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RESEARCH ARTICLE

STREET LIGHTING SERVICE CONTROL

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Abstract

The management of street lighting is a known problem can be revisited from the perspective of smart cities. In smart cities, services and services are interconnected to provide infrastructure for sustainable growth and improvement in the quality of life of citizens. In this research work, xplore was and xplore new low-cost technologies to create intelligent street lighting systems capable of monitoring and controlling luminaires, thus reducing maintenance costs and allowing youto electricity more rationally.

Introduction:-

The state of Amazonas according to IBGE is considered the largest state in Brazil with (1,599,146,876 km²) and the capital of this state is Manaus, which currently has ibge surveys with 2,255,903 inhabitants considered one of the main capitals of the northern region, with this large number of inhabitants the city has been developing every year and increasing territory;

Second (Andrew Natsios, 2014) Many large cities have old and collapsed infrastructure. This has to be dealt with in the near future, or they will be in serious trouble. They'll be harmed if they don't do something. Due to the evolution of the city, some sectors end up being negatively affected where the public agencies responsible are unable to become aware of the problem that occurred.

This article presents the lack of provision of services focused on the city's infrastructure, focusing on the lighting part of public roads. The lack of lighting in certain parts of the city mainly on the busiest roads causing fatalities for both pedestrians and vehicles. In the city of Manaus currently to re-established the lighting of these certain routes it is necessary that the population contact via phone or e-mail with SEMINF for these services to be provided.

The objective of this article is to develop an application to improve the infrastructure of public lighting in the roads of the city of Manaus, where the user will enter with the identification data of the poles and their location in a faster, easier and practical way. Contributing to the agility of the service, causing reduction in fatality rates between drivers and pedestrians and also helping in the improvement of manaus infrastructure.

Theoretical Reference

The theoretical framework of this research was structured in 6 topics, these are:

1. Mysql
2. Node Js
3. React Native

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4. React Js
5. Infrastructure
6. public agencies
7. Google forms

MYSQL
Mysql is a database management system (DBMS), which uses the Structured Language Query (SQL) language as an interface. The tool version to be used for the development of this application is Mysql in version 5.7.14.

Node JS
Node.js characterized as a JavaScript execution environment. With it, the user can create applications without relying on the browser for this. With high scalability, good flexibility, architecture and low cost.

React Native
It is a framework based on React, developed by the Facebook team, which enables the development of mobile applications, both for Android and iOS, using only Javascript.

React JS
React is a declarative, efficient, and flexible JavaScript-based front-end library for creating user interfaces. It allows you to comwrite complex UIs from small, isolated codes called "components".

Infrastructure
It is the set of fundamental services for the socioeconomic development of a region such as sanitation, transportation, energy and telecommunications. The lack of infrastructure makes it difficult to attract investments, the competitiveness of companies and the generation of new jobs. The improvement of infrastructure is fundamental for socioeconomic development, as it favors a better business environment, the attraction of more investments, the competitiveness of companies and the generation of jobs.

Public Agencies
Public bodies are the internal offices of the State, created from administrative deconcentration, with the purpose of performing state functions, being stripped of legal personality, that is, it is the compartment in the state structure to which certain functions are committed, being composed by public agents who, when they perform them, manifest the very will of the State.

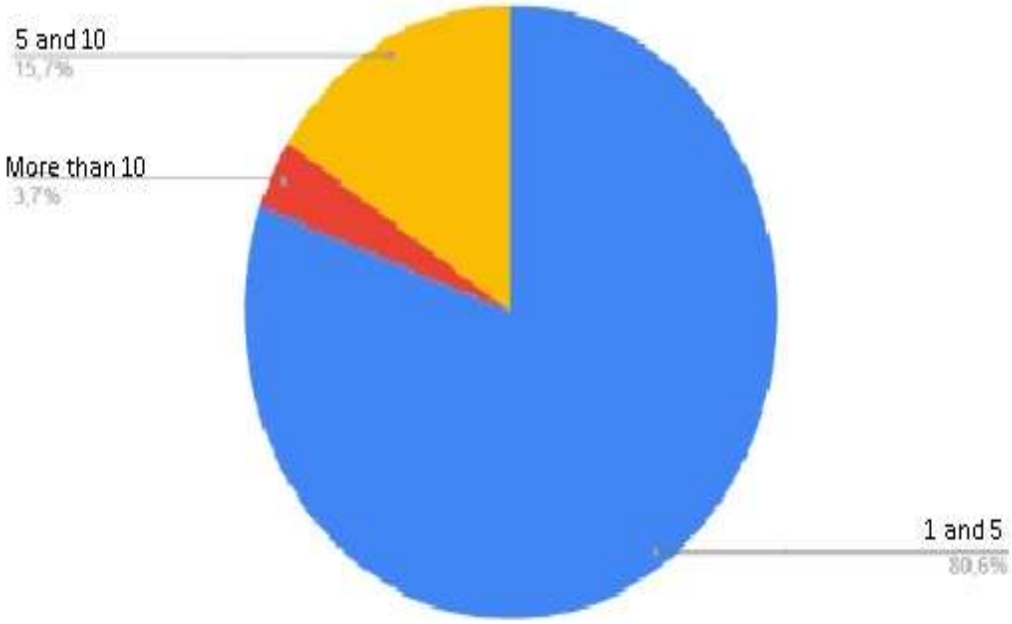
Google Forms
It is a free service for creating online forms. In it, the user can produce multiple choice surveys, ask discursive questions, request numerical scale evaluations, among other options. The tool is ideal for those who need to request feedback on something, organize registrations for events, invitations or ask for evaluations.

Methodology:-

The article aims to propose an application model where it will be presented to the body responsible for the lighting area of the city. The process adopted to carry out this research will be quantitative, exploratory to obtain an overview of the prototype. The Google forms tool was used to collect the data, due to the generation of graphics and its practicality. The questionnaires sent through social networks were formulated questions for objective answer. However, information were collected from the theme to better understand the subject that will be presented in this article. In the application, the user identifies and describes the lighting problem and triggers the competent body.

Findings
To know if the application would be of necessary use for the population, a survey was carried out to collect the amount of poles that do not have energy in their region.

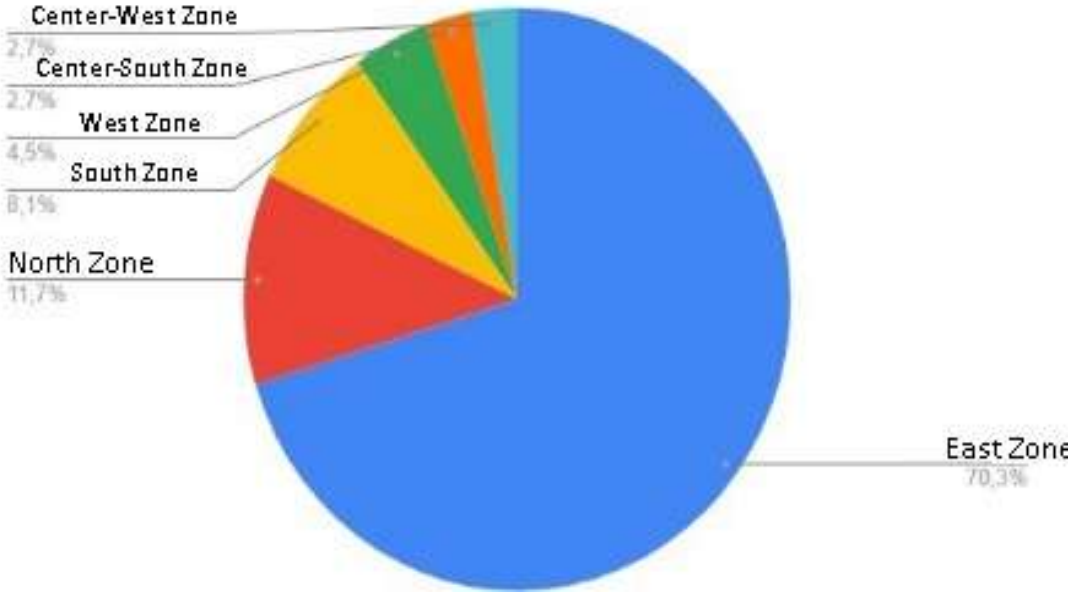
Graph 1:- On your street how many poles are without power?



Source: Autores, 2022.

Graph 1 shows the number of poles that do not have energy, currently 80.6% answered that from 1 to 5 do not have energy, 15.7% responded from 5 to 10 and 3.7% responded above 10.

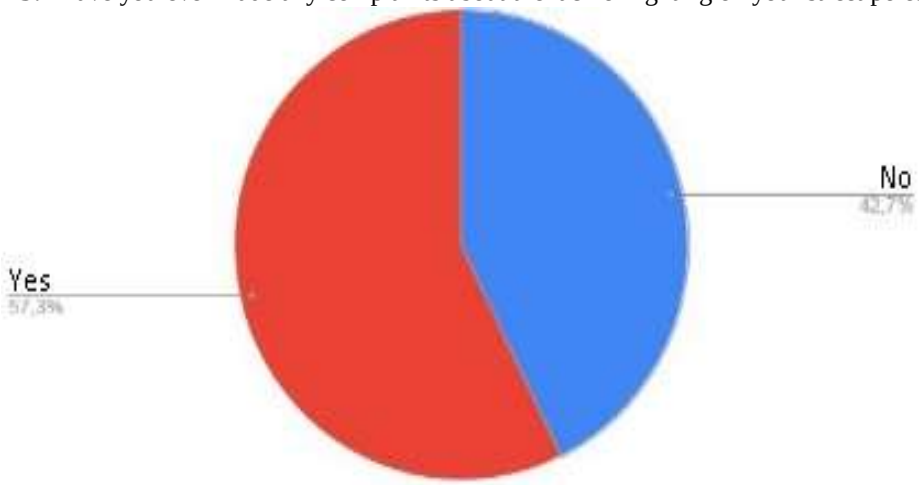
Graph 2:- Which zone are you in?



Source: Authors, 2022.

Graph 2 shows the area in which the people interviewed live, 70.3% reported that they are in the East Zone, 11.7% in the North Zone, 8.1% in the South Zone, 4.5% in the West Zone, 2.7% in the Midwest zone and 2.7% in the Midwest Zone.

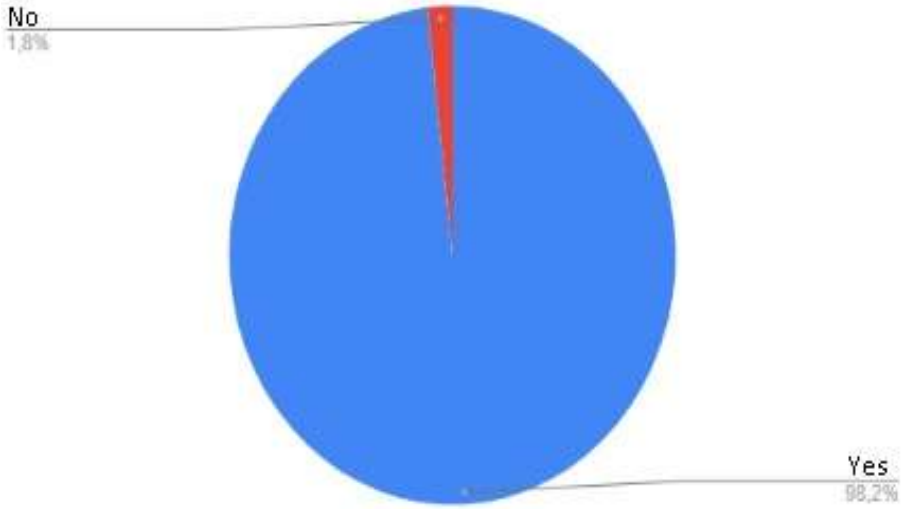
Graph 3:- Have you ever made any complaints about the lack of lighting on your street poles?



Source: Autores, 2022.

Graph 3 shows the amounts of poles that do not have energy, a survey was done to know the percentage of people who have already made complaints to the agencies responsible for a possible restoration of this energy, 57.3% already make complaints or some type of complaint and 42.7% did not make any type of complaint or complaint.

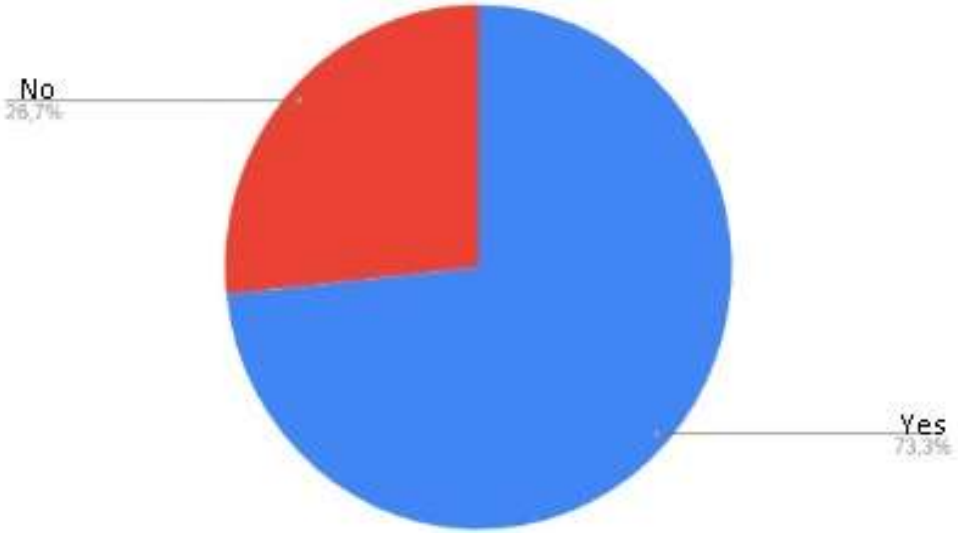
Graph 4:- If there was an application where you could make requests to restore the lighting of your street pole, would you use it?



Source: Authors, 2022.

Graph 4 If there was an application where you could do 98.8% answered that Yes and 1.8% answered no.

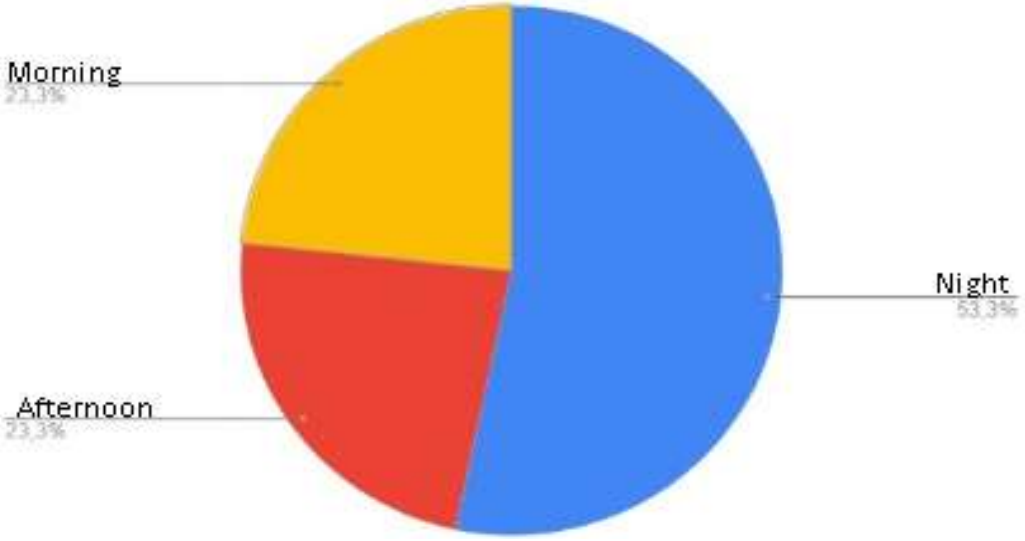
Figure 5:- Have you ever been muused?



Source: Authors, 2022.

Graph 5 shows the number of times a person was assaulted, 73.3% answered yes and 26.7% answered no.

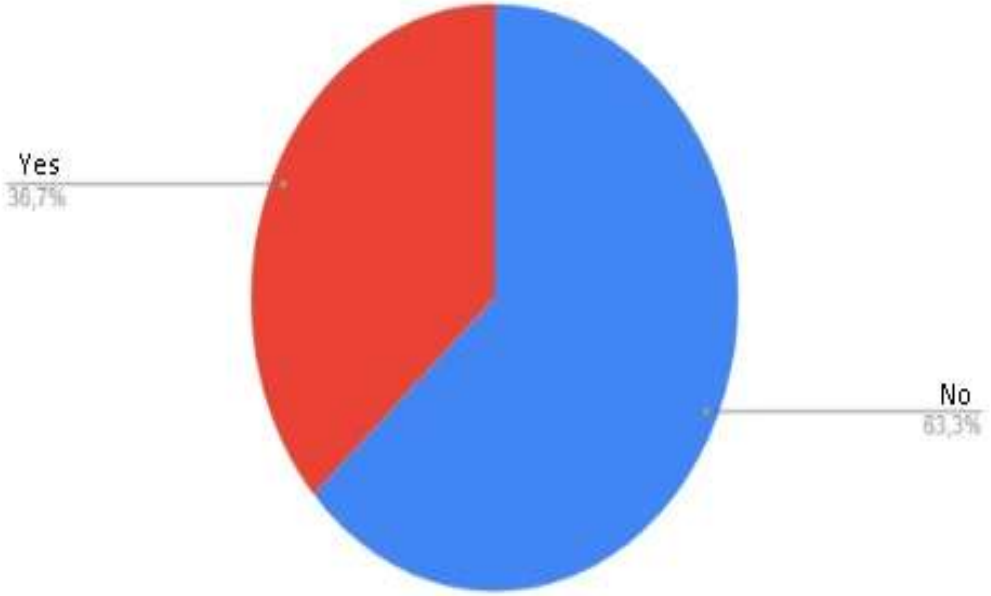
Graph 6:- Which shift?



Source: Authors, 2022.

Graph 6 Survey made to identify which shift occurred the assault 53.3% occurred in the night shift, 23.3% in the afternoon and 23.3% in the evening.

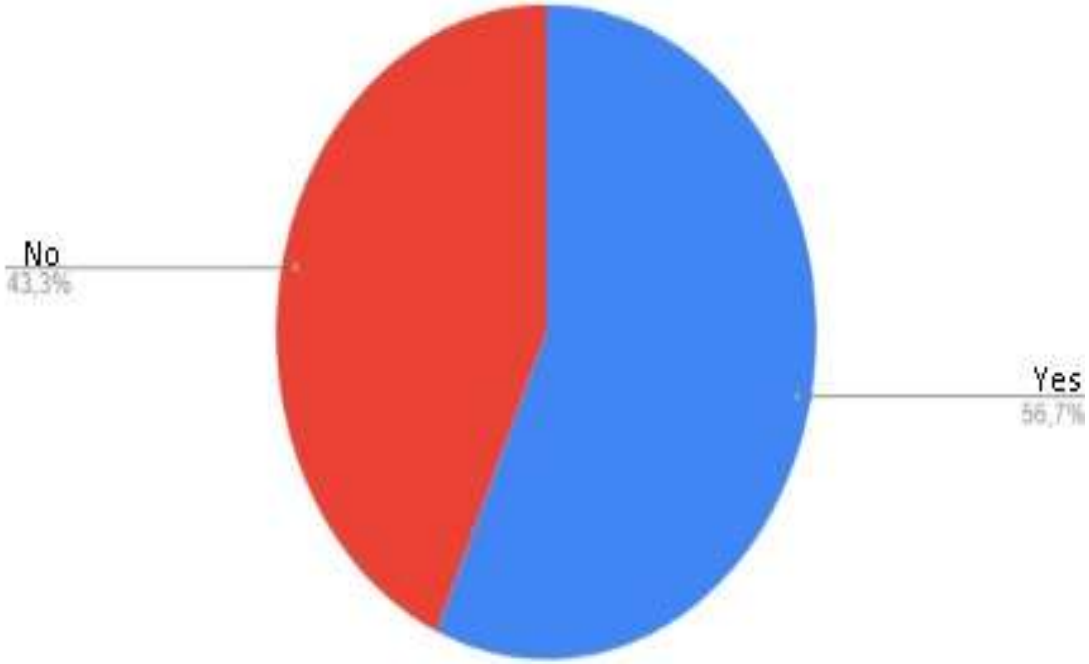
Graph 7:- Did the place where you were located have adequate lighting?



Source: Autores, 2022.

A survey was conducted to find out if where the assault occurred there was adequate street lighting, 63.3% answered No and 36.7% answered Yes.

Graph 8:- For lack of street lighting have you ever had an accident?



Source: Authors, 2022.

A survey was conducted to find out if any accidents occurred due to the lack of public lighting where it was, 56.7% answered Yes and 43.3% answered No.

Discursão:-

To evaluate and validate the prototype, a field study was carried out in which a questionnaire was applied to the population to know questions about it.

According to Heidemann et al. (2010, p. 32) states that "Opinion surveys can be easily implemented on Google."

Based on the analysis and presentation of data obtained through graph 7, 60.7% have already suffered assaults due to lack of maintenance of the poles, and 53.6% have already suffered some accident due to lack of lighting. To know how many poles are without power in the street of the interviewees, 80.6% answered that there are 1 to 5 poles without power leaving the population more vulnerable to accident and assault by the neighborhoods of Manaus, in graph 4 were collected the answers if the population would use an application where it would facilitate the realization of complaints,98.8% answered that Yes and 1.8% answered no. To collect the percentage of people who have already reported to the agencies responsible for a possible restoration of energy, 57.3% responded that they report without any success in communicating. According to the graphs' collected above, it is concluded that this application would be of paramount importance for the population to communicate with responsible companies in a practical way and thus helping in the infrastructure of Manaus.

Final Considerations

From this work it is noted that it is important to analyze new methods of application, proposing improvements for society. Observing the interaction of the interviewees, it is identified that the practicality of an application arouses the interest of individuals.

The objective is to propose a prototype of application of complaints, where it helps the population of Manaus, as well as public agencies to be aware of these complaints.

With the improvement in communication between the user and the service provider will become more practical and efficient the waiting process, thus the effect that the waiting time will fall, bringing more practicality to the population.

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