



## **A esthetic disharmony through visual pollution: an analysis in the urban center of the capital of Ceará**

A desarmonia estética através da poluição visual: uma análise no centro urbano da capital do Ceará

Desarmonía estética a través de la contaminación visual: un análisis en el centro urbano de la capital de Ceará

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### **ABSTRACT**

Visual communication resources such as billboards, when allocated in a planned way, coupled with marketing strategies, such as the design of elements, color contrasts and LED lighting, are characteristics that influence retail consumption. Cities like New York and Tokyo are known worldwide for the presence of commercial districts with an exacerbated amount of advertisements together with the play of lights present in these places. However, the excess of these elements impacts both social and environmental issues due to visual pollution. Knowing this, this research aims to analyze the effects caused to society and the natural state of the place due to visual pollution in the city of Fortaleza - Ceará. Data collection through photographic records was used as a methodology, where it was possible to measure the effects caused to society by visual pollution in the environment. Due to this research, it was possible to verify that elements of visual pollution are easily found in all parts of the city, despite being concentrated in shopping centers. It was identified through this study the presence of visual pollution through graffiti on public and private assets, excess aerial wiring, commercial advertising through billboards and LED screens, causing damage to the natural state of the environment and, therefore, harming aspects environmental and social.

**KEYWORDS:** Communication. Visual pollution. Advertising. Society.

### **RESUMO**

Recursos de comunicação visual como os outdoors quando alocados de forma planejada atrelado com as estratégias de marketing, como o design dos elementos, contrastes de cores e a iluminação de LED, são características que influenciam no consumo do comércio. Cidades como Nova York e Tóquio são conhecidas mundialmente pela presença de distritos comerciais com exacerbada quantidade de anúncios publicitários em conjunto com o jogo de luzes presente

nestes locais. Entretanto, o excesso desses elementos impacta tanto em questões sociais como ambientais devido a poluição visual. Sabendo-se disso, esta pesquisa tem como objetivo analisar os efeitos causados à sociedade e ao estado natural do local devido a poluição visual na cidade de Fortaleza - Ceará. Utilizou-se como metodologia a coleta de dados através de registros fotográficos, onde foi possível mensurar os efeitos causados à sociedade pela poluição visual no ambiente. Devido a esta pesquisa, foi possível constatar que elementos de poluição visual são facilmente encontrados em todos os pontos da cidade, apesar de concentrar-se nos centros comerciais. Identificou-se através deste estudo a presença de poluição visual através de pichações em patrimônios públicos e privados, excesso de fiação aérea, divulgação publicitária comercial através de outdoors e telões de LED, acarretando em danos no estado natural do ambiente e prejudicando, portanto, aspectos ambientais e sociais.

**PALAVRAS-CHAVE:** Comunicação. Poluição visual. Publicidade. Sociedade.

## **INTRODUCTION**

With the advent of post-World War II globalization, investments in technological means grew and, taking advantage of this, institutions found new market opportunities and innovations in sales strategies (AHMED; ZHANG; CARY, 2021; ROSOKHATA; RYBINA; DERYKOLENKO; MAKERSKA, 2020).

Due to the increase in market competition, according to Suphan (2015) and Reitz (2018), companies constantly need changes in their sales plan, in order to keep up to date and willing to meet the new demands of their audience, adapting to them always to the cultural origin of each country. Aware of the importance of publishing in business, organizations have invested more of their financial capital in promotional media advertising as a way to achieve their social, communication and sales objectives (ELAHI; DIVSALAR, 2020; FRIO; GLASENAPP; SILVEIRA; LUCE, 2019).

One of the techniques adopted by visual communication marketing used on billboards to attract customers is based on the psychology of colors, to which the color tone linked to the quality of the design exposed in advertising campaigns sends the customer the credibility and personality of the brand, instigating it to consume it (SURIADI; MARDIYANA; REZA, 2022). In addition, Zhang, Wu, Chung and Pan (2021) mentioned the existence of other strategies, such as the use of LED panels, implementation of light outputs and customized movements for the advertising effect.

However, outdoor advertisements are the main cause of visual pollution and controlling the use of colors on billboards can lead to an improvement of more than 20% in reducing this visual pollution (WAKIL et al., 2021). In a survey carried out by Falchi et al. (2016), these

artificial lights significantly increase the luminance of the night sky and that 80% of the world's territory is covered by visual pollution due to this artificial glare.

Given the above, the research emerged from the following question: What are the social and environmental impacts caused by the excess of visual communication resources present in the city of Fortaleza? In this sense, this work has the general objective of analyzing the effects caused by visual pollution due to the excess of elements of visual communication exposed in external means of dissemination, such as graffiti, excess electrical wiring, billboards and LED panels disseminated in large cities.

This research is justified by presenting the main visual communication resources commonly used by society that cause damage to the environment and social factors. Furthermore, the relevance of the research, in addition to the academic sector, is highlighted, as it contributes to the management of public environmental policies regarding legislative compliance with environmental and sanitary control measures.

## **ADVERTISING AND VISUAL COMMUNICATION**

Created in the early 20th century, advertising has the function of influencing a certain group of individuals to make a decision, generally inducing them to purchase a product (HELBERGER; HUH; MILNE; STRYCHARZ; SUNDARAM, 2020; TABIE, 2021), while that the purpose of marketing is to capture the consumer's attention (WAHEED; YANG, 2017).

Japan Color Research Institute, published in its research that for a product to be successful in its sales, it must align marketing research involving colors and textures in fashion, psychological research on consumer behavior and also on ergonomics and functionality of product. In this way, it can be inferred that advertising and marketing must be linked to the means of communication that will be disseminated, in such a way that the resource is easy and effective to reach its target audience, thus guaranteeing its operability and functionality (KISHORE, 2021).

Due to the current scenario of the COVID-19 pandemic, spending on advertising and communication has reduced in much of the world, with estimates that the United States, the country that leads the position that most invests in this sector, has a loss of investment of 26 billions of dollars (VORHAUS, 2020). However, Guttman (2022) identified that in 2021, the United States invested a total of 285 billion dollars in advertising promotional activities, followed by China with 91 billion dollars of investment, and in 3rd place Japan with 52 billion of investments dollars.

## VISUAL POLLUTION

At the beginning of this century, records began on the various types of pollution, especially water and atmospheric pollution, indicating that government measures should be imposed to minimize the environmental impacts suffered by excess pollution caused by humans (ARAÚJO; BRITO; COSTA, 2022). Also according to the same authors, it was possible to register in 1970, some geographic points spread across the globe that indicated light pollution.

Due to population growth, especially in the main capitals of the country, there has been a disproportionate increase in damage caused to the environment by the lack of urban planning by governments, which generates negative impacts for society (GOMES; MEDEIROS, 2019).

The excess of elements of visual communication resources and the carelessness with the preservation of the environment is the main cause of visual pollution, having a direct relationship with the quality of life of the population that lives in the surroundings (CODATO, 2014; ESTÁCIO, 2016). Among the main effects caused by visual pollution, according to a survey carried out by Correa and Mejía (2015), 97% of respondents reported problems with visual fatigue, 94% with headaches and 93% felt stressed by attending such environments.

The identification of these elements of visual pollution is evident when moving in metropolises where the excess of these visual resources disturbs the visualization of the natural environment (BARROS, 2019). However, the problem of visual pollution goes far beyond just the disharmony of the environment in terms of the physical appearance of the place, it involves at least 4 aspects, namely: commercial, aesthetic, communication and legal aspects (ESTÁCIO, 2016).

Although visual pollution is harmful both for the environment and for citizens, some cities use this excess of communication to benefit tourism, such as the cities of New York and Tokyo, as can be seen through Figure 01, in which this play of luminosity together with the placement of advertisements, it attracts the eyes of tourists from all over the world (SALLES; ESCOBAR, 2014).

Figure 01 - The presence of visual pollution in the metropolis

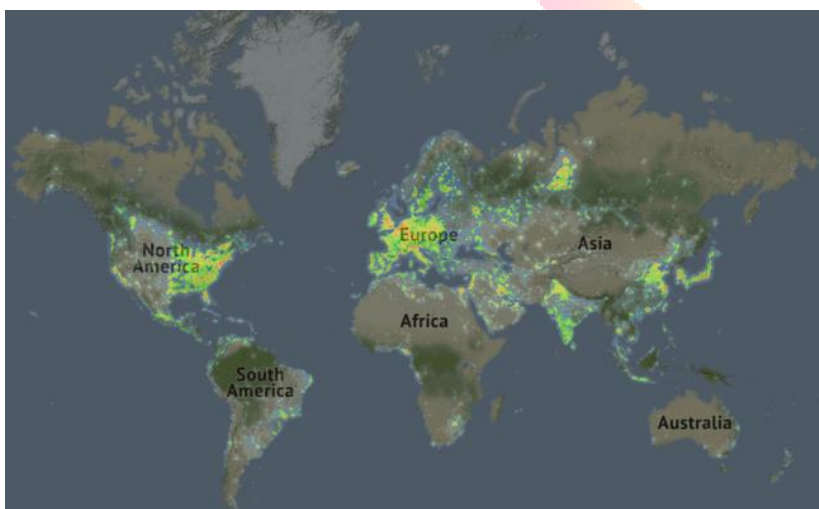


Source: Mattos (2016)

It should be noted that visual pollution is not just about the excessive and uncontrolled use of visual communication elements on billboards, but also includes exposed electrical networks, traffic signs or information, posters, graffiti and other elements that destroy the natural landscape. of the environment (MATTOS, 2016). However, places that have visual pollution are more likely to have other types of pollution such as noise and air pollution (SILVA; OLIVEIRA; GOMES; MONTEIRO, 2016).

According to data provided by Fragmaq (2014), the 15 most polluting countries in the world in descending order are: China, United States, India, Russia, Japan, Germany, South Korea, Canada, Saudi Arabia, Iran, Great Britain, Brazil, Mexico, Indonesia and South Africa. This geographic distribution of visual pollution can be seen in Figure 02.

Figure 02 - Visual pollution map



Source: Light Pollution Map - DarkSiteFinder.com (2022)

It can be seen from the map that Brazil, as well as much of the South American continent, does not have large incidences of visual pollution in its extensive territory, represented on the

map as being these places with neon colors in greenish tones, being predominantly located in the capitals Brazilians.

## **METHODOLOGY**

This topic addresses all the steps of the methodological process used to carry out this research. As for the approach, it is a qualitative research, as the present work aims to identify the main causes of visual pollution and what are its effects on society. As for the objectives, is classified as explanatory, as it is characterized by describing, identifying and explaining the causes and effects of the analyzed phenomenon. As for the procedures, there is the framework as a bibliographic research, since it is necessary to use research that has already been carried out previously. In addition, it was also necessary to carry out observations and photographic records in locu.

The city of Fortaleza - Ceará was chosen because it is one of the Brazilian capitals and because it presents characteristics of visual pollution, as well as other Brazilian capitals such as São Paulo and Curitiba where other similar research has already been carried out. As for the photographic records, these were obtained through the author's circulation in various parts of the city, which made it possible to identify the presence of the excess of these elements of visual communication that led to the modification of the natural environment into an artificial one.

## **RESULTS**

The observations made throughout this research revealed that Brazil, more specifically the city of Fortaleza where the data and photographic records were collected, presents the most diverse typologies of visual pollution, being possible to identify through graffiti, excess electrical wiring on poles, use of billboards and LED panels. However, other forms of visual pollution can be observed depending on the time of day, period of the year and location, such as the presence of garbage in inappropriate places on urban roads and advertising pamphlets, especially during elections.

Through Figures 03 and 04, one can visualize the presence of visual pollution resulting from graffiti on buildings. This type of visual pollution is one of the easiest to spot, some considering it as art through the graffiti technique, others as vandalism due to “territory marking” by gangs.



Figures 03 and 04 - Graffiti scattered around the city



Source: Authors' private collection (July, 2022)

Another element that significantly interferes with the natural landscape of the environment, causing visual pollution is the presence of urban wiring, which can be electrical, telephone and internet wiring. It can be seen through Figures 05 and 06 that in the city of Fortaleza, as well as in many Brazilian capitals, there is an exorbitant amount of conductor wires on top of the poles causing aesthetic damage due to misalignment and tangle of wires present at each intersection point.

Figures 05 and 06 - Entanglements of wires in electric pole



Source: Authors' private collection (July, 2022)

Exemplified by Figures 07 and 08, billboards scattered throughout the city are observed, this is the most common form of external advertising of advertisements, due to its structure and size, they are easily identified by both pedestrians and drivers. Outdoor billboards have increasingly been adopted by organizations to advertise their products, making it possible to detect their presence in shopping centers, residential neighborhoods or even on the roads to advertise gas stations or hotels.

Figures 07 and 08 - Advertising through billboards



Source: Authors' private collection (July, 2022)

Finally, the presence of LED panels can be verified, as shown in Figures 09 and 10, which naturally arouse greater curiosity and attention of individuals, as they have the ability to advertise an advertisement with the transmission of the message in motion, mixing colors, contrasts, shapes, direction and positioning of the sign and image to which you want to advertise.

Figures 09 and 10 - LED Panels





Source: Authors' private collection (July, 2022)

Because it is a modern tool, with greater visibility of ads and the characteristic of dynamism, fixing eyes for longer, LED panels have the differential of attracting a wider audience that is easily interested in consuming that service that is being advertised due to the power of engagement of the dynamism present in the LED panels. In this way, many organizations have invested in this means of communication, especially because it is a tool with the best cost benefit, due to its low consumption of electricity, affordable rental and the impact it generates on customers.

## CONCLUSION

This research aimed to investigate the impacts caused by the visual communication elements exposed on billboards in large shopping centers. This is a descriptive and documentary analysis research because it focuses on extracting information from concepts, characteristics and effects caused in large metropolises due to visual pollution.

According to what was exposed in the course of this research, it is clear that visual pollution is a worldwide problem and must be portrayed with the deserved and necessary importance to minimize the damage caused by the excess of visual communication elements exposed mainly on billboards.

Commercial establishments are the main causes of visual pollution, due to the need to stand out from their market competitors, they advertise their products through the distribution

of pamphlets on the street, in addition to advertising their products on billboards and storefronts, thus increasing their presence. of visual resources in the same environment.

It was noticed that in the city of Fortaleza, visual pollution occurs more abundantly through the excessive dissemination of advertising through billboards scattered around the city, and mainly by irregular graffiti in establishments. However, visual pollution on billboards is done in a geographically isolated way, focusing especially on commercial conglomerates, especially in Brazilian capitals.

Regarding the impacts resulting from visual pollution, in aspects of environmental impacts, visual pollution is more present and intense, modifying the natural landscaping of the place through the excess of electrical wiring which, in addition to making the environment more aesthetically polluted, is one of the main causes of bird deaths due to wire tangles.

Regarding graffiti, along with the excess wiring on the poles, they were the elements most found in the city, and their main negative impact on this aspect is due to making the environment dirtier, in addition to violating the Environmental Crimes Law n° 9605. /98 and oppose Bill No. 5202/20 on damaging, destroying or deteriorating someone else's property, whether public or private property.

Finally, billboards and LED panels, which are often used by marketing to promote their products, which due to their play of lights and colors, thus attracting the attention of individuals, can be the cause of traffic accidents and, for those who observe it, over time can cause eye irritation, stress, fatigue and headaches.

It is left as a suggestion for future research, to analyze alternatives to mitigate the effects of excess visual communication resources causing visual pollution, in order to contribute to society in social and environmental aspects.

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