Visual Pollution in Addis Ababa,

The Case of outdoor advertisement in selected city centers

Getachew Gebeyehu Agegnehu

A Master's Thesis Submitted to the Department of Architecture

School of Civil Engineering and Architecture

Presented in Partial Fulfillment of the Requirement for the Degree of Master's in Urban Planning and Design

Office of Graduate Studies

Adama Science and Technology University

Adama, Ethiopia

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APPROVE OF BOARD OF EXAMINERS

I, the advisor of the thesis entitled "**Visual Pollution in Addis Ababa, The Case of outdoor advertisement in selected city centers**" and developed by **Getachew Gebeyehu Agegnehu**, hereby certify that the recommendation and suggestions made by the board of examiners are appropriately incorporated into the final version of the thesis.

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We, the undersigned, members of the Board of Examiners of the thesis by **Getachew Gebeyehu Agegnehu** have read and evaluated the thesis entitled "**Visual Pollution in Addis Ababa, The Case of outdoor advertisement in selected city centers**" and examined the candidate during open defense. This is, therefore, to certify that the thesis is accepted for partial fulfillment of the requirement of the degree of Master of Science in Urban Planning and Design.

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Finally, approval and acceptance of the thesis is contingent upon submission of its final copy to the Office of Postgraduate Studies (OPGS) through the Department Graduate Council (DGC) and School Graduate Committee (SGC).

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DECLARATION

I hereby declare that this MSc Thesis entitled "**Visual Pollution in Addis Ababa, The Case of outdoor advertisement in selected city centers**" is my original work. That is, it has not been submitted for the award of any academic degree, diploma or certificate in any other university. All sources of materials that are used for this thesis have been duly acknowledged through citation.

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RECOMMENDATION

I, the advisor of this thesis, hereby certify that I have read the revised version of the thesis entitled "**Visual Pollution in Addis Ababa, The Case of outdoor advertisement in selected city centers**" prepared under my guidance by **Getachew Gebeyehu Agegnehu** submitted in partial fulfillment of the requirements for the degree of Mater's of Science in "**Urban Planning and Design"**. Therefore, I recommend the submission of revised version of the thesis to the department following the applicable procedures.

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Major Advisor Signature Date

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AALRT = Addis Abeba light rail way

OA = Out door advertisement

VPA = Visual pollution assessment

VPO = Visual polluting object

ABSTRACT

Visual pollution is one of the study areas which has been formulated in recent decades. This makes it a field of study with little known about it. Although it is not studied well visual pollution is and has been affecting human beings' day-to-day activities. This negative effect of visual pollution is widely seen in developing countries due to either there is no law to regulate the visual canvas of the city or problem in the implementation of rules about visual quality. The objective of this study was to explore the cause and effect of visual pollution being caused by outdoor advertisements in Addis Abeba's selected places. In this study in addition to finding the cause and effect of visual pollution by outdoor advertisement quantification of visual pollution being caused by outdoor advertisement was addressed. To collect data both qualitative and quantitative data collection methods were employed. For the qualitative data collection, the method used was questionnaire and interview. The questionnaires were designed and delivered to be filed by 385 sample populations and the interviews were conducted with a group of expertise in the area of the advertisement industry. To get qualitative data, the visual pollution assessment tool formulated by Khadija was used. The findings from the data collected were, the cause for visual pollution by outdoor advertisement is the weakness and unwillingness of the government to formulate and implement governing policies and regulations. The effect of outdoor advertisement visual pollution onto the community was found to be a major distraction and being disturbed when they are in polluted areas. Thirdly average visual pollution of the city Addis Abeba was 68.91%, from this 68.91% pollution 13.02% of which is contributed by outdoor advertisements which are posted onto the urban canvas. This will make outdoor advertisement which shared 18.89% of the total visual pollution one of the most pollutant visual polluting objects. Thus, we can imply that Addis Abeba is highly visually polluted by outdoor advertisement and needs a holistic approach from the government and other stockholders to reduce visual pollution by outdoor advertisement. Finally, as this study was made on only one visual polluting object category future academic studies should work on the general visual polluting objects and their effect on the community in general.

Keywords: Visual pollution; visual polluting objects (VPO); outdoor advertisement;

Visual pollution is more poisonous than any other pollution because it kills the soul.

Friedensreich-Hundertwasser

CHAPTER ONE

1. INTRODUCTION

Pollution, which is a word largely associated with air pollution, sound pollution, water pollution, and visual pollution. Although as a society we didn't emphasize visual pollution as the other types of pollution. Visual pollution has been affecting us throughout our life. The information we perceive by visualizing things that are through our eyes is far greater than the information we perceive through the other four senses. This implies that if the information we perceive is polluted and disturbing it will harm the wellbeing of society.

In developing countries like Ethiopia visual quality is considered a luxury. Most of the people including the governing bodies don't even know the term visual pollution and its existence. (Natnael,2018). For instance, when advertising companies install their outdoor advertisement most of the time, they never take into account visual disturbance caused by those objects. The solo interest they have is to provide their services. But this never should have happened. Whether it is natural or man-made we cannot avoid our surroundings. We are massively influenced by our surrounding environment.

Talking about visual pollution in developing countries especially in Ethiopia must not be considered a luxury. As we need clean air, pure water, and a pleasant audio environment we ought to have a good aesthetic, visually appealing, and uplifting environment. so, in this study visual pollution in the case of the outdoor advertisement has been assessed and quantified objectively to get the overall effect of these visual polluting objects on the society at large. Finally, ways of increasing the visual quality of urban space have been proposed.

1.1 Background of the study

Visual pollution is considered one of the recently formulated types of pollution. Most of the time pollution is strongly related to air and water pollution. Because of the young age of this field of study very little has been explored. Many visual assessment methods are based on a subjective manner and can't be quantified. Of those studies, most of them are conducted in developed countries. (Amber Pariona,2018)

Visual pollution can be traced back to 1960 in the United States Bird Johnson (former U.S. First Lady) stating that billboard advertisements having a negative effect on the urban

landscape and supporting the highway beautification act. (Amber Pariona,2018). This act tries to minimize the effect of the visual polluting object on the urban landscape.

Most of the people living in the cities will encounter visually polluting objects while walking alongside the road, driving in sidecars, or even sitting inside their homes.

> *"At midday, you are riding a motorcycle to your home hungry for your lunch. While approaching your home, you see an ugly scene of huge mountains of waste on the roadside, including wasted food, used banana leaves, purifying fruits, etc. After seeing that, can you enjoy your lunch at home?" (Muthukrishnan, N. ,2015).*

On the above note, Mrs. Muthukishnan put visual pollution in great words. How can a person who has seen those disturbing things can enjoy his or her meal?

A good visual sphere that is calming and the sousing environment is strongly associated with quality of life productively. (Parisa Nami et al., 2016). This shows that visual pollution is directly related to the well-being of society and the productivity of the workforce. On this note reducing visual pollution will have a positive effect on the development of the county.

In the case of Ethiopia specifically in Addis Ababa visual pollution can be seen in everyday activity in probably every direction of the visual cone. For instance, the light rays coming from the outside street outdoor advertising screen might not let you sleep in the middle of the night. In the morning when you wake up and open your window wires and poles installed by utility service will block your vistas to enjoy the sunrise. On mid-day walking through the city beautifully crafted architectural pieces might be ruined by unplanned advertisement posters posted on the façade of the building.

So, it is necessary to determine, assess and propose a way to reduce visual pollution to increase the well-being, productivity, and mental health of society. Which indirectly will have an effect on the development of the country at large.

1.2 Statement of the problem

Urban planners and designer agree that a good city should have well-characterized identities which can give them a unique urban landscape. Visual pollution comprising trash cans, old vehicles, reflected light, cell phone towers, business signs, buildings, highways, and graffiti gives the city a polluted visual canvas.

The capital city Addis Ababa as a diplomatic center for different international and continental offices is vulnerable to visual pollution. Visual pollution has a negative effect on the economic sector of the city. Because when the image of the city is related to disturbing advertisement posters, unplanned and view obstructing buildings, cell phone towers, and old vehicle tourists will lose interest in coming and exploring the city which in one way or another will affect economic the sector of the city.

Figure 1.1: Visual pollution in Addis Abeba caused by outdoor advertisement.

Source: By Mark Wiens- http://migrationology.smugmug.com/Ethiopia-Blogs

In Addis Abeba, the effect of visual pollution is visible mostly in commercial centers of the city. different non-coherent designs of outdoor advertisements create a disturbing urban visual canvas. Although visual pollution is affecting the overall visual field of the city, the government and the expertise in the industry give little emphasis to it. The graphics design and advertisement industry are not well organized and is not led by peoples with an educational background or experience. In addition to that, the urban design of the city has a contribution to pollution. Urban designers don't consider outdoor advertisements to be an

element of the streetscape element as a result the application of outdoor advertisement in building facades is ill-mannered because there is little or no space provided.

Although visual pollution is visible in the urban scenery of the city the governing body which is Addis Abeba's city infrastructure coordination, building permit, and control authority Has no power on regulating outdoor advertisements. The reason is that the proclamation which was used to control outdoor advertisements was suspended because a new draft document was being formulated. But it has been more than two years without any rule to regulate outdoor advertisements in Addis Abeba. This makes it impossible for controlling and reducing visual pollution by an outdoor advertisement for the governing body.

Most of all visual pollution has its share in the increase of accidents in the city. (Sudeepta Banerjee, 2017). Signs posted to show hazards environment Infront of the road are covered by illegally posted advertisement leading the driver into an accident

Human health has been affected by visual pollution. Although it can't be put in number the effect of visual pollution can be seen in creating a distraction, eye fatigue, and rheumatic disease in addition, psychologically human decision making by creating an unpleasant environment. (Sudeepta Banerjee, 2017). The effect of visual pollution caused by outdoor advertisement is affecting residents of urban areas as stated in the above paragraphs. And designers and planners are creating unintended effects of visual pollution which should be corrected sooner or later.

1.3 The rationale for the research

The motivating factors for doing this research were the observation of poor visual quality, poor urban design, and implementation of rules and regulations at hand. In addition to that, the effect and cause of visual pollution by outdoor advertisement wasn't studied very well before this study in our country Ethiopia especially the capital city Addis Abeba which the pollution is affecting. Lastly, this study was conducted to get a Master's degree in urban planning and design.

1.4 Objective of the Research

General objective

The general objective of this study is to explore the cause and effect of visual pollution originated from an outdoor advertisement in Addis Ababa city.

Specific objective

The specific objectives of this study are:

i. To identify causes of outdoor advertisement visual pollution;
ii. To examine the effect of outdoor advertisement visual pollution on the communities;
iii. To quantify visual pollution caused by outdoor advertisement in selected city centers of Addis Abeba;

1.5 Research Questions

- What are the causes of outdoor advertisement visual pollution?
- What is the effect of outdoor advertisement visual pollution on the communities?
- How much Addis Abeba's selected city centers are visually polluted by outdoor advertisements?

1.6 Significance of the study

This study will have a very diverse significance for the city and its inhabitants. This study will be used as a reference for other resources for the reason that there is little known about visual pollution in Addis Ababa city. Therefore, this study can be used by planners and designers as a guideline in designing urban entities, and also the city administration can use this research to minimize the effect of visual pollution based on the mitigations proposed.

1.7 Scope of the study

Thematic Scope

In this study, the thematic scope has covered the assessment of visual pollution generated by unplanned outdoor advertisements in Addis Abeba. This assessment involved identifying visually polluting objects which affect the urban aesthetics of the city. And the effect of those VPOs on the day-to-day activities of residents. Furthermore, the effect of those VPOs is quantified to get a more subjective output. For the quantification of visual pollution by different visual polluting objects, *A Hybrid Tool for Visual Pollution Assessment in Urban Environments* (Khydija Wakil et al., 2019) was used.

Spatial Scope

This study will be conducted in Addis Ababa city. For the purpose of this study, five locations were identified for the quantification of visual pollution by outdoor advertisement. The locations which were selected for this paper are the centers of the city.

1.8 Limitations

As we are in a global pandemic the research was limited in various ways to attain its full capacity. For instance, people refuse to have a personal interview, and also to fill the questionnaire provided by the researcher. In addition to this, the perception of respondents in this country towards cooperating with researchers is not very well. For those reasons, the research needed a longer time to collect data. But the research used technological tools such as google form and others to tackle the above problems and get the optimal results needed for the research visual pollution in Addis Abeba. Finally, the language limitations between the mother tongue of the researcher and the delivery language which is English have made it difficult to make the best of this study.

1.9 Operational definitions in visual pollution

Aesthetic Quality; - Aesthetic qualities are the feeling, mood, or atmosphere of the artwork, generated by the use of art elements and principles. (Andy Warhol, Nd)

Design; - is the creation of a plan or convention for the construction of an object or a system. (dictionary.com,2020)

Outdoor advertisement; - means any advertisement such as disseminated by using a billboard, electronic screen, or moving picture. (Advertisement Proclamation No.759/2012)

Pollution; - is the introduction of contaminants into the natural environment that cause adverse change. (Merriam-webster.com, 2010)

Urban; - is used to define a place including the population size, population density, type of economic activity, physical characteristics, level of infrastructure, or a combination of these or other criteria (Concise Oxford dictionary, 2011)

Urban design; - is the process of making cities, towns, and villages. (Boeing et al., 2014)

Visual; - relating to seeing or sight. (Concise Oxford dictionary, 2011)

Visual pollution; - is a term used to describe something that blocks or otherwise obstructs the view of a particular place or thing. (Amber Pariona,2018)

Visual Quality; - are qualities that are visible and are used to express or convey the designer's idea of his work. Visual qualities include color, shape, texture, form, etc. (https://www.yundle.com/ terms-definitions)

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Introduction

Urban design is anything creation that exists in the urban canvas. Most scholars agreed that this urban design has 6 dimensions which are the morphological dimension, The perceptual dimension, The social dimension, The functional dimension, The temporal dimension, and the visual dimension. (Matthew Carmona et al.,2003). Of those dimensions in this chapter, the negative effect (visual pollution) on the visual dimension will be elaborated.

2.2 Concepts and Definition of Terms

2.2.1 The concept of Pollution

Pollution is the process of degrading the quality of land, water, air, or other parts of the environment. (www.livescience.com,2018) This is done by introducing the so-called pollutants which are foreign substances for the environment. But the idea of contamination is not limited to matters of substances things that are not tangible such as light, temperature and sound can also be considered as pollutants of the environment.

2.2.2 Visual Pollution

Visual pollution is a term used to describe something that blocks or otherwise obstructs the view of a particular place or thing. It may refer to the visibility of an object that is located at a distance, to visibility in general, or to clutter within a particular view. (Amber Pariona,2018)

Visual pollution is "unbridled and uncoordinated diversity of color, form, light and materials and the accumulation of heterogeneous visual elements, ugly, unattractive and man-made space and urban landscape, and is an aesthetic issue and its effects one's ability to enjoy the sights reduced or view it disrupts" (Parisa Nami et al., 2016)

Most scholars agree that visual pollution is an unwanted or unpleasant view of the urban design or sphere. Which is might be a big pole obstructing the view of the ocean or a mountain of trash that is outside of your compound. Or even it might be a glare coming directly to your home from the street.

2.2.3 Outdoor Advertisement

As stated in a study by Frans Jordaan outdoor advertising is defined by the South African Manual for Outdoor Advertising Control (DEAT, 1998, April, p.vii) as any visual notation of a word, figure, name, letter, object, mark, or symbol or of an abbreviation of a word or name, or of any combination of such thing with the object of transferring information. In this, we can understand that outdoor advertisement is more than any billboard or poster posted alongside the street.

2.2.4 The six urban design dimensions vs visual pollution

From the six dimensions of urban design visual pollution is directly related to the three dimensions. Those are visual, functional, and perceptual dimensions. The Visual dimension This dimension is important in the creation of a successful urban built space that focuses on aesthetic preferences, aesthetic qualities of urban spaces, urban architecture, and hard & soft landscaping (Enkossa, 2007). In that visual pollution on the contrary will have a great effect especially on this dimension of urban design. Because most of the visual sphere of the built environment has been affected by OAs. The second affected urban dimension is the perceptual dimension. It is also an essential dimension of urban design, which focuses on the awareness and the appreciation of environmental perception, in particular, the experience of a 'place' or a sense of a 'place'. (Mokhtar, 2007). Visual pollution by outdoor advertisement affects the placelessness of the community. (Natneal,2018). Finally, the functional dimension is also affected by visual pollution. functional dimension It involves how places work and how urban designers can make 'better' places. (Carr et al.,1992). But visual pollution creates a place that is not better for the community to lives in.

When we are posting or installing unlawful and unmannered outdoor advertisements it will affect the three dimensions of urban design. For instance, if someone posts an outdoor advertisement onto an area that is prohibited to post an OA, for this scenario let's take a pedestrian walkway it will block the flow of traffic and creates a disturbance in the functional dimension of urban design. The effect of this unlawful advertisement doesn't stop there it will also affect the visual dimension of urban design by degrading the aesthetical quality of the environment by applying chaotic colors and shapes. This will in return affect the placelessness of the urban sphere that will affect the perceptual dimension of the built environment. In sum, the effect of visual pollution doesn't only affect as its name implies

the visual dimension of urban design the effect does deeper into functional and perceptual dimensions too.

2.3 Historical background of visual pollution

In the 19th pollution was related to air and water pollution because those two were assumed to be pollution that affected human wellbeing. But in late 1970, the articulation of noise pollution creates an understanding of there are other types of pollutions. (Khydija Wakil et al., 2019)

It is reported that in 1965 former U.S. First Lady Bird Johnson referred to billboards along highways as an ugly addition to the urban landscape. She followed this complaint by supporting the Highway Beautification Act, which became law in 1965 and prohibited certain types of advertising along federally funded highways and interstates. Additionally, the law suggested the use of more scenic additions when screening fewer desirable sites (like junkyards or garbage dumps). (Amber Pariona,2018)

As this field of study has been developed in recent times most of the studies and beautification acts were only applied to developed countries. But in recent years in those developing countries, visual pollution is taken into consideration.

2.4 Types of visual pollution

As stated in the article by Parisa Nami types of visual pollutions are the following;

2.4.1 Visual pollution

Visual pollution is a discomfort created by unwanted scenery for instance misplaced or ugly positioning of outside advertisement, building (design, placement, maintenance, and use of material), waste management (trash mountain), and as such.

Figure 2.1: *Visual pollution in Addis Ababa.*

Source: Google photos

2.4.2 Light pollution

This kind of pollution can occur when there is improper lighting and the existence of unwanted light sources in the area. Glare and irritating luminosity affect one's view and can also create discomfort to the viewer.

Figure 2.2: Light pollution.

Source: Google photos

2.4.3 Color Pollution

Color pollution is the unplanned use or application of colors in urban canvas and which affects the viewer to have an unsatisfying and unpleasant experience. (Parisa Nami et al., 2016) Designs that can span from urban to graphics design(advertisement) apply the color theory which will create a pleasant environment. But designs that haven't apply a color theory or a group of designs in the cluster will create a disturbing environment.

Figure 2.3: Color pollution.

Source: Google photos

2.4.4 Symbol Pollution

Symbol pollution is an inexistence of any symbolic representation of the society or unwanted irrelevant reflection of residents in any urban designs or elements (Parisa Nami et al., 2016)

A city must be a reflection of its inhabitants. This means any design created will reflect the social, political, and economic status of the society. Any symbolic monument, symbol, or building that cant resonate with society will create an undesirable outcome. (Parisa Nami et al., 2016)

Figure 2.4: Symbol pollution

Source: Google photos

2.5 The Sources of Visual Pollution (visual polluting objects)

Any object which creates a negative effect on the visual perception is called a visual polluting object (VPO) Visual polluting objects can span from graffiti on the wall to a

monument or telecommunication tower. Mrs. Sudeepta listed the following VPOs as a source of visual pollution.

Figure 2.5: Reppi Solid Waste Disposal Site, Addis Ababa, Ethiopia

Source: Google photos

> *"Excessive and overcrowded advertisements, Telecommunication and electric wires and poles, Mobile towers, Signboards, Billboards, Posters and Hoardings, unproductive lands and deforestation, Bad designed Buildings and huge Constructions, Smoke spewing chimneys of factories, Graffiti, Open storage trashes" (Sudeepta Banerjee, 2017).*

2.6 Outdoor advertisement as a visual polluting object

2.6.1 What is an outdoor advertisement

Figure 2.6: Outdoor advertisement

Source: Google photos

This term embraces a very wide range of advertising and promotional activities which will be posted or installed in the outside space of the environment. This form of advertising has

an almost infinite variety, ranging from hand-painted signs gracing a roadside vegetable stand to the elaborate display in times square. In recent years it has expanded to & includes such diverse forms as taxis (not strictly transport media like railway and underground), parking meters and petrol pump handles. (Fantaye,2004)

According to the federal democratic republic, Ethiopian Negarit Gzata (Advertisement Proclamation No.759/2012) outdoor advertising is

> *"Outdoor advertisement" means any advertisement: disseminated by using a billboard, electronic screen, or moving picture; written or affixed to a building or any structure or transport vehicle; disseminated by using banner, poster, sticker, brochure, leaflets, or flier; disseminated through audio cassette, loudspeaker; or disseminated through any other related means of dissemination.*

2.6.2 Historical background of outdoor advertisement

The historical background of the outdoor advertisement dates back to 5000 years and it is considered to be the oldest type of advertisement mechanism. The first known outdoor advertisement is known to be a notice of reward for a runaway slave in Egypt. Egyptians also used to be known to possess obelisks to direct travelers where to go. (Taylor et al., 1995) Babylonians also utilized outdoor advertisement o show their place of business by hanging signage above their shops to be distinguished from others.

In the reign of the roman empire, signs began to be multipurpose in usage. Since literacy was low people don't understand characters but they can understand pictorial notations. So those merchants try to huge signs such us goat for dairy and bunch of grapes for a wine shop to cate travels eye.

In Europe France and England utilize outdoor signages better. At the beginning of the 12 century, France began posting written proclamations of laws in cities, and at the end of the 13th-century businesses were required to the edict to hang a sign identifying themselves and their businesses.

In the 18th century in England, the ownership of bill posting locations was legalized. This allowed a formation of billposters to begin to erect their structures to advertise in locations where traffic was heavy and where there are many audiences. (Taylor et al., nd)

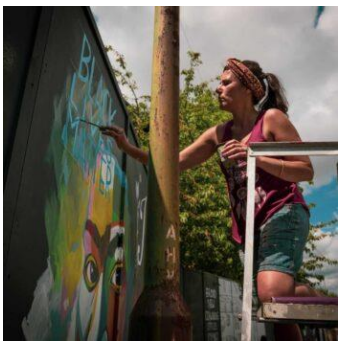
2.6.3 Types of outdoor advertisement

Posters: - Posters are usually sheets of paper containing a message which are pasted on the walls of buildings or frequently visited and distinctly observed places. (Taylor et al., nd) These posters are exhibited at public places, Well-travelled streets, or roads so that They can be seen by a large number of people.

Figure 2.7: Poster advertisement

Painted Displays: - Painted displays take from painted bulletins. (Sahu et al., 2004) painted bulletins are metal sheets or wooden sheets, rectangular in size and usually erected at a height. Their sizes are not standardized but generally, they are larger than posters.

Figure 2.8. Painted Displays



Source: Google photos

Electronic Board and Neon Signs: - Another important outdoor advertising medium is electronic board and neon signs. (Taylor et al., nd) This medium of advertising has gained much popularity in recent years. This form of advertising is especially undertaken during evening and night time.

Figure 2.9: Neon sign

Source: Google photos

Traveling Displays: - Otherwise known as transit advertising, traveling displays are painted on metallic sheets called car cards. These car cards are usually fixed inside buses, taxis, trams, trains, etc. for attracting passengers. (Sahu et al., 2004).

Figure 2.10: Google photo, avert

Source: Google photos

Sky Writing: - This is a modern form of outdoor advertising. It may take several forms. Messages can be written or attached to balloons that are floated in the air, banners are released from airplanes. (Sahu et al., 2004).

Figure 2.11: Balloon advert

Source: Google photos

Sandwich Board Men: - This is one of the oldest forms of outdoor advertising. Sandwich men are hired persons carrying two boards with which they walk up and down the streets. These sandwich men sometimes dress up funnily and shout slogans in favor of the company's products. Similar use made of men-on still to attract the attention of passers. (Sahu et al., 2004).

2.6.4 The effect of outdoor advertisement on the society

Overstimulation or information overload

Environmental overstimulation could result in behavior breakdown in such a way that creating confusion, disorientation, fatigue, and extreme irritability with apathy and emotional discharge in the final stage (Toffler, 1973). This phenomenon may lead to a decrease in productivity, violence, and crime.

Impacts related to placeness

Outdoor information transfer and especially commercial advertisements may be seen as a major contributor in creating more uniform visual environments in accordance with a global economy and culture. (Natneal,2018) This influence is not limited to advertising content and structures only. Those international brands by using the idea of franchising and are usually known for using a surplus amount of advertisement they have created a global identity throughout the world.

Spatial impact

In contrast with some other forms of advertising, you cannot turn off outdoor advertising. (Cronin,2006). As it is evident outdoor advertisements have a spatial characteristic that affects the special quality of the surrounding environment and we can't avoid them.

The ethical or moral impact

Because we cannot unsee what we have seen before we are affected by what we see. In recent years women's rights activists are concerned by the portrayal of women as sex objects. This concern about disrespectfulness of outdoor advertisement goes even into sensitive subject matters such as religious matters. (Natneal,2018)

Impact on tourism resources

In the tourism industry, the image of the city has a great role. If the city is associated with advertisements that are designed and installed in the unplanned and unlawful manner one it will create an ugly city image for the city which directly affects the tourism sector. Two s explained before those unplanned and unlawful advertisements might be a source or reason for crime and vandalism which creates fear in the mind of tourists. (Cronin,2006)

2.7 Factors Affecting Visual Quality of Outdoor advertisements

As expressed in the study made by Jacksonville Community Council the factors which have been found to affect the visual quality of the city were. Inadequate control of signs, Inadequate enforcement of existing legislation, Inadequate plans for long-term preservation of open space, Lack of commitment to street landscaping, unsightly clutter of overhead wires. (Jacksonville Community Council,1985). In this, we can see the major factor which contributes to the degradation of urban visual quality is the unwillingness of the government to formulate new laws and to enforce existing legislation.

2.8 Visual pollution assessment methods

In many articles' scholars agreed that the measurement of visual pollution is very difficult because of its subjectivity. Assessing and quantifying visual pollution is nearly impossible because what one individual thinks there is a disturbance in the visual dimension of urban space may not be true for someone else. (Amber Pariona,2018) Any systematic way of assessing and measurement of visual pollution in local governments is not available (Khydija Wakil et al., 2019)

In the article written by Khydija and others *A Hybrid Tool for Visual Pollution Assessment in Urban Environments* they have come up with a more objective and systematic way of analyzing visual pollution in urban areas which can be applied anywhere else especially in developing countries.

2.9 The Challenges of Measuring Visual Pollution

Because of the subjective manner of visual pollution, it is impossible to quantify it and get a result that is acceptable by all. In addition, there is no standardized guideline for the assessment of visual pollution. From literature reviews, these points had been stated as drawbacks for assessing visual pollution. (Khydija Wakil et al., 2019)

a. Scope of the study- the scope of visual assessment applied might consist of one or two visual polluting objects of the study that could cover the entire city and more than one VPO.
b. Lack of quantification method- because of its complexity and subjectivity there is no mechanism or tool to quantify visual pollution.

c. The subjectivity of the result- because most the visual assessment studies applied subjective indicators more than objective indicators. This might result in biased output because of the researcher's or the participant's view.

2.9 The effect of visual pollution on human health

Visual pollution has been affecting human wellbeing whether in the conscious mind or unconscious mind. The things we perceive through our eyes will create who we are. Below the effect of visual pollution on the human mind is listed as Mrs. Sudeepta stated in a *study of visual pollution and its effect on mental health.* (Sudeepta Banerjee, 2017). Distraction, Eye fatigue, decrease in opinion diversity, Loss of identity, Accidents, harming mental health: Unpleasant visuals can cause Exhaustion, Depression, Stress, and Anxiety due to bad views, Rheumatic diseases, Negative and chaotic visuals can reduce decision- making power of the human mind, especially in kids, Dark dangerous color combinations can change human perception and human psychological mood and behavior. The above list can show that visual pollution is affecting our everyday life by creating discomfort. A billboard could be a distraction for a driver on the highway and an accident might happen. A neighborhood with chaotic figures could create eye fatigue for anybody passing by.

The effect of visual pollution can even go deeper into the perception of aesthetics. The study done by Milan Kumar and others (Milan Kumar et al.,2015) showed that children who were resided in the visually polluted area feel no need to stay in a visually pleasant environment because their center of a human aesthetical test is blunted. Which will cause those children not to deal with mature and adult problems.

Those effects are greater in developing countries because the subject matter is not considered as a necessity rather than a luxury so, there is little regulation for minimizing visual pollution. Therefore, the effect is tremendous.

2.10 Mechanisms for preventing visual pollution.

From 1960 governments try to prevent visual pollution by formulating rules and regulations. but rules and regulations passed by the government have little effect on preventing pollution unless the society at large creates a common consensus on reducing visual pollution.

Moderate advertising at a public place, Local authorities of urban areas must have rules and regulations to protect natural Environment, Reduce the no of graffiti at a public place, Make

the public aware of the causes of visual pollution. Especially kids and Minors because they are the next generation who has to face it, even more, educate people to know the importance of a natural healthy environment and self-motivated to change the habit, Government intervention is needed to make the environment of urban areas natural by setting strict rules regarding the environment.

Visual pollution can be reduced based on the recommendations stated by Muthukrishnan by implementing proper waste management, improved greener and well-mannered placement of the outdoor advertisement.

2.11 Empirical Literature

2.11.1 Best practice around the world in reducing visual pollution

Brazil

The most notable example is Sao Paulo, Brazil, which banned all OAs in 2006. The law not only made São Paulo a more pleasant place to live but also showed that relatively straightforward acts, when well-planned and rigidly enforced, can change the environment. The Clean City law focused on two main targets: publicity and commerce. (V.A. Gokhale et al., 2010). This helped the country to eradicate unwanted advertisements from polluting the built environment. the two publicity and commerce were addresses by the commercial accessibility and visual comfort in the urban design.

Greek

In the year 2000, Athens city embarked on a successful four-year project removing the majority of rooftop advertisements to beautify the city for the tourists the games Summer Olympics 2004 brought, overcoming resistance from advertisers and building owners. (Gudis et al.,2003).

Although Greek is known for having great site of tourist attractions, outdoor advertisements have affected them negatively. In the 2004 Olympic games the government tries to abolish advertisements to decrease the degrading effect of advertisements on the city image of Athens. This will indirectly affect the tourism sector by associating the image of Athens with bad visual quality.

Australia

Visual pollution has now become law by the council due to OA on busy roads which distract the drivers. However, even if a car is parked in a shopping Centre car park and had a for sale sign on the back of the car this will be breaking the law. Residents are not allowed to advertise off our property and if we do it's a fine of $1000 an hour. The features covered by visual pollution policy include factories, sheds, buildings, fences, signs, landscaping, equipment, graffiti, etc. (Ewen, 1976)

The government of Australia tries to minimize the impact of outdoor advertisement on the visual quality of urban space by introducing a very stick fining system. This allowed the government to prevent unwanted advertisement which could be posted onto the cityscape. The approach that the government of Australia used is better because it tries to prevent visual pollution by preventing OAs before installation.

Indian

The height and size restrictions for advertisement hoardings Following restrictions are put on the outdoor advertisement to check visual pollution in the city of Bangalore. The minimum distance from the ground level to the base of the hoarding must be 8 feet. The maximum height from the ground level to the top of the hoarding cannot exceed 30 feet. The dimensions of the hoarding cannot exceed 12' X 24'. The size of the board should not exceed 1' X 3'. The applicant will have to pay a ground rent of Rs.3,000 and Advertisement Tax annually. If the height of the hoarding is below 30' the fine is Rs.5, 000. (V.A. Gokhale et al., 2010)

By putting forward a regulation forward government of Bangalore tries to prevent the unmannered installation of advertisements onto the built environment. Even if the advertisements are posted on the urban canvas the standard laid out will minimize their effect by setting forth the dimensions and payment system beforehand.

2.12 Urban aesthetics vs. visual pollution

Figure 2.12: Images of visual pollution and visual aesthetics

Source: Google photos

According to Mokhtar (2007, p.16), aesthetics has defined as "As a working definition, aesthetics is intended to mean a coordination of design elements to produce an appealing intellectual and emotional awareness which, is an interaction between the psychology of perception and a language of association". (Rezafar & Turk, 2018). On the other hand, visual pollution may refer to the visibility of an object that is located at a distance, to visibility in general, or to clutter within a particular view. (Amber Pariona,2018). In this, we can understand that minimizing the effect of visual pollution on the urban visual sphere will have a positive effect, and the effect of having a good urban senary will go to the psychological and intellectual capacity as mentioned in Teymur (1991)

2.13 Visual pollution policy issues (Addis Abeba city administration)

From 2011 Ethiopian calendrer Previous law which was used to regulate outdoor advertisement was suspended with the new draft law in place. Which was proclamation law no 64/2011. But the draft document was not be applied for two and more years. In those years regulation body was not exercising any of the laws in place because there is no ground for it.

The new draft proclamation (64/2011) for outdoor advertisement.

After being formulated the draft law was delivered for the public and other stockholders to reviewed for further improvements. Below some good points and points which have to be improved are list.

Good points from the new draft document

The first very good point to be mentioned is that one requires prior approval from a regulating body in the current statutes which is Addis Abeba city infrastructure coordination building permit and control authority to post any advertisement on the urban space. This will make the regulating body more powerful and empower them to exercise the law in its fullest capacity.

The second pros that we can opt-out from the new document are that it has a section which is dedicated to controlling light pollution and also controlling mechanism of the distraction of drivers from seeing LED screens alongside the road. The new draft documents section 6.4 clearly defines the amount of information and light intensity allowed for electronic boards alongside roads.

In addition, the new draft document tries to minimize the effect of symbol pollution by not allowing advertisement which will cause social and cultural turmoil. In section 26.1 of the new document, the regulation doesn't permit advertisements such as gambling, gun, witchcraft, and abusive drug advertisements to be posted.

The drawback of the new draft document

The new law for regulating visual pollution by outdoor advertisement doesn't mention the administrative body which will exercise it. This is one of the major causes for the law to be banned. Two governmental bodies claim they are responsible for the implementation of the law they are Ethiopian revenue agency and the Addis Abeba city infrastructure coordination building permit and control authority. Because of this jurisdiction dispute, the law can't be exercised to provide better urban visual quality.

The other limitation of the new draft document is that it should limit the amount and types of advertisement which are posted on historical and cultural sites of the city. Because advertisements harm the city's image. But there is no article dedicated to this effect of advertisement on cultural and historical sites of the city.

Thirdly, the law didn't limit the amount of information posted on the walls of buildings. In most buildings of Addis Abeba, the aesthetical quality of the building is diminished because of the overwhelming number of advertisements posted on them. In addition, the amount of information provided for the viewer can create a distraction. For those reasons, the newly

formed document should specify the ratio of area advertisement to the total surface area of the building.

2.15 Lessons drawn from the review

Visual pollution in developing countries was and is being considered a luxury but it is not in one way or another, we are being affected by it. It is involved in the car accidents in the metropolitans of those countries. And also, it minimizes the productivity of citizens in affecting their mood and industriousness. (Sudeepta Banerjee, 2017). So, to have a city that resembles its inhabits and visually appealing town administrations and governing bodies should formulate and implement regulating lows to minimize visual pollution and its effect.

2.15 Research Gaps

In most of the literature review, the studies were made in the developed countries of the world, especially African countries are not visible in the arena of visual pollution studies. And also, most of the studies focused on defining visual pollution and what cause. they didn't go deep into the effect of outdoor advertisement visual pollution such as the effect on the community in general.

CHAPTER THREE

3. MATERIALS AND METHODS

3.1 The Paradigm of This Research

Research Paradigm

"A world view underlying the theories and methodology of a scientific subject". (Oxford Dictionary of English, 2003)

(Hatch,2002) introduced five common paradigms in education research: positivist, postpositivist, constructivist, critical/feminist, and poststructuralist. Among them, the paradigm of this research seems to be closest to the constructivist paradigm.

I have a similar viewpoint to constructivist ontology in that I believe multiple realities exist because all individuals experience the world in different ways based on their beliefs. In terms of epistemology, I believe that knowledge is subjective, and meaning comes from the interaction between people and reality.

3.2 General description of methods and design

The nature of this research is an exploratory type of research. The researcher has tried to explore the characteristics of visual pollution such as the sources of visual pollution, the effect of visual pollution how to reduce it. The deductive research approach was considered to be the best-suited research approach.

In the case of research design case study is a research process that tries to give guidelines to local situations and helps to understand the existing local situation. This method is the most commendable and selected since it allows having closer contact with the actual situation.

The research used the mixed-method approach that combined qualitative (case studies) and quantitative (questionnaire, survey)

3.2.1 Source of Data

For this particular research primary and secondary data sources were used. Primary data sources include observation, photographic walk and questionnaire survey, and personal interviews.

Secondary data that the researcher has used were rules and regulations, previous projects, articles, online sources, and other publications that were relevant for this study.

3.3 Sampling Technique

For this specific study, both probability and non-probability sampling techniques were used. In the probability sampling technique, simple random sampling was used because the research demands participant from the study areas which are performing their normal daily chores.

In the non-probability sampling technique, purposeful sampling was used. Purposeful sampling is selecting a strategically and purposefully portion that has a higher degree of information (Information-rich cases). (Patton, 2002, p. 243). Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry (Patton, p. 230)

Because architects, urban planners, graphics designers, psychologists, and city administration officers are information-rich when it came to visual pollution. Their expertise in the field of study had a greater advantage to the outcome of this research.

Table 3.1: The sample size of expert respondents

No	Expertise	Total number in Addis Abeba	sample	Respondents
1	Addis Abeba city infrastructure coordination, building permit and control authority	10 sub-cities	4 from 4 sub-city	Officer
2	Architectural firms	120	5 from 5 offices	Architects
3	Advertisement offices	Unknown	6 from 6 offices	Graphics designers
4	Psychologists	Unknown	2	Doctors
5	Urban planning and design University professors	3	4 from 2 universities	Educators
	Total		61	

Source: Researcher compilation. (2021)

3.4 Target population

The target population for this research was resident who works and live Addis Abeba and also expertise who has a background in urban design or advertisement agency workers who have been purposefully selected. Those who are selected for their expertise must live in Addis Abeba

3.5 Sample size

In the sample sizing process, the first thing is to determine the target population size. There are two groups of populations in this study residents in the selected areas and experts who have a background in urban design.

For the residents in the study area, the sample sizing process was determined using Cochran's formula because the population size exceeds 10000 and the target population is also unknown. The population which lives in the city Addis Abeba is estimated to be Addis Ababa's 2020 population is now estimated at 4,793,699.

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where: "e" is the level of precision (i.e., the margin of error), "p" is the (estimated) proportion of the population which has the attribute 0.5, q is one minus the value of "p". The "z" value is found in a Z table.

For this particular research, p = 0.5. with 95% of the level of confidence, and 5 percent precision. The 95 % confidence level gives us Z values of 1.96, per the normal tables, so we get

((1.96)2 (0.5) (0.5)) / (0.05)2

= 385

Therefore, in simple random sampling, the sample size is to be 385 based on the Cochran formula.

3.6 Data Collection Technique

Table 3.2: Data collection techniques used.

No	Objective to be met for this research	Data collection technique used	Description
1	To identify causes of outdoor advertisement visual pollution;	Observation, questionnaire, and interview	The main data collection tools employed here were questionnaires and interviews for the reason that the respondents will rely on the most accurate causes. In addition to those two techniques observation was used to support the arguments.
2	To assess the effect of outdoor advertisement visual pollution on Addis Abeba residents;	Questionnaire, visual comparison, and interviews	Because of the subjectivity of this objective the main tool used was a questionnaire which will allow the researcher to get the wide variety of effects of visual pollution by OA.
3	To quantify visual pollution caused by outdoor advertisement in ten city centers of Addis Ababa city;	Visual pollution assessment tool. (Khydija et al., 2019)	This tool allowed this research to quantify the overall visual pollution and also the amount in which outdoor advertisements share for the total pollution.

Source: Researcher compilation. (2021)

Because of the subjective manner of the study, most of the data collected was qualitative dates. But as expressed in the objective of this study one of the aims of this research is the quantification of visual pollution caused by outdoor advertisement in Addis Ababa city. For this reason, some quantitative data collection methods have been applied.

3.6.1 Qualitative Data collection Technique

Field observation

As the problem of this research is strongly related to the visual quality of the urban spare observation is the main qualitative data collection method. In this way, the researcher has found out the area affected by visual pollution and what is effect visual pollution on society. The type of observation employed here was Observer as Participant in this where the researcher will be known and recognized by the participants.

Photography walks

Three ways that can be used to record visual pollution are photography, sketch, and video. To get the best output the researcher had mostly use a photo walk to collect the data.

Interview

The interview was conducted on-site with the inhabitants of the study areas. In addition, a small group of professionals with expertise related to the subject manner such as architects, urban designers and planners, and administrative bodies was selected to on rely their insight on the problem stated.

For this research, the researcher has conduct interviews in structured, semi-structured, and unstructured manners. But unstructured and semi-structured types of the interview was mainly used because of the subjectivity of the research and also the is so much little is known about visual pollution in the study areas.

Questionnaire

The questionnaire was prepared by the researcher and communicated with the research participants via google forms. In the questionnaire's research participants have delivered their attitude towards visual pollution and how they think it has been affecting them in day-to-day activities. The reason for using Google Forms is to address a maximum number of participants.

Visual comparison

This is method was used to get the relation between visually polluted areas and the feeling of respondents. In this, the respondents were provided with different parts of Addis Abeba

and were asked to rate their feeling very comfortable, comfortable neutral, disturbed and very disturbed

3.6.2 Quantitative Data collection techniques

Although it is difficult to get quantitative data about visual pollution without the biased insight of the research participants. The researcher has tried to get the data through questionnaires, interviews, and relevant field surveys.

3.7 Data Analysis Techniques

After both primary and secondary data are collected, they have been labeled and organized in an orderly fashion. The qualitative data have been summarized in a way that will give a common understanding. For the open-ended questions and unstructured interviews, the study tried to create a correlation between them and formulating them into categories to get the conceptualization of the idea behind them. In the case of quantitative data, they were analyzed in their numerical value and summarized in maximum and minimum values.

The data analysis technique for quantifying visual impact assessment done by Khadija "A Hybrid Tool for Visual Pollution Assessment in Urban Environments" was applied for measuring visual pollution. For the quantification, the location which was selected by respondents on the survey question was analyzed to get the total visual pollution score of the city. Afterward share of outdoor advertisements for the total visual pollution was put in percentage.

To produce the final output of this research various applications were in use. For the data collection and analysis, Google Forms from google, SPSS, and MS Excel for the data analysis, and to formulate the final word document MS word 2016 was used.

CHAPTER FOUR

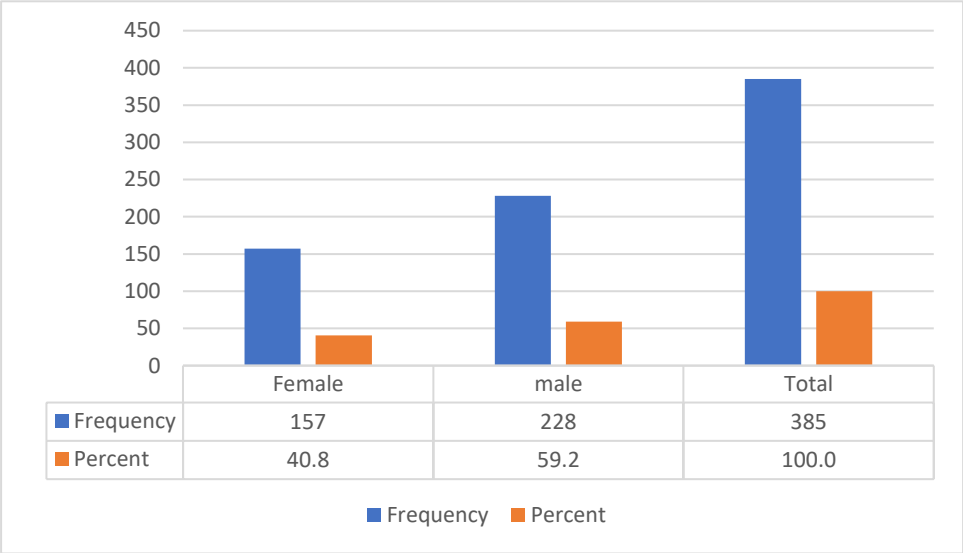
4. RESULTS AND DISCUSSION

4.1 Results

4.1.1 Respondent's Background

4.1.1.1 Sex of the Respondents

Figure 4.1: Sex composition of respondents.

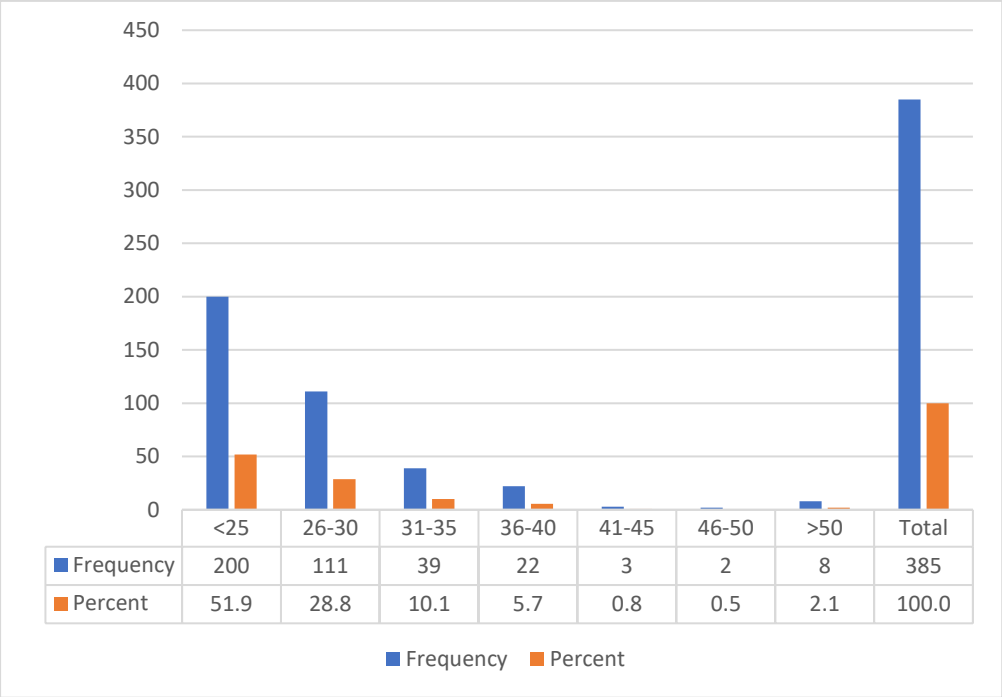


Source: Researcher survey data.,2021

Form the total 385 questionnaires distributed 228 were filled by male volunteers which make 59.2 percentage of the total, and the rest 157 were filled by women volunteers which make 40.8 percentage of the total.

4.1.1.2 Age of the Respondents

Figure 4.2: Age composition of respondents



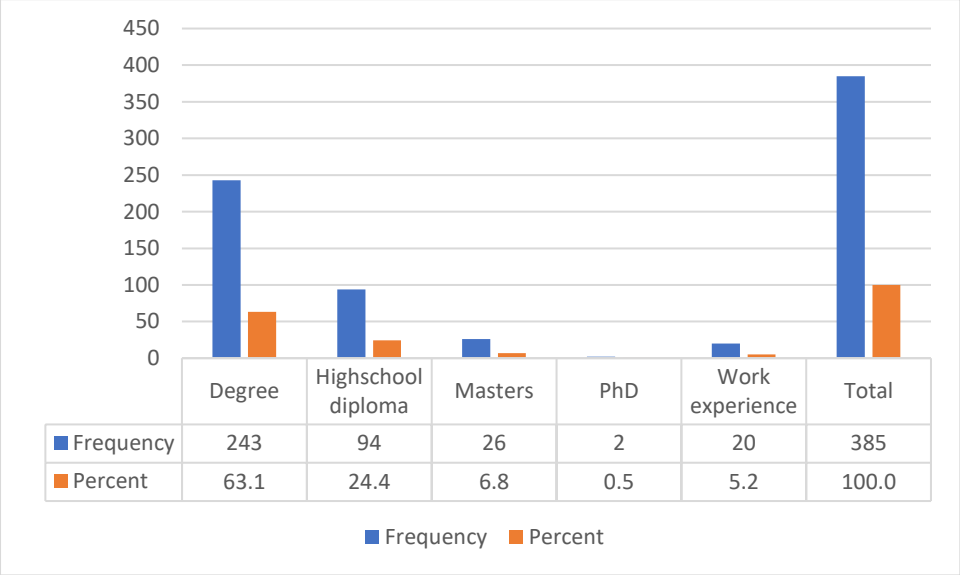
	<25	26-30	31-35	36-40	41-45	46-50	>50	Total
Frequency	200	111	39	22	3	2	8	385
Percent	51.9	28.8	10.1	5.7	0.8	0.5	2.1	100.0

Source: Researcher survey data.,2021

From the total 385 questionnaires, most of them were filled by young adult volunteers which are less than the age of 25 with a total number of 200 that makes them 51.9 percent of the total, the second biggest age group is the age between 26 and 30 with a total number of 111 with a percentage of 28.8, the third biggest age group that filled this questionnaire was the age group between 31 and 35 with a total number of 39 that makes this group 10.1 percent of the total, the rest age groups that volunteered for this questionnaire were between the age of 36 and 40 with a total number of 22 and 5.7 percent of the total,41 and 45 with a total number of 3 and 0.8 percent of the total and 46 and 50 with a total number of 2 and 0.5 percent of the total. The last remaining 8 questionnaires were filled by volunteers with the age group above 50 years of age.

4.1.1.3 The qualification of the Respondents

Figure 4.3: Qualification of respondents.



	Degree	Highschool diploma	Masters	PhD	Work experience	Total
Frequency	243	94	26	2	20	385
Percent	63.1	24.4	6.8	0.5	5.2	100.0

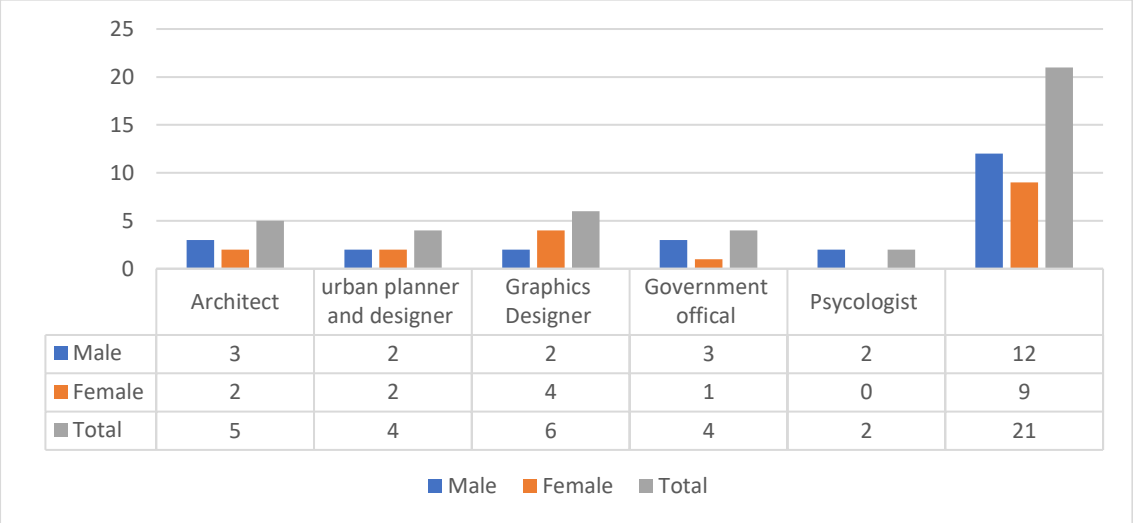
Source: Researcher survey data.,2021

From the total 385 questionnaires, most were filled by those with a degree certificate with a total number of 243 which is 63.1% of the 385, the second biggest group was volunteers that have a High school diploma with a total number of 94 which is 24.4%, the third biggest group based on the educational background was the group with the master degree with a total number of 26 which is 6.8 %, the rest of the questionnaires were filled by 2 volunteers with the Ph.D. degree with 0.5% and finally the rest 20 were people without any higher educational background which makes them 5.2 %.

4.1.1.4 Target respondent's background

Sex and Profession composition of the target respondents

Figure 4.4: Sex and Profession composition of the target respondents.



	Architect	urban planner and designer	Graphics Designer	Government offical	Psycologist	
Male	3	2	2	3	2	12
Female	2	2	4	1	0	9
Total	5	4	6	4	2	21

Source: Researcher survey data.,2021

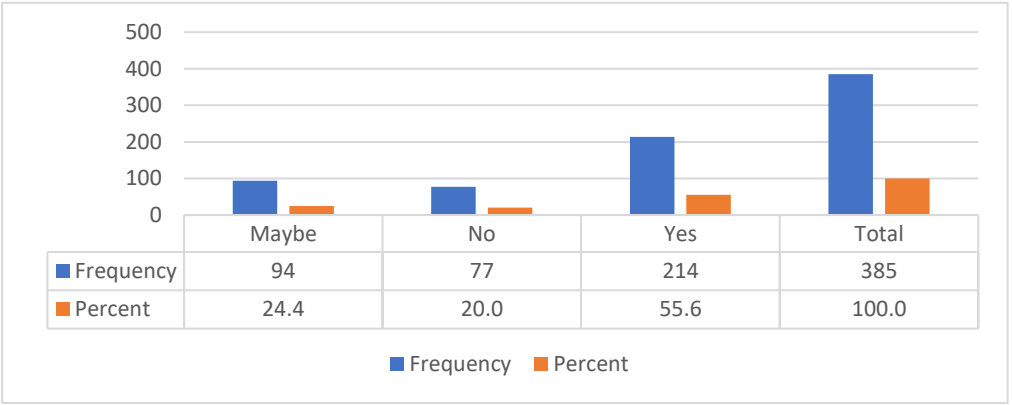
The total selected experts for this paper were 21 out of those 9 were female and 12 were male. When we see those experts in their profession 5 of them were architects which encompass 3 males and 2 females. Out of 4 urban planners and designers, 2 were female and 2 were male. When we come to graphics designers the number of females was twice the number of males which is 2. In the governmental office, 3 males and 1 female were selected which is in total becomes 4. Finally, the number of psychologists was 2 and both of them were male.

4.1.2 Result and findings

4.1.2.1 The cause of visual pollution in Addis Abeba by outdoor advertisement

4.1.2.1.1 Respondents' knowledge about visual pollution

Figure 4.5: Respondent's knowledge about visual pollution.



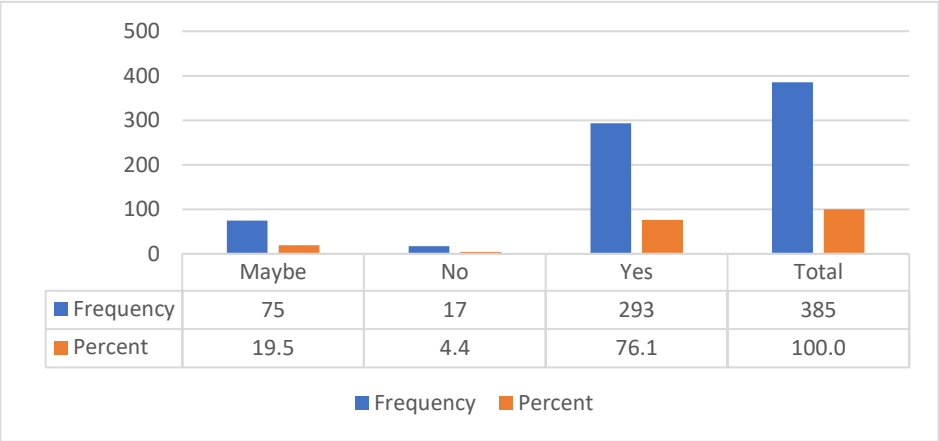
	Maybe	No	Yes	Total
Frequency	94	77	214	385
Percent	24.4	20.0	55.6	100.0

Source: Researcher survey data.,2021

Among the conducted survey on their prior perception about visual pollution from a total of 385 214(55.6%) said they know about visual pollution,94(24.4%) said maybe and 77(20%) of the respondent doesn't know about visual pollution before this research. In this one can understand that more than half of the society has a knowledge about visual pollution although the field of study is formulated in recent decades.

4.1.2.1.2 Outdoor advertisement as a source of visual pollution

Figure 4.6: Outdoor advertisement as a visual polluting object.

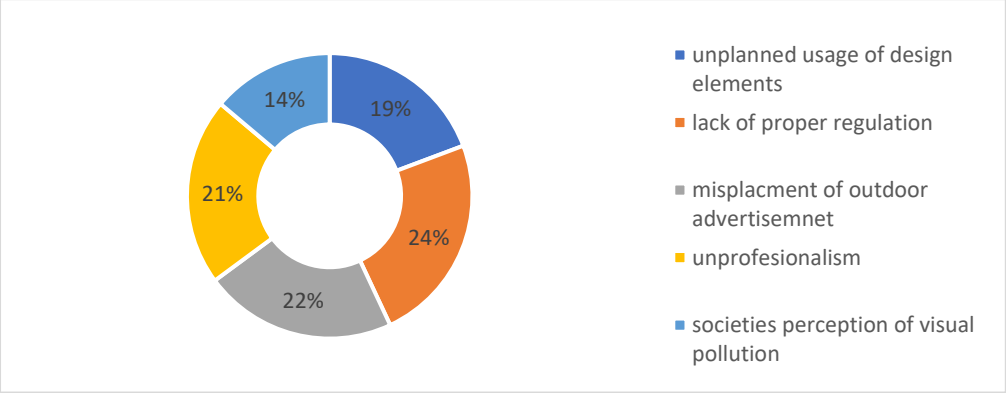


Source: Researcher survey data.,2021

From the total 385 conducted survey 293(76.1%) respondent said outdoor advertisements can be a cause for visual pollution, 17(4.4%) of the respondents, on the contrary, said outdoor advertisements are not the cause for visual pollution, the rest 75(19.5%) respondents stated that outdoor advertisement could be a source of visual pollution. This shows that residents consider OA as visual polluting object in the urban canvas.

4.1.2.1.3 The Inhabitants perception of the cause for visual pollution in the case of outdoor advertisements

Figure 4.7: Causes of visual pollution by outdoor advertisement.

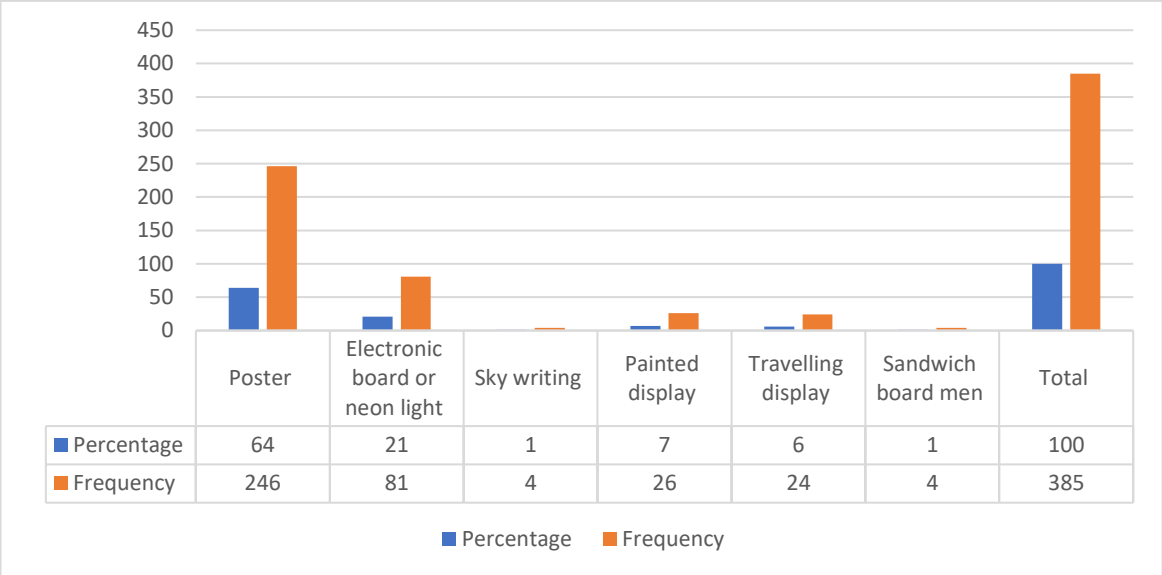


Source: Researcher survey data.,2021

From the survey conducted 24% of the respondent expressed that the cause for visual pollution is lack of proper regulation, 22% of the total respondent said that misplacement of outdoor advertisement is the cause for pollution, the other 21% stated that unprofessionalism of designers is cause for visual pollution by outdoor advertisement, 19% of the survey results implied that unplanned usage of design element by designers was the reason for pollution, the rest 14% of respondents side the societies perception towards visual quality is the cause for visual pollution by outdoor advertisement. This implies that about 46% of the respondent said lack of proper regulation and misplacement of advertisement are the cause for visual pollution which are both problems which the government is the only body regulate them. Therefore, the major cause for the visual pollution caused by outdoor advertisement is the negligence of the governing body.

4.1.2.1.4 Types of advertisement which cause visual pollution

Figure 4.8: Types of advertisement which causes visual pollution.



Source: Researcher survey data.,2021

Amongst the respondents 64% of them said posters are the most visually polluting type of outdoor advertisement, 14% said electronic board or neon light,1% said skywriting, 7% stated painted displays were the most pollutant, traveling display was selected as the most visually polluting type of advertisement by 6% of the respondents, the remaining 1% said sandwich board men were most visually pollutant. This shows that only the two advertisement types poster and electronic boards were said most pollutant by the respondents 85% of the total respondents, which implies there is an excessive number of disruptive poster and electronic board installation in the urban canvas.

4.1.2.1.5 The most disturbing outdoor advertisement

The respondents were asked to write the most disturbing outdoor advertisement they have come across with Addis Abeba and they have written the following answers. The answers were categorized in their respective types of visual pollution for better organization.

Figure 4.9: Pictures of visual polluting advertisements.

Source: Researcher field survey.,2021

Table 4.1: Most disturbing advertisements classified into a group of visual pollution.

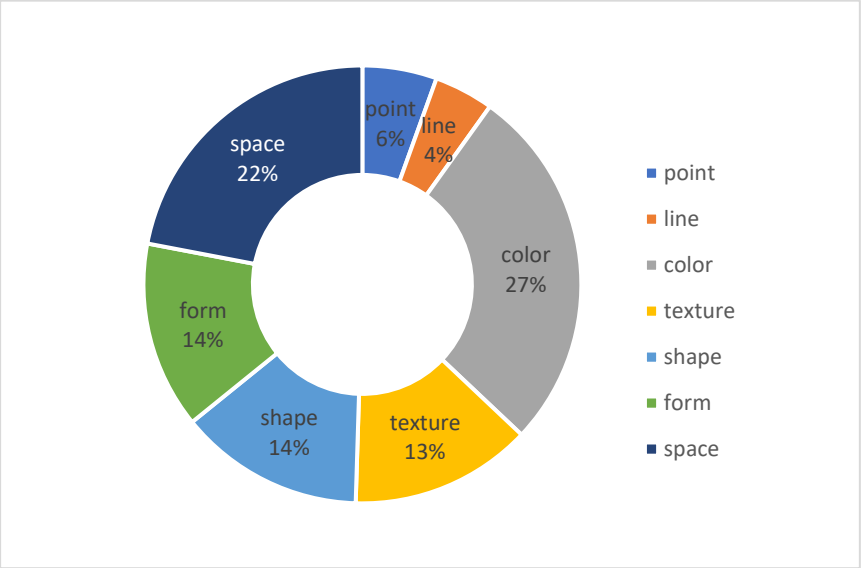
Symbol Pollution	**Color Pollution**	**Visual Pollution**	**Light Pollution**
Lover finder	An advertisement that has an odd color combination and full of text	job vacancy and other paper advertisements posted on walls and street light poles.	Big lighting advertisements for bar
About abortion	On the building (commercial) there are different advertisements of shops are different types of color they used, that doesn't match with the building.	Real estate broker ads crowded in one place	TV screen around Megenagna
Alcohol or beer advertisement	Background color, font size, and also poster size	Billboards	led lights
"sugar mommy agenagn agency"		Advertisements commonly on tapelas are placed on the roads with big frames.	
Some Ethiopian artist's (woman) dressing code is very inappropriate and against our culture and religion.		Chaotic Ads on commercial buildings	
Condom advert at Meskel Square		posters of election	
Advertisement Posted on doors with nude photos for dish maintenance		I observed advertisement's which will block/Partially intercept drivers view on streets.	
		religious trip advertisements	

Source: Researcher survey data.,2021

This shows us that in the city of Addis Abeba all types of visual pollutions occur. The most occurring are symbolic and visual pollution. In advertisements that cause symbolic pollution, the cultural and traditional norms of the society were defied. The others types create an uncomforting scenario for the inhabitant adjacent to them.

4.1.2.1.6 Design element which is mostly used wrongly

Figure 4.10: Most wrongfully used design element.



Source: Researcher survey data.,2021

From the eight basic design elements, respondents were asked to select the most wrongfully used design element in outdoor advertisements which creates visual pollution 27% of the respondent replied color was the most ill-used design element, 22% said space, 14% said form as a design element was misused also 14% said shape was the most wrongfully used design element, 13% said texture,6% said point and 4% of the respondents said line was misused as a basic design element. This implies that color is the most disruptive element of advertisements, which will in return causes a visually unappealing environment for the viewer. Mostly the ill-mannered application of color was because of the unprofessionalism of the designers. Secondly, the placement of advertisements onto the overall space is not properly administered. In sum, about half of the respondents said space and color were ill-used in the visual field.

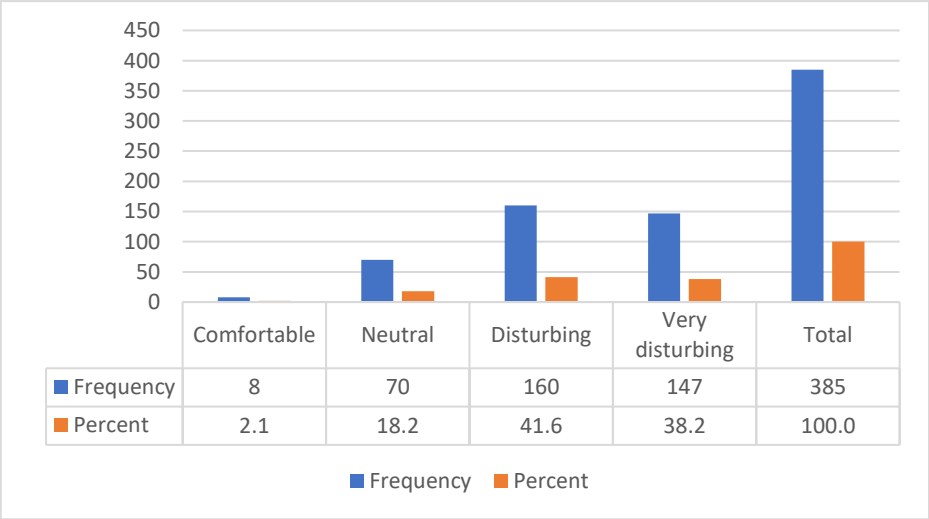
4.1.2.2 The effect of visual pollution in Addis Abeba by outdoor advertisement on the residents

4.1.2.2.1 Visual comparison

The visual comparison was done using different photos taken from different areas of the city. Seven pictures were provided to the respondents and were asked to rate their feeling when they are in that place in from very comfortable to very disturbing.

Poster on a building facade

Figure 4.11: Responses to Poster on building façade.

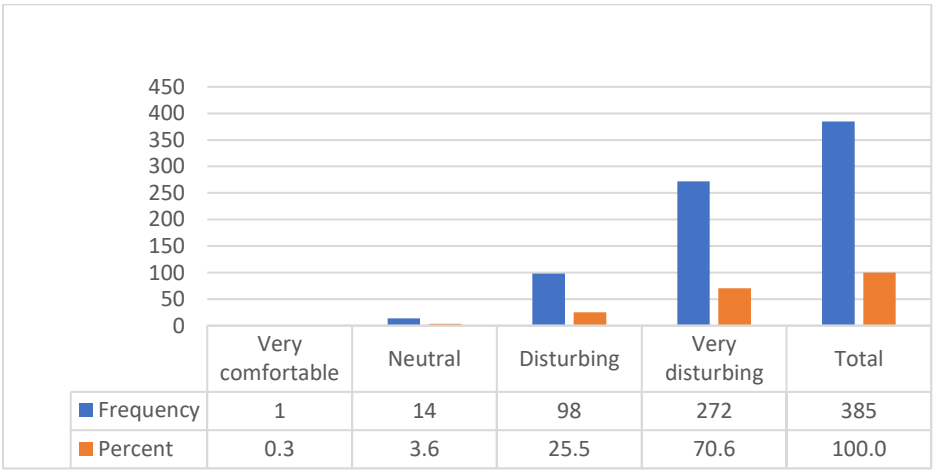


Source: Researcher survey data.,2021

The respondents were asked what they feel when they are in a place such as a Poster on a building façade. 8(2.1%) said they feel comfortable, 70(18.2%) replied they feel neutral, 160(41.6%) of the respondent felt disturbed and the rest 147(38.2%) felt very disturbed when the area in such areas. This implies that about 307 respondents feel disturbed or very disturbed when they are around this kind of urban space. The reason for that is the amount of advertisement posted on the space and the overall design of it. Thus, we can understand that the amount of advertisement in one place or visual field affects the views feeling.

Old paper posters posted onto a wall

Figure 4.12: Responses to Old paper posters posted onto a wall



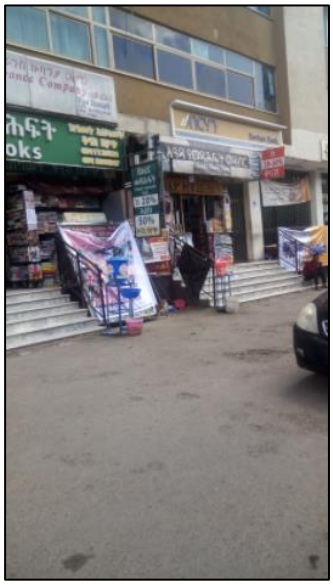
	Very comfortable	Neutral	Disturbing	Very disturbing	Total
Frequency	1	14	98	272	385
Percent	0.3	3.6	25.5	70.6	100.0

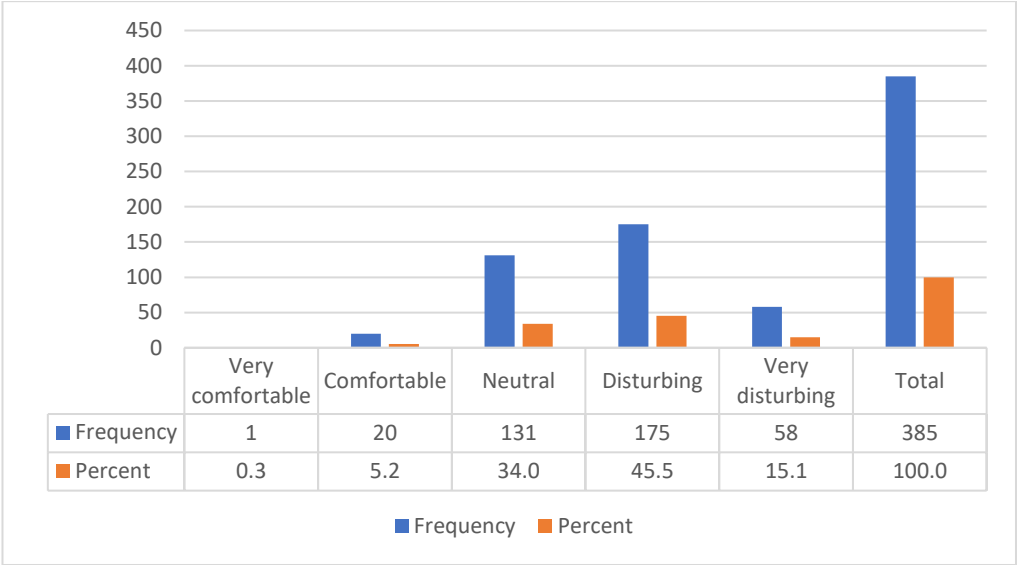
Source: Researcher survey data.,2021

From the survey conducted 1(0.3) respondent feel comfortable, 14(3.6%) neutral, 98(25.5%) disturbed, and the remaining 272(70.6%) replied they feel very disturbed when they are in a place where old paper posters posted onto a wall. In this particular picture, respondents showed a negative feeling pattern. From the general 385, respondent 370 of them either feel disturbed or feel very disturbed. This shows that old and torn paper advertisements posted on the streets and fences create an ill-feeling to society.

Poster on building façade and entrance

Figure 4.13: Responses to a poster on building facade and entrance





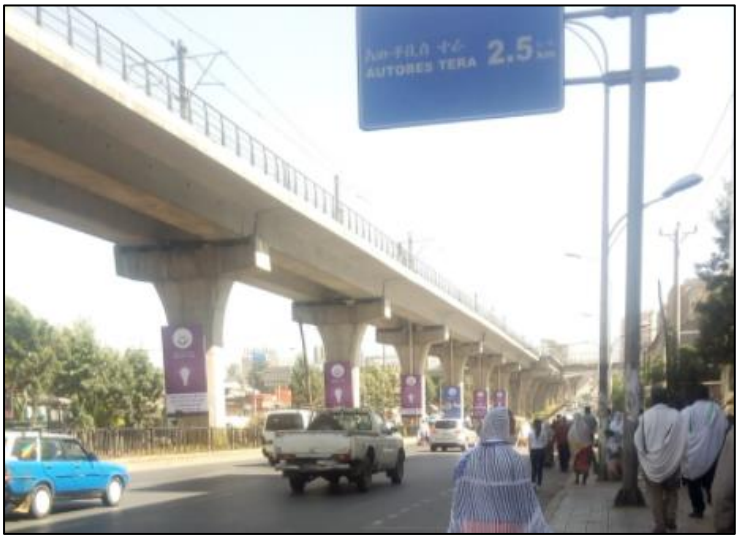
	Very comfortable	Comfortable	Neutral	Disturbing	Very disturbing	Total
Frequency	1	20	131	175	58	385
Percent	0.3	5.2	34.0	45.5	15.1	100.0

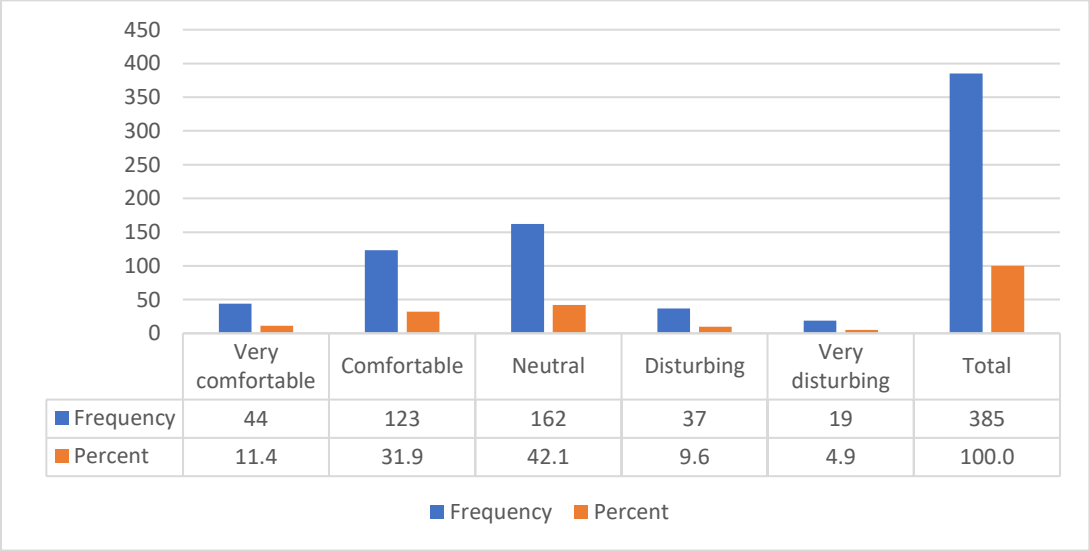
Source: Researcher survey data.,2021

Figure 4.13 was provided for the respondents and were asked to rate their feeling. 1(0.3%) respondent replied that he/she feels very comfortable,20(5.2%) said they feel comfortable, out of 385 respondent 131(34.0%) feel neutral, 175 of the respondents feel disturbed and the rest 58(15.1%) feel very disturbed. In this figure 4.13, 60.6% of respondents feel disturbed this shows that the number of respondents who feel disturbed or very disturbed is above the average although it is relatively lower than figure 4.11 this is because of the amount of information provided here is relatively lower than that of figure 4.11.

Posters on AALRT railway columns

Figure 4.14: Responses to poster posters on AALRT railway columns





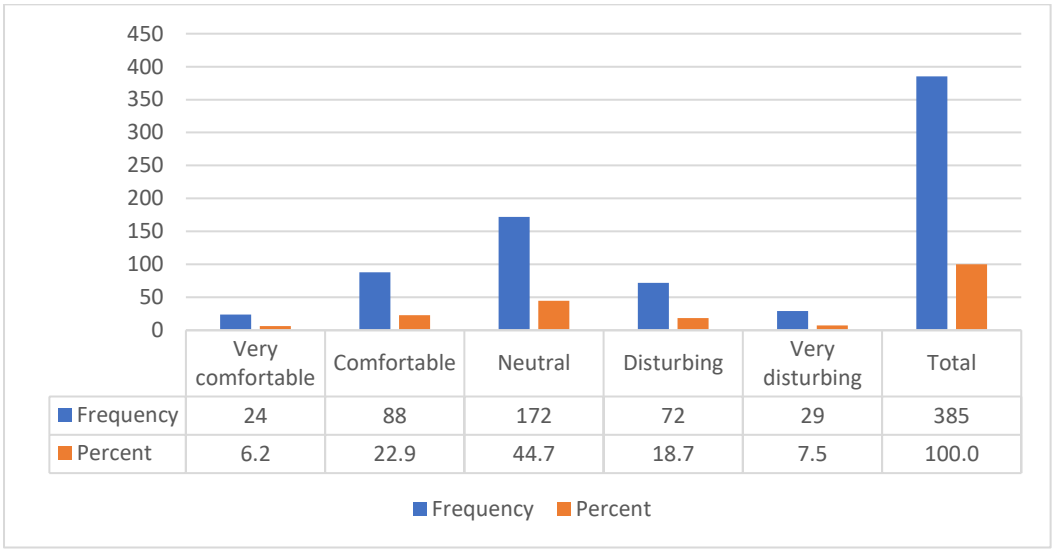
	Very comfortable	Comfortable	Neutral	Disturbing	Very disturbing	Total
Frequency	44	123	162	37	19	385
Percent	11.4	31.9	42.1	9.6	4.9	100.0

Source: Researcher survey data.,2021

Among the 385 survey questions 44(11.45) feel very comfortable,123(31.9%) feel comfortable,162(42.1%) feel neutral,37(9.6%) feels disturbed, 19(4.9%) very disturbed if they were situated in the place like the figure 4.14. in this one can understand that the amount of respondent who feels disturbed and very disturbed was lower and the respondent who feels comfortable and neutral was the highest 85.1% which implies that if outdoor advertisements are installed and designed in a rhythmical and proper arrangement, comfortable and visually appealing environment will be created.

Poster onto the side of a building

Figure 4.15: Responses to poster onto the side of a building

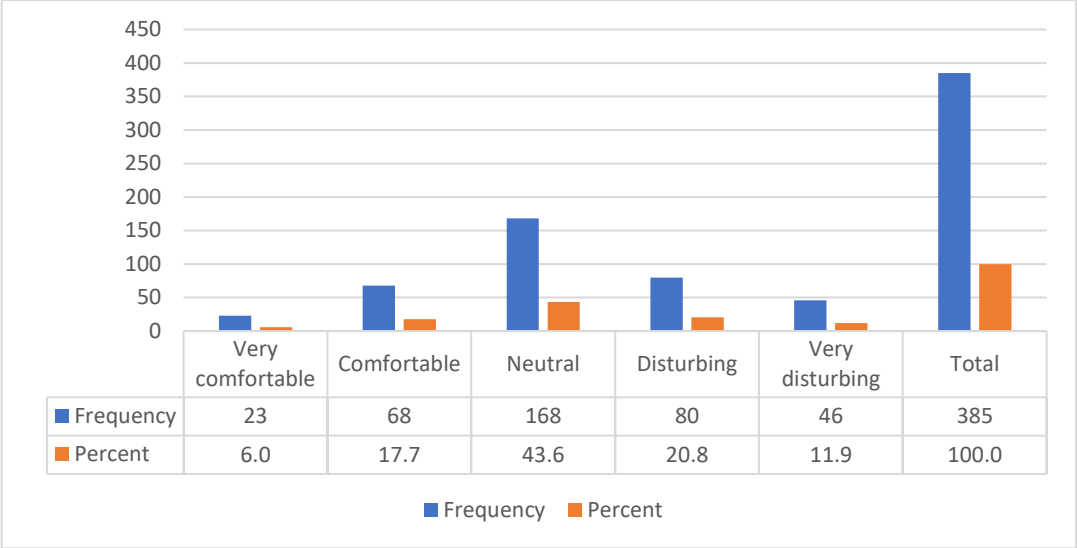


Source: Researcher survey data.,2021

Figure 4.15 was provided to the respondent and were asked to describe how they feel when they see this advertisement 24(6.2%) respondent said very comfortable,88(22.9%) of the total respondents said they feel comfortable,172(44.7%) respondent feel neutral,72(18.7%), finally out of 385 questionnaire survey 29(7.5%) respondent were comfortable seeing advertisement shown in figure 4.15. In this figure 4.15, the researcher tries to find the feeling of the society to only one advertisement with a negative symbolic representation of bravery and courage. In this particular figure, the respondent's response showed a neutral feeling pattern which inclines to disturbed feeling. This implies that the amount of information is more pollutant than the content inside the advertisement.

LED screen

Figure 4.16: Responses to LED screen

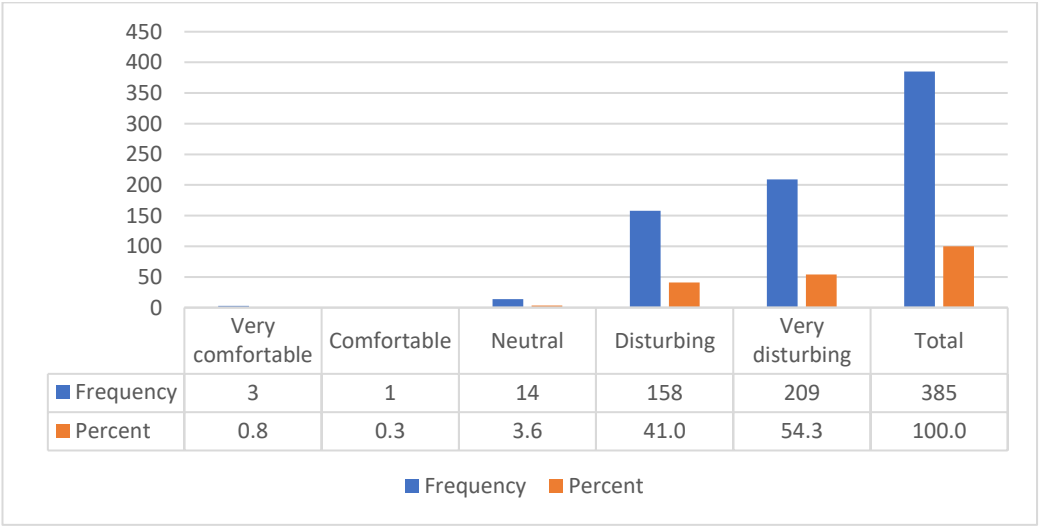


Source: Researcher survey data.,2021

After being provided with figure 4.16 amongst the questionnaire survey provided with figure 4.16, 23(6.0%) replied they feel very comfortable,68(17.7%) said they feel comfortable, 168(43.6%) said they feel neutral, 80(20.8%) said they feel disturbed in such places, lastly, 46(11.9%) feel very disturbed. This implies that LED screens created a neutral and comfortable (61.3%) feeling in society. In this sense LED screens can be considered a better type of advertisement with its drawbacks because it proved one type of information and also minimize the amount of space needed for advertisement

Small paper posters

Figure 4.17: Responses to small paper posters



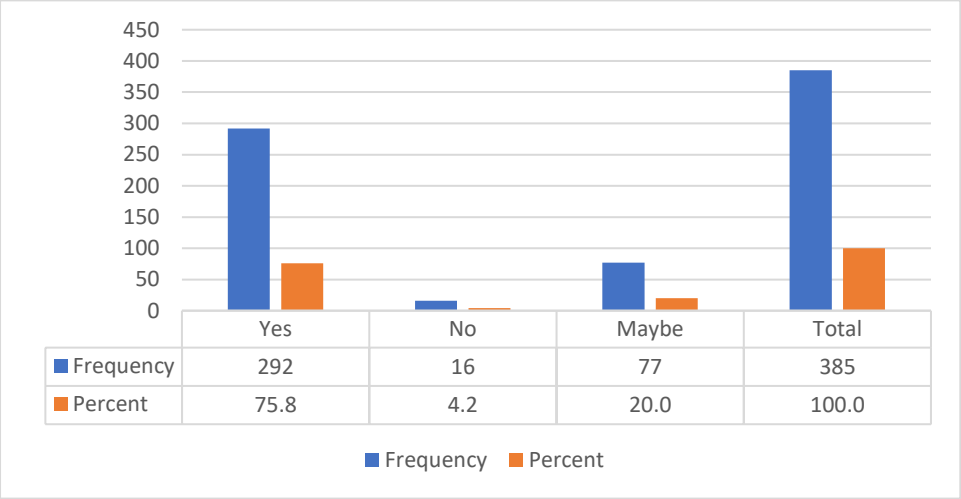
	Very comfortable	Comfortable	Neutral	Disturbing	Very disturbing	Total
Frequency	3	1	14	158	209	385
Percent	0.8	0.3	3.6	41.0	54.3	100.0

Source: Researcher survey data.,2021

From 385 questionnaire survey, 3(0.8%) feel very comfortable in a place such like areas shown in figure 4.17, 1(0.3%) respondent feel comfortable, 14(3.6%) respondents feel neutral, 158(41.0%) of the total respondents feel disturbed, lastly 209(54.3%) respondents feel very disturbed. In this figure, 4.17 respondents showed the highest disturbance feeling pattern 95.3%. which implies the in this picture both the amount of information proved and small and thrown advertisement exists and that will create disturbing feeling onto the society

4.1.2.2.2 The effect of visual pollution caused by outdoor advertisement on Addis Abeba city image

Figure 4.18: Effect of visual pollution by OA.

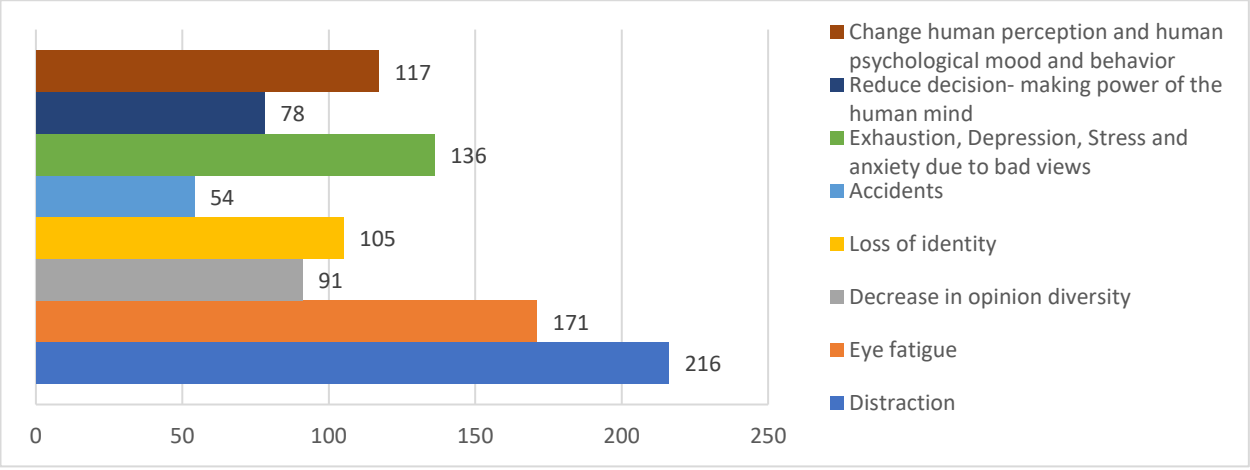


Source: Researcher survey data.,2021

Amongst the questionnaire survey 292(75.8) said visual pollution by outdoor advertisement has a negative effect on the city image, 16(4.2) of the respondents replied visual pollution caused by OA doesn't harm Addis Abeba's image, the rest 77(20%) said maybe it affects the image of the city. This implies that more than three fourth of society thinks visual pollution harms the image of the city.

4.1.2.2.3 The effect of being in a visually polluted environment that is caused by an outdoor advertisement

Figure 4.19: Effect of visual pollution by OA.

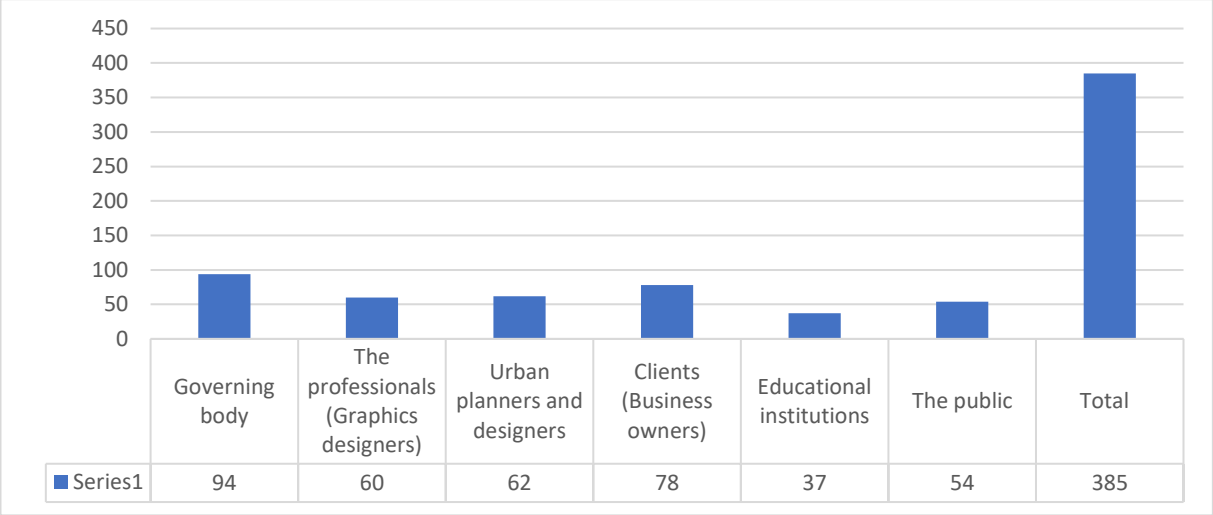


Source: Researcher survey data.,2021

From the total respondent of 216 feel distracted when they are situated in a visually polluted area of Addis Abeba, 171 feel eye fatigue, 136 of the respondents feel exhaustion, depression, stress anxiety due to bad views, 117 of the total respondents replied change human perception and human psychological mood and behavior, 105 losses of identity, 78 of them said reduce decision-making power occurs when they are in visually polluted space, the remaining 54 said accident can be caused due to visual pollution by outdoor advertisement. This shows that most of the effects of visual pollution are in the psychological well-being of society.

4.1.2.2.4 The responsible body for outdoor advertisement visual pollution

Figure 4.20: Responsible body for visual pollution by OA.

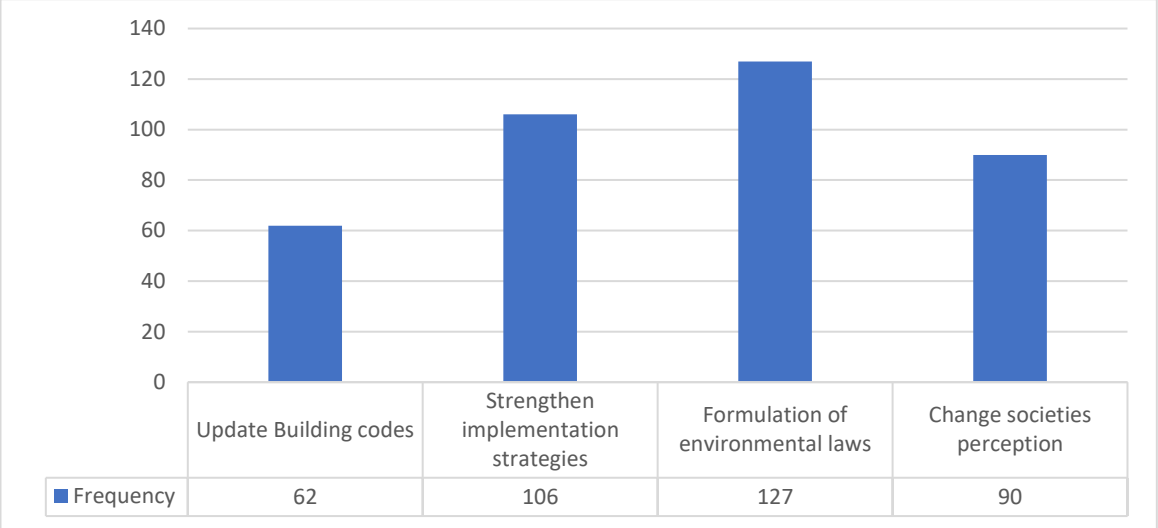


Source: Researcher survey data.,2021

Respondents were asked who is responsible for visual pollution by outdoor advertisement in Addis Abeba. From the total 385,94 said government,78 replied the business owners,62 out of 385 said urban planners and designers are responsible for the pollution, 60 of them replied the professionals(designers), 54 of the respondents said educational institutions are responsible for the pollution, the rest 54 respondents replied the general public is responsible for this pollution. The most frequent answer for the responsible body for visual pollution by outdoor advertisement in the city Addis Abeba was the government. This implies that the respondents think the government is not working in its full capacity to control visual pollution.

4.1.2.2.5 Solution for the pollution

Figure 4.21: Solution for visual pollution.



Source: Researcher survey data.,2021

Out of the total 385 respondents 62 said updating building codes will be the solution for visual pollution by outdoor advertisement,106 replied strengthen implementation strategies will be the solution, the respondents who said formulating environmental laws were 127, the remaining 90 respondents' states that changing the societies perception will be key for solving visual pollution by outdoor advertisement. This implies that more than have of the respondent believed if the government formulate and implement regulations which can control visual field of the city visual pollution can be reduced. As expressed in previous sections of this chapter the major cause of visual pollution was the unwillingness of the governing body to enforce laws so that if the willingness and devotion of the administration body changed visual pollution can be reduced.

4.1.3 Target group results

4.1.3.1 The cause of visual pollution by outdoor advertisement

4.1.3.1.1 Cause of outdoor advertisement caused visual pollution expressed by Architects and Urban planners and designers

Architects from an educational institution, freelancer, and office architects were asked what was the cause for visual pollution by outdoor advertisement. one of the architecture instructors in kotebe metropolitan university revealed that the cause for the pollution is not considering advertisements in the streetscape, urban designs and also in individual architectural designs. He said if advertisements were allowed to have a specific place in

the city which will make the other places of Addis Abeba free from unnecessary outdoor advertisements. On the other hand, other architects expressed that lack of proper rule and regulation and also not implementing the laws is the main cause for visual pollution by OA.

4.1.3.1.2 Cause of visual pollution by OA expressed by Graphics designers

In the interview with a designer from Kitab design solution, he expressed that visual pollution by outdoor advertisement is caused because there is no space provided for advertisement in the cityscape and also in buildings, this is due to ill consideration of designers the value of outdoor advertisement in the conception period of the design. In addition to this, he said that the professional graphics designer is not well respected in Ethiopia. He stated that in Addis Abeba anyone with the knowledge of designing software (adobe photoshop and adobe illustrator) is called a graphics designer. And also, the government doesn't give proper attention to it. For instance, anyone can have a graphics design license without prior knowledge of basic design. This makes the industry to be flooded with advertisement agencies without proper certification of graphics design qualificator.

In the interview with the graphics designer from M advertisement said that we can't remove the advertisement from the urban sensory because a lot of lives depend on it even though they are causing visual pollution. The cause of visual pollution by outdoor advertisement as stated by her was because there is little or no specific place which is provided for outdoor advertisement people tries to post adverts onto anyplace, they see which is vacant.

Figure 4.22: Visual pollution at roundabouts

Source: Researcher field survey.,2021

In addition, one designer expressed those political advertisements are posted everywhere with little or non-provision this created visual pollution although it is periodical. But on the newly drafted document article 4 and sub-article 4.1 it clearly stated that it is not legal to post any advertisement inside roundabouts unless issued permission is given for an organization that develops and maintains the roundabout. (AACICBP,2019). But in the 6th national election of Ethiopia, the unlawful and visually polluting advertisements were installed right at the center of the squares. On the contrary, in other sections of this proclamation, it gives room for political parties to post their information on the allocated spaces of the city it doesn't specifically say political parties can post an advertisement inside a square.

Figure 4.23: Visual element created by an ill-mannered advertisement

Source: Researcher field survey.,2021

In the figure above the visual disturbance that paper advertisement posted on to walls and electric poles can even be seen across the street. Because of a large number of advertisements posted they have created another design element which is linear seen from the opposite side of the street. This makes it impossible to avoid both sides of the street. This idea was resid from a graphics designer from Kitab design solution. He expressed that unmannered OAs in addition to creating pollution they have emerged in the urban space as an unintended visual element.

Figure 4.24: Regulation for advertisement agency permit.

ተራ ቁ.	አዲሱ የንግድ ፈቃድ መስጫ መደብ ኮድ	አዲሱ የንግድ ፈቃድ መስጫ መደብ ሥያሜ	ነባሩ የንግድ ፈቃድ መስጫ መደብ ኮድ	አዲሱ የንግድ ፈቃድ መስጫ መደብ ኮድ ሥር የሚካተቱ የስራ መስክች
59	34212	ፐልፕ፣ ወረቀትና የወረቀት ቦርድ መፈብረክ	32310	ወረቀት እና የወረቀት ማሸጊያ, መሸፈን እና ዲዛይን ማድረግ ፐልፕ ፣ ወረቀት እና የወረቀት ቦርድ እና ከወረቀትና ከወረቀት ውጤቶች የተዘጋጁ መያዣዎች መፈብረክ የሴሉሎስ ውስጠኛ ሽፋን እና የሴሉሎስ ፋይብል መሰመር መፈብረክ እና ሌሎች ያልተጠቀሱትንም መፈብረክ ያጠቃልላል።
60	34311	ህትመትና ተያያዥ ሥራዎች	32410፣ 32420፣ 32430፣ 32440፣ 32490፣ 32530፣ 32540፣ 32510፣ 32520፣ 32590፣ 99139	መጽሀፎች ፣ ብሮሸሮች ፣ የሙዚቃ መጽሀፎች እና ሌሎች ተዛማጅ ጽሁፎች አታሚ፣ ፖስት ካርድና የጥሪ ካርዶች፣ ጋዜጣና መጽዔት አታሚ ያልተጠቀሱ ወረቀት ነክ አታሚ ኤሌክትሮኒክስ ህትመት የሚዲያ ሪኮርድ ቅጅ ሥራ ሪኮርድ ሚዲያ መቅረፅ መፈብረክ ለማስታወቂያ እና ለህትመት ሥራዎች የሚያገለግሉ እቃዎች እና ቀለሞች መፈበረክ ኤሌክትሮኒክስ ህትመት እና የሚዲያ ሪኮርድ ቅጅ ስራ ተዛመማጅ የተለያዩ የህትመት ስራዎች እንዲሁም የጨርቃጨርቅ ውጤቶችን ማቅለምና ማተምንም ያጠቃልላል።

Source: Bole sub-city Trade bureau

The interview conducted with the designer of m advertisement reveals that the main cause for pollution is improper management of outdoor advertisements in the city old and outdated advertisements are the main cause for visual pollution.

In addition, designer from Essayas advertisement told me the clients want bold and hot colors for their designs which will make the urban space a combination of hot and bold designs. Even though the owners are competing to have a bold advertising poster so that it can attract more customers, the visual sphere is becoming more chaotic and making their customers unconformable.

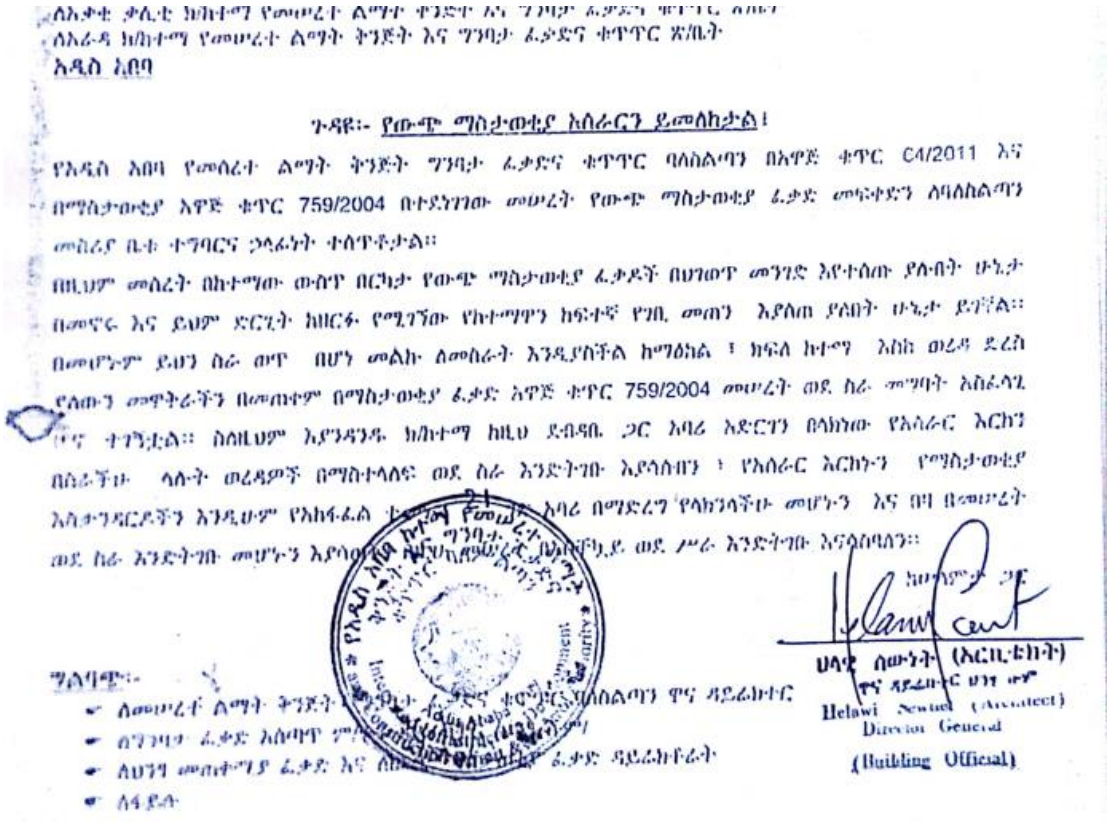
Figure 4.25: Pictures of visual polluting advertisements

Source: Researcher field survey.,2021

4.1.3.1.3 Cause of visual pollution by OA expressed by Government officials

Government official in the Bole sub-city administration told me that the law which was used for preventing visual pollution by outdoor advertisement was used before three years at that time the mandate for giving permission and controlling was given to building control offices in the city administration. This created a shortage of manpower and implementing the law to its full capacity.

Figure 4.26: Regulation for advertisement permits.


ለአቃቂ ቃሊቲ ክ/ከተማ የመሠረተ ልማት ቅንጅት እና ግንባታ ፈቃድና ቁጥጥር ጽ/ቤት
ለአራዳ ክ/ከተማ የመሠረተ ልማት ቅንጅት እና ግንባታ ፈቃድና ቁጥጥር ጽ/ቤት
አዲስ አበባ

ጉዳዩ፡- የውጭ ማስታወቂያ አሰራርን ይመለከታል፤

የአዲስ አበባ የመሰረተ ልማት ቅንጅት ግንባታ ፈቃድና ቁጥጥር ባለስልጣን በአዋጅ ቁጥር 64/2011 እና በማስታወቂያ አዋጅ ቁጥር 759/2004 በተደነገገው መሠረት የውጭ ማስታወቂያ ፈቃድ መፍቀድን ለባለስልጣን መስሪያ ቤቱ ተግባርና ኃላፊነት ተሰጥቶታል።

በዚህም መሰረት በክተማው ውስጥ በርካታ የውጭ ማስታወቂያ ፈቃዶች በህገወጥ መንገድ እየተሰጡ ያሉበት ሁኔታ በመኖሩ እና ይህም ድርጊት ከዘርፉ የሚገኘው የክተማዋን ከፍተኛ የገቢ መጠን እያሰጠ ያለበት ሁኔታ ይገኛል። በመሆኑም ይህን ስራ ወጥ በሆነ መልኩ ለመስራት እንዲያስችል ከማዕከል ፣ ክፍለ ከተማ እስከ ወረዳ ደረስ ያለውን መዋቅራችን በመጠቀም በማስታወቂያ ፈቃድ አዋጅ ቁጥር 759/2004 መሠረት ወደ ስራ መግባት አስፈላጊ ሆኖ ተገኝቷል። ስለዚህም እያንዳንዱ ክ/ከተማ ከዚህ ደብዳቤ ጋር አባሪ አድርገን በላክነው የአሰራር እርከን በስራችሁ ላሉት ወረዳዎች በማስተላለፍ ወደ ስራ እንድትገቡ እያሳሰብን ፣ የአሰራር እርከኑን የማስታወቂያ አስተንዳደሮችን እንዲሁም የአከፋፈል ስርዓቱን አባሪ በማድረግ የላክንላችሁ መሆኑን እና በዛ በመሠረት ወደ ስራ እንድትገቡ መሆኑን እያሳወቅን [illegible] ወደ ሥራ እንድትገቡ እናሳስባለን።

ሀላዊ ሰውነት (አር.ኪ.ቴክት)
ዋና ዳይሬክተር ሀገ ሙ
Helawi Sewnet (Architect)
Director General
(Building Official)

ግልባጭ፡-
- ለመሠረተ ልማት ቅንጅት [illegible]
- በግንባታ ፈቃድ አሰጣጥ [illegible]
- ለህንፃ መጠቀሚያ ፈቃድ እና ለ[illegible] ፈቃድ ዳይሬክተራት
- ለፋይል

Source: Bole sub-city building permit.

After three years the government established a subdivision in the building permits department which was advertisement permit offices within the building construction control office and also tries to update advertisement permit regulation. But the regulation was blocked due to a jurisdiction dispute between revenue authority and Addis Abeba infrastructure cooperation, building permit, and control authority.

It has been almost more than two years without any regulation employed on outdoor advertisement says Mrs. Addisu from bole sub-city advertisement control. He said that they cannot prevent visual pollution by outdoor advertisement because there is no legal ground to support them.

The governmental officer from four different sub-city was asked the cause for visual pollution by outdoor advertisement all of them said the lack of proper regulation and motivation to implement the law was the main cause for this kind of pollution.

4.1.3.1.4 Cause of visual pollution by OA expressed by Psychologists

Figure 4.27: Visually polluted area of Addis Abeba

Source: Researcher field survey.,2021

In the interview with a doctor in black lion, a specialized referral hospital told me the main cause for visual pollution by outdoor advertisement is the unmannered placement of an advertisement. He said that advertisements are crucial for business interactions and also to find places so that abolition advertisement is not advisable but creating a space internationally designed or outdoor advertisement should be considered in the city design.

4.1.3.2 The effect of visual pollution by outdoor advertisement

4.1.3.2.1 Effect of an outdoor advertisement caused visual pollution expressed by Architects and Urban planners and designers

in the interview time with architects and urban planners they have told me that the effect of visual pollution by OA can range from affecting human being mental health to city image. They have told me that when they are in a visually polluted area, they feel distracted, lose the identity of the place they are situated in, and also one architect told me that those unplanned advertisements ruined architectural masterpieces. For instance, he has told me Genet commercial around Megenagna has a lot of outdoor advertisement you can't have a good view of the architecture as it is.

Figure 4.28: Visually polluted area of Addis Abeba.

Source: Researcher field survey.,2021

4.1.3.2.2 Effect of an outdoor advertisement caused visual pollution expressed by Graphics designer

in the interview with graphics designers the effect of visual pollution by OA expressed in a way that the designs which are by peoples with no basic knowledge about design are creating a disturbing effect on the all-over visual canvas they say. This is reverse has an effect on the residents of Addis Abeba and creates anxiety, change in mood, and also even accidents. A freelance designer told the researcher that advertisements that are posted on street signs could be a source of accidents.

Figure 4.29: Visually polluted area of Addis Abeba.

Source: Researcher field survey.,2021

4.1.3.2.3 Effect of an outdoor advertisement caused visual pollution expressed by Government officials

In the interview with government officials in Addis Abeba, they have told me the effect of visual pollution has also in the financial sector. For example, a permitted outdoor advertisement will be fined the amount of money specified by the laws. But know the law is not granted to be implemented so outdoor advertisement which affects the city's image also are affecting the financial structure of the city. In the Lideta sub-city, one company only was paying 40,000 birrs per year for the advertisement that they have erected in open space.

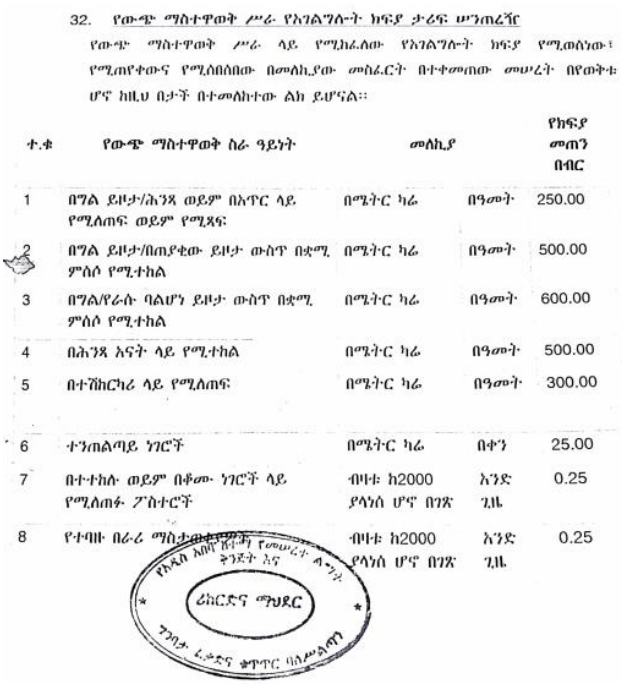
Figure 4.30: Light pollution in Addis Abeba at night time.

Source: Researcher field survey.,2021

The other effect mentioned by architects was the amount of light emitted in the nighttime from led screens. Although LED screens reduce visual pollution by minimizing the number of advertisements posted in one place, they have said that because of the light

intensity of the surrounding environment in the daytime the brightness of those screens adjusted at maximum brightness level. Although the effect of this is not visible at day time at night time because there is no controlling mechanism employed to align the brightness of the screen to the surrounding environment the screens emit intensive light rays which in return cause light pollution and affect the environment.

Figure 4.31: Cost table on the draft law for advertisement



32. የውጭ ማስተዋወቅ ሥራ የአገልግሎት ክፍያ ታሪፍ ሠንጠረዥ

የውጭ ማስተዋወቅ ሥራ ላይ የሚከፈለው የአገልግሎት ክፍያ የሚወሰነው፣ የሚጠየቀውና የሚለበለበው በመለኪያው መስፈርት በተቀመጠው መሠረት በየወቅቱ ሆኖ ከዚህ በታች በተመለከተው ልክ ይሆናል።

ተ.ቁ	የውጭ ማስተዋወቅ ስራ ዓይነት	መለኪያ		የክፍያ መጠን በብር
1	በግል ይዞታ/ሕንጻ ወይም በአጥር ላይ የሚለጠፍ ወይም የሚጻፍ	በሜትር ካሬ	በዓመት	250.00
2	በግል ይዞታ/በጠያቂው ይዞታ ውስጥ በቋሚ ምሰሶ የሚተከል	በሜትር ካሬ	በዓመት	500.00
3	በግል/የራሱ ባልሆነ ይዞታ ውስጥ በቋሚ ምሰሶ የሚተከል	በሜትር ካሬ	በዓመት	600.00
4	በሕንጻ አናት ላይ የሚተከል	በሜትር ካሬ	በዓመት	500.00
5	በተሽከርካሪ ላይ የሚለጠፍ	በሜትር ካሬ	በዓመት	300.00
6	ተንጠልጣይ ነገሮች	በሜትር ካሬ	በቀን	25.00
7	በተተከሉ ወይም በቆሙ ነገሮች ላይ የሚለጠፉ ፖስተሮች	ብዛቱ ከ2000 ያላነሰ ሆኖ በገጽ	አንድ ጊዜ	0.25
8	የተባዙ በራሪ ማስታወቂያዎች	ብዛቱ ከ2000 ያላነሰ ሆኖ በገጽ	አንድ ጊዜ	0.25

Source: Lideta sub city woreda 9 building permit office.

4.1.3.2.4 Effect of an outdoor advertisement caused visual pollution expressed by Psychologists

The first encounter of any design element has a greater impact on the person even it will affect the thinking ability afterward says a doctor Getasew at black lion specialized hospital. A person who sees a bad advertisement of some product, in future that advertisement will have an effect on the personal chose of such like products. This will also affect the sense of place. For instance, if someone saw a scary advertisement on his way to his home, he might feel stressed when even thinking about going home. This shows the advertisement which is posted, installed, or erected in our surround have a greater effect on our mental health.

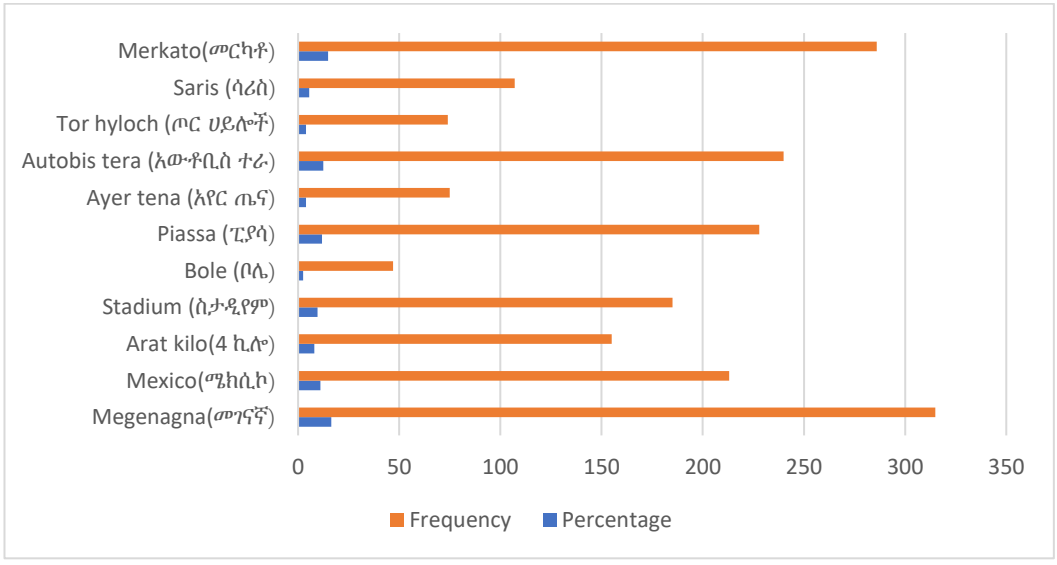
Figure 4.32: Visually polluted area of Addis Abeba.

Source: Researcher field survey.,2021

4.1.4 Quantification of visual pollution in Addis Abeba the case of outdoor advertisement

4.1.4.1 Five most polluted areas of Addis Abeba according to respondents

Figure 4.33: Most visually polluted areas of Addis Abeba.

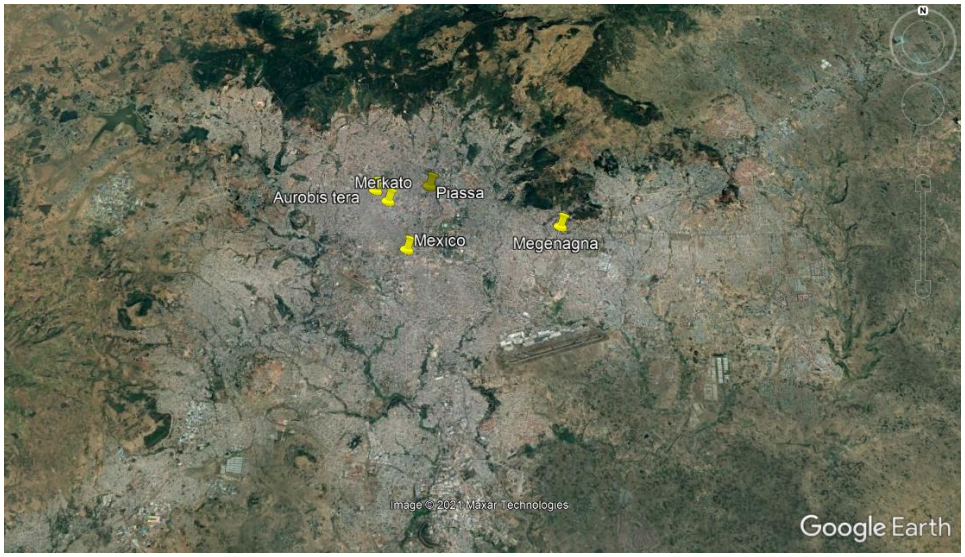


Source: Researcher survey data.,2021

In the questionnaire survey, the respondents were asked to select five very visually polluted places because of outdoor advertisements out of 11 city centers of Addis Abeba which were selected by the researcher based on observation and assumed that all respondents know those places well. After the selection of the five most polluted place filled observation was conducted by using the visual pollution assessment tool formulated by Khadija "A Hybrid Tool for Visual Pollution Assessment in Urban Environments" The selected places were Megenagna, Merkato, Autobis tera, Mexico and Piassa.

4.1.4.2 Description of selected city centers

Figure 4.34: Location map of selected areas.



Source: Google Earth.,2021

The above location map shows the distribution of selected places in Addis Abeba. From the provided places the selected five will be disused briefly.

Megenagna

Figure 4.35: Location map of Megenagna

Source: Google Earth.,2021

Megenagna is one of the busiest business centers of Addis Abeba. The center has around six major routes to other parts of the city. In the place there are commercial and business centers and also there are informal markets alongside the roads. Out of 385 questionnaire surveys, 333 replied Megenagna is one of the 5 very polluted city centers.

Mexico

Mexico is a city center named to acknowledge the effort of Mexico for their support in the time of the Italian invasion. The city center is located alongside the headquarter of Ethiopian federal police headquarters and also there is new construction of many financial organizations. From the provided 385 questionnaire survey 233 replied Mexico's roundabout is one of the 5 very polluted city centers.

Figure 4.36: Location map of Mexico.

Source: Google Earth.,2021

Piassa

Piassa is one of the oldest city centers of Addis Abeba with historical significance. the roundabout is located adjacent to the historical St. George orthodox church. And also, inside the roundabout one of the landmarks of Addis Abeba which is the monument of king Minilik II on the horse is situated. Out of 385 questionnaire surveys, 246 replied Megenagna is one of the 5 very polluted city centers.

Figure 4.37: Location map of Piassa.

Source: Google Earth.,2021

Market

Merkato is one of the largest open markets in Africa(migrationology.com). it goes on for kilometers. Most of Addis Abeba's trade and business is made in this marketplace. From the provided city centers Merkato was selected 304 times by respondents to be one of the most visually polluted city centers of Addis Abeba.

Figure 4.38: Location map of Merkato.

Source: Google Earth.,2021

Autobis tera

Figure 4.39: Location map of Autobis Tera

Source: Google Earth.,2021

Autobis tera is one of the five bus stations located in Addis Abeba. It gets its name from the Amharic transition of a bus station. The place is located near Merkato. From Autobis tera every route to the county can be accessed. Out of the 385-questionnaire survey, 258 said Autobis tera is a visually polluted center of Addis Abeba.

Visual pollution assessment of selected city centers of Addis Abeba

Table 4.2: Visual pollution score of selected city centers of Addis Abeba.

No	VPO type	Selected centers of Addis Abeba					
		Weight	Megenagna	Mexico	Merkato	Piassa	Autobis tera
1	Outdoor Advertisements						
	Billboards		7.19%	6.45%	7.55%	8.29%	8.11%
	Signboards		2.21%	2.08%	2.01%	2.21%	1.81%
	Banners		1.47%	1.51%	1.41%	1.27%	1.27%
	Steamers		0.60%	0.49%	0.57%	0.57%	0.50%
	Posters		1.44%	1.41%	1.54%	1.71%	1.44%
Sub total		20.10%	12.91%	11.93%	13.08%	14.05%	13.13%
2	Open dumps of solid waste						
	SW (open)		7.33%	6.66%	6.00%	6.66%	6.00%
	Medical waste		2.67%	2.67%	2.67%	3.24%	1.90%
	Overflowing trash bins		4.76%	5.00%	5.47%	4.28%	4.28%
	Construction material dumps		3.81%	4.57%	3.81%	4.57%	3.05%
	Sub total	23.80%	18.56%	18.90%	17.95%	18.75%	15.23%

3	Hanging and cluttered wires						
	Electric		6.99%	6.48%	5.70%	6.99%	5.96%
	Communication		1.92%	1.78%	1.70%	1.92%	1.70%
	TV-Cable		0.00%	0.00%	0.00%	0.00%	0.00%
	Sub total	11.10%	8.92%	8.25%	7.40%	8.92%	7.66%
4	Dilapidated buildings						
	Dilapidated buildings		7.59%	11.04%	11.04%	10.35%	6.90%
	Sub total	13.80%	7.59%	11.04%	11.04%	10.35%	6.90%
5	Overflown sewerage/drainage						
	Manholes		2.08%	1.87%	2.39%	1.87%	1.66%
	Standing water in streets		1.14%	1.04%	1.04%	1.14%	0.73%
	Sewers		2.08%	1.43%	1.69%	2.08%	1.56%
	Wide-open drains		2.91%	2.18%	2.55%	2.73%	2.37%
	Sub total	10.40%	8.22%	6.53%	7.67%	7.83%	6.32%
6	Graffiti/wall chalking:						
	Graffiti		1.81%	1.90%	2.42%	0.43%	0.43%
	Wall Chalking		1.98%	1.81%	2.42%	2.07%	1.90%
	Sub total	6.90%	3.80%	3.71%	4.83%	2.50%	2.33%
7	Various poles and transformers						
	Electricity Poles		0.94%	0.90%	0.94%	0.90%	0.75%
	Communication towers		0.41%	0.38%	0.38%	0.38%	0.23%
	Telephone poles		0.78%	0.75%	0.51%	0.69%	0.60%
	TV cable poles		0.00%	0.00%	0.00%	0.00%	0.00%
	Street lights		0.75%	0.72%	0.54%	0.72%	0.60%
	Electric transformers		0.60%	0.51%	0.66%	0.54%	0.48%
	Sub total	4.50%	3.47%	3.26%	3.02%	3.23%	2.66%
8	Encroachments (temp and permanent)						
	Extended roof projections		1.00%	0.80%	0.93%	0.93%	0.73%
	Uneven ramps		0.91%	0.97%	0.91%	1.03%	0.74%
	Encroachments (permanent and temporary)		1.13%	1.00%	0.93%	1.06%	0.93%
	Sub total	3.80%	3.04%	2.76%	2.77%	3.02%	2.40%
9	Broken roads/footpaths/street furniture						
	Road		0.93%	0.65%	0.65%	0.84%	0.75%
	Footpath/ medians		0.98%	0.77%	0.77%	0.91%	0.56%
	Street furniture		0.84%	0.91%	0.91%	0.98%	0.70%
	Sub total	3.50%	2.75%	2.33%	2.33%	2.73%	2.01%
10	Architecturally poor structures						

	Building structures		0.58%	0.60%	0.62%	0.60%	0.50%
	Uneven and irregular building skyline		0.46%	0.44%	0.44%	0.42%	0.40%
	Bluewater tanks on rooftops		0.15%	0.13%	0.13%	0.18%	0.12%
	Dish receivers and broken antennas		0.15%	0.13%	0.13%	0.18%	0.12%
	Sub total	2.10%	1.35%	1.29%	1.32%	1.37%	1.14%
Total			70.61%	69.99%	71.42%	72.75%	59.78%

Source: Researcher field survey,2021

The above table expressed the whole visual polluting objects and their percentage of pollution but for this research, we only use the first visual polluting object which is an outdoor advertisement. In this visual polluting object, there are types of visual polluting types are Billboards, Signboards, Banners, Steamers, and Posters.

Table 4.3: Outdoor advertisement visual pollution score.

No	VPO type	Selected centers of Addis Abeba					
		Weight	Megenagna	Mexico	Merkato	Piassa	Autobis tera
Outdoor Advertisements							
1	Billboards		7.19%	6.45%	7.55%	8.29%	8.11%
2	Signboards		2.21%	2.08%	2.01%	2.21%	1.81%
3	Banners		1.47%	1.51%	1.41%	1.27%	1.27%
4	Steamers		0.60%	0.49%	0.57%	0.57%	0.50%
5	Posters		1.44%	1.41%	1.54%	1.71%	1.44%
Subtotal visual pollution by outdoor advertisement		20.1%	12.91%	11.93%	13.08%	14.05%	13.13%
Total visual pollution in Addis Abeba		100%	70.61%	69.99%	71.42%	72.75%	59.78%
The ratio of a subtotal to Total (outdoor advertisements percentage from total pollution)			18.28%	17.05%	18.31%	19.31%	21.96%

Source: Researcher field survey,2021

In the assessment made we get the value in Megenagna 18.28% (12.91%) of the whole pollution (70.61%) was due to outdoor advertisement. In Mexico, 17.05% (11.93%) of the total visual pollution (69.99%) was emanated from outdoor advertisement. When we see the percentage of visual pollution caused by outdoor advertisement in Merkato 18.31% (13.08%) of the total 71.42% pollution. Piassa was 19.31% (14.05%) being

polluted by outdoor advertisement out of the total 72.75%. lastly, 21.96% (13.13%) of the total 59.78% of pollution was generated from the outdoor advertisement.

The average visual pollution of those five places in the city can be stated as the following

Average total visual pollution = (70.61%+69.99%+71.42%+72.75%+59.78%)/5

= 68.91%

Average Visual pollution by outdoor advertisement
= (12.91%+11.93%+13.08%+14.05%+13.13%)/5 **= 13.02%**

The ratio of Average Visual pollution by outdoor advertisement to Average total visual pollution = 13.02%/68.91% = 0.1889

=18.89% of the total pollution is caused by outdoor advertisement visual pollution.

4.2 Discussion

4.2.1 Causes of visual pollution by outdoor advertisement onto the community

Out of 385 the conducted survey 293(76.1%) respondent said outdoor advertisements are a cause for visual pollution, 17(4.4%) said outdoor advertisements are not the cause for visual pollution, 75(19.5%) respondents replied that outdoor advertisement could be a source of visual pollution. This implies that more than three fourth of the respondent think outdoor advertisements are visual pollutants which align with the former literature reviews and this research main topic visual pollution in Addis Abeba the case of outdoor advertisements. This will provide a strong base for the argument of this research that is outdoor advertisements are causes for visual pollution in Addis Abeba.

In saying this from outdoor advertisements provided for respondents the most pollutant type which was selected is poster and electronic boards. We can understand that the frequency which they can be found in the urban space also has a factor in this. Because the other types of outdoor advertisements can't be found as frequently as a poster and electronic boards. This implies that both types of advertisements have been posted or installed in the cityscape wrongfully or the usage of design elements onto them was unmannered to the extent which created visual pollution. To support this standpoint respondent was asked to state the most disturbing advertisement they have seen almost all replies were advertisements that fall into the categories of the poster and electronic board advertisements making the poster and electronic boards the most pollutant.

In another case, the respondents were asked to reply which design element is the most wrongfully used in the urban space of the city. The respondents' answer was color which was in the first place. From the data in the interview section, the graphics designers said the clients want their designs to be bold and colorful which forces the designers to use colors in unmannered unprofessional ways. This implies that to create a bold and eye-catching design graphics designers apply a more chaotic color scheme which created a disturbing urban canvas. And also, the overwhelming amount of advertisement in the urban landscape doesn't spare the areas such as religious places historical places, and also greenery which make space the most wrongfully used design element in the urban sphere.

In the questionnaire survey, interview, and also field observation most of the pollutions was caused because of lack of proper regulation is not fully formulated and being implemented. In the questionnaire survey, the respondent puts lack of regulation as a

cause for visual pollution in addition to this all the expertise at the time of the interview said that lack of proper regulation or implementation strategies were the cause for visual pollution by outdoor advertisement in Addis Abeba. As it was mentioned in the literature review the new draft regulation and permit for advertisement (outdoor advertisement usage law no. 759/2004) which has many good points should be implemented to reduce the effect of visual pollution being caused by outdoor advertisements. In general, all the above causes of visual pollution by outdoor advertisement the like misplacement of visual pollution, unmannered usage of design elements are caused by the unwillingness of the governing body to impose the rules and regulation which govern the advertisement industry.

4.2.2 Effect of visual pollution by outdoor advertisement onto the community

When we come to the effect of visual pollution by outdoor advertisement in Addis Abeba. Respondents of the research survey were provided with seven pictures showing a visually polluted area of the city. The two were pictures showing small paper posters, three showing posters installed onto the building, one picture of electronic board (LED screen), and one picture showing posters posted on columns of the Addis Abeba railway line. From those groups of pictures, respondents showed a pattern in which they replied very disturbed or disturbed when they are situated in places where small paper posters are posted and different posters posted onto the building facade. In the above cases, the advertisements were placed in unmannered ways, some of the advertisements were thrown apart and the information up for grasp was more than one. In the visual comparison, the results showed that the other reason for the respondents to show negative feelings is that the amount of information for grasp more than one and the unpleasant scenario they create with the old part of them being thrown apart. In sum as the amount of information provided at one glance increases the number of respondents who feel disturbed increases this shows us that the amount of information provided has a direct effect on the feeling of the viewer.

Table 4.4: Pattern of the respondent to visually polluted places.

	Picture	Very comfortable (%)	Comfortable (%)	Neutral (%)	Disturbing (%)	Very disturbing (%)
1	poster on building facade	-	2.1	18.2	**41.6**	**38.2**
2	old paper posters posted onto wall	0.3	-	3.6	**25.5**	**70.6**
3	poster on building facade	0.3	5.2	34.0	**45.5**	**15.1**
4	posters on railway columns	**11.4**	**31.9**	**42.1**	9.6	4.9
5	poster onto side of building	6.2	**22.9**	**44.7**	18.7	7.5
6	LED screen	6.0	**17.7**	**43.6**	20.8	11.9
7	Picture 7 (small paper posters)	0.8	0.3	3.6	**41.0**	**54.3**

Source: Researcher field survey.,2021

On the other hand, respondents showed a comfortable and neutral pattern in their response for posters posted onto columns Addis Abeba light railway line, a single poster posted onto one side of a building. In those scenarios, the advertisements were arranged in a rhythmic pattern (advertisements on columns on AALRT) or single information is being delivered. This shows us that the way advertisements are arranged and also the amount of information provided up for grasp affect the wellbeing of viewers of that advertisement.

As cited in the literature part of this research the effect of visual pollution can range from distraction to accident. In this survey, the respondents mostly said they have experienced distraction 216 out of 385 and the least of the said they have experienced accident 54 out of 385. This shows that the effect of visual pollution is on the mental and psychological well-being of Addis Abeba's society.

The other major effect of visual pollution by outdoor advertisement is on the image of the city Addis Abeba. From the respondent 75% of them said outdoor advertisement visual pollution has a negative effect on the image of the city, only 16(4.2%) of the responses replied it doesn't harm the city image. Therefore, outdoor advertisement caused visual

pollution affects the image of the city which will, in turn, affect industries that are closely related to the image of the city.

4.2.3 Quantification of visual pollution being caused by an outdoor advertisement

After being asked if they think visual pollution by outdoor advertisement can be quantified out of 385 respondents only 98(25.5%) replied visual pollution by outdoor advertisement can't be put in numbers which means 74.5% of the total respondents think outdoor advertisement can or could be quantified. Although the subjective manner of quantification of visual pollution most of the respondents think visual pollution can be put in numbers.

In such a way for the sake of simplicity five places were selected out of the provided eleven by the respondents which they think are more polluted centers of Addis Abeba. In those five places, the average total visual pollution was calculated to be 68.91% and the contribution of outdoor advertisement to this amount was 13.02% which 18.89% of the total pollution. This shows us Addis Abeba is highly visually polluted and outdoor advertisement is one of the most polluting visual polluting objects.

CONCLUSION, AND RECOMMENDATION

5. Conclusion

The scope of this study was to identify causes of outdoor advertisement visual pollution; to assess the effect of outdoor advertisement visual pollution on Addis Abeba residents; to quantify visual pollution caused by outdoor advertisement in city centers of Addis Ababa. Those objectives mention in chapter one was tried to be met in chapter four of the study. The following conclusion was made based on the analysis of the data collected,

1. Visual pollution in Addis Abeba the case of outdoor advertisement is caused by a lack of proper regulation and the unwillingness of the governing body to implement the existing regulations.
2. The effect of visual pollution by outdoor advertisement on the residents of Addis Abeba can range from accidents to the most occurring effect of its destruction. Most of the effect of visual pollution by outdoor advertisement in the mental and psychological wellbeing of the society at large.
3. The overall image of the city Addis Abeba has been affected by visual pollution caused by outdoor advertisements by degrading the visual quality. This negative effect has an indirect effect on such as tourism which is directly linked with the image of the city.
4. Addis Abeba is 68.91% visually polluted out of 100%. Out of this 68.91% visual pollution outdoor advertisement accounts for 13.02% which is 18.89% of the total pollution.

6. Recommendations

As the result of this research, the following points are listed for reducing visual pollution caused by outdoor advertisement,

- ✓ In the urban design of the city, designers should provide a well-designed space designated only for outdoor advertisements. In making this the pollution caused by outdoor advertisement can be contained in one place and also it will be better for supervision and follow-up.
- ✓ Incorporating outdoor advertisement as a design element in design educations especially design courses such as architectural design, graphics design, streetscape design, and urban design.
- ✓ Integrating basic design education in primary and secondary schools to increase the societies perception of visual pollution and to create awareness for business owners of the effect of advertisement which they have posted.
- ✓ The law (outdoor advertisement usage law no. 759/2004) which has been suspended should be allowed to be implemented.
- ✓ Only well-educated or equivalently experienced designers should be allowed to get a permit for opening an advertisement agency.
- ✓ Enough manpower and expertise should be assigned to the building usage permit bureau.
- ✓ This research paper should be communicated widely for architects, urban planners, graphics designers, and governmental offices.
- ✓ In this study, I have understood that we have to study the effect of visual pollution by outdoor advertisement on mental and psychological wellbeing the society further in detail.

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APPENDICES I

Questionnaire survey

(Google form link https://forms.gle/wgaw3Bn69AN6v9k5A)

Visual pollution in Addis Abeba, The case of outdoor advertisement

By - Getachew Gebeyehu

Hello, I'm MSc (urban planning and design) student at Adama Science and Technology University, and I am conducting a study on visual pollution in Addis Abeba in the case of outdoor advertisement. This questionnaire is prepared to find out how residents perceive visual pollution. Filling this questionnaire will take about 5-10 minutes. Please answer the following questions as completely as possible. Your information will only be used for academic purposes and will be kept confidential. Thank you for being kindly to answer this questionnaire.

1. **Name:** _____
2. **You are** male____ Female____
3. **Age** <25 ___26-30___ 31-35___ 36-40___ 41-45___ 46-50___ >50___
4. **profession** Architect___Urban planner/Urban designer___Graphics designer___student___ Other_____
5. **What is your qualification?** Highschool diploma___Degree___Masters___PhD___ Other_____
6. **In which part of the city do you live?** _____
7. **In which part of the city, do you work or spent most of your time?** _____
8. **Have you ever come across with visual pollution before?** Yes____No____Maybe____ ***If yes how?** _____
9. **Do you think there is visual pollution caused by outdoor advertisement?** Yes___No___Maybe___Other_____
10. **What do you think is the cause for visual pollution in the case of outdoor advertisements?** *Tick to all that apply*
    - Unplanned usage of design elements
    - Lack of proper regulation
    - Misplacement of outdoor advertisement
    - Unprofessionalism
    - societies perception of visual pollution
    - Other_____
11. **What was the most disturbing outdoor advertisement you have come across?** _____
12. **What is the most wrongfully used design element that cause outdoor advertisement visual pollution?** *Tick to all that apply*
    - point
    - line
    - color
    - texture
    - shape
    - form
    - space
13. **Which part of Addis Abeba do you think is the most visually polluted?** _____
14. **How do you feel when you are in a visually polluted part of the city such like this place?** *Mark only one oval*
    - Very disturbing
    - Disturbing
    - Neutral
    - Comfortable
    - Very comfortable
    - Other_____

    *** why do you feel so?** _____

15. **How do you feel when you are in a visually polluted part of the city such like this place?** *Mark only one oval*
    - Very disturbing
    - Disturbing
    - Neutral
    - Comfortable
    - Very comfortable
    - Other_____

    *** why do you feel so?** _____

16. **How do you feel when you are in a visually polluted part of the city such like this place?** *Mark only one oval*
    - Very disturbing
    - Disturbing
    - Neutral
    - Comfortable
    - Very comfortable
    - Other

    *** why do you feel so?** _____

17. **How do you feel when you are in a visually polluted part of the city such like this place ?** *Mark only one oval*
    - Very disturbing
    - Disturbing
    - Neutral
    - Comfortable
    - Very comfortable
    - Other_____

    *** why do you feel so?** _____

18. **How do you feel when you are in a visually polluted part of the city such like this place?** *Mark only one oval*

- o Very disturbing
- o Disturbing
- o Neutral
- o Comfortable
- o Very comfortable
- o Other_____

***why do you feel so?** _____

19. **How do you feel when you are in a visually polluted part of the city such like this place?** *Mark only one oval*

- o Very disturbing
- o Disturbing
- o Neutral
- o Comfortable
- o Very comfortable
- o Other_____

***why do you feel so?**_____

20. **How do you feel when you are in a visually polluted part of the city such like this place?** *Mark only one oval*

- o Very disturbing
- o Disturbing
- o Neutral
- o Comfortable
- o Very comfortable
- o Other_____

***why do you feel so?** _____

21. **Do outdoor advertisements have a negative effect on Addis Abeba's image?** Yes___No___Maybe_____

22. **How do you feel when you are in a visually polluted environment that is caused by outdoor advertisement?** *Tick to all that apply*

- o Distraction
- o Eye fatigue
- o Decrease in opinion diversity
- o Loss of identity
- o Accidents
- o Exhaustion, Depression, Stress and anxiety due to bad views
- o Reduce decision- making power of the human mind
- o Change human perception and human psychological mood and behavior
- o Other_____

23. **Which type of outdoor advertisement do you think pollutes the most?**

Tick to all that apply

- o poster

- o electronic board or neon light

- o Sky Writing

- o painted display

- o Travelling Displays

- o Sandwich Board Men

Other_____

24. **In Addis Abeba which 5 places are the most visually polluted by outdoor advertisement?** *Tick to all that apply*

- o Megenagna(መገናኛ)
- o Mexico(ሜክሲኮ)
- o Arat kilo(4 ኪሎ)
- o Stadium (ስታዲየም)
- o Bole (ቦሌ)
- o Piassa (ፒያሳ)
- o Ayer tena (አየር ጤና)
- o Autobis tera (አውቶቢስ ተራ)
- o Tor hyloch (ጦር ሀይሎች)
- o Saris (ሳሪስ)
- o Merkato(መርካቶ)

25. **Do you think visual pollution by outdoor advertisement can be quantified?** Yes___No___Maybe_____

26. **If yes, can you suggest some methods to measure visual pollution?**

_____
_____

27. **Who do you think is responsible for visual pollution caused by outdoor advertisement in Addis Abeba?** *Tick to all that apply*

- o Governing body
- o The professionals (Graphics designers)
- o Urban planners and designers
- o Clients (Business owners)
- o Educational institutions
- o The public
- o Other_____

28. **In your opinion, what are the ways to reduce visual pollution caused outdoor advertisement?** *Tick to all that apply*

- o Update Building codes
- o Strengthen implementation strategies
- o Formulation of environmental laws
- o Change societies perception
- o Other_____

29. **Please, if you have any other thoughts about this topic feel free to share them?**

_____

30. **Would you please share your email so that I can get back to you in case of any query?**

_____

With much appreciation your response has been recorded.

I thank you very much!

APPENDICES II

Interview question

For architects only

1. Have you ever encountered a building design changed badly by improper placement of outdoor advertisement? If yes which building?

_____

2. What do you feel when you see that building?

_____

3. Do you consider an outdoor advertisement as a design element for the building design process?

_____

4. Do you favor posting an outdoor advertisement on buildings?

_____

5. What kind of outdoor advertisement do you recommend for building designs which will not affect the architectural design of the building?

_____

6. Which building in Addis Abeba city have you consider best practice for minimizing the effect of outdoor advertisement visual pollution?

_____

For urban planner and urban designers only

1. Do you consider an outdoor advertisement as a streetscape design element?

_____

_____

3. What element of urban design is most visually polluted by outdoor advertisement?

_____

For graphic designers only

1. In your opinion, are most outdoor advertisements designed by professionals?

_____

2. What is the qualification of most graphics designers?

_____

3. What element of design do you use the most? Why?

_____

4. What do clients want when they come to you for outdoor advertisement?

_____

5. What kind of color scheme do you use most of the time?

_____

6. What color do you prefer for your design?

_____

7. Have you ever considered the impact of your design on the visual field?

_____

8. When installing outdoor advertisement do you consider visual pollution?

_____

For psychologist

1. Have you ever come encounter clients with visual pollution caused by OA problems?

_____

2. How are we affected by our environment especially visually?

_____

3. How design elements like color, shape, and form affect human behavior?

_____

For government officer

1. What are the ways you employed to mitigate the effect of visual pollution caused by outdoor advertisement?

_____
_____
_____

2. What ways do you employ to minimize outdoor advertisement?

_____
_____
_____

3. What are the problems you have faced in doing so?

_____
_____
_____

4. Who do you think is responsible for outdoor visual pollution caused by outdoor advertisement?

_____

APPENDICES III

Visual pollution assessment score

AUTOBIS TURA

Visual Pollution Assessment Tool

Section 1: Place Character:

1.1	Number of road legs		1	2	3	4			
1.2	Dominant landuse (more than 70%)		R	C	O	E	H	R	
1.3	Nature of activity								
1.4	Average height of majority of buildings (no of stories)		1	2	3	4			
1.5	Average road width								
1.6	Average distance between facing building lines								
1.7	Area type (planned/ unplanned)		P	UP					
1.8	Socio-economic status		Low		Medium		High		

1.9 Location Lat: Lng:

1.10 Node Address merkato

1.11 Node ID (auto generated)

Section 2: Visual Pollution Objects

Sr.	VPO Type	W	P	Physical appearance	Structure	Adjacent landuse	Functional hinderence	placement	Display Surfaces	size	content	Media type	Color scheme	View hinderence	Score
2.1	**Outdoor Advertisements:**			**20.10%**											
	Number of objects/ spots/ phenomena		Presence	Structure Broken_5 Leaning_4 Torn off_3 Normal_2 Very well shaped_1	Wooden structure Steel Structure Monopole Multi	Cultural Heritage_5 Education_5 Open space_4	At a scale of 1-5. 1 means no hinderance while 5 means	Stand alone On wall On roof top	Single facing_1 Double facing (back to back)_3 V facing	Small_1 10X20_2 20X30_3 30X40_4 Larger_5	Public service message_1 Movie_2 Religious_3	digital_5 mechanical_4 painted_3 mobile_2 poster_1	Pleasant_1 Normal_2 Irritating_3 Disturbing_4	At a scale of 1-5. 1 means no hinderance while 5 means	
2.1.1	Billboards	55%	5	4	4	1	1	3	5	5	5	1	5	5	44
2.1.2	Sign boards	20%	5	1	1	1	3	1	1	5	1	5	1	2	27
2.1.3	Banners	10%	5	4	3	1	2	3	1	5	5	1	5	3	38
2.1.4	Steamers	5%	5	2	1	1	2	2	1	5	1	5	3	2	30
2.1.5	Posters	10%	5	3	4	1	3	3	5	5	5	1	4	4	43
2.2	**Open dumps of solid waste**			**23.80%**											
2.2.1	SW (open)	35%	5			1	3			5				4	18
2.2.2	Medical waste	20%	5			1	1			1				2	10
2.2.3	Overflowing trash bins	25%	5			1	4			4				4	18
2.2.4	Construction material dumps	20%	4			1	3			5				2	16
2.3	**Hanging and cluttered wires**			**11.10%**											
				Well stretched_1 Loose but high_3 Low hanging_5	Well arranged_1 reasonably arranged_3 jumbled_4 highly cluttered_5										
2.3.1	Electric	70%	5	4	4	1	5							4	23
2.3.2	Communication	20%	5	4	4	1	5							4	23
2.3.3	TV Cable	10%	0	0	0	0	0							0	0
2.4	**Dilapidated buildings**			**13.80%**											
				Unpainted_buildings_1, Poorly_maintained_structures_2, Dilapidated_buildings_3, Squatter_settlement_5											
2.4.1	Dilapidated buildings	100%	5	2		1	2								10
2.5	**Overflown sewerage/drainage**			**10.40%**											
2.5.1	Manholes	25%	5	3	2	1	5								16
2.5.2	Standing water in streets	15%	2			1	4								7
2.5.3	Sewers	25%	3	5		1	3								12
2.5.4	Wide open drains	35%	3	5		1	4								13
2.6	**Graffiti/wall chalking:**			**6.90%**											
2.6.1	Graffiti	50%	5			0	0		0	0	0		0	0	5
2.6.2	Wall Chalking	50%	5			1	2		1	5	3		2	3	22
2.7	**Various poles and transformers**			**4.50%**											
2.7.1	Electricity Poles	25%	5	5		1	3	2						4	20
2.7.2	Communication towers	10%	5	2		1	2	3						2	15
2.7.3	Telephone poles	20%	5	4		1	3	2						5	20
2.7.4	TV cable poles	5%	0	0		0	0	0						0	0
2.7.5	Street lights	20%	5	3		1	4	3						4	20
2.7.6	Electric transformers	20%	5	2		1	2	3						3	16
2.8	**Encrochments (temp and permanent)**			**3.80%**											
2.8.1	Extended roof projections	35%	5			1	2							3	11
2.8.2	Uneven ramps	30%	5			1	5							2	13
2.8.3	Encroachments (permanent and temporary)	35%	4			1	4							4	14
2.9	**Broken roads/footpaths/street furniture**			**3.50%**											
				Smooth_0, Rough_2, Broken_4, Ditches_5											
2.9.1	Road	40%		4		1	3								8
2.9.2	Footpath/ medians	30%		3		1	4								8
2.9.3	Street furniture	30%		4		1	5								10
2.10	**Architecturally poor structures**			**2.10%**											
				Quality of elevation Regular to irregular	Proportionate_1 Out of proportion_5										
2.10.1	Building strucutres	40%	5	2	2	1	3						4	4	21
2.10.2	Uneven and irregular building skyline	30%	5	4	3	1	2							4	19
2.10.3	Blue water tanks on rooftops	15%	5	1	1	1	1	1	1	4				2	17
2.10.4	Dish receivers and broken antenas	15%	5	1	1	1	1	1	1	4				2	17

Visual PollutA1:H56ion Assessment Tool (Score Calculator)

Section 1: Place Character:

Node ID AUTOBIS TERA

Section 2: Visual Pollution Objects

Sr.	VPO Type	Weight	Max attainable score	Score attained	VPO Specific Ratio Score	Weighted score	Overall weighted score
2.1	**Outdoor Advertisements:**	**20.10%**					
	Number of objects/ spots/ phenomena		Sum of highest scores under each characteristics	Sum of VPO specific score attained	Ratio of attained score to max score	Ratio score multiplied by VPO Type weight	Weighted score multiplied by VPO Group weight
2.1.1	Billboards	55%	60	44	0.73	0.40	8.11%
2.1.2	Sign boards	20%	60	27	0.45	0.09	1.81%
2.1.3	Banners	10%	60	38	0.63	0.06	1.27%
2.1.4	Steamers	5%	60	30	0.50	0.03	0.50%
2.1.5	Posters	10%	60	43	0.72	0.07	1.44%
2.2	**Open dumps of solid waste**	**23.80%**					
2.2.1	SW (open)	35%	25	18	0.72	0.25	6.00%
2.2.2	Medical waste	20%	25	10	0.40	0.08	1.90%
2.2.3	Overflowing trash bins	25%	25	18	0.72	0.18	4.28%
2.2.4	Construction material dumps	20%	25	16	0.64	0.13	3.05%
2.3	**Hanging and cluttered wires**	**11.10%**					
				0			
2.3.1	Electric	70%	30	23	0.77	0.54	5.96%
2.3.2	Communication	20%	30	23	0.77	0.15	1.70%
2.3.3	TV Cable	10%	30	0	0.00	0.00	0.00%
2.4	**Dilapidated buildings**	**13.80%**					
				0			
2.4.1	Dilapidated buildings	100%	20	10	0.50	0.50	6.90%
2.5	**Overflown sewerage/drainage**	**10.40%**					
2.5.1	Manholes	25%	25	16	0.64	0.16	1.66%
2.5.2	Standing water in streets	15%	15	7	0.47	0.07	0.73%
2.5.3	Sewers	25%	20	12	0.60	0.15	1.56%
2.5.4	Wide open drains	35%	20	13	0.65	0.23	2.37%
2.6	**Graffiti/wall chalking:**	**6.90%**					
2.6.1	Graffiti	50%	40	5	0.13	0.06	0.43%
2.6.2	Wall Chalking	50%	40	22	0.55	0.28	1.90%
2.7	**Various poles and transformers**	**4.50%**					
2.7.1	Electricity Poles	25%	30	20	0.67	0.17	0.75%
2.7.2	Communication towers	10%	30	15	0.50	0.05	0.23%
2.7.3	Telephone poles	20%	30	20	0.67	0.13	0.60%
2.7.4	TV cable poles	5%	30	0	0.00	0.00	0.00%
2.7.5	Street lights	20%	30	20	0.67	0.13	0.60%
2.7.6	Electric transformers	20%	30	16	0.53	0.11	0.48%
2.8	**Encrochments (temp and permanent)**	**3.80%**					
2.8.1	Extended roof projections	35%	20	11	0.55	0.19	0.73%
2.8.2	Uneven ramps	30%	20	13	0.65	0.20	0.74%
2.8.3	Encroachments (permanent and temporary)	35%	20	14	0.70	0.25	0.93%
2.9	**Broken roads/footpaths/street furniture**	**3.50%**					
				0			
2.9.1	Road	40%	15	8	0.53	0.21	0.75%
2.9.2	Footpath/ medians	30%	15	8	0.53	0.16	0.56%
2.9.3	Street furniture	30%	15	10	0.67	0.20	0.70%
2.10	**Architecturally poor structures**	**2.10%**					
				0			
2.10.1	Building strucutres	40%	35	21	0.60	0.24	0.50%
2.10.2	Uneven and irregular building skyline	30%	30	19	0.63	0.19	0.40%
2.10.3	Blue water tanks on rooftops	15%	45	17	0.38	0.06	0.12%
2.10.4	Dish receivers and broken antenas	15%	45	17	0.38	0.06	0.12%
	Cumulative Visual Pollution Score (Sum of Overall weighted score of all VPO types)						**59.78%**

PIASSA

Visual Pollution Assessment Tool

Section 1: Place Character:

1.1	Number of road legs		1	2	3	4			
1.2	Dominant landuse (more than 70%)		R	C	O	E	H	R	
1.3	Nature of activity								
1.4	Average height of majority of buildings (no of sto		1	2	3	4			
1.5	Average road width								
1.6	Average distance between facing building lines								
1.7	Area type (planned/ unplanned)		P	UP					
1.8	Socio-economic status		Low		Medium		High		

1.9 Location
Lat: Lng:

1.10 Node Address
merkato

1.11 Node ID (auto generated)

Section 2: Visual Pollution Objects

Sr.	VPO Type	W	P	Physical appearance	Structure	Adjacent landuse	Functional hinderence	placement	Display Surfaces	size	content	Media type	Color scheme	View hinderence	Score
2.1	**Outdoor Advertisements:**			######											
	Number of objects/ spots/ phenomena		Presence	Structure Broken_5 Leaning_4 Torn off_3 Normal_2	Wooden structure Steel Structure Monopole Multi Port	Cultural Heritage_5 Education_5 Open space_4 Health_4	At a scale of 1-5. 1 means no hinderance while 5 means max	Stand alone On wall On roof top	Single facing_1 Double facing (back to back)_3 V facing Triangle	Small_1 10X20_2 20X30_3 30X40_4 Larger_5	Public service message_1 Movie_2 Religious_3 Commerc	digital_5 mechanical_4 painted_3 mobile_2 poster_1	Pleasant_1 Normal_2 Irritating_3 Disturbin g_4	At a scale of 1-5. 1 means no hinderance while 5 means max	
2.1.1	Billboards	55%	5	5	4	5	3	3	1	5	3	1	5	5	45
2.1.2	Sign boards	20%	5	1	1	5	2	2	1	5	1	4	1	5	33
2.1.3	Banners	10%	5	3	3	5	4	4	1	5	3	1	3	1	38
2.1.4	Steamers	5%	5	2	1	5	1	1	1	5	1	5	2	5	34
2.1.5	Posters	10%	5	4	4	5	4	4	5	5	5	1	4	5	51
2.2	**Open dumps of solid waste**			######											
2.2.1	SW (open)	35%	5			5	1			4				5	20
2.2.2	Medical waste	20%	5			5	3			1				3	17
2.2.3	Overflowing trash bins	25%	5			5	1			3				4	18
2.2.4	Construction material dumps	20%	5			5	4			5				5	24
2.3	**Hanging and cluttered wires**			######											
				Well stret	Well arranged_1	reasonably arranged_3	jumbled_4	highly cluttered_5							
2.3.1	Electric	70%	5	4	4	5	5							4	27
2.3.2	Communication	20%	5	4	4	5	3							5	26
2.3.3	TV Cable	10%	0	0	0	0	0							0	0
2.4	**Dilapidated buildings**			######											
				Unpainted_buildings_1	Poorly_maintained_structures_2	Dilapidated_buildings_3	Squatter_settlement_5								
2.4.1	Dilapidated buildi	100%	5	2		5	3								15
2.5	**Overflown sewerage/drainage**			######											
2.5.1	Manholes	25%	5	3	2	5	3								18
2.5.2	Standing water in	15%	2			5	4								11
2.5.3	Sewers	25%	5	5		5	3								16
2.5.4	Wide open drains	35%	5	5		5	2								15
2.6	**Graffiti/wall chalking:**			6.90%											
2.6.1	Graffiti	50%	5			0	0		0	0	0		0	0	5
2.6.2	Wall Chalking	50%	5			5	1		1	4	1		3	4	24
2.7	**Various poles and transformer**			4.50%											
2.7.1	Electricity Poles	25%	5	4		5	4	1						5	24
2.7.2	Communication to	10%	5	4		5	3	4						4	25
2.7.3	Telephone poles	20%	5	3		5	4	3						3	23
2.7.4	TV cable poles	5%	0	0		0	0	0						0	0
2.7.5	Street lights	20%	5	4		5	5	1						4	24
2.7.6	Electric transform	20%	5	2		5	2	2						2	18
2.8	**Encrochments (temp and pern**			3.80%											
2.8.1	Extended roof pro	35%	5			5	2							2	14
2.8.2	Uneven ramps	30%	5			5	5							3	18
2.8.3	Encroachments (p	35%	5			5	4							2	16
2.9	**Broken roads/footpaths/stree**			3.50%											
				Smooth_0	Rough_2	Broken_4	Ditches_5								
2.9.1	Road	40%		2		5	2								9
2.9.2	Footpath/ median	30%		5		5	3								13
2.9.3	Street furniture	30%		5		5	4								14
2.10	**Architecturally poor structure**			2.10%											
				Quality of	Proportionate_1	Out of proportion_5									
2.10.1	Building strucutre	40%	5	3	1	5	5						4	2	25
2.10.2	Uneven and irregu	30%	5	1	3	5	5							1	20
2.10.3	Blue water tanks	15%	5	2	1	5	5	1	1	4				1	25
2.10.4	Dish receivers and	15%	5	2	1	5	5	1	1	4				1	25

Visual Pollution Assessment Tool (Score Calculator)

Section 1: Place Character:

Node ID PIYASSA

Section 2: Visual Pollution Objects

Sr.	VPO Type	Weight	Max attainable score	Score attained	VPO Specific Ratio Score	Weighted score	Overall weighted score
2.1	**Outdoor Advertisements:**	**20.10%**					
	Number of objects/ spots/ phenomena		Sum of highest scores under each characteristics	Sum of VPO specific score attained	Ratio of attained score to max score	Ratio score multiplied by VPO Type weight	Weighted score multiplied by VPO Group weight
2.1.1	Billboards	55%	60	45	0.75	0.4125	0.082913
2.1.2	Sign boards	20%	60	33	0.55	0.11	0.02211
2.1.3	Banners	10%	60	38	0.633333	0.063333	0.01273
2.1.4	Steamers	5%	60	34	0.566667	0.028333	0.005695
2.1.5	Posters	10%	60	51	0.85	0.085	0.017085
2.2	**Open dumps of solid waste**	**23.80%**					
2.2.1	SW (open)	35%	25	20	0.8	0.28	0.06664
2.2.2	Medical waste	20%	25	17	0.68	0.136	0.032368
2.2.3	Overflowing trash bins	25%	25	18	0.72	0.18	0.04284
2.2.4	Construction material dumps	20%	25	24	0.96	0.192	0.045696
2.3	**Hanging and cluttered wires**	**11.10%**					
				0			
2.3.1	Electric	70%	30	27	0.9	0.63	0.06993
2.3.2	Communication	20%	30	26	0.866667	0.173333	0.01924
2.3.3	TV Cable	10%	30	0	0	0	0
2.4	**Dilapidated buildings**	**13.80%**					
				0			
2.4.1	Dilapidated buildings	100%	20	15	0.75	0.75	0.1035
2.5	**Overflown sewerage/drainage**	**10.40%**					
2.5.1	Manholes	25%	25	18	0.72	0.18	0.01872
2.5.2	Standing water in streets	15%	15	11	0.733333	0.11	0.01144
2.5.3	Sewers	25%	20	16	0.8	0.2	0.0208
2.5.4	Wide open drains	35%	20	15	0.75	0.2625	0.0273
2.6	**Graffiti/wall chalking:**	**6.90%**					
2.6.1	Graffiti	50%	40	5	0.125	0.0625	0.004313
2.6.2	Wall Chalking	50%	40	24	0.6	0.3	0.0207
2.7	**Various poles and transformers**	**4.50%**					
2.7.1	Electricity Poles	25%	30	24	0.8	0.2	0.009
2.7.2	Communication towers	10%	30	25	0.833333	0.083333	0.00375
2.7.3	Telephone poles	20%	30	23	0.766667	0.153333	0.0069
2.7.4	TV cable poles	5%	30	0	0	0	0
2.7.5	Street lights	20%	30	24	0.8	0.16	0.0072
2.7.6	Electric transformers	20%	30	18	0.6	0.12	0.0054
2.8	**Encrochments (temp and permanent)**	**3.80%**					
2.8.1	Extended roof projections	35%	20	14	0.7	0.245	0.00931
2.8.2	Uneven ramps	30%	20	18	0.9	0.27	0.01026
2.8.3	Encroachments (permanent and temporary)	35%	20	16	0.8	0.28	0.01064
2.9	**Broken roads/footpaths /street furniture**	**3.50%**					
				0			
2.9.1	Road	40%	15	9	0.6	0.24	0.0084
2.9.2	Footpath/ medians	30%	15	13	0.866667	0.26	0.0091
2.9.3	Street furniture	30%	15	14	0.933333	0.28	0.0098
2.10	**Architecturally poor structures**	**2.10%**					
				0			
2.10.1	Building strucutres	40%	35	25	0.714286	0.285714	0.006
2.10.2	Uneven and irregular building skyline	30%	30	20	0.666667	0.2	0.0042
2.10.3	Blue water tanks on rooftops	15%	45	25	0.555556	0.083333	0.00175
2.10.4	Dish receivers and broken antenas	15%	45	25	0.555556	0.083333	0.00175
	Cumulative Visual Pollution Score (Sum of Overall weighted score of all VPO types)						**0.73**

MEGENAGNA

Section 1: Place Character:

1.1	Number of road legs		1	2	3	4		
1.2	Dominant landuse (more than		R	C	O	E	H	R
1.3	Nature of activity							
1.4	Average height of majority of buildings (no of stories)		1	2	3	4		
1.5	Average road width							
1.6	Average distance between facing building lines							
1.7	Area type (planned/ unplanned)		P	UP				
1.8	Socio-economic status		Low		Medium		High	

1.9 Lat: Lng:

1.10 na

Node ID

Section 2: Visual Pollution Objects

Sr.	VPO Type	W	P	Physical appearance	Structure	Adjacent landuse	Functional hinderen	placement	Display Surfaces	size	content	Media type	Color scheme	View hinderence	Score
2.1	**Outdoor Advertisements:**			#######											
	Number of objects/ spots/ phenomena		Presence	Structure Broken_5 Leaning_	Wooden structure Steel	Cultural Heritage _5	At a scale of 1-5. 1 means	Stand alone On wall	Single facing_1 Double	Small_1 10X20_2 20X30_3	Public service message	digital_5 mechanical_4	Pleasant_1 Normal_	At a scale of 1-5. 1 means	
2.1.1	Billboards	55%	5	5	5	1	2	4	1	5	5	1	1	4	39
2.1.2	Sign boards	20%	5	1	2	4	2	3	1	5	5	1	1	3	33
2.1.3	Banners	10%	5	3	4	1	2	4	5	5	5	1	4	5	44
2.1.4	Steamers	5%	5	2	1	1	2	1	1	5	4	5	4	5	36
2.1.5	Posters	10%	5	4	5	1	3	4	1	5	5	1	4	5	43
2.2	**waste**			#######											
2.2.1	SW (open)	35%	5			4	5			3				5	22
2.2.2	Medical waste	20%	5			4	1			1				3	14
2.2.3	Overflowing trash bins	25%	5			4	5			2				4	20
2.2.4	Construction material dumps	20%	5			4	3			5				3	20
2.3	**wires**			#######											
				stretched _1 Loose	arranged _1										
2.3.1	Electric	70%	5	5	4	4	4							5	27
2.3.2	Communication	20%	5	5	3	4	4							5	26
2.3.3	TV Cable	10%	0	0	0	0	0							0	0
2.4	**Dilapidated buildings**			#######											
				dilapidated_buildin											
2.4.1	Dilapidated buildings	100%	3	3		1	4								11
2.5	**sewerage/drainage**			#######											
2.5.1	Manholes	25%	5	3	3	4	5								20
2.5.2	Standing water in streets	15%	2			4	5								11
2.5.3	Sewers	25%	3	4		4	5								16
2.5.4	Wide open drains	35%	3	4		4	5								16
2.6	**Graffiti/wall chalking:**			6.90%											
2.6.1	Graffiti	50%	5			4	2		1	5	1		1	2	21
2.6.2	Wall Chalking	50%	5			4	2		1	5	1		1	4	23
2.7	**transformers**			4.50%											
2.7.1	Electricity Poles	25%	5	3		4	3	5						5	25
2.7.2	Communication towers	10%	5	5		4	4	4						5	27
2.7.3	Telephone poles	20%	5	5		4	4	3						5	26
2.7.4	TV cable poles	5%	0	0		0	0	0						0	0
2.7.5	Street lights	20%	5	3		4	5	4						4	25
2.7.6	Electric transformers	20%	5	4		4	2	2						3	20
2.8	**Encrochments (temp and permanent)**			3.80%											
2.8.1	Extended roof projections	35%	5			4	2							4	15
2.8.2	Uneven ramps	30%	5			4	5							2	16
2.8.3	temporary)	35%	5			4	5							3	17
2.9	**roads/footpaths/street furniture**			3.50%											
				0,											
2.9.1	Road	40%		4		4	2								10
2.9.2	Footpath/ medians	30%		5		4	5								14
2.9.3	Street furniture	30%		3		4	5								12
2.10	**structures**			2.10%											
				Quality of	Proportionate_1										
2.10.1	Building strucutres	40%	5	5	3	1	3						3	4	24
2.10.2	skyline	30%	5	5	2	1	4							5	22
2.10.3	Blue water tanks on rooftops	15%	5	2	1	1	1	1	1	5				5	22
2.10.4	Dish receivers and broken antenas	15%	5	2	1	1	1	1	1	5				5	22

Visual Pollution Assessment Tool (Score Calculator)

Section 1: Place Character:

Node ID

Section 2: Visual Pollution Objects

Sr.	VPO Type	Weight	Max attainable score	Score attained	VPO Specific Ratio Score	Weighted score	Overall weighted score
2.1	**Outdoo**	**20.10%**					
	Number of objects/ spots/ phenomena		Sum of highest scores under each characteristics	Sum of VPO specific score attained	Ratio of attained score to max score	Ratio score multiplied by VPO Type weight	Weighted score multiplied by VPO Group weight
2.1.1	Billboards	55%	60	39	0.65	0.36	7.19%
2.1.2	Sign boards	20%	60	33	0.55	0.11	2.21%
2.1.3	Banners	10%	60	44	0.73	0.07	1.47%
2.1.4	Steamers	5%	60	36	0.60	0.03	0.60%
2.1.5	Posters	10%	60	43	0.72	0.07	1.44%
2.2	**Open di**	**23.80%**					
2.2.1	SW (open)	35%	25	22	0.88	0.31	7.33%
2.2.2	Medical waste	20%	25	14	0.56	0.11	2.67%
2.2.3	Overflowing trash bins	25%	25	20	0.80	0.20	4.76%
2.2.4	Construction material dumps	20%	25	20	0.80	0.16	3.81%
2.3	**Hanging**	**11.10%**					
2.3.1	Electric	70%	30	27	0.90	0.63	6.99%
2.3.2	Communi	20%	30	26	0.87	0.17	1.92%
2.3.3	TV Cable	10%	30	0	0.00	0.00	0.00%
2.4	**Dilapida**	**13.80%**					
2.4.1	Dilapidate	100%	20	11	0.55	0.55	7.59%
2.5	**Overflo**	**10.40%**					
2.5.1	Manholes	25%	25	20	0.80	0.20	2.08%
2.5.2	Standing v	15%	15	11	0.73	0.11	1.14%
2.5.3	Sewers	25%	20	16	0.80	0.20	2.08%
2.5.4	Wide ope	35%	20	16	0.80	0.28	2.91%
2.6	**Graffiti/**	**6.90%**					
2.6.1	Graffiti	50%	40	21	0.53	0.26	1.81%
2.6.2	Wall Chalking	50%	40	23	0.58	0.29	1.98%
2.7	**Various**	**4.50%**					
2.7.1	Electricity	25%	30	25	0.83	0.21	0.94%
2.7.2	Communi	10%	30	27	0.90	0.09	0.41%
2.7.3	Telephon	20%	30	26	0.87	0.17	0.78%
2.7.4	TV cable p	5%	30	0	0.00	0.00	0.00%
2.7.5	Street ligh	20%	30	25	0.83	0.17	0.75%
2.7.6	Electric tra	20%	30	20	0.67	0.13	0.60%
2.8	**Encroch**	**3.80%**					
2.8.1	Extended	35%	20	15	0.75	0.26	1.00%
2.8.2	Uneven ra	30%	20	16	0.80	0.24	0.91%
2.8.3	Encroachn	35%	20	17	0.85	0.30	1.13%
2.9	**Broken**	**3.50%**					
2.9.1	Road	40%	15	10	0.67	0.27	0.93%
2.9.2	Footpath/	30%	15	14	0.93	0.28	0.98%
2.9.3	Street furi	30%	15	12	0.80	0.24	0.84%
2.10	**Archite**	**2.10%**					
2.10.1	Building s	40%	35	24	0.69	0.27	0.58%
2.10.2	Uneven a	30%	30	22	0.73	0.22	0.46%
2.10.3	Blue wate	15%	45	22	0.49	0.07	0.15%
2.10.4	Dish recei	15%	45	22	0.49	0.07	0.15%
	al Pollution Score (Sum of Overall weighted score of all VPO types)						**70.61%**

MERKATO

Visual Pollution Assessment Tool

Section 1: Place Character:

1.1	Number of road legs	1	2	3	4			
1.2	Dominant landuse (more than 70%)	R	C	O	E	H	R	
1.3	Nature of activity							
1.4	Average height of majority of buildings (r	1	2	3	4			
1.5	Average road width							
1.6	Average distance between facing building lines							
1.7	Area type (planned/unplanned)	P	UP					
1.8	Socio-economic status	Low		Medium		High		

1.9 Location Lat: Lng:

1.10 Node Address merkato

1.11 Node ID (auto generated)

Section 2: Visual Pollution Objects

Sr.	VPO Type	W	P	Physical appearance	Structure	Adjacent landuse	Functional hinderence	placement	Display Surfaces	size	content	Media type	Color scheme	View hinderence	Score
2.1	Outdoor Advertisement		######												
	Number of objects/ spots/ phenomena		Presence	Structure Broken_5 Leaning_4 Torn off_3	Wooden structure Steel Structure Monopole	Cultural Heritage_5 Education_5 Open	At a scale of 1-5. 1 means no hinderance while	Stand alone On wall On roof top	Single facing_1 Double facing (back to back)_3	Small_1 10X20_2 20X30_3 30X40_4 Larger_5	Public service message_1 Movie_2 Religious	digital_5 mechanical_4 painted_3 mobile_2	Pleasant_1 Normal_2 Irritating_3	At a scale of 1-5. 1 means no hinderance while	
2.1.1	Billboards	55%	5	5	3	1	4	3	1	5	4	1	5	4	41
2.1.2	Sign boards	20%	5	1	1	1	3	2	1	5	4	3	2	2	30
2.1.3	Banners	10%	5	5	4	1	4	3	1	5	4	1	4	5	42
2.1.4	Steamers	5%	5	2	2	1	2	4	1	5	4	5	2	1	34
2.1.5	Posters	10%	5	5	5	1	5	4	1	5	4	1	5	5	46
2.2	Open dumps of solid wa		######												
2.2.1	SW (open)	35%	5			1	3			4				5	18
2.2.2	Medical waste	20%	5			2	1			1				5	14
2.2.3	Overflowing trash bins	25%	5			4	5			5				4	23
2.2.4	Construction material dumps	20%	5			4	4			5				2	20
2.3	Hanging and cluttered v		######												
				Well stret	Well arranged_1	reasonably arranged_3	jumbled_4	highly cluttered_5							
2.3.1	Electric	70%	5	4	4	1	3							5	22
2.3.2	Communi	20%	5	5	4	1	3							5	23
2.3.3	TV Cable	10%	0	0	0	0	0							0	0
2.4	Dilapidated buildings			######											
				Unpainted_buildings_1, Poorly_maintained_structures_2, Dilapidated_buildings_3, Shutter_deficiency_5											
2.4.1	Dilapidate	100%	5	5		1	5								16
2.5	Overflown sewerage/d		######												
2.5.1	Manholes	25%	5	5	5	4	4								23
2.5.2	Standing v	15%	2			4	4								10
2.5.3	Sewers	25%	3	5		1	4								13
2.5.4	Wide ope	35%	3	5		1	5								14
2.6	Graffiti/wall chalking:		6.90%												
2.6.1	Graffiti	50%	5			1	2		1	5	5		4	5	28
2.6.2	Wall Chalking	50%	5			1	2		1	5	5		4	5	28
2.7	Various poles and trans		4.50%												
2.7.1	Electricity	25%	5	5		4	4	3						4	25
2.7.2	Communi	10%	5	5		4	4	3						4	25
2.7.3	Telephon	20%	5	3		4	2	1						2	17
2.7.4	TV cable p	5%	0	0		0	0	0						0	0
2.7.5	Street ligh	20%	5	3		4	2	2						2	18
2.7.6	Electric tra	20%	5	5		4	4	2						2	22
2.8	Encrochments (temp an		3.80%												
2.8.1	Extended	35%	5			1	3							5	14
2.8.2	Uneven ra	30%	5			4	4							3	16
2.8.3	Encroachn	35%	5			4	2							3	14
2.9	Broken roads/footpaths		3.50%												
				Smooth_0	Rough_2	Broken_4, Ditches_5									
2.9.1	Road	40%		3		1	3								7
2.9.2	Footpath/	30%		5		1	5								11
2.9.3	Street fur	30%		4		4	5								13
2.10	Architecturally poor str		2.10%												
				Quality of	Proportionate_1	Out of proportion_3									
2.10.1	Building s	40%	5	3	3	4	4						4	3	26
2.10.2	Uneven a	30%	5	4	2	4	2							4	21
2.10.3	Blue wate	15%	5	2	1	1	1	1	1	5				2	19
2.10.4	Dish recei	15%	5	2	1	1	1	1	1	4				2	18

Visual Pollution Assessment Tool (Score Calculator)

Section 1: Place Character:

Node ID MERKATO

Section 2: Visual Pollution Objects

Sr.	VPO Type	Weight	Max attainable score	Score attained	VPO Specific Ratio Score	Weighted score	Overall weighted score
2.1	Outdoo	20.10%					
	Number of objects/ spots/ phenomena		Sum of highest scores under each character	Sum of VPO specific score attained	Ratio of attained score to max score	Ratio score multiplied by VPO Type weight	Weighted score multiplied by VPO Group weight
2.1.1	Billboards	55%	60	41	0.68	0.38	7.55%
2.1.2	Sign boards	20%	60	30	0.50	0.10	2.01%
2.1.3	Banners	10%	60	42	0.70	0.07	1.41%
2.1.4	Steamers	5%	60	34	0.57	0.03	0.57%
2.1.5	Posters	10%	60	46	0.77	0.08	1.54%
2.2	Open d	23.80%					
2.2.1	SW (open)	35%	25	18	0.72	0.25	6.00%
2.2.2	Medical waste	20%	25	14	0.56	0.11	2.67%
2.2.3	Overflowing trash bins	25%	25	23	0.92	0.23	5.47%
2.2.4	Construction material dumps	20%	25	20	0.80	0.16	3.81%
2.3	Hanging	11.10%					
				0			
2.3.1	Electric	70%	30	22	0.73	0.51	5.70%
2.3.2	Communi	20%	30	23	0.77	0.15	1.70%
2.3.3	TV Cable	10%	30	0	0.00	0.00	0.00%
2.4	Dilapid	13.80%					
				0			
2.4.1	Dilapidate	100%	20	16	0.80	0.80	11.04%
2.5	Overflo	10.40%					
2.5.1	Manholes	25%	25	23	0.92	0.23	2.39%
2.5.2	Standing v	15%	15	10	0.67	0.10	1.04%
2.5.3	Sewers	25%	20	13	0.65	0.16	1.69%
2.5.4	Wide ope	35%	20	14	0.70	0.25	2.55%
2.6	Graffiti/	6.90%					
2.6.1	Graffiti	50%	40	28	0.70	0.35	2.42%
2.6.2	Wall Chalking	50%	40	28	0.70	0.35	2.42%
2.7	Various	4.50%					
2.7.1	Electricity	25%	30	25	0.83	0.21	0.94%
2.7.2	Communi	10%	30	25	0.83	0.08	0.38%
2.7.3	Telephon	20%	30	17	0.57	0.11	0.51%
2.7.4	TV cable p	5%	30	0	0.00	0.00	0.00%
2.7.5	Street ligh	20%	30	18	0.60	0.12	0.54%
2.7.6	Electric tra	20%	30	22	0.73	0.15	0.66%
2.8	Encroch	3.80%					
2.8.1	Extended	35%	20	14	0.70	0.25	0.93%
2.8.2	Uneven ra	30%	20	16	0.80	0.24	0.91%
2.8.3	Encroachn	35%	20	14	0.70	0.25	0.93%
2.9	Broken	3.50%					
				0			
2.9.1	Road	40%	15	7	0.47	0.19	0.65%
2.9.2	Footpath/	30%	15	11	0.73	0.22	0.77%
2.9.3	Street fur	30%	15	13	0.87	0.26	0.91%
2.10	Archite	2.10%					
				0			
2.10.1	Building s	40%	35	26	0.74	0.30	0.62%
2.10.2	Uneven a	30%	30	21	0.70	0.21	0.44%
2.10.3	Blue wate	15%	45	19	0.42	0.06	0.13%
2.10.4	Dish recei	15%	45	18	0.40	0.06	0.13%
	ual Pollution Score (Sum of Overall weighted score of all VPO types)						**71.42%**

MEXICO

Visual Pollution Assessment Tool

Section 1: Place Character:

1.1	Number of road legs	1	2	3	4			
1.2	Dominant landuse (more than 70%)	R	C	O	E	H	R	
1.3	Nature of activity							
1.4	Average height of majority of buildings (r	1	2	3	4			
1.5	Average road width							
1.6	Average distance between facing building lines							
1.7	Area type (planned/ unplanned)	P	UP					
1.8	Socio-economic status	Low		Medium		High		

1.9 Location
Lat: Lng:

1.10 Node Address
merkato

1.11 Node ID (auto generated)

Section 2: Visual Pollution Objects

Sr.	VPO Type	W	P	Physical appearance	Structure	Adjacent landuse	Functional hinderence	placement	Display Surfaces	size	content	Media type	Color scheme	View hinderence	Score
2.1	**Outdoor Advertisement** ######														
	Number of objects/ spots/ phenomena		Presence	Structure Broken_5 Leaning_4 Torn off_3 Normal_2 Very well shaped_1	Wooden structure Steel Structure Monopole Multi Post	Cultural Heritage_5 Education_5 Open space_4 Health_4 Religious_3 Residential_2 Commercial_1	At a scale of 1-5. 1 means no hinderance while 5 means max hinderance	Stand alone On wall On roof top	Single facing_1 Double facing (back to back)_3 V facing Triangle_5	Small_1 10X20_2 20X30_3 30X40_4 Larger_5	Public service message_1 Movie_2 Religious_3 Commercial_4 Political_3 Harsh religious / political statement_5 Undecent postures_5	digital_5 mechanical_4 painted_3 mobile_2 poster_1	Pleasant_1 Normal_2 Irritating_3 Disturbing_4 Highly disturbing_5	At a scale of 1-5. 1 means no hinderance while 5 means max hinderance	
2.1.1	Billboards	55%	5	2	4	1	2	2	1	5	5	1	2	5	35
2.1.2	Sign boards	20%	5	1	2	1	1	3	1	5	1	5	1	5	31
2.1.3	Banners	10%	5	2	4	4	1	4	3	5	5	5	2	5	45
2.1.4	Steamers	5%	5	2	2	1	2	1	1	5	1	3	1	5	29
2.1.5	Posters	10%	5	5	4	1	4	2	1	5	4	1	5	5	42
2.2	**Open dumps of solid wa** ######														
2.2.1	SW (open)	35%	5			1	5			4				5	20
2.2.2	Medical waste	20%	5			2	2			2				3	14
2.2.3	Overflowing trash bins	25%	5			4	4			3				5	21
2.2.4	Construction material dumps	20%	5			4	5			5				5	24
2.3	**Hanging and cluttered w** ######														
				Well stret	Well arranged_1 reasonably arranged_3 jumbled_4 highly cluttered_5										
2.3.1	Electric	70%	5	4	4	4	3							5	25
2.3.2	Communi	20%	5	4	3	4	3							5	24
2.3.3	TV Cable	10%	0	0	0	0	0							0	0
2.4	**Dilapidated buildings** ######														
				Unpainted_buildings_1, Poorly_maintained_structures_2, Dilapidated_buildings_3, Squatter_settlement_5											
2.4.1	Dilapidate	100%	5	4		3	4								16
2.5	**Overflown sewerage/dr** ######														
2.5.1	Manholes	25%	5	3	3	4	3								18
2.5.2	Standing v	15%	2			4	4								10
2.5.3	Sewers	25%	3	4		1	3								11
2.5.4	Wide ope	35%	3	4		1	4								12
2.6	**Graffiti/wall chalking:** 6.90%														
2.6.1	Graffiti	50%	5			1	1		1	5	3		3	3	22
2.6.2	Wall Chalking	50%	5			1	1		1	5	3		3	2	21
2.7	**Various poles and transl** 4.50%														
2.7.1	Electricity	25%	5	3		4	5	3						4	24
2.7.2	Communi	10%	5	2		4	5	4						5	25
2.7.3	Telephone	20%	5	4		4	5	2						5	25
2.7.4	TV cable p	5%	0	0		0	0	0						0	0
2.7.5	Street ligh	20%	5	2		4	5	3						5	24
2.7.6	Electric tra	20%	5	3		4	2	2						1	17
2.8	**Encrochments (temp an** 3.80%														
2.8.1	Extended	35%	5			1	1							5	12
2.8.2	Uneven ra	30%	5			4	5							3	17
2.8.3	Encroachm	35%	5			4	4							2	15
2.9	**Broken roads/footpaths** 3.50%														
				Smooth_0 Rough_2	Broken_4, Ditches_5										
2.9.1	Road	40%		3		1	3								7
2.9.2	Footpath/	30%		5		1	5								11
2.9.3	Street furi	30%		4		4	5								13
2.10	**Architecturally poor stri** 2.10%														
				Quality of	Proportionate_1 Out of proportion_5										
2.10.1	Building s	40%	5	2	2	4	3						4	5	25
2.10.2	Uneven a	30%	5	4	3	4	1							4	21
2.10.3	Blue wate	15%	5	2	1	1	1	1	1	5				1	18
2.10.4	Dish recei	15%	5	2	1	1	1	1	1	4				2	18

Visual Pollution Assessment Tool (Score Calculator)

Section 1: Place Character:

Node ID MEXICO

Section 2: Visual Pollution Objects

Sr.	VPO Type	Weight	Max attainable score	Score attained	VPO Specific Ratio Score	Weighted score	Overall weighted score
2.1	**Outdoo** 20.10%						
	Number of objects/ spots/ phenomena		Sum of highest scores under each characteristics	Sum of VPO specific score attained	Ratio of attained score to max score	Ratio score multiplied by VPO Type weight	Weighted score multiplied by VPO Group weight
2.1.1	Billboards	55%	60	35	0.58	0.32	0.06
2.1.2	Sign boards	20%	60	31	0.52	0.10	0.02
2.1.3	Banners	10%	60	45	0.75	0.08	0.02
2.1.4	Steamers	5%	60	29	0.48	0.02	0.00
2.1.5	Posters	10%	60	42	0.70	0.07	0.01
2.2	**Open d** 23.80%						
2.2.1	SW (open)	35%	25	20	0.80	0.28	0.07
2.2.2	Medical waste	20%	25	14	0.56	0.11	0.03
2.2.3	Overflowing trash bins	25%	25	21	0.84	0.21	0.05
2.2.4	Construction material dumps	20%	25	24	0.96	0.19	0.05
2.3	**Hanging** 11.10%						
				0			
2.3.1	Electric	70%	30	25	0.83	0.58	0.06
2.3.2	Communi	20%	30	24	0.80	0.16	0.02
2.3.3	TV Cable	10%	30	0	0.00	0.00	0.00
2.4	**Dilapida** 13.80%						
				0			
2.4.1	Dilapidate	100%	20	16	0.80	0.80	0.11
2.5	**Overflo** 10.40%						
2.5.1	Manholes	25%	25	18	0.72	0.18	0.02
2.5.2	Standing v	15%	15	10	0.67	0.10	0.01
2.5.3	Sewers	25%	20	11	0.55	0.14	0.01
2.5.4	Wide ope	35%	20	12	0.60	0.21	0.02
2.6	**Graffiti/** 6.90%						
2.6.1	Graffiti	50%	40	22	0.55	0.28	0.02
2.6.2	Wall Chalking	50%	40	21	0.53	0.26	0.02
2.7	**Various** 4.50%						
2.7.1	Electricity	25%	30	24	0.80	0.20	0.01
2.7.2	Communi	10%	30	25	0.83	0.08	0.00
2.7.3	Telephone	20%	30	25	0.83	0.17	0.01
2.7.4	TV cable p	5%	30	0	0.00	0.00	0.00
2.7.5	Street ligh	20%	30	24	0.80	0.16	0.01
2.7.6	Electric tra	20%	30	17	0.57	0.11	0.01
2.8	**Encroch** 3.80%						
2.8.1	Extended	35%	20	12	0.60	0.21	0.01
2.8.2	Uneven ra	30%	20	17	0.85	0.26	0.01
2.8.3	Encroachm	35%	20	15	0.75	0.26	0.01
2.9	**Broken** 3.50%						
				0			
2.9.1	Road	40%	15	7	0.47	0.19	0.01
2.9.2	Footpath/	30%	15	11	0.73	0.22	0.01
2.9.3	Street furi	30%	15	13	0.87	0.26	0.01
2.10	**Archite** 2.10%						
				0			
2.10.1	Building s	40%	35	25	0.71	0.29	0.01
2.10.2	Uneven a	30%	30	21	0.70	0.21	0.00
2.10.3	Blue wate	15%	45	18	0.40	0.06	0.00
2.10.4	Dish recei	15%	45	18	0.40	0.06	0.00
ual Pollution Score (Sum of Overall weighted score of all VPO types)							**0.70**