Post Venture Examination and Environmental Impact Assessment (EIA) Report Survey of a Multistory Building

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Abstracts: In recent years, high-rise buildings have been constructed as an urban development strategy in many megacities. High-rise buildings have positive as well as negative impacts on urban environments. Therefore, the post-project analysis and review (PPA) of environmental impact assessments (EIA) of high-rise buildings should be performed to establish strategies to ensure sustainable and resilient urban development is essential. This study involves the Post Project Analysis and Review (PPA) of the EIA report for the complex "The Centaurus". The Centaurus has been in operation for ten years, a PPA&R of impact is required, as predicted. It must be emphasized that the PPA needs to analyze the environmental factors selected in the EIA report. Furthermore, the proposed improvement measures must be implemented. A few impacts were chosen that could be easily carried out. Operational-related impacts were selected which include traffic, parking, the concentration of carbon monoxide in an enclosed parking garage, building shadow, etc. Preliminary and Secondary data were collected. Several visits were made for the collection of data through literature review, questionnaires, interviews, and Instruments while the data was analyzed by MS Excel. The study concluded that the project had been altered from its original scope and that this had caused traffic, parking problems, and carbon monoxide concentrations in parking lots.

Keywords: Environmental Impact Assessment (EIA), Post-Project-Analysis (PPA), Post-Project-Analysis in environmental impact, Centaurus and CO concentration.

1. INTRODUCTION

Every country on Earth uses a version of the Environmental Impact Assessment (EIA) procedure.Fifty years ago, this tool was created so that people could think about the environmental impact of development before making decisions about whether or not to give the green light [1]. Prediction and identification of impacts at the pre-decision level are said to be the primary concerns of EIA, with little attention paid to what comes afterward (such as post-development follow-up activities or when the building is operational). Thus, the primary focus of EIA is on foreseeing the environmental effects of proposed projects. Since the EIA is completed in advance, it is challenging to cover the operation phase [2].

Several studies have been conducted in recent decades to investigate the impact of high-rise buildings when they are operational. It should be noted that these structures can also cause seriousproblems for the people who live nearby. They may, for example, infringe on the rights of others in the neighborhood to natural light and visual quality [3]. Similarly, high-rise buildings can cause increased traffic volumes, traffic noise pollution, air pollution, and

parking issues and put additional strain on transportation networks. These adverse impacts also include delays and traffic congestion, loss of parking spaces, Concentration of Carbon Monoxide in an Enclosed Parking Garage, waste drainage system being disturbed, etc. [4]. All of this could have a negative impact on public health and surroundings; as a result, if high-rise buildings are not properly maintained and looked after, they can cause serious environmental problems. To achieve harmony between project building and environmental impact, it is necessary to conducta post-project analysis (PPA) to track, monitor, and confirm the environmental impact of completed projects and the efficacy of preventative measures, and then to propose corrective plansor measures. PPA can be used to foresee future synergistic and cumulative effects [5]. There is a common misconception that EIA only considers the period leading up to the planning decision, whereas, in reality, it should also include post-development activities like monitoring andauditing to ensure that no unforeseen consequences [6], therefore, EIA is not makingthe most of its opportunities for ongoing advancement. It also appears that EIA's focus on procedure, specifically the pre-decision analysis, keeps it from achieving its intended purpose, which is environmental protection [7]. There are a lot of dangers associated with operating a high-rise building that can affect not only the people inside but also the neighborhood and the building itself. Therefore, a PPA should be conducted after a project has been completed to discuss environmental concerns and offer solutionsand advice [8].

1.1. High Rise Buildings

Research into the effects of fully functional high-rises has been conducted in multiple studies overthe past few decades. It's important to remember that these structures can also pose significant risks to the local community. Because of this, they may interfere with the access to natural light and visual quality enjoyed by others in the area. Similar to how high-rises can increase traffic volumes, noise pollution, air pollution, parking issues, and strain on transportation networks, theycan also increase the need for these services. The concentration of carbon monoxide in an enclosed parking garage, the disruption of the waste drainage system, and the like are all examples of these unfavorable effects. As a result, if high-rise buildings aren't properly maintained and cared for, they can cause serious environmental problems that threaten public health and the surrounding environment [9-11].

1.2. Environmental Impact Assessment (EIA)

According to common belief, environmental impact assessment (EIA) focuses on foreseeing and identifying potential effects before a decision is made but pays little attention to what comes afterward, such as monitoring or additional development. Predicting how a project will affect the environment before it is built is called an environmental impact assessment (EIA).

Every nation on Earth uses some form of Environmental Impact Assessment (EIA) [12-13]. At a pre-decision level, EIA analyses the current environmental conditions, identifies the likely impacts of the proposed project on the natural environment, predicts the impacts related to design and construction, and predicts the impacts related to the project's operations [14].

To a large extent, environmental impact assessments (EIAs) are predictive exercises that aim to identify and estimate the characteristics and significance of impacts associated with a proposed development action or plan at the pre-decision level, while ignoring the impacts of any post-decisionfollow-up activities [15].

1.3. Post Project Analysis & Review (PPA)

There are numerous risks associated with high-rise buildings, which not only affect during the design and construction phase but also impact the occupants and the surrounding environment during the operation phase. Operation-related impacts are predicted in EIA but when the project is operated, several impacts take place after some years. For this purpose, PPA&R should be done to overcome these environmental issues. To achieve the coordination of project construction and environmental protection, it is necessary toconduct a post-project-analysis (PPA) to track, monitor, and confirmatory assess the environmentalimpact of constructed projects and the efficacy of preventative measures, and to propose correctiveplans or measures [16-17].

1.4. Importance of Post-Project Analysis and Reviews

High-rise buildings have positive as well as negative impacts on urban environments. Environmental impact assessment (EIA) is reported to be mostly concerned with the prediction and identification of impacts at a pre-decision level but ignores the post-development follow-up activities. There have been several studies of high-rise buildings, which not only affect during the design and construction phase but also impact the occupants and the surrounding environment during the operation phase Because EIA aims to ensure that the consequences of any development action throughout its entire life cycle are understood and are acceptable, EIA should have some mechanism for checks on the design, implementation, operation stages of the project cycle. , EIA isnot making the most of its opportunities for progress. It also appears that EIA's focus on procedure, specifically the pre-decision analysis, inhibits it from achieving its intended purpose, which is environmental protection [18-20].

PGCL planned to construct up multi-use commercial building Complex in Islamabad. The complexwasnamed “the Centaurus” which included a luxury hotel Tower, an office Tower, two residential Apartment buildings, a shopping mall, parking garages, and other associated facilities. The Centaurus was to be completed in 2010 & 2011. Three Towers were constructed and two of them were Operated in 2013. The 7 Star Hotel which was the fourth Tower has not been constructed dueto some reasons. Now that the luxury hotel has been shifted to the 3rd Tower construction has again started. The EIA report which was given in 2008 included the design-related impact, construction-related impact, and operational impact of the project. Reports indicate that EIA focusesprimarily on the phases leading up to the planning decisions, but does not account for what comesafterward in terms of follow-up activities like keeping an eye on things and expanding on them such as monitoring and further development. The operational impact of the project cycle should be monitored in some way by the EIA. Becausethe purpose of an EIA is to make sure the long-term effects of a development project are acceptable. So PPA is a new part introduced to check the environmental impacts. We are going to perform a post-project review & analysis of the operational impacts that were predicted in the EIA report.

The following are the objectives of the research.

- Review of Centaurus EIA Report
- Monitoring & Compliance Analysis of EIA report during construction.
- Post Project Analysis (PPA) and Review of environmental factors, and parameters considered in the Centaurus EIA report.
- Recommendation and Remedial measures to be taken for the environmental factors not considered or parameters not complied during the last 10 years, to improve the effectiveness or the efficiency of the EIA process.

2. RESEARCH METHODOLOGY

The systematic, theoretical evaluation of the approaches used in a field of study is known as methodology. The methodology is mainly concerned with creating a conceptual framework because that is the way to accomplish some goals. The type of research methodology that will be used in this study is based on questionnaires and interviews to achieve the objectives.

The methodology that is approved for our research includes:

- Analysis of the EIA report which was collected from centaurs concerned staff.
- Site visits to the complex “THE CENTAURUS”.
- Interviews with the staff and residents.

- The questionnaire was prepared according to the problems faced by the residents.
- Qualitative or Quantitative analysis of the obtained Data.
- Remedial measures are to be recommended and the current information is to bedocumented.
- Conclusion, recommendations, and suggestions for upcoming study.

2.1. Method of Surveying

The majority of this research will be conducted through questionnaires and interviews with residents and staff of Centaurus. To determine the factors that might have an impact on theproject objectives, a thorough literature review was first conducted.

A preliminary questionnaire was sent to various experts in this survey to assess the readability, clarity, and effectiveness. Their feedback was taken into account when composing the final questionnaire.

2.2. Site Visit

- Carbon Monoxide in parking Garages (Mezzanine, B1 for Visitors)
- Car Parking
- Pictures of traffic congestion on roads
- The Duration of field visits was short and was used only for preliminary data collection.
- The Best environmental assessment requires field visits of all four seasons.

2.3. Questionnaire

A questionnaire is a research tool that includes a series of studies and different reminders with theultimate goal of gathering information from respondents about public events. Because they are lessexpensive, require less effort from the respondent than verbal or phone studies, and frequently have institutionalized responses that make it simple to order information, questionnaires are preferred over some other types of analyses.

By requiring that respondents be able to read the questionnaire and respond to it, surveys are also tightly controlled. Questionnaires are of the following types i.e. Structured Questionnaire, Unstructured Questionnaire, Open-Ended Questionnaire, and Mixed Questionnaire.

2.4. Questionnaire Structure

Our Questionnaire highlights the following environmental impacts:

- Traffic Congestion
- Loss of parking spaces
- The concentration of CO in an enclosed basement
- Building Shadow

The survey questionnaire is designed to find out people's opinions and to understand how much these

sustainable techniques have affected the environment whether positively or negatively.

2.5. Interviews

Interviews are regarded as one of the qualitative data collection techniques. Interviews can be classified as structured, semi-structured, or unstructured. The three types are distinguished by theextent to which the researcher directed and led the interview and set the length of the interviewees' responses. Face-to-face, group, and focus interviews are just a few of the interview formats that can be used. Before conducting interviews, preparation is crucial. It is advantageous if the interviewer has a list of specific issues to cover. Following are the types of interviews i.e. Structured Interviews, unstructured interviews, and Semi-Structured Interviews.

2.6. Tools for Data Collection

The technology used during the interviews to record and stores the information and data gathered during interviews is referred to as the tools for data collection.

We have used the following tools for the data collection of our investigation:

- **Digital Camera**

A digital camera is a piece of photographic equipment that captures images digitally and keeps them in the camera's memory.

During our visit to "THE CENTAURUS," we used a Digital camera for taking Pictures.

- **Audio Recorder**

An audio recorder will be used to record the sound of the interviewee to save theinformation for later use.

- **Carbon Monoxide Detector**

In a basement, there will not be sufficient natural air circulation. The cars produce a small amount of Carbon Monoxide when the engine is ON. This means that in a basement parking lot, a substantial amount of Carbon Monoxide will be produced. If the ventilation is not properthe concentration of CO in the basement will increase.

- **Software Use**
  - We did a side-by-side comparison of site data in Microsoft Excel.
  - To better grasp the scope and complexity of the data, it is often represented graphically.
  - Microsoft Excel allows users to arrange, organize, and calculate spreadsheet data.
  - Data analysts and other users can use spreadsheet programs like Excel to organize data in a way that makes it more accessible when new data is added or existing data is modified.
  - Each row and column in Excel is made up of smaller boxes called "cells."

3. RESULTS AND ANALYSIS

This section offers the data analysis and findings from the survey that was conducted in "THE CENTAURUS" Islamabad using questionnaires, interviews, and case studies. A case study-based survey, interviews, and questionnaires were used to gather and analyze the data. The entire analysis stage, including how the data was

analyzed and the results discovered to draw the necessary inferences and suggestions, is covered in detail in the section.

Using Microsoft Excel, the data collected through questionnaires based on the survey and interviews were examined. The results are illustrated in the following paragraphs.

3.1. The Centaurus

"The Centaurus" is located in Blue Area F-8. The Centaurus' first EIA report was completed in 2007. A luxury hotel tower, an office tower, two residential apartment buildings, a multi-story shopping mall, parking garages, and other associated facilities were all part of the complex. In 2013, the Centaurus became operational. But, Now the multi-use commercial building complex includes three towers & no luxury hotel. Now that the office tower is being converted into a luxury hotel and the Centaurus has been in operation for ten years, a PPA&R of impact is required, as predicted. It must be emphasized that the PPA needs to analyze the environmental factors selected in the EIA report. Furthermore, the proposed improvement measures must be implemented.

3.2. Traffic Congestion

Major cities around the world face a wide range of issues, including but not limited to those related to land availability, social issues, and infrastructure. Congestion problems have arisen as a result of an increase in traffic volume induced by the movement of products and passengers that is not by road capacity. The quality of urban life is in evident danger from traffic congestion, which has been on the rise across most of the world, developed or not. The most obviouseffect is a slowing of traffic, which adds to travel times, fuel use, other operating costs, and pollution compared to when traffic flows without interruption (Alexandra Sotiropoulou, 2020).

The presence of tall buildings in urban areas can be both beneficial and detrimental. The rapid rise in car ownership in Pakistan over the past few decades is a major contributor to traffic congestion. Individuals in developing nations can benefit from private automobiles since they increase their mobility, sense of security, and social standing. However, private automobiles are not an effective means of public transit, as each rush-hour car passenger is responsible for almost 11 times as much traffic as an individual riding a bus (Lotfabadi, 2014).

3.2.1. Causes

There are two main causes of traffic congestion in “The Centaurus”.

Urbanization

The region's rapid growth has implications for changes in land use, population growth, and various socioeconomic activities, but most importantly, it has attracted various investors to conduct high-rise building development, as a result of the emergence of various activities, there has been an increase in traffic volume, which can cause congestion and increase fuel consumption.

Parking Area

According to the EIA report, "The Centaurus" had a luxury hotel tower, an office tower, two residential apartment buildings, a multi-story shopping mall, parking garages, and other associated facilities that were all part of the complex. Parking garages were given to all towers. Now the ground realities are totally out of the scope of the EIA report. The Centaurus started running in 2013. The multi-use commercial building complex included three towers but no luxury hotel. The parking garages aren't in use because the office tower is currently being converted into a luxurious hotel. The parking garages of the other two towers are divided into residents, staff, and visitors. The majority of traffic is generated by shopping malls, which include visitors. As a result, vehicles are parked on the roads, causing traffic congestion.

Effects

When high-rise buildings are not properly maintained, they can increase traffic volumes, traffic noisepollution, and air pollution, and place additional strain on transportation networks. All of this has the potential to harm public health and well-being. The rise of various activities has resulted in increasedgeneration and traffic volume, which can cause congestion, increased fuel consumption, decreased comfort, accidents, and air, soil, and water pollution, all of which endanger human health. (Lee, 2010)

3.3. Lack of Parking Area

Since the beginning of time, man has been a wanderer, moving from place to place in search of foodand shelter. Buildings have been used as shelters for as long as there have been people, and various types of buildings serve various purposes for people. Some structures only serve one purpose, whereas mixed-use structures serve a variety of purposes. Parking is a major issue with these types of buildings, which can be brought on by the design, the building's encroachment on the site, the building's occupants or users, or general laws (rules and regulations) governing the area. Byanalyzing the number and sizes of the parking spaces offered, estimating the number of car users, and determining the parking space efficiency in mixed-use buildings.

The Complex named “the Centaurus” Mix used buildings including a luxury hotel tower, an office tower, two residential apartment buildings, a multi-story shopping mall parking garages, and other associated facilities in the EIA report.

Designing a mixed-use building to function as a single-use building is not an easy task. Errors in design or operation are more common in this kind of development. The proper function combinationmust be used, period. It is difficult to provide an effective parking facility in this kind of structure. The parking plan should be able to comply with all applicable laws and regulations while keeping in mind that different users and functions have different parking needs as a result of their various operating hours. For instance, through the use of shared parking spaces, parking spaces used by office users during the day may be made available to other users (visitors) during the evening**.**

Our study aims to evaluate the parking space efficiency in mixed-use buildings, which can be done by analyzing the number and sizes of the parking spaces offered, estimating the number of car users,and finding out how users feel about the available parking spaces. We calculated the cars on weekdays, weekends, sale days, and festival days on site. The EIA report states that "The Centaurus" was a multi-building complex that included a luxury hotel tower, an office tower, two residential apartment buildings, a multi-story shopping mall, parking garages, and other related facilities. All towers received parking garages. The current state of affairscompletely transcends the scope of the EIA report. In 2013, the Centaurus began to move. Three towers were part of the complex of multi-use commercial buildings, but there was no luxury hotel. The office tower is being converted into a five-star hotel, so the parking garages aren't in use. There are separate parking garages for residents, employees, and visitors in the other two towers. One of the reasons for parking oversupply is the lack of comprehensive research data on parking needs. For this purpose, the Site was visited for several days and Data was collected and plotted on Graphs**.** The graphs given below show the weekdays, weekends, and festival days data. Data was collected through questionnaires and personal observation.

3.4. Calculation and Comparative Analysis

Following is the analysis of comparison in normal days, sale days, and festival days.

3.4.1. Normal Days

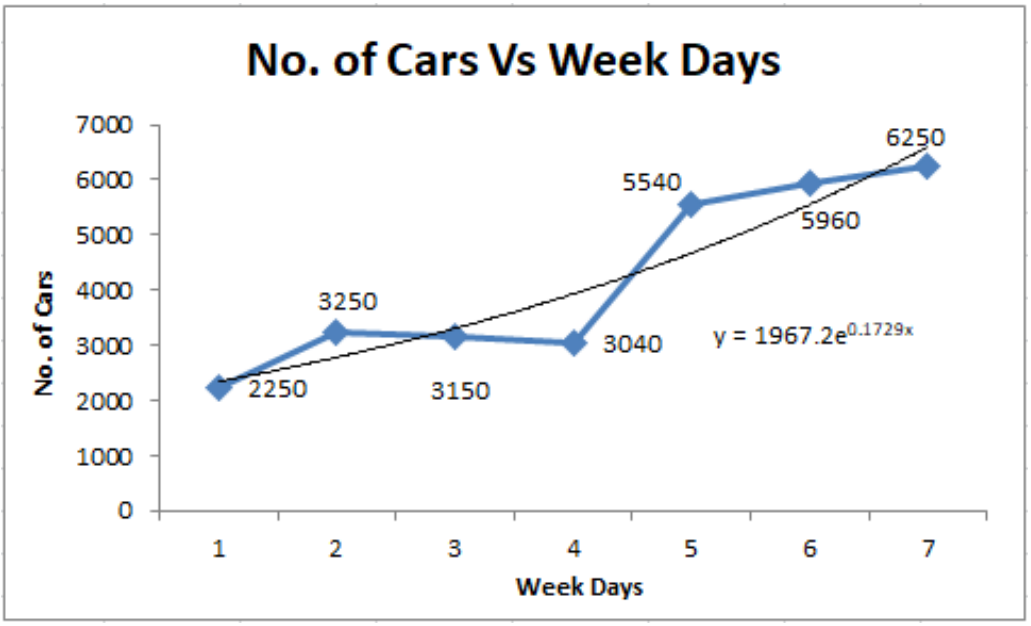


Figure 1: Impact of traffic on Normal days

3.4.2. Sale Days

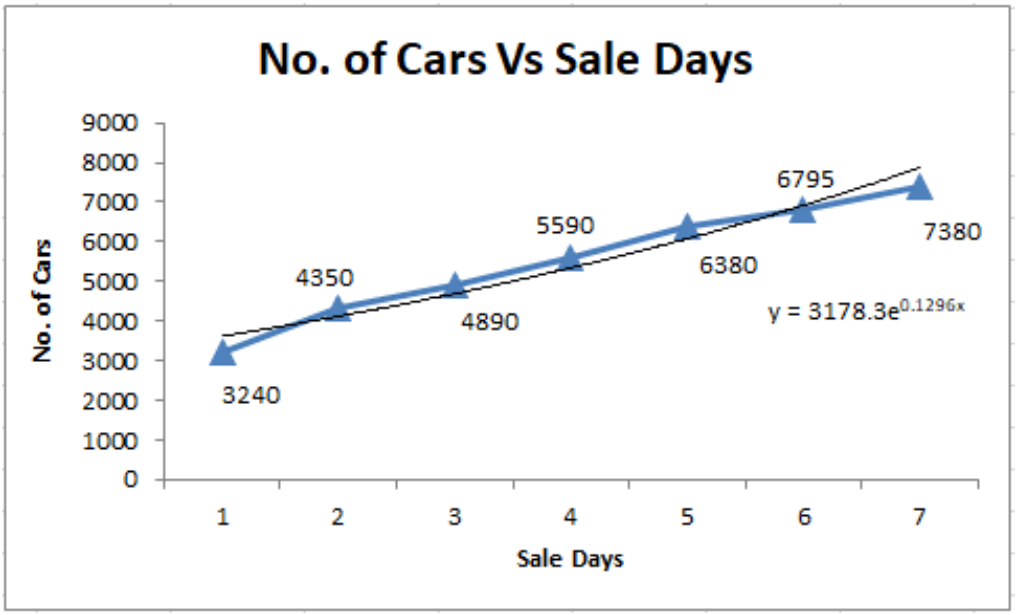


Figure 2: Impact of traffic on sales day

3.4.3. Festival Days

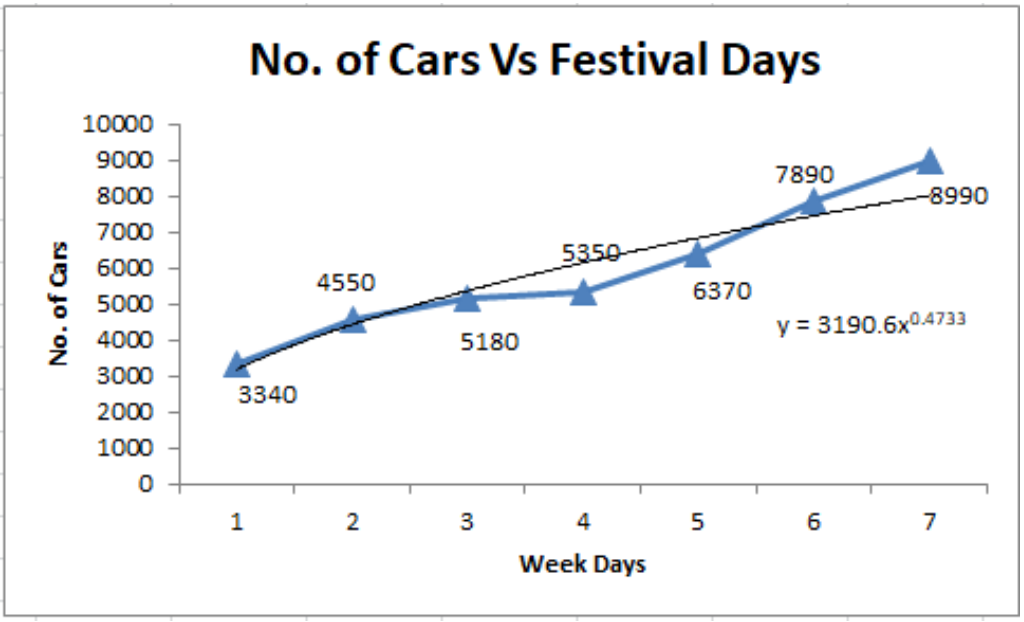


Figure 3: Impacts of cars on festivals day

Discussion: On normal days the no of cars varies from 2550 to 5540 and on weekends it exceeds up to 6340. On sales days the no of cars varies from 3240 to 6340 and onweekends it exceeds up to7380. On festival days the no of cars varies from 3340 to 6840 and on weekends it exceeds up to 8980.

In the EIA report, it was predicted that 4100 to 4800 vehicles would arrive and depart the mixed-use building during peak hours when the building complex is fully operational. But after 10 years this study reveals that due to urbanization and other factors the amount vehicles exceed approximately 9000, which directly causes the lack of parking area in the complex.

3.5. The concentration of CO in Enclosed Parking

Garage parking for vehicles can be open-air or enclosed. A partially open garage does not need mechanical ventilation because it is above ground and has open sides. On the other hand, fully enclosed parking garages are typically located underground and feature ventilators. Problems with poor indoor air quality are common in covered parking garages because of the lack of ventilation. The most significant problem is the excessive amounts of carbon monoxide (CO) released by vehiclesin garages. In addition to noise, oil and gasoline odors, as well as pollutants like oxides of nitrogen (NO) and smoke haze from diesel engines, can be a problem in covered garages (Nayef Z. Al-Mutairi,2020).

3.5.1. Effects

Air pollution has a negative impact on environmental quality and, more importantly, human well-being. It is the focus of new policies and research. Many types of cancer (including lung cancer, leukemia, and asthma) and premature births and deaths have been linked to air pollution.

The International Agency for Research on Cancer (IARC) classified this as a category 1 human carcinogenic diesel extractor in 2012. According to Vermilion et al. (2014), industrial diesel use causes 6% of lung cancer deaths.

Vehicle emissions from multiple modes of transportation contribute significantly to environmental and workplace exposures. According to recent research, traffic is the primary source of air pollution(Nayef Z. Al-Mutairi, 2020).

3.6. CO Detector

Avoiding carbon monoxide poisoning is the primary function of a carbon monoxide detector, often known as a CO detector. As a byproduct of the incomplete combustion of carbon-containing materials, carbon monoxide (CO) is an odorless, tasteless, and colorless gas. It is called the "silent killer" because people can barely notice its presence.

Indoor air temperatures were measured using an electronic CO sensor. The data collected was compared to the ambient conditions. Other information was gathered, such as the number of cars exiting and entering the parking lot, as well as the average time spent walking from the car to the entrance and vice versa.

There are no strict levels of appropriate CO for parking garages because these restrictions vary across several guidelines from countries and agencies. Occupational Safety and Health Administration (OSHA) recommends a maximum limit of 50 ppm of CO for a worker to be exposed to in eight hours. So, the acceptable limit for CO in parking garages is 50 ppm.

3.7. Calculated CO Rates in Centaurus Basements

For this purpose, we visited Centaurus basements for several days.CO parameters were measured in the parking garage. Data was collected and plotted on graphs**.** The graphs given below show the comparative analysis of weekdays, weekends, and festival days' data. The outcome of an indoor micro-environmental survey is described in this analysis of the parking garages.

3.8. Calculation and Comparative Analysis of CO Concentration

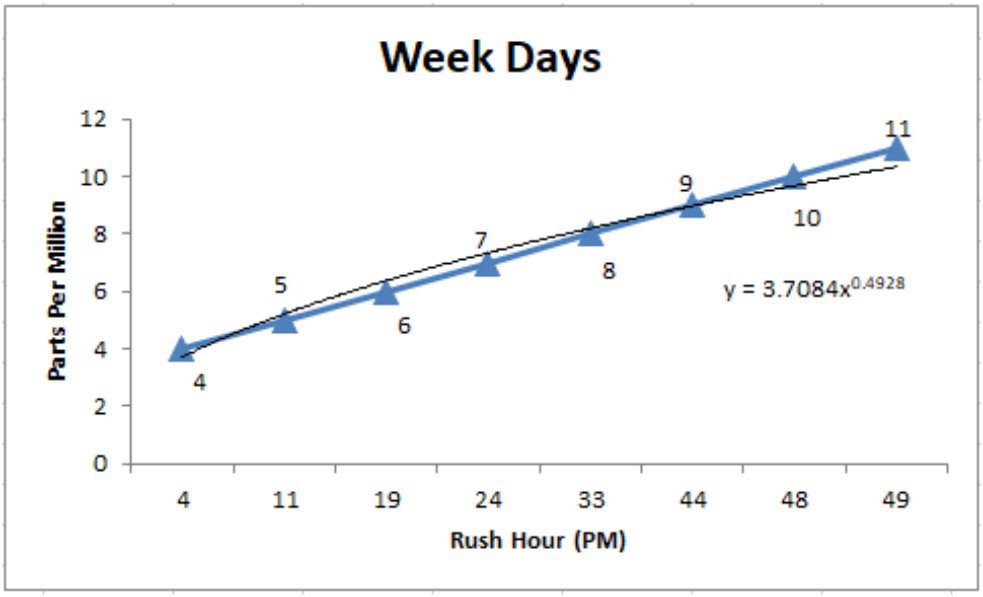


Figure 4: CO Concentration at Evening Time

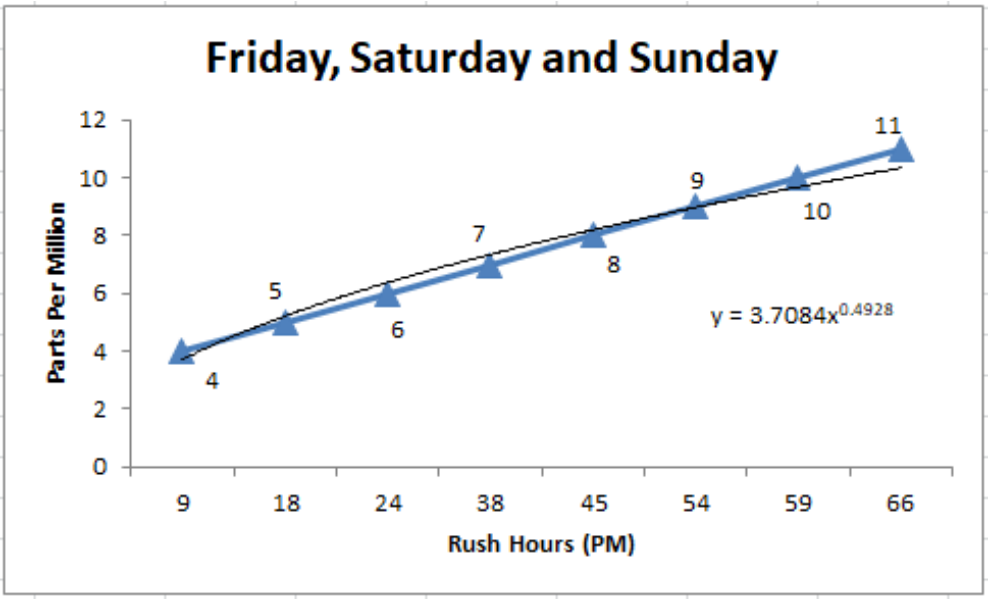


Figure 5: CO Concentration at 4-12 pm

Discussion: At peak hours and weekends, Carbon monoxide is released directly from vehicle tailpipes while engines are running. Carbon monoxide present in motor vehicle exhaust can accumulate in garages and enclosed parking facilities.

The above graphs show that CO rates exceed the standard limit which is 50 ppm so remedial measures should be taken as soon as possible.

3.9. Questionnaire Reviews

The following table shows the reviews of the public concerning different questions being asked in the questionnaire.

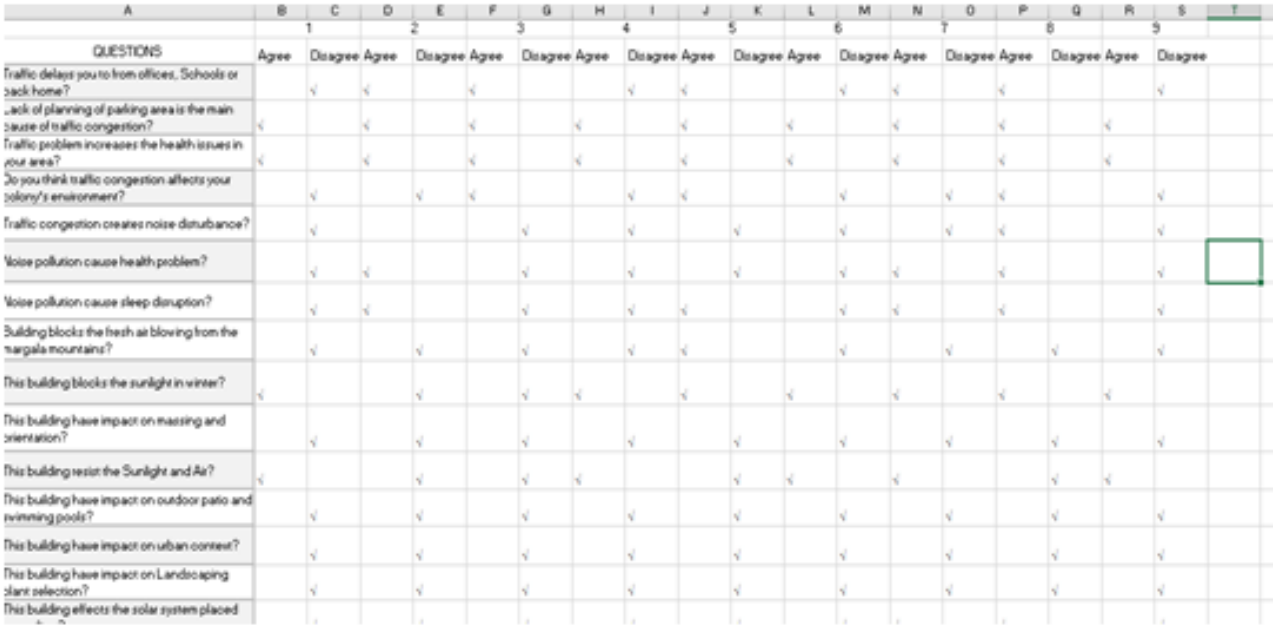
Table 1: Public Reviews

Post Impacts of the Building						
S. No.	**Description**	**Linguistic Description Frequencies (Residents, Visitors, Staff)**				
		Strongly Disagree	**Disagree**	**Neither Agree Nor Disagree**	**Agree**	**Strongly Agree**
1	Traffic delays you to from offices,Schools or back home?	24	19	13	23	21
2	Lack of planning of parking area isthe main cause of traffic congestion?	6	3	15	33	43
3	Does traffic problem increase thehealth issues in your area?	11	23	29	27	10
4	Do you think traffic congestionaffects your colony's Environment?	12	24	17	27	20
5	Traffic congestion creates noisedisturbance.	7	9	11	40	33
6	Noise pollution causes healthproblems.	6	13	8	39	34
7	Noise pollution causes sleepdisruption?	7	15	6	45	27

8	Building blocks the fresh airblowing from the Margala mountains?	21	27	12	26	14
9	This building blocks the sunlightin winter.	23	39	4	18	16
10	Does this building have an impact onthe outdoor patio and swimmingpools?	13	22	11	37	17
11	Does this building have an impact onthe urban context?	18	37	15	11	19
12	Does this building have an impact on Landscaping plant selection?	23	36	12	14	15
13	The high rise can cause environmental issues in the future.	17	32	15	17	11
14	Parking is necessary for futuredevelopment.	6	3	15	33	43

3.10. Questionnaire Review Sample

Table 2: Reviews of Public



QUESTIONS	1 Agree	1 Disagree	2 Agree	2 Disagree	3 Agree	3 Disagree	4 Agree	4 Disagree	5 Agree	5 Disagree	6 Agree	6 Disagree	7 Agree	7 Disagree	8 Agree	8 Disagree	9 Agree	9 Disagree
Traffic delays you to from offices, Schools or back home?		√	√		√			√	√			√	√		√			√
Lack of planning of parking area is the main cause of traffic congestion?	√		√		√		√		√		√		√		√		√	
Traffic problem increases the health issues in your area?	√		√		√		√		√		√		√		√		√	
Do you think traffic congestion affects your colony's environment?		√		√	√			√	√			√		√	√			√
Traffic congestion creates noise disturbance?		√				√		√		√		√		√	√			√
Noise pollution cause health problem?		√	√			√		√		√		√	√		√			√
Noise pollution cause sleep disruption?		√	√			√		√	√			√	√		√			√
Building blocks the fresh air blowing from the margala mountains?		√		√		√		√	√			√		√		√		√
This building blocks the sunlight in winter?	√			√		√	√		√		√			√	√		√	
This building have impact on massing and orientation?		√		√		√		√		√		√		√		√		√
This building resist the Sunlight and Air?	√			√		√	√			√	√			√		√	√	
This building have impact on outdoor patio and swimming pools?		√		√		√		√		√		√		√		√		√
This building have impact on urban context?		√		√		√		√		√		√		√		√		√
This building have impact on Landscaping plant selection?		√		√		√		√		√		√		√		√		√
This building effects the solar system placed																		

Conclusion and Recommendation

In this section, the conclusion of this research study has been discussed. The underlying examination targets have been assessed and based on this investigation; conclusions have been drawn for these objectives. The outcomes have been examined in detail for every objective and proposals are accommodated for further research on this topic.

Conclusion

Implementation, review, issue evaluation, decision-making, and post-monitoring and analysis are allareas where the EIA system falls short in developing nations. There is a lack of coordination betweenthe various phases of the project lifecycle and the EIA process, and the results of the EIA studies arenot given adequate weight in the final decision.

There is a greater emphasis on economic development, population management, and managing rising energy needs in developing nations. Going down this road means environmental protection won't be a top priority for the

government. For instance, in the 1980s, Pakistan, like many other developing countries, enacted environmental legislation; yet, its long-term commitment to environmental protection has not been proven because environmental issues are not prioritized. Most underdeveloped countries' EIA is immature because of their limited resources and infrastructure. (Khaled Hesham Hyari1, 2015)

Without better Post-Impacts, public engagement, awareness, environmental regulations, and data systems, developing countries will not be able to achieve their sustainability goals. The success or failure of the EIA system is determined by these areas or factors, which may affect the system directly or indirectly.

EIA report of high-rise buildings is made at pre-decision and passed but if the project path is away from itsscope and is operated then it causes environmental issues in the operation phase after some years due to urbanization. (SADLER, 1996)

From this project, we concluded the issues that directly affect the environment during the operational phase of building. The post impacts of the project are given below:

- Traffic congestion
- Lack of parking spaces
- The concentration of CO in enclosed parking

These impacts have a direct or indirect impact on the efficacy of the PPA system, making them limiting factors that decide the system's success or failure. Existing impacts are listed in a table, alongwith suggestions for how to address, reduce, or eliminate them in developing countries.

Recommendations

Following are the recommendations for future research.

Traffic Congestion

- Extended the U-Turn to avoid the concentration of traffic in front of the Centaurus.
- The service road (Nazimuddin Road) can be converted to one lane road.
- Enforce existing road traffic laws.
- Use CCTV to monitor road conditions.

Lack of Parking Spaces

- Off-site multi-store parking.
- On-site parking.
- On-street parking.
- An individual structure (multi-storygarage).
- Mechanical car parking systems

The concentration of CO in Enclosed parking

- Air conditioning units should be installed in theparking attendant's facilities to maintain a reasonable level of humidity and temperature.

- CO sensors ought to be installed inside theparking floors so that CO rates can be monitored continuously. Ventilation providers should automatically switch to double or treblespeed if sensors detect that CO levels are nearlythe standard I-hour (35 ppm) to preventthe buildup of dangerous gas.

- The authorities should closely monitor the proper ventilation rate within the covered parking facility to maintain CO-contaminated emission concentrations at an acceptable level.

- Remove offices from the Air vents.

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