and the low social level of many of the population. This is mirrored in the lack of household participation in sewage and communications networks and was evident in their rejection of the quality of their lives by choosing representatives for them. Although they cast their votes, the residents of the region felt the futility of participating in decision-making through these deputies due to their lack of a sense of social responsibility toward the voters. Studying the problems and deficiencies in the services that people suffer from would provide solutions to improve their living standards.

INTRODUCTION

Kafr El-Sheikh governorate is located between the two branches of the Nile River in the northern part of the Delta. It is bordered to the north by the Mediterranean Sea with an extension of 100km; to the south by Gharbia governorate; to the east by Dakahlia governorate, and to the west by Al-Rashid Branch with an extension of 85km, and its area is 3748 square kilometers (**Wikipedia, 2022**). Kafr El-Sheikh governorate enjoys a diversity of natural life due to the diversity of environments and landscapes and the diversity of the topography of the land. The natural environments in the governorate can be classified into three main types: agricultural and urban environments, coastal environments, and wetlands, each of which is unique in what distinguishes it from animal life, plants and its own biodiversity. One of the most important features of the natural environment in the governorate is the Burullus Nature Reserve (**Department of Environmental Affairs in Kafr El-Sheikh Governorate, 2008**).

The lake represents 88% of the area of the reserve, which is one of the largest lakes in the Republic in terms of area and production. Lake Burullus is located within the borders of the governorate, with an area of 120,000 feddans and is connected to the Mediterranean Sea by the Burullus strait harbor (bogaas), which has a width of 44 meters. It serves more than 5 thousand families, equivalent to 25% of the citizens of the governorate, most of whom work in the fishing craft, and it is the first in fish production at the level of the Republic, with a production of 56 thousand tons annually. The people also extract salt from the salt marshes and exploit the reeds scattered in the lake in some industries, such as roofs and fences (**Department of Environmental Affairs in Kafr El-Sheikh Governorate, 2008**).

According to population estimates, the majority of the governorate's population in 2015 lived in rural areas. Of the estimated 3,172,753 people residing in the province, the urbanization rate was only 23.1%, with 2,441,246 people living in rural areas compared to only 731,507 people in urban areas (**Central Agency for Public Mobilization and Statistics, 2015**). The population of the governorate was about 3,362,185 in 2017 AD, according to the estimated census of the Central Agency for Public Mobilization and Statistics in Cairo (**CAPMAS, 2019**).

Most of the governorate's population is concentrated in scattered towns and villages along the Nile River; they also inhabit some coastal areas, and houses are usually built close to each other, so that they resemble villages or hamlets, according to the number of these dwellings by taking advantage of the limited spaces and preserving agricultural lands. These cities and villages are also located near agricultural environments, wetlands or coastal environments, and thus we find that they overlap with their surroundings and share their elements with the surrounding environments, thus some intrusive plants grow in the gardens and along the streets (**Department of Environmental Affairs in Kafr El-Sheikh Governorate, 2008**).

Most families in Kafr El-Sheikh live in family gatherings that adhere to customs and traditions similar to tribal society, and some families live in one house that brings together parents and children and has its own character (**Muhammad, 2006**).

Population conditions are among the main indicators of economic and social development. Poor and marginalized communities and families often suffer from a lack of basic utility services, as providing citizens with basic social services (facilities, education, health, etc.) is vital and has a profound impact on the quality of life for the individual (**Rafiq, 2006**).

The governorate is exposed to many environmental problems, the most important of which are: solid waste resulting from population activities, which increases with the increase in population and their needs for more services as a result of economic conditions and social development in addition to the industrial waste resulting from industrial activities, whether solid or liquid, which in turn will be a burden on the authorities responsible for solid waste management. As for the liquid waste, it will be a

burden on the sewage stations; these wastes may be untreated, which causes risks to treatment plants and thus leads to insufficient treatment, which in turn leads to pollution of waterways. Among the pollution sources, the following issues were recognized: the noise resulting from the spread of workshops within the residential block and the damages they cause; air pollutants that are emitted from fuel burning in various factories, especially with the lack of proper environmental management within these facilities, either due to economic conditions or lack of environmental awareness among those responsible for managing these facilities; urban sprawl on agricultural land; the rise in the groundwater level and its threats to residential areas and old facilities; the exacerbation of the sewage problem due to the continuous urban inflation, and its disposal whether on groundwater or on waterways without treatment (**Hager *et al.*, 2021**).

Lake Burullus is considered an integrated ecosystem, exposed to a lot of quantitative changes, such as drying, overfishing, and siltation of strait harbors (bogaas). In addition to other types of pollution, the most prominent of which is the pollution resulting from the discharge of sewage water of various types into the lake from five Egyptian governorates, which some studies estimate at about 652 million cubic meters annually through the Bahr al-Baqar drain, Faqous, Awlad Hammam, Ramses, al-Serw, and al-Matariyya pumping stations, Faraskour in addition to agricultural waste, about 42 companies pour fertilizer and pesticide residues into Lake Burullus (**Mohamed *et al.*, 2017**).

Drying is one of the problems that led to a decrease in the amount of water available for fishing. Estimates of the area that was drained vary according to different sources. Where some studies estimate it to be about 75 thousand acres, as the area of the lake has become about 15 thousand acres only, and the drying resulting from the urban expansion of the state, such as the construction of roads and others, or plant cultivation, in addition to the encroachments of the people (**Saber *et al.*, 2004; Mohamed *et al.*, 2017**).

In addition, the Egyptian government recently implemented the Burullus Rehabilitation Project, which included dredging the entry point, ordering the protection on both sides of the entrance, the side protection on the northwest side of the lake, and the radial canal at the entrance site (**Hamed, 2022**).

Therefore, the research aimed primarily at studying the factors affecting the residents' perception of the development of Lake Burullus, and this goal can be achieved through a set of the following sub-objectives:

- Identifying some of the personal, social and economic characteristics of the respondents.
- Determining the total degree of the respondents' perception of the development of Lake Burullus.

- Studying the correlations between the total degree of the respondents' perception of the development of Lake Burullus and some independent variables studied.
- Studying the effect relationships between the total degree of the respondents' perception of the development of Lake Burullus and some independent variables under study.

STUDY AREA

The Burullus Center is located on the Medfiterranean coast in the far north of Kafr El-Sheikh governorate in northern Egypt. It includes Lake Burullus entirely, which is the second largest lake in terms of area in Egypt, and in the center are three cities: Baltim City, Baltim Resort and Burj Al Burullus. It is bordered to the north by the Mediterranean Sea, to the south by the center of Hamoul and Lake Burullus, to the east by Dakahlia Governorate, to the west by Lake Burullus and the center of Sidi Salem (Wikipedia, 2023).

MATERIALS AND METHODS

Procedural definitions

Respondents' perception of the development of Lake Burullus

In this research, awareness of the respondents' of the surrounding environment is known from the developmental works taking place in Lake Burullus; understanding them, giving an explanation for them, identifying their positives and negatives, and their impact on their living conditions and the surrounding environment.

Research hypotheses

- There is a significant correlation between the total degree of the respondents' awareness of the development of Lake Burullus and some of the independent variables studied, and this hypothesis is tested in its zero form.
- There is a significant effect relationship between the total degree of the respondents' awareness of the development of Lake Burullus and some of the independent variables studied, and this hypothesis is tested in its zero form.

Comprehensiveness and sample

The comprehensiveness of this research is represented by all residents of Burullus Center in Kafr El-Sheikh governorate, whose number is 168,483 individual.

Due to the poor conditions of the roads, most of them are dirty and agricultural roads, whose conditions are completely bad in the winter, and it is difficult to use them for traveling because of the rain, conflicting data, and the difficulty of obtaining data, whether from the concerned government agencies or from the residents in the center. A random sample was taken, and it consisted of 855 respondents overall.

Data collection and analysis method

The data were collected through a personal interview questionnaire. After completing the questionnaire forms, they were reviewed and made sure that they fulfilled

all their items, then they were emptied into pre-prepared tables, followed by tabulating the data in tables for discussion, using a number of statistical methods represented in percentages, the arithmetic mean, the standard deviation, the simple correlation coefficient of Pearson, the coefficient of multiple correlation, (T) test, (F) test and stepwise regression in order to describe and analyze the findings of the study using the SPSS statistical analysis program.

RESULTS AND DISCUSSION

First: the personal and socio-economic characteristics of the respondents

The results presented in Table (1) indicate that the age of the respondents ranged between 15- and 65 years, with an average of 31.28 years and a standard deviation of 11.76 years. The research results indicate that 59.6% of the respondents represented the largest percentage, with an average age of less than 32 years. This indicates that the age group is young, as they demand more equitable opportunities in their societies; youth can be a positive force to drive development when they are provided with the knowledge and opportunities they need. In particular, youth must acquire the education and skills necessary to contribute to a productive economy, and they need access to a labor market that can absorb their capabilities in the labor force.

From the results presented in the Table (1), it was found that 90.9% of the respondents were men, which is the category responsible in the study area for decision-making, given that it is a rural environment, with an average of 1.09 and a standard deviation of 0.29.

It became clear from the results that 16.5% of the respondents are illiterate; 9.5% of the respondents can read and write, and 0.3% has only basic education (elementary school stage and middle school), with an average of 7.53 and a standard deviation of 4.57. The rise in these percentages does not represent an advantage here but rather an indicator of an imbalance in some aspects of the educational features of the population of the region, and this may be due to several factors, including:

The inability of educational services, their scarcity, and their increase compared to the population increase, whether these services are related to buildings or teaching staff and the requirements of the quality of education in addition to the poor distribution of these services, the high rate of illiteracy among the population, the low standard of living, the high dropout indicators, which represent one of the tributaries of illiteracy, and the increase in the percentage of the population who knows the alphabet to some extent.

While it was found that only 30.2% of the respondents had pre-university education (secondary), this indicates the keenness of some to obtain a certificate as a result of the poverty of the environment, which prompted the population to enroll in education early in order to obtain a job in the government or private sector or to emigrate abroad.

Table 1. Distribution of the respondents based on their personal, social and economic characteristics

Category	Number	%
1- Age:		
Lower category (less than 32)	510	59.6
Middle category (32–48)	258	30.2
Higher category (more than 48)	87	10.2
Total	855	100
2- Sex:		
Male	777	90.9
Female	78	9.1
Total	855	100
3- Education level:		
Illiterate	141	16.5
Read & write	81	9.5
Elementary school stage	153	17.9
Middle School	192	22.4
Pre-university (Secondary)	258	30.2
Collegiate	30	3.5
Total	855	100
4- Marital status		
Single	393	46.0
Married	456	53.3
Divorced	3	0.4
Widower	3	0.4
Total	855	100
5- Number of Children		
Lower category (less than 4)	627	73.3
Middle category (4–7)	207	24.2
Higher category (more than 7)	21	2.5
Total	855	100
6- Average monthly income		
Lower category (less than 1660)	174	20.4
Middle category (1660 – 2330)	510	59.6
Higher category (more than 2330)	171	20
Total	855	100

Source: computed from sample data.

The results in Table (1) of marital status indicate that the percentage of unmarried people is 46.0% of the respondents, which is not a small percentage for a society in which marriage is distinguished at an early age, whether for men or girls, and this percentage is due to the high dowry, and the high other costs of marriage resulting from the customs and traditions followed, the high cost of living and the difficulty of providing housing, high unemployment rates, high education rate for females, especially in urban areas,

preoccupation with work or job by the girl and dissatisfaction with the one who proposes to her (the girl goes out to work), adding to the decline in the wages that youth receive.

The results of Table (1) indicate that the number of children ranged between 0 & 10 children, with an average of 1.97 children and a standard deviation of 2.32 children. Whereas it was found that, 73.3% of the respondents have less than 4 children, and their number is 627 out of a total of 855 respondents since 393 are unmarried respondents, as shown in the results of the marital status, and that the remaining 234 do not have children yet, while 24.2% of the respondents have 4- 7 children.

Second: satisfaction with the health condition

The research results in Table (2) indicate that when the respondents were asked about the connection of their homes to the sewage network, it was found that 80.4% of the respondents had homes with no connection to the sewage network. This contributes to environmental pollution, especially since the remaining part depends on a traditional network, most of which is built by the residents' own efforts. It was observed during the field study that most traditional networks dump their waste in agricultural drains or in collection ponds that do not accommodate the daily expenditure of the population. Consequently, it overflows on its sides and impedes movement within the streets of the villages. They also constitute foci for the gathering of various insects, and they represent areas of imbalance in the environment of the Egyptian countryside in general and the study area in particular. The reason why the houses are not connected to the sewage network is that they have not yet been included in the plan to build and develop the Egyptian village.

While the research results in Table (2) show that when the respondents were asked about their intake of any type of protein (meat , chicken or fish) during the week of collecting the study data, it was clear that 88.1% of the respondents agreed that they receive protein food continuously during the week. This is due to the fact that the region is located in the vicinity of a water body that is considered one of the most important Egyptian fisheries in addition to the work of the inhabitants in the southern outskirts of its villages in the fields of agriculture and animal husbandry. Their nutritional behavior was reflected in their strong benefit from the products of the natural environment. Therefore, the population almost always benefits from a large percentage of both animal and vegetable protein.

Table (2) shows that when the respondents were asked about the availability of a health facility in their village, 70.5% agreed that there was a health facility in their village. Moreover, the results indicate that when asked about their complete reliance on following up on family health conditions in government health facilities, 62.1% of the respondents agreed to rely on it. While, 7.9% disapproved of being dependent on it because there are no permanent doctors in the health unit. They added that medical units are not supported with adequate tools and services to serve patients, and the respondents pointed to a lack of interest in health units due to the lack of health facility in the village

and the spatial distance of other health facilities, thus they resort to going to hospitals and private clinics.

The data presented in Table (2) show that, the age of marriage for girls in the village ranges between 15 & 30 years, with an average of 18.4 years, and a standard deviation of 2.39 years.

Table 2. Distribution of the respondents based on their satisfaction with the health condition

Category	Number	%
1- Connecting the house to the sewage network		
Yes	168	19.6
No	687	80.4
Total	855	100
2- Eating any type of protein (meat - chicken - fish) during the week of conducting the study		
Yes	753	88.1
No	102	11.9
Total	855	100
3- Availability of a health facility in the village		
Yes	603	70.5
No	252	29.5
Total	855	100
4- The dependence of the respondents on government health facilities to monitor the health conditions of the family		
Yes	531	62.1
No	324	37.9
Total	855	100
5- The average age of marriage for girls in the village		
Lower category (less than 20) year.	627	73.3
Middle category (20 – 25) year.	225	26.3
Higher category (more than 25) year	3	0.4
Total	855	100
6- Women monitor their reproductive health during pregnancy		
Yes	633	74
No	222	26
Total	855	100
7- Suffering of the respondent from any disease		
Yes	249	29.1
No	606	70.9
Total	855	100

Source: computed from sample data.

It was clear from the respondents' answers displayed in Table (2) that, when the respondents were asked about women's follow-up on their reproductive health during their pregnancy, the field study data showed that 26% of the mothers in the region do not consult doctors for their reproductive health. This indicates low health awareness among mothers, reliance on traditional medicine, and a low percentage of income expenditure on health affairs. Moreover, this shows that, only 74% are those who follow up during their pregnancy with specialized doctors, whether in private clinics or in the health unit.

Besides, when the respondents were asked about their suffering from any diseases, it was found that 29.1% of the respondents suffer from chronic diseases, such as high blood pressure, diabetes and kidney disease.

Third: satisfaction with the educational level in the village

The research results in Table (3) indicate that, when the respondents were asked about having children in education, it was found by 62.8 that they do not have children in education, as 387 of them were respondents who were not married at all; this is evident from the results of the marital status. While, the other fifty respondents either have children who have dropped out of education in order to go out to work and help with living expenses, or they are married and do not have children.

While, it was found from the research results in Table (3) that, when respondents were asked about the availability of schools close to their homes, 81.1% of the respondents agreed that there are schools close to their homes.

Additionally, it became clear from the research results (Table 3) that, when the respondents were asked about the extent of their conviction in continuing their children's education, it was found that 14.7% of the respondents were not convinced of their children's continuing education. They added that they are satisfied with them as a source of increasing the family's income, resulting from the large number of its members and the poor income. In addition to the high rates of unemployment among young people with various qualifications, in light of family circumstances and the inability of successive governments to solve them and find job opportunities for these young people, parents prevent their children from continuing their education. For the 85.3% of the respondents, they were convinced of continuing their children's education; this is due to the high indicators of illiteracy within the patriarchal structure of the study community. Therefore, parents try to fill these gaps in their children's lives by continuing their education with the hope of obtaining governmental or private jobs.

It was found from data presented in Table (3) that, when the respondents were asked about the presence of children who had dropped out of education, it turned out that the percentage was 16.1%. Since there is an imbalance within the educational field in the literature on the relationship between students, teaching staff, and school administrations, this caused the relationship between the teacher and his students to deteriorate and many students to flee from school. In addition, they sometimes drop out in search of work and contribute to the cost of living.

Data in Table (3) reveal that, when the respondents were asked whether they have working children, it was found that 84.6% do not have children who work (723 respondents) since 387 of the respondents are unmarried. For the rest 336, some of them have young children, or their children have not found any work until now due to the high unemployment in the village.

Table 3. Distribution of the respondents based on their satisfaction with the educational level in the village

Category	Number	%
1. Having children in education		
Yes	318	37.2
No	537	62.8
Total	855	100
2. Availability of schools close to the residence		
Yes	693	81.1
No	162	18.9
Total	100	100
3. The respondent is convinced to continue educating his children		
Yes	729	85.3
No	126	14.7
Total	855	100
4. Having children who have dropped out of education		
Yes	138	16.1
No	717	83.9
Total	855	100
5. Having children who work		
Yes	132	15.4
No	723	84.6
Total	855	100
6. The opinion of the respondent on the educational curricula		
Appropriate	468	54.7
Not appropriate	387	45.3
Total	855	100
7. The average class density, especially in the basic (primary) education stage		
Lower category (less than 35) student	342	48.1
Middle category (35 – 50) student	330	46.4
Higher category (more than 50) student	39	5.5
Total	855	100

Source: computed from sample data.

The research results in Table (3) indicate that, when respondents were asked about their opinions on educational curricula, it turned out that 45.3% of the respondents

believe that the educational curricula are not appropriate, which is not small percentage. This is due to several factors, the most important of which are: the fluctuations of educational experiments in the educational field and the ineffectiveness of curricula in providing students with skills that are compatible with the needs of the labor market. In addition to the aforementioned cause, another factor stands behind the respondents' response, which is the large number of school subjects and the burden on the shoulders of children, their families and teachers, which leads to boredom, and the family's inability to spend on the requirements of the educational process, such as books, school supplies, private lessons, transportation, and personal expenses for children, especially in light of the high cost of living.

While for the average class density, especially in the basic education stage, it ranges between 20 & 65 students, with an arithmetic mean of 36.7 students, and a standard deviation of 9.58 students. 48.1% of the respondents stated that the average class density, especially in the basic (primary) education stage, is less than 35 students. While, 46.4% mentioned that the average class density, especially in the basic education stage (primary), is between 35 and 50 students, which indicates a low percentage of class density in villages compared to cities.

Fourth: the social level

In recent years, Egypt has expanded its interest in providing services to the population, especially electricity. After the expansion of the establishment of generation and distribution stations at the level of the Republic as a result of the multiplicity of sources of electric power generation to meet the needs of the population, this indicates that most urban areas in Egypt are covered by electricity, regardless of their urban and population size, including the study area. As it was shown from the research results in Table (4), when the respondents were asked whether their homes were connected to an electricity network, 88.4% of the respondents agreed on the connection of their homes to the electricity network, while the remaining percentage is still deprived of this service. This shortcoming and deprivation of these people is not due to a defect in the network's access and extension but rather in the living standards of the population since some people refrain from connecting due to the inability to provide the prerequisites for subscribing to the network. Likewise, considering the monthly subscription prices, which are expensive in exchange for withdrawals and their reliance on connecting the house to electricity in illegal ways, such as the connection through street lighting poles.

While, the findings in Table (4) indicate that, when the respondents were asked about the connection of their homes to a drinking network (purified water), it was found that 79.6% of the respondents had their homes connected to a drinking network (purified water), and the remaining 20.4% was deprived of this service. Hence, they rely on water taps installed at the crossroads of streets, underground water pumps milled in the depths of the earth or from neighbors' homes, mosques and government service centers, or they buy it from water merchants who rely on some water filtration and purification plants to provide it. In addition, respondents mentioned the contamination of drinking water with sewage.

Table (4) show that, when the respondents were asked about the connection of their homes to a communications network (landline telephone), it was found that the percentage of joint families decreased, reaching 27% of families who do not subscribe to a communications network (landline telephone) in the study area. This is primarily due to the low standards of living and the population's consideration that connecting to these networks is not necessary, some also viewed it as a family luxury and not an urgent necessity compared to food, clean water and electricity. In addition to the expansion of the region's area, the scattering of its villages, and the delay of the local administration in providing the population with various services, including the communications network represented by the telephone.

Where the research results showed (Table 4) that, when the respondents were asked about their possession of agricultural land, it was found that 98.6% of the respondents in the study area do not own agricultural land. Most of the respondents are experts in the profession of fishing, its equipment, trade, and the main economic activity.

While, upon asking about the type of possession of their home, it turned out that 87.4% of the respondents stated their ownership, which is the prevailing custom in rural villages that their homes are owned by them. In some of them, their ownership of the house is due to the occupation system from an earlier time.

When the respondents were asked about the availability of consumer devices, the research results showed (Table 4) that, 91.9%, 59.3%, 90.2%, 99.3%, 97.9%, 59.3%, 6.3%, 25.3%, 89.1%, and 85.6% of the respondents own each of the following electrical appliances, respectively: TV, heater, cooker, washing machine, refrigerator, oven, microwave, vacuum cleaner, mixer and iron. **Amani (1985)** indicated that the effects of the policy of openness, the expansion of immigration to Arab countries for quick work and return back to the village, which led to the spread of some consumer values and entertainment in the Egyptian countryside are the reasons for the aforementioned phenomenon. Where Mansour Maghawry refers to this when he says that the economic openness and the emigration of Egyptian labor to Arab countries affected the flooding of the local market with luxury goods after 1974. Thus, the spread and penetration of the elements of the luxury consumption pattern among the rich classes in the Egyptian countryside deepened the effect of simulation and confronted the fascination with durable and non-durable luxury goods that flooded the Egyptian markets, which increased the consumption forces in society in general and changed the rural consumption pattern in particular (**Yasser, 1999**).

In the family that has a very small field or does not own agricultural land, some of its members migrate to the Arab countries to work and get a quick income that enables them to purchase luxurious goods such as recording, video and television equipments, giving an imaginary social dimension to this class and hides the gap between the holders of agricultural land and the destitute.

In addition, when respondents were asked about their home connection to the Internet, it was found that only 25.6% of the respondents are the ones who connect their homes to the Internet. It indicates a decrease in households participating in the various communication and information networks in the study area. This is primarily due to the low standards of living and the population's consideration that connection to these networks is not necessary. Some also viewed it as a family luxury and not an urgent necessity compared to food, clean water and electricity.

Furthermore, when respondents were asked about their possession of a cell phone, 83.5% of the respondents owned a cell phone. When asked about a family member owning a cell phone, it was revealed that 73.3% agreed that their relatives should own a cell phone. It is a means of communication in the current era that cannot be dispensed with. The cell phone is characterized by its services and the speed of access to the international information network (the Internet), and it has become accessible to everyone with high technology and advanced capabilities.

For their response on the type of dependence of the house on gas source, it was found that 99.3% of the respondents did not connect their homes to a natural gas network. This may be justified by the agricultural areas that characterize the study area in some villages or by the fact that the unconnected areas are still included in the connection plan. This may also be attributed to the inability to pay the connection fee, or due to geographical conditions that prevented the delivery of gas, such as living in narrow lanes and streets, and the inability of gas maintenance and emergency vehicles to enter them if they were connected, or ascribed to living in areas not served by sewage or in areas where sewage is provided by self-efforts (civilian network).

With respect to the availability of transportation in the village, it was found that 77.5% of the respondents stated that there were no means of transportation covering their villages and that they depend on tuk-tuks as a means of transportation across the village. They added that, this means of transportation is only available on the main roads. Whereas, when asked about paving the streets in the village, 93.7% of the respondents reported that the streets are not paved (unpaved), hindering the movement of development in their villages.

Fifth, the ability to make decisions

The research data in Table (5) indicate a high rate of participation by the population in casting their votes in the elections, where the percentage reached 80% of the respondents. This indicates an increase in political awareness among the population in recent years and their ability to understand the value of participation.

Table 4. Distribution of the respondents based on the social level in the village

Category	Number	%
1- Connecting the house to the electricity network		
Yes	756	88.4

No	99	11.6
Total	855	100
2- Connecting the house to a drinking network (pure water)		
Yes	681	79.6
No	174	20.4
Total	855	100
3- Connecting the house to the communications network (landline telephone)		
Yes	231	27
No	624	73
Total	855	100
4- Possession of agricultural land		
Yes	12	1.4
No	843	98.6
Total	855	100
5- Type of dwelling possession		
Rent	108	12.6
Ownership	747	87.4
Total	855	100
6- Household appliances available at home		
Television	786	91.9
Heater	507	59.3
Cooker	771	90.2
Washing machine	849	99.3
Refrigerator	837	97.9
Oven	507	59.3
Microwave	54	6.3
Vacuum cleaner	216	25.3
Mixer	762	89.1
Iron	732	85.6
7- Home Internet connection		
Yes	219	25.6
No	636	74.4
Total	855	100
8- The respondent owns a cell phone		
Yes	714	83.5
No	141	16.5
Total	855	100
9- A family member owns a cell phone		
Yes	630	73.7
No	225	26.3
Total	855	100
10- The type of dependence of the house on the gas source		
Gas network	6	0.7
Gas tube	849	99.3
Total	855	100

11- Availability of transportation in the village		
Yes	192	22.5
No	663	77.5
Total	855	100
12- Paving the streets in the village		
Yes	54	6.3
No	801	93.7
Total	855	100

Source: computed from sample data.

When the respondents were asked about their satisfaction with the services provided to them by officials, it was clear from the research results (Table 5), that 84.6% were dissatisfied. There is a loss of confidence between the voters and the candidates to fill the electoral positions. The respondents mentioned that they do not see the voter except during the days of the elections or with the approaching date of the electoral process and preparation for it, in addition to their open compliments to a specific group, who are few, without taking into account the feeling of the public, and they are the majority.

In addition, meeting the needs of the population in recent years has no longer been subject to the voter's ability to meet them. Rather, it was linked to the policies and plans of the government. These include, for example, government employment. Moreover, numerous requirements can be met by the average person without the need for them all, including, for example, the medical affairs of the population.

Table 5. Distribution of the respondents based on their ability to make decisions

Category	Number	%
1- Participation by casting a vote in the elections		
Yes	684	80
No	171	20
Total	855	100
2- Satisfaction with the services provided by officials		
Yes	132	15.4
No	723	84.6
Total	855	100

Source: computed from sample data.

Sixth, satisfaction with security and safety within the village

The research results (Table 6) indicate that, 94.7% of the respondents stated that there is no police station near their residence, as the Burullus Lake region includes a police station located in Baltim, the capital of the Burullus district, and three rural security units (police points).

When the respondents were asked about their feeling of safety in their villages, it was clear from the research results (Table 6) that 67.4% of the respondents agreed on

their feeling of security despite the lack of sufficient police stations. However, this is due to the feeling of the village community as a whole— the feeling of one family who protects and takes care of each other.

When the respondents were asked about the availability of government agencies near their homes, the research results in Table (6) show that 93% of the respondents seem to be far from the government departments that they are located in the centers. In addition to the factor of the absence of any of them inside the villages, which is a huge difficulty facing them on their visit to end their government interests.

Table 6. Distribution of the respondents based on their satisfaction with security and safety in the village

Category	Number	%
1- Availability of a police station near the residence		
Yes	45	5.3
No	810	94.7
Total	855	100
2- Availability of a police point near the residence		
Yes	366	42.8
No	489	57.2
Total	855	100
3- Feeling safe inside the village		
Yes	576	67.4
No	279	32.6
Total	855	100
4- Availability of government departments near the residence		
Yes	60	7
No	795	93
Total	855	100

Source: computed from sample data.

Seventh: Perception of the development of Lake Burullus

When the respondents were asked about their hearing about the development of Lake Burullus, the research results (Table 7) indicate that 56.8% of the respondents heard about the development of Lake Burullus.

For the impact of the development on their living conditions, it was revealed from the research results (Table 7) that, 52.3% of the respondents agreed that the lake development had a positive impact on their living conditions.

With regard to the effects of the development of Lake Burullus on the living conditions of the population, the responses varied between positive and negative. One of the positive responses was that the lake was cleaned and purified with dredges, and the Nile rose and reeds that were an obstacle in the fishing process were removed.

Developing the entrances leading to the lake, clearing the Bogaas, eliminating irregularities, building bridges around the lake have made it fit and better for fishing.

In addition, for the negative responses, there was no development in the first place; the development that took place is fake, and a lot of money was spent on it without interest, adding that the lake was vandalized and destroyed, and it became a haven for the violating crafts.

When the respondents were asked about the impact of development on their surrounding environment, it was found that 56.5% did not agree that the development in Burullus Lake did not affect the environment surrounding the respondent, and that it remained the way it had been before (Table 7).

About the effects of the development of Lake Burullus on their surrounding environment, their responses varied between positive and negative. The increase of violations and the spread of industrial and sanitary pollution inside the lake, along with the decline in the standard of living allowed the influential to control the lake, removing the lake from Nile roses and reeds, which were working to warm the fish and haven for fish to breed in winter, which led to the deaths of fish. Additionally, reeds were cut, which the population depends on it for trade. In addition to the previous negative effects, the absence of a water body's police role at night is recognized to be one of them. Despite the cleansing, it did not reach the area in the western sector.

Whereas, for the positive responses of some, it improved the standard of living for the fisherman, promoted the cleanliness of the country, enhanced the availability of employment opportunities for young people and increased fish productivity.

Table 7. Distribution of the respondents based on their perception of the development of Lake Burullus

Category	Number	%
1- Hearing about the development of Lake Burullus		
Yes	486	56.8
No	369	43.2
Total	855	100
2- The impact of development on the living condition		
Yes	447	52.3
No	408	47.7
Total	855	100
3- The impact of development on the surrounding environment		
Yes	372	43.5
No	483	56.5
Total	855	100

Source: computed from sample data.

Correlation relationships between each of the studied independent variables and total degree of the respondents' perception of the development of Lake Burullus

The research results in Table (8) reveal the existence of a significant direct correlation relationship at the probabilistic level of 0.01 between each of the average monthly income, educational status, social level, decision-making ability, satisfaction

with security and safety in the village as independent variables, each separately, and the total degree of the respondents' perception of the development of Burullus Lake as a dependent variable. The values of the simple correlation coefficient were 0.207, 0.160, 0.296, 0.357 and 0.317, respectively. The result of this relationship is that the independent variables and the dependent variable move in the same direction, and this relationship agrees with the indicative logic (extension logic), which indicates that each of the variables correlates in motion with the dependent variable.

It was also found that there was a significant inverse relationship at the probability level of 0.01 between each of the educational levels in the village as an independent variable and the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable. Where the value of the simple correlation coefficient was 0.209, and the result of this relationship is that the independent variable and the dependent variable move in the opposite direction.

Based on the previous result, the null hypothesis between the previous variables can be rejected, which states that “there is no correlation between each of the previous independent variables and the dependent variable.”

Table 8. Values of the correlation coefficients between each of the independent variables studied and the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable

Independent variable	Correlation coefficient value	level of significant
Age	0.062	Non-significant
Average monthly income	0.207**	0.01
Number of children	-0.009	Non-significant
Educational Status	0.160**	0.01
Satisfaction with the state of health	0.017	Non-significant
Educational level in the village	-0.209**	0.01
Social level	0.296**	0.01
The ability to make a decision	0.357**	0.01
Satisfaction with security and safety	0.317**	0.01

** Correlation is significant at the 0.01 level (2- tailed).

* Correlation is significant at the 0.05 level (2- tailed).

Second: the multiple regression relationships between the studied independent variables and the total degree of the respondents' perception of the development of Lake Burullus

This aspect deals with the effective relationships between each of the studied independent variables on the one hand and the overall degree of the respondents' perception of the development of Lake Burullus as a dependent variable on the other.

To estimate the effect of the independent variable on the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable, the stepwise multiple regression analysis method was used. The results of the analysis showed 5 linear models for the multiple regression analysis. The first model included one independent variable, which was the ability to make decisions. A multiple correlation was found between this independent variable and the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable. The value of the multiple correlation coefficient was 0.357, which is a significant value at the probabilistic level of 0.01. The (F) ratio reached 41.255, it was also found that this variable is responsible for explaining 12.4% of the total variation that could occur in the total degree of the respondents' perception of the development of Lake Burullus.

At the same time, the statistical results show that the value of the partial regression coefficient (B) for the decision-making ability variable was 0.973. It is a positive value reflecting the establishment of a significant partial regression relationship at the probability level of 0.01, where the value of (t) was 6.423. The result of this result is that by increasing the decision-making ability of the respondent as an independent variable by one degree, the total degree of the respondent's perception of the development of Lake Burullus increases by 0.973; and vice versa, in light of the dynamic interaction between the rest of the internal independent variables in this model.

The second regression model included two independent variables: decision-making ability and satisfaction with security and safety. It was found that there is a multiple correlation relationship between these two independent variables, with the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable. The value of the multiple correlation coefficient was 0.444, which is a significant value at the probabilistic level of 0.01. The (F) ratio reached 34.595, it was also found that these two independent variables are responsible for explaining 19.1% of the total variation that could occur in the total degree of the respondents' perception of the development of the lake as a dependent variable.

Simultaneously, the statistical results show that the value of the partial regression coefficient (B) for the two independent variables, decision-making ability and satisfaction with security and safety amounted to 0.858 and 0.557, respectively. These are two positive values that reflect the existence of two significant partial regression relationships at the probability level of 0.01. Where the value of (t) was 5.820, 4.951, the result of these two outcomes showed that, by increasing the decision-making ability and satisfaction with the security and safety of the respondent as two independent variables by one degree, the total degree of the respondents' perception of the development of Lake Burullus increases by 0.858, 0.557 degrees; and vice versa, in light of the dynamic interaction between the rest of the internal independent variables in this model.

The third regression model included three independent variables; namely, the ability to make decisions, satisfaction with safety and security, and satisfaction with the educational level. A multiple correlation was detected between these independent

variables and the overall degree of the respondents' perception of the development of Lake Burullus as a dependent variable. The value of the multiple correlation coefficient was 0.473, which is a significant value at the probabilistic level of 0.01 as the (F) ratio reached 27.056. It was also found that, this variable is responsible for explaining 21.6% of the total variation that could occur in the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable.

At the same time, the statistical results show that the value of the partial regression coefficient (B) for the variable of decision-making ability, satisfaction with security and safety, reaching 0.839, 0.528, respectively. This is a positive value that reflects the establishment of a significant partial regressive relationship at the probabilistic level of 0.01, where the value of (T) was 5.777, 4.788. This result reveals that, by increasing the decision-making ability and satisfaction with the security and safety of the respondent as independent variables by one degree, the total degree of the respondents' perception of the development of Lake Burullus increases by 0.839, 0.528 degrees, and vice versa, in light of the dynamic interaction between the rest of the internal independent variables in this model.

While, the value of the partial regression coefficient (B) for the third variable, satisfaction with the educational level was -0.024, which is a negative value that reflects the existence of a significant partial regression relationship at the probabilistic level of 0.05, where the value of T was -3.133. The outcome of this relationship is that by increasing satisfaction with the educational level as an independent variable by one degree, the total degree of the respondents' perception of the development of Lake Burullus decreases by 0.024 degrees, and vice versa, in light of the dynamic interaction between the rest of the internal independent variables in this model.

The fourth regression model included four independent variables; namely, the ability to make decisions, satisfaction with security and safety, satisfaction with the educational level, and satisfaction with public health. It has been shown that there is a multiple correlation between these independent variables and the overall degree of the respondents' perception of the development of Lake Burullus as a dependent variable. In this respect, the value of the multiple correlation coefficient was 0.492, which is a significant value at the potential level of 0.01. The ratio (F) was 22.377, it was also found that this variable is responsible for explaining 23.1% of the total variation that could occur in the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable.

For the statistical results, it was shown that the values of the partial regression coefficient (B) for the variables of decision-making ability, satisfaction with security and safety and satisfaction with public health amounted to 0.780, 0.511, and 0.096, respectively. It is a positive value that reflects the existence of a significant partial regression relationship at the probabilistic level of 0.01, as the T values were 5.357, 4.630, and 2.587. This result indicates that, by increasing the ability to make decisions, satisfaction with security and safety, and satisfaction with public health as independent

variables by one degree, the total degree of the respondents' perception of the development of Lake Burullus increases by 0.780, 0.511, and 0.096 degrees; and vice versa, in light of the dynamic interaction between the rest of the internal independent variables in this model.

On the other hand, the value of the partial regression coefficient (B) for the third variable, satisfaction with the educational level amounted to -0.041, which is a negative value reflecting the existence of a significant partial regression relationship at the probabilistic level of 0.05, where the value of (t) was -4.085. The indication of this result is that, with an increase in satisfaction with the educational level as an independent variable of one degree, the total degree of the respondents' perception of the development of Lake Burullus decreases by 0.041 degrees, and vice versa, in light of the dynamic interaction between the rest of the internal independent variables in this model.

The fifth regression model included five independent variables, namely the ability to make decisions, satisfaction with security, satisfaction with the educational level, satisfaction with public health, and the educational status of the respondent. It has been shown that there is a multiple correlation between these independent variables and the overall degree of the respondents' perception of the development of Lake Burullus as a dependent variable, where the value of the multiple correlation coefficient was 0.524, which is a significant value at the probabilistic level of 0.01, with the percentage (F) was 21.123, and it was found that this variable is responsible for explaining 26.2% of the total variation that could occur in the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable.

At the same time, the statistical results show that the value of the partial regression coefficient (B) for the variables of decision-making ability, satisfaction with security and safety, satisfaction with public health, and the educational status of the respondent amounted to 0.676, 0.372, 0.160, and 0.096. They are positive values that reflect the establishment of a partial regression relationship at the probability level 0.01, where the (T) values were 4.635, 3.236, 3.928, and 3.528. This result shows that, by increasing the ability to make decisions, satisfaction with security, and satisfaction with public health, and the educational status of the respondents as independent variables by one degree, the total degree of the respondents' perception of the development of Lake Burullus increases by 0.676, 0.372, 0.160, and 0.096 degrees, and vice versa, in light of the dynamic interaction between the rest of the internal independent variables in this model.

The values of the partial regression coefficient (B) for the third variable, satisfaction with the educational level amounted to -0.062, which is a negative value that reflects the existence of a significant partial regression relationship at the probabilistic level of 0.05, where the value of (t) is -5.387. This result reveals that, with an increase in satisfaction with the educational level as an independent variable of one degree, the total degree of the respondents' perception of the development of Lake Burullus decreases by

0.062 degrees, and vice versa, in light of the dynamic interaction between the rest of the internal independent variables in this model.

Table 9. The regression relationship between each of the independent variables and the total degree of the respondents' perception of the development of Lake Burullus as a dependent variable

Results Model	Multiple correlation coefficient	Adjusted coefficient of determination (R ²)	Ratio (F)	T	Partial regression coefficient (B)
Model (1) 1-The ability to make decisions	0.357	0.124	41.255	6.423**	0.973
Model (2) 1-The ability to make decisions. 2-Satisfaction with security and safety	0.444	0.191	34.595	5.820** 4.951**	0.858 0.557
Model (3) 1-The ability to make decisions. 2-Satisfaction with security and safety 3-Satisfaction with the educational level.	0.473	0.216	27.056	5.777** 4.708** -3.133**	0.839 0.528 -0.024
Model (4) 1-The ability to make decisions. 2-Satisfaction with security and safety 3-Satisfaction with the educational level. 4-Satisfaction with public health	0.524	0.262	21.123	4.635** 3.236** -5.387** 3.928**	0.676 0.372 -0.062 0.160
Model (5) 1-The ability to make decisions.	0.524	0.262	21.123	4.635**	0.676
2-Satisfaction with security and safety				3.236**	0.372
3-Satisfaction with the educational level.				-5.387**	-0.062
4-Satisfaction with public health.				3.928**	0.160
5- The educational status of the respondents				3.528**	0.096

** Correlation is significant at the 0.01 level (2- tailed).

* Correlation is significant at the 0.05 level (2- tailed).

RECOMMENDATIONS

- 1- Governments should improve the standard of living of the population and their services in order to improve the quality of life.
- 2- Paying attention to studies that reflect the problems and deficiencies in services that impede development.
- 3- Supporting hospitals and organizations operating in the villages of Kafr El-Sheikh and the sewage network to ensure a healthy environment for the population.
- 4- Paying attention to the educational aspect through considering schools, classrooms and teachers.
- 5- Economic development through rehabilitation and training of villagers on the one hand and the development and exploitation of natural and economic resources on the other hand.
- 6- Supporting villages with security units.
- 7- Activate the role of the Environmental Protection Agency.
- 8- Increasing awareness among the population about political participation in choosing the best representatives who fulfill their requirements in a way that ultimately ensures the improvement and upgrading of the quality of life.

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الملخص العربي

العوامل المؤثرة على إدراك السكان المحليين لتطوير بحيرة البرلس بمحافظة كفر الشيخ

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أستهدف البحث دراسة العوامل المؤثرة على إدراك السكان المحليين لتطوير بحيرة البرلس بمحافظة كفر الشيخ، تم جمع البيانات من إجمالي 855 مبحوث من خلال أستمارة الاستبيان بالمقابلة الشخصية. تشير النتائج أن كثير من المناطق بعد تطوير بحيرة البرلس مازال يشهد سكانها حرماناً واضحاً في كل الخدمات وتأخيراً في تنمية مواردها البشرية والطبيعية والاقتصادية الأمر الذي أدى في النهاية إلى رداءة نوعيات الحياة بها، والدليل على ذلك نقص في كل الخدمات التي تناولتها الدراسة ويحتاجها السكان بصفة أساسية في حياتهم مثل: المنشآت الصحية، ونقص الخدمات التعليمية، وأنخفاض المستوى الإجتماعي لكثير من السكان والتي يمثلها قلة أشتراك المنازل في شبكات الصرف الصحي والاتصالات، وتجلى في رفضهم لنوعية حياتهم أختيار النواب على الرغم من إدلائهم بأصواتهم لكن استشعر السكان بالأقليم عدم جدوى المشاركة في صنع القرار عن طريق هؤلاء النواب، وذلك لعدم إحساسهم بالمسئولية الاجتماعية ناحية الناخبين، ولذلك توصي الدراسة أن على الحكومة أن تنظر بعين الاهتمام نحو السكان، والإرتقاء بهم وخدماتهم ومواردهم بقصد تحسين نوعية الحياة، ودراسة المشكلات والقصور في الخدمات التي تعاني منها.