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**A Study of The Phenomena of Visual Pollution in Halabja and its
Effects on The Psychology of Citizens**

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Abstract

Each year, new environmental threats develop. Human-caused environmental effects are becoming more influential. Their activities endanger the ecosystem and future generations. As a result, environmental changes have an impact on people's physical and emotional well-being. Nobody questions the fact that the environment is deteriorating. Numerous studies have demonstrated that this transition occurs and has an impact on our lives. One of the most serious concerns confronting the world today is environmental contamination. A polluted environment is one of the difficulties that everyone in society encounters. Visual pollution is a type of environmental contamination. Any human action that affects the environment is referred to as visual pollution, the examples of visual pollution such as Billboards , congestion, Deteriorated buildings, Electricity distribution networks, Wired electricity poles, Satellite dishes, Garbage or rubbish dumps. A lack of environmental knowledge and irresponsibility causes visual pollution. There is no doubt that pollution harms the environment's living and inanimate components because the environment is necessary for human life and other kinds of life. Any alteration in the environment will endanger the entire land ecosystem. There are various types of environmental pollution, with water, air, soil, sight, and sound pollution all the most serious.. By using the descriptive methodology , field study and Questionnaire ; the research has been completed.

Abstrak

Setiap tahun, ancaman lingkungan baru berkembang. Ancaman ini dapat berupa alami atau buatan manusia. Efek lingkungan yang disebabkan oleh manusia menjadi lebih menonjol dan berpengaruh. Aktivitas dan perbuatan mereka membahayakan ekosistem dan generasi mendatang. Tindakan manusia, ekonomi, dan politik adalah penyebab mendasar dari pencemaran dan kerusakan lingkungan. Akibatnya, perubahan lingkungan berdampak pada kesejahteraan fisik dan emosional masyarakat. Tidak ada yang mempertanyakan fakta bahwa lingkungan semakin memburuk. Sejumlah penelitian telah menunjukkan bahwa transisi ini terjadi dan berdampak pada kehidupan kita. Salah satu masalah paling serius yang dihadapi dunia saat ini adalah pencemaran lingkungan. Lingkungan yang tercemar adalah salah satu kesulitan yang dihadapi setiap orang di masyarakat. Polusi visual adalah jenis pencemaran lingkungan. Setiap tindakan manusia yang mempengaruhi lingkungan disebut sebagai polusi visual. Kurangnya pengetahuan lingkungan dan tidak bertanggung jawab menyebabkan polusi visual. Tidak dapat disangkal bahwa pencemaran merugikan kehidupan lingkungan dan komponen tak hidup karena lingkungan diperlukan untuk kehidupan manusia dan kehidupan lainnya. Setiap perubahan lingkungan akan membahayakan seluruh ekosistem daratan. Ada berbagai jenis pencemaran lingkungan, dengan pencemaran air, udara, tanah, penglihatan, dan suara yang paling serius.

Keywords: *Visual Pollution, Effects on the Psychology*

Introduction

Pollution has different types that have serious effects on our daily life. One is visual pollution, a relatively new concept (Kan, Ngai, & Wong, 2014). Visual pollution is no less dangerous than other common types of pollution, such as noise pollution, air pollution, and others. Visual pollution takes many forms, but they all have one thing in common: they are related to individual health in general and mental health in particular (Mohamed, Ibrahim, Dodo, & Bashir, 2021). When visual pollution does exist, the place of the community's adventures will hurt our people, affect public aid, and harm health and economics (Gokhale, Raichur, & Rowtu, 2011) since the visual environment is as important as clean water and animal habitat. Visual pollution hurts our eyes and affects our overall well-being. It can also harm the health and economy of a city. There are visual issues of any kind of manmade structures and actions that does not have the people's attention and have an impact on the ability of someone to survive or give industrial, non-natural and ugly sights in our communities. These include wind turbines, billboards, garbage, graffiti, electricity lines, buildings, signs, etc. (Kharate & Banerjee, 2016). Visual impairment in urban areas can indirectly cause mental distress in the long run. Every day we see many advertisements in the cities and think about them in our minds, which causes mental preoccupation and lack of concentration (Lindstrom, 2008). Pollution is the most important threat to human, animal and plant life, whether directly or indirectly) (Al-Dulaimi & Al-Taai, 2021).

Human impact on the environment through economic activities is complex and diverse because changing or modifying natural conditions and processes causes a series of changes in the biological and non-biological composition of the environment. In today's world, one of the problems of many societies is environmental pollution. One type of environmental pollution is visual pollution, mainly caused by human activities. They create this problem by finding themselves in these activities as an addition to public property. Their tracks on public places, advertisements, the presence of old buildings, the lack of services, the disadvantage and the abandonment of the uncompleted construction structures in the cities and the arrangements.

Industrial and technological development is at a very high level. This development has led to the fact that every organization wants to market its products and services in such a way that it can influence the other party. Marketers use visual media as much as they

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can. Advertising from big companies is colourful and attractive, while unpleasing most of the time. So they advertise but are also responsible for this visual discomfort of people (Kharate & Banerjee, 2016). In developing countries, economic growth, urban sprawl, and economic change are among many other phenomena (Ogunbodede & Sunmola, 2014). In general, services are provided without an appropriate plan. This destroys the city structure; for example, marketing agencies place various advertisements outside, adversely affecting people's ability to see what they desire (Jana & De, 2015).

Definition of pollution and its types

Pollution: In general, pollution means anything that adversely affects the living and non-living elements of the environment, such as humans, plants, animals, water, air and soil. It refers to the deterioration of environmental aspects for earning energy, throwing the remnants, and leaving manmade objects carelessly that cause fundamental changes (Al-Dulaimi & Al-Taai, 2021).

Visual pollution in cities: It is a negative physical condition of several things directly or indirectly related to the quality of the built environment. They ultimately affect the area's inhabitants (Wakil et al., 2019).

Kinds of pollution:

1. Natural pollution: It is the destruction of the environment due to natural causes such as earthquakes, floods, droughts, storms, etc.
2. Manmade pollution: Pollution due to human activities, humans damage different elements of the environment such as air, water, soil, and even ecosystems. Man is primarily responsible for the pollution of the environment through his actions and unconsciousness. On the one hand, it damages itself; on the other hand, it damages all the resources and capabilities of the environment (Appannagari, 2017).

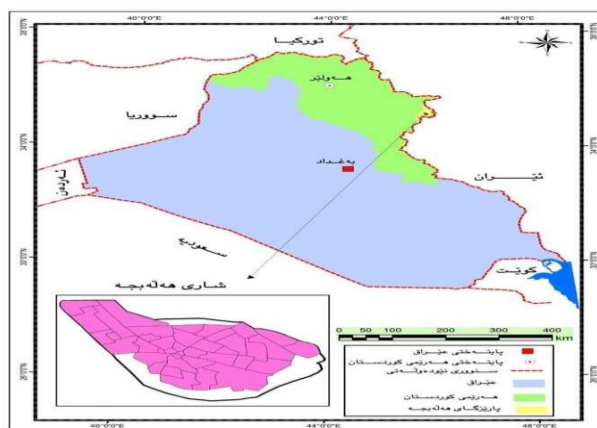
Case Study:

Halabja is located in the eastern Kurdistan Region of Iraq. It is located about (80) km southeast of Sulaimani province (Salih & Yamulki, 2020), Northeastern Iraq, near the Iraqi-Iranian border (Samin, 2021). Halabja falls on the latitude circle at latitude (3507'26.7") and longitude (4552'34.7") (Sharbazheri, Ghafor, & Muhammed, 2009). Topographically, Halabja is located between the Hawramabad Mountains in the north and the Balambo Mountains in

Hasim Othman Baram, Osama Ashraf Mohammed, Aram Omer Salih, Daban Kadhim Omar, Rawa Fayaq Mahmood, Talar Mohammed Karim the west and south, bordering the Sharazoor Plain in the southwest (Baram, Mohammed, Hamaamin, Hamid, & Mustafa, 2021).

During the Iran-Iraq war, the Iraqi regime often used weapons of mass destruction against Iran, even its own nation. He attacked the border areas between Iraq and Iran with chemical weapons. Halabja was one of the cities hit by chemical attacks, killing about 5,000 people (Brown, 2015).

Figure 1. The geographical location of the study area on the Iraqi map



Methods

This study investigates various visual pollutants in different areas of Halabja (a city in the northern east of Iraq, this area is being chosen because the researchers are the residents of the city and the city has been bombed by chemical bombs in 1988). Some visual pollutants are including electricity cables, commercial advertisements, writing on the walls and the spread of garbage on the streets, lack of proper plans for the construction of buildings and houses, the spread of stray animals in the streets and the drying of trees due to the cold waves in winter.

The research has been completed by depending on field study, descriptive study and Questionnaire, in addition to the pictures that have been used as documents that support the purpose of the study.

Questionnaires:

In the questions multiple-choice method is used so that the citizens in the way of choosing their favourite answer they can express the level of their psychological satisfaction about these phenomenon which cause vision pollution.

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Surveying the residents of different areas of Halabja city of different ages (about 180 citizens) about the phenomena that cause mental anxiety and visual pollution. Their different answers explained their psychological agreement or disagreement.

Discussion and Result

Appearances of visual pollution in the study area

The most frequent appearances in the city are more visible to citizens. These phenomena are the main causes of visual pollution in the study area, such as:

1. *Burning of waste and debris*

Every day in the study area, a large amount of waste and human uses are burned in the waste of households and public places, and a lot of smoke covers the sky in the area. This smoke is very harmful to human health. In Halabja, a large part of the garbage is burned daily, as shown in Figure 2.

Figure 2. Waste incineration in the study area



2. *Generators:*

To provide electricity such as energy and light for daily activities, 43 generators in the study area are distributed in different neighbourhoods of the city. This causes many types of pollution, such as noise and visual pollution, which of course, affect the life quality of citizens, as shown in Figure 3.

Figure 3. Pollution caused by generators



3. *Writing on the walls*

It is considered one of the manifestations of visual pollution widespread in the study area and expresses (political messages, poems and titles of professions and professionals). This gives the city an ugly appearance, as shown in Figure 4.

Figure 4. Writing on the wall



4. *Trespasses on public spaces from shopkeepers*

In order to display their goods, many shop owners and people use sidewalks and streets, thus creating visual pollution and problems for citizens' traffic, as shown in Figure 5.

Figure 5. Trespasses on public



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5. Buckets and dustbins in the streets

The presence of buckets and containers for garbage collection in most of the city's streets causes visual pollution and bad smell and problems for the traffic of citizens and vehicles, as seen in Figure 6.

Figure 6. Spread of buckets and sandbags



6. Commercial sign boards

Shops and businesses have many signs and advertisements written and hung in different colours and sizes. So, one feels uncomfortable seeing this scene, and it is one of the most frequent phenomena, as shown in Figure 7.

Figure 7. Many banners and signs in shops and public places



7. The collapsed houses

Because of the chemical attack, the Iran-Iraq war, the war between political parties, and the war between the Iraqi government and the political forces in the Kurdistan Region, many houses and residences have collapsed, have not been rebuilt, and are in the streets, creating irregularities in the residential areas, as seen in Figure 8.

Figure 8. shows pollution from collapsed houses

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8. *Transcendent neighbourhoods*

Several unlicensed neighbourhoods and residential units have been built around the city far apart, and most lack engineering and



civilizational features. They are also very poor in terms of services, which is considered a regional pollution phenomenon, as shown in Figure 9.

Figure 9. Visual pollution due to neighborhood transcendent



9. *Spreading domestic animals in the city*

It is found in some neighbourhoods, streets and streets of the city, especially in suburban neighbourhoods and places that are relatively far from the city centre and have rural characteristics. However, they are sometimes seen in the city centre, especially after sunset, because at that time, the remains of fruit and vegetable vendors remain in the market and are used as food, Figure 10.

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Figure 10. Spreading domestic animals in the city



Visual pollution due to tree felling and pruning

It is a seasonal phenomenon of visual pollution in the area. The residents cut them down due to the defoliation of the trees, and sometimes the branches and leaves remain on the streets for several days. Especially since the garbage collection company is not responsible for collecting the branches and leaves of the trees, as seen in Figure 11.

Figure 11. Visual pollution due to tree felling and pruning

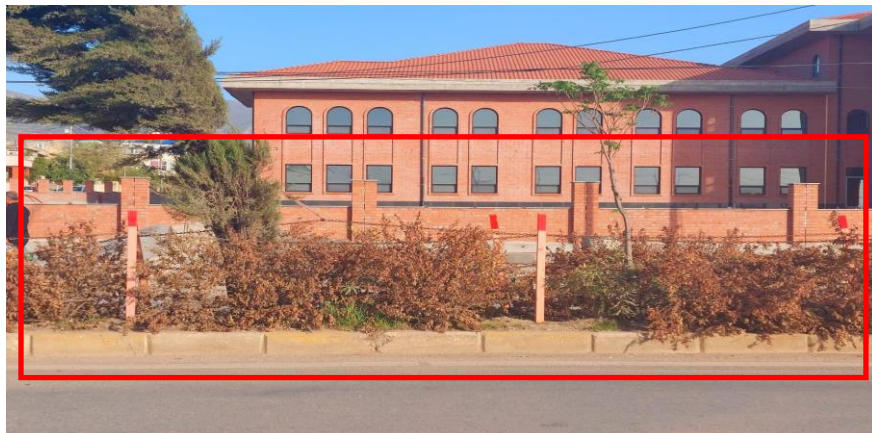


10. Drying of trees

Due to the harsh winter season, high temperatures, heavy heat waves and lack of irrigation, many trees and plants in the study area have dried up. This has, of course, had a negative impact on the population's peace, and their replacement will take many years, as shown in Figure 12.

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Figure 12. Drying of trees due to cold seasons



11. Unfinished buildings

Another phenomenon seen in different parts of the research area that causes visual discomfort and distress is the buildings that were partly built by the government and some of the citizens, and the other parts were left unfinished. This has caused mental suffering to citizens who believe they have been neglected by the government, as shown in Figure 13.

Figure 13. unfinished buildings



Effects of visual pollution on the population of the study area and its solutions

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The environment around us contains many visual effects we see every day, and scientists estimate that the human eye sees thousands of different scenes every minute. Some of these scenes and phenomena cause peace, but others cause restlessness and mental instability. In this regard, we present the results of a study area survey regarding the impact of visual pollution phenomena on the residents of the area.

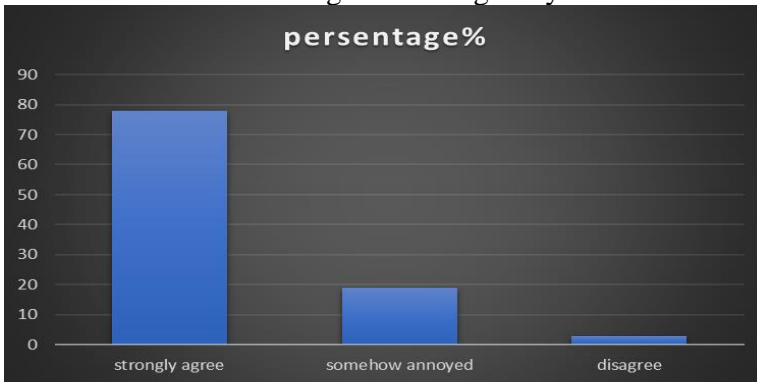
Visual pollution is easily detected because it is in the surrounding environment, has constant and rapid contact with it, and cannot escape it. However, this greatly impacts mental discomfort because people feel bored and unbalanced by seeing irregular, complicated, and various scenes such as collapsed, unwanted colours and dirty places (Nami, Jahanbakhsh & Fathalipour, 2016.).

Every pollution causes a number of diseases. A lot of diseases caused by the smoke of factories that cause air pollution or the waste left behind by people on beaches directly affect human health. It then leaves a number of health problems in society. In general, environmental pollution has a negative impact on individuals in the study area.

The survey result of this study indicates that due to the visual pollution the large number of citizens feels the mental boredom, such as the following points:

1. The survey results show that 78% of citizens answered (strongly agree), meaning that many of them feel bored and uncomfortable when they see wires and wires in an irregular, scattered and complicated way. And 19% of citizens think they feel 'somehow' annoyed when seeing this phenomenon and 3% of citizens answered 'disagree' and did not pay attention to this aspect of pollution. This means that citizens are annoyed and very tired of seeing wires irregularly, according to the results.

Diagram.1 The rate of the annoyance of the residents while seeing wires irregularly



2. The survey results showed that about 44% of citizens feel very annoyed when shop owners misuse the sidewalks, and 48% of citizens are somehow annoyed. Only about 8% of citizens answered 'disagree', indicating that the misuse of sidewalks by shopkeepers is a cause of visual pollution and annoyance to residents.
3. The survey results showed that 60% of citizens feel very annoyed when they see the phenomenon of stray animals in the city. About 34% of the respondents believe that they are somehow annoyed and about 5% of the respondents believe that this phenomenon does not cause them annoyance. Some people who did not care about this type of pollution may have owned livestock or lived on the outskirts of cities where livestock are raised on the outskirts of the study area.
4. The survey showed that 41% of citizens feel bored and uncomfortable seeing old, dilapidated houses. About 36% of citizens said 'somehow' when they saw this phenomenon, while 23% said 'disagree', meaning that residents feel more annoyed when they see old collapsed houses.
5. About 26% of respondents said they had been psychologically affected by seeing old houses, while 38% said they were 'somehow'. About 36% of citizens said 'disagree', which means that citizens were less psychologically affected by seeing old collapsed houses.
6. The survey results showed that about 42% of citizens said there was a lot of misuse of sidewalks by shopkeepers. About 55% of citizens said there was a lot of misuse of sidewalks by shopkeepers. About 3% of citizens said 'disagree', which means

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that the use of sidewalks in the city is higher and is a prominent cause of visual pollution. Although some of them have been warned and punished by the municipality of the study area, this type of pollution is still observed.

7. The survey results showed that about 84% of the population answered 'agree' to the spread of the phenomenon of private generators and the spread of wires, and only about 16% of citizens believe that they are spread to some extent. There is no 'disagree' answer, which means that private generators are one of the causes of visual pollution in the study area, and this problem is difficult to solve. Because there is little government electricity in the area, generators are an alternative to supply electricity when needed.
8. The survey results showed that about 38% of citizens said 'agree' to seeing signs in workplaces, shops and supermarkets as annoyance objects. In the city, about 47 % of their response was 'somehow'. About 15% of the respondents said 'disagree', meaning that the spread of signs on shops and markets in the city is widespread and has become a significant cause of visual pollution.
9. The survey results showed that about 12% of citizens said 'strongly agree' about the view of the public streets. While 36% of the respondents and that 52% of the voters stated 'disagree', which means that the citizens are dissatisfied with the view of the public streets of the city.
10. The survey results showed that about 70% of citizens answered yes to the phenomenon of stray animals in the city, and only about 27% of citizens believe that the phenomenon of stray animals in the city is spread to some extent. About 3% of citizens answered no, which suggests that the spread of stray animals in the city is a cause of visual pollution.

Solutions to visual pollution in the study area:

After the designation of sources of visual pollution in the study area. We can reduce the visual pollution problems in the study area by the difference ways, such as the government, citizens, the country's management system, the economy, the provision of services, continuous monitoring and the design of buildings to reduce this type of pollution. Pay attention to the cleanliness, quality of colours, engineering of government projects and plans, and work on

Hasim Othman Baram, Osama Ashraf Mohammed, Aram Omer Salih, Daban Kadhim Omar, Rawa Fayaq Mahmood, Talar Mohammed Karim educating citizens. Work should also be done to educate citizens, and pay attention to the streets, buildings and houses so that people can see them and open their hearts, not in such a way that people can see the scene and close their hearts.

Some of ways to solve of visual pollution in the study area:

1. Increase the city's greenery to reduce visual pollution to some extent.

Figure 14. Green Street

2. Reduce car use: Citizens should try to commute by bicycle or public transport to reduce CO₂ emissions.
3. Most of the waste generated by professional products is difficult and slow to dispose of. Today, such waste is either burned or buried in the ground. Each of these methods causes the accumulation of pollutants in the soil and groundwater.
4. Installation of smoke detectors for factories at an altitude of 250 m.
5. Enact laws on those who pollute the environment and impose taxes on them.
6. The garbage is about to be moved from the centre of the city to the outskirts of the city, i.e. sparsely populated areas.
7. The widening and development of roads should be changed from dirt roads to asphalt because the rising dust increases visual pollution. Change to asphalt because it reduces visual pollution to some extent.

Conclusion

The purpose of visual pollution is to the environment in which organisms live due to natural and human factors. Human actions and activities cause the formation of certain substances that are not suitable for the place where organisms live, causing damage to the environmental system of the area. Land use in the centre of Halabja has created a kind of visual pollution because there is no coordination between the type of shops and the way of hanging signs and colours. The lack of green areas in the study area has exacerbated the environmental problem. The most important natural causes of visual pollution in the study area are (flood, dust, strong winds, earthquakes, and fog). The most important human factors that cause visual pollution in the study area are (the administrative system and lack of laws and guidelines - factory smoke - population growth - economic factors – individual intellectuality). Regarding the

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psychology of the citizens, the researchers concluded that more than half of the citizens are annoyed and dissatisfied with all the types of visual pollution in the area of the study. The most important phenomena that are most frequently repeated are (waste and dust - generator smoke - the spread of pets and sheep - writing on the walls - the spread of buckets and dustbins). Some other phenomena have the least recurrence like (the presence of factories near the city and streets - increased tourists - the spread of sewage - traffic congestion) and that cause visual pollution too. The survey results showed that about 84% of citizens answered yes to the spread of the phenomenon of private generators and the spread of wires. About 16% of citizens believe that they are spread to some extent. This is even though there is no 'no' answer which implies that generators are one of the causes of visual pollution in the study area.

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