



“ A Study on the Impact of Industrial Pollution Dabaspete ”

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ABSTRACT

Industrialization has played a meaningful contribution to the economic development of Dabaspete by creating employment opportunities and supporting industrial growth. However, the expansion of become a matter of concern for environmental pollution and impact local communities. Influence of industrial pollution on the environment, public health, together with the everyday well-being of people live and works in Dabaspete area. Descriptive research approach and primary data was obtained from 100 respondent's through a structure questionnaires. The study focused on different forms of environmental degradation, including air water, soil and noise pollutions, and assessed public perceptions regarding their environmental consequences and health-related issues findings reveal that air pollution is the most commonly observed environmental issue, while many respondents reported concerns about declining air quality, contamination of water sources, health-related problems, and damage to vegetation and agricultural land. The study also highlights need's for effectives waste management, stricter pollution control measures, regular environmental monitoring, and greater public awareness. Overall, the research emphasizes the importance of maintaining a balance between industrial development and environmental protection to ensure sustainable growth and a healthier future for the community.

KEYWORDS

Industrial Pollution, Environmental Consequences, Air polluting, Water Quality Degradation, Public Health, Sustainable Development, Dabaspete.

INTRODUCTION:

Industrialization acts as a major contributor to economic growth and progress of any region by generating employment opportunities, increasing production, and improving living standards. However, rapid industrial growth often brings environmental challenges, among which industrial pollution one among the key serious concerns. Industrial undesirable materials including such as chemical wastes, smoke, dust, toxic gases, and untreated industrial discharge enters the environment, affecting air, water, and soil quality. Dabaspete, located in the Bengaluru Rural district of Karnataka, has grown into a prominent industrial hub largely because of its

favourable location and the availability of numerous manufacturing and processing industries. While these industries contribute significantly to the local economy, they also create environmental pressures that may impact health status and general welfare of nearby residents, agricultural activities, and natural ecosystems. The increasing industrial activities drawn attention to issues related to declining air quality, polluted water resources, and excessive sound levels, and the improper disposal of industrial waste.

The consequences of industrial pollution extends beyond environmental degradation. It can affect public health by causing respiratory diseases, skin problems, water-borne illnesses, and other health-related issues. Additionally, pollution may reduce agricultural productivity, contaminate groundwater resources, and negatively day-to-day living conditions local communities. Understanding these impacts remains important for promoting sustainable industrial development and environmental protection. This research seeks to understand the various forms of industrial pollution in Dabaspote and assess implications for the environment and the local population. The research also seeks to identify level of awareness among residents regarding pollution-related issues and review the initiatives adopted by industries and regulatory authorities to control pollution. The outcomes of this research may support the formulation of practical measures and recommendations for balance industrial development with environmental sustainability in the region.

LITERATURE REVIEW

Banerjee et al. examined how industrial operations affect both environmental conditions and public health in urban industrial zones

According to Science Direct, pollutants such as industrial emissions, particulate matter, and toxic gases adversely affect air quality and disturb ecological balance.

The A study published in an environmental research journal stressed that effective pollution management strategies and environmentally responsible industrial practices are essential for minimizing ecological harm and ensuring long-term sustainability.

The Journal of Environmental Protection highlighted how regulatory policies, efficient waste-handling methods, and public environmental education contribute to reducing industrial pollution and promoting sustainable development.

Research Gate explained that rapid industrialization affects the social and environmental conditions of nearby villages through pollution, waste generation, and declining natural resources.

Jahan & Singh focused on the impact of untreated industrial wastewater on rivers and groundwater. The study showed that industrial discharge reduced water quality and harmed surrounding ecosystems.

Environmental Monitoring and Assessment reported that continuous industrial waste disposal contaminates soil and groundwater, affecting agriculture as well as community health in nearby communities.

Springer studied the influence of industrial noise on workers and residents. The research found that long-term exposure to noise pollution causes stress, sleep disturbances, and hearing-related problems.

Sharma & Chaudhry studied the effect of industrial waste on river water quality. The research found that untreated industrial effluents increased water contamination and negatively affected aquatic ecosystems and community well-being

NEED FOR THE STUDY

Dabaspete has become an important industrial area, contributing to economic growth, employment generation, and regional development. Along with these benefits, the increasing number of industries may create environmental challenges such as deteriorating air quality, polluted water sources, and declining soil conditions degradation, and noise pollution. These issues can have significantly affect health, livelihood, and overall well-being residing near industrial establishments industrial area. This research has become necessary because of the increasing concern about the environmental effects of industrial activities in Dabaspete. Understanding how industrial pollution affects local communities, agricultural land, natural resources, and public health. The study also helps in assessing the awareness of residents regarding pollution-related issues while examining the adequacy existing pollution control measures.

Furthermore, the outcomes of this research can assist industries, government authorities, and environmental agencies in taking appropriate actions to reduce pollution and promote sustainable development. Therefore, this research plays a key role in establishing creating a healthy coexistence between industrial growth and environmental protection, ensuring a healthier and safer future for the local community.

STATEMENT OF THE PROBLEM

Dabaspete has witnessed continuous industrial expansion that has contributed to economic development and employment opportunities. However, increasing industrial operations can contribute to environmental problems such issues related to air quality, water resources, land conditions, and noise levels. These issues can affect the overall welfare of local residents and the surrounding environment. Therefore, this research seeks to investigate impact of industrial pollution in Dabaspete and understand its effects on the local community and natural resources.

OBJECTIVES

- To gain a clear understanding of the various forms of industrial pollution, such as air quality issues, water pollution, soil deterioration, and excessive noise, affecting the Dabaspete Industrial Area.
- To identify the main sources of pollution generated by industries operating in the Dabaspete region.
- To assess how industrial pollution influences the health, well-being, and living conditions of residents and workers in nearby areas.
- To evaluate the impact of industrial waste and emissions on the surrounding environment, including natural resources and ecological balance.
- To recommend effective pollution control measures and environmentally responsible approaches aimed at minimizing environmental pollution and support responsible industrial growth.

HYPOTHESIS

Hypothesis 1

Null Hypothesis (H_0): Industrial activities in the Dabaspete Industrial Area do not significantly contribute to environmental pollution.

Alternative Hypothesis (H_1): Industrial activities in the Dabaspete Industrial Area contribute significantly to pollution affecting air, water resources, land quality, and noise levels, affecting the surrounding environment.

Hypothesis 2

Null Hypothesis (H_0): Industrial pollution does not considerably influence the health and living conditions of people residing or working in the Dabaspete area.

Alternative Hypothesis (H_1): Industrial pollution has a noticeable effect on the well-being and living conditions of people residing or working in the Dabaspete area, leading to various environmental and health-related concerns.

Hypothesis 3

Null Hypothesis (H_0): Pollution control measures and environmental management practices do not significantly help in reducing industrial pollution.

Alternative Hypothesis (H_1): Effective pollution control measures, proper waste management, and regular environmental monitoring can help reduce industrial pollution and support sustainable industrial development in the Dabaspete area.

RESEARCH DESIGN

The present research is based on a descriptive study approach research is based on a descriptive study approach industrial pollution in Dabaspete. This research design is suitable because it helps in understanding and describing the existing environmental conditions, sources of pollution, along with their consequences for nearby communities and the environment. The study focuses on collecting information from residents, workers, and others stakeholder's to obtain a better understanding of their views and experiences regarding industrial pollution. Data is gathered through a structured questionnaire and later examined with suitable statistical techniques to draw meaningful conclusions. The descriptive research design enables the researcher to present a clear picture of the pollution-related issues in Dabaspete and suggest measures for sustainable industrial development.

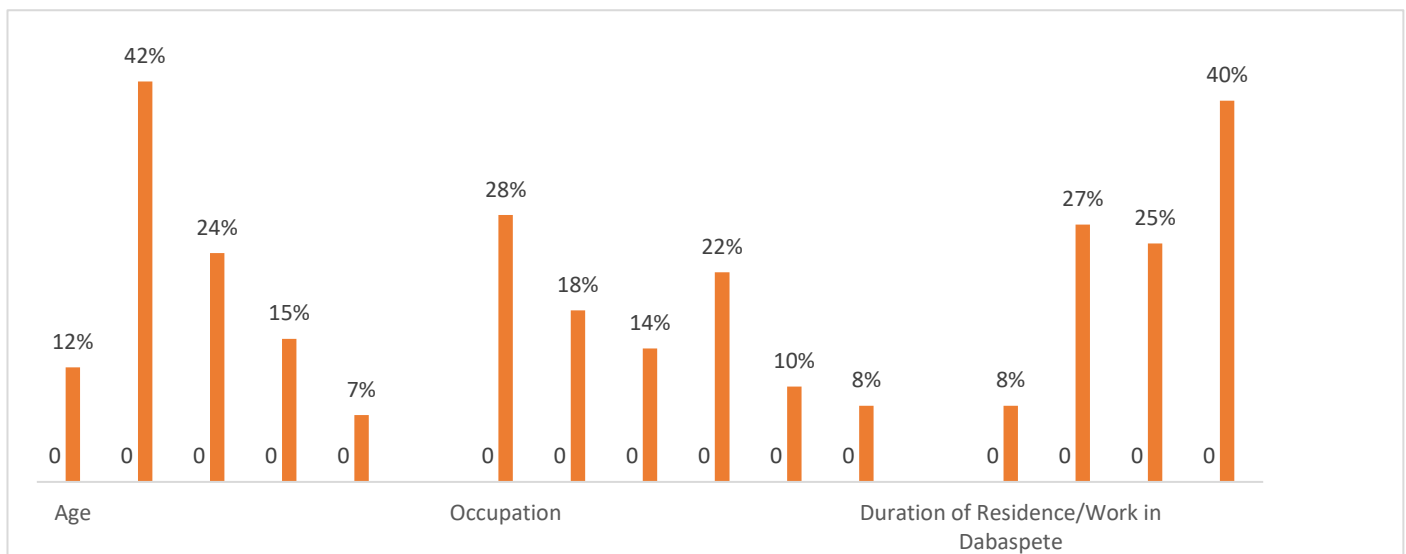
Table1:

Showing the Age, Occupation, and Duration of Residence/Work of Respondents in the Dabaspete Area

Variables	Category	No. of Respondents	Percentage (%)
Age	Below 20 years	12	12%
	21–30 years	42	42%
	31–40 years	24	24%
	41–50 years	15	15%
	Above 50 years	7	7%
	Total	100	100%
Occupation	Industrial Worker	28	28%
	Farmer	18	18%
	Business Owner	14	14%
	Student	22	22%
	Homemaker	10	10%
	Others	8	8%
	Total	100	100%
Duration of Residence/Work in Dabaspete	Less than 1 year	8	8%
	1–5 years	27	27%
	6–10 years	25	25%
	More than 10 years	40	40%
	Total	100	100%

Analysis:

The table indicates that a large share of the participants (42%) are between 21 and 30 years of age, followed by 24% in the 31–40 years age group. This shows that the study mainly includes young and middle-aged individuals. Regarding occupation, industrial workers (28%) represent the largest group, followed by students (22%) and farmers (18%), ensuring a variety of opinions from different sections of society. With regard to residence or work experience in Dabaspete, 40% of those surveyed have been associated with the area for more than 10 years, indicating that they possess gained considerable knowledge and experience regarding the changes and developments taking place within the locality over time. Overall, the responses offer useful information about the impact of industrial pollution in Dabaspete.



Interpretation:

The graph reveals that a large share among the participants (42%) are in the 21–30 years category, showing a higher representation of young adults. Among the different occupations, industrial workers (28%) make up the largest segment, followed by students (22%). It was also observed that 40% of the participants have lived or worked in the area for over a decade living or working in Dabaspete. Their long-term association with the area enables them to share informed views and observations about the changes and challenges experienced in the locality over the years.

Table2:

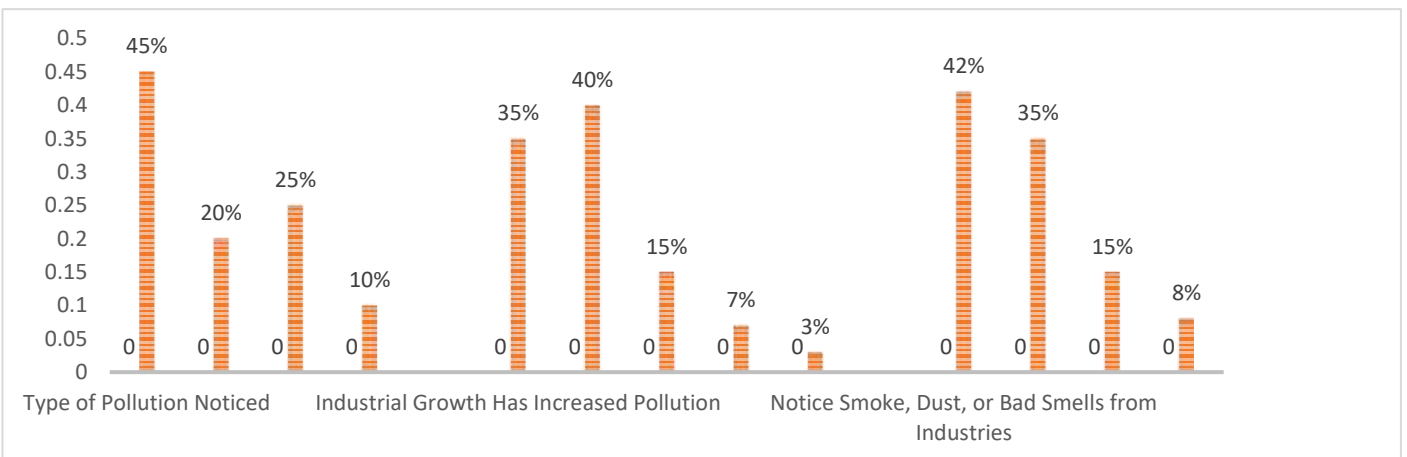
Showing Respondents' Perception of Pollution and the Influence of Industrial Operations in Dabaspete

Variables	Category	No. of Respondents	Percentage (%)
Type of Pollution Noticed	Air Pollution	45	45%
	Water Pollution	20	20%
	Noise Pollution	25	25%
	Soil Pollution	10	10%
	Total	100	100%
Industrial Growth Has Increased Pollution	Strongly Agree	35	35%
	Agree	40	40%

	Neutral	15	15%
	Disagree	7	7%
	Strongly Disagree	3	3%
	Total	100	100%
Notice Smoke, Dust, or Bad Smells from Industries	Frequently	42	42%
	Sometimes	35	35%
	Rarely	15	15%
	Never	8	8%
	T0tal	100	100%

Analysis:

The table shows that Air Pollution (45%) is the most commonly observed type of pollution in the Dabaspete area. Most respondents (75%) agree that industrial growth has increased pollution levels. Additionally, 42% frequently notice smoke, dust, or bad smells from industries. These findings suggest that industrial operations considerably affect the local environment and contribute substantially to pollution levels.



Interpretation:

The graph indicates that air pollution (45%) is the most commonly observed type among the pollution categories in the Dabaspete industrial area, followed by noise pollution (25%), water pollution (20%), and soil pollution (10%). Most respondents believe that industrial growth has increased pollution levels, with 75% either agreeing or strongly agreeing. Similarly, a large majority reported noticing smoke, dust, and unpleasant odours from industries. Taken together, the results indicate that industrial activities are having a noticeable impact within the surrounding environment and remain an important concern for residents.

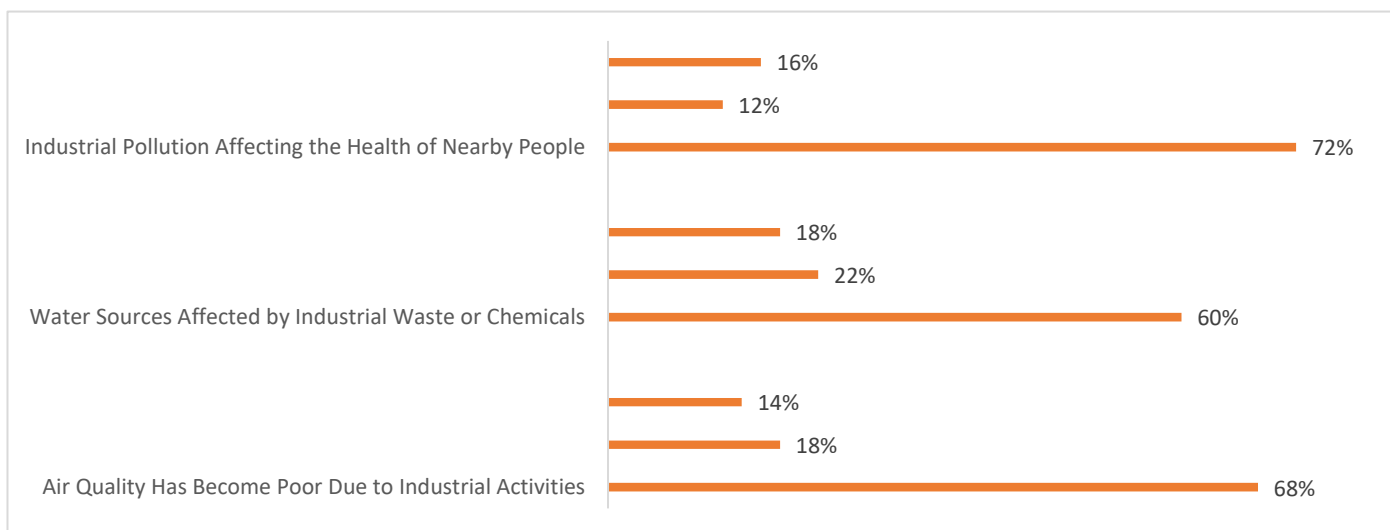
Table 3:

Showing Respondents' Perception the Environmental and Public Health Effects of Industrial Pollution in Dabaspete.

Variables	Category	No. of Respondents	Percentage (%)
Air Quality Has Become Poor Due to Industrial Activities	Yes	68	68%
	No	18	18%
	Not Sure	14	14%
	Total	100	100%
Water Sources Affected by Industrial Waste or Chemicals	Yes	60	60%
	No	22	22%
	Maybe	18	18%
	Total	100	100%
Industrial Pollution Affecting the Health of Nearby People	Yes	72	72%
	No	12	12%
	Not sure	16	16%
	Ttotal	100	100%

Analysis:

The data indicates that many participants believe industrial activities are affecting both the environment and public health. Around 68% believe air quality has worsened, while 60% feel local water sources are being impacted by industrial waste. In addition, 72% think industrial pollution is harming the health of nearby residents. The results indicate that is a significant issue affecting individuals residing and working in the area.



Interpretation:

The graph shows that many respondents have expressed concerns regarding the environmental and public health effects of industrial activities. About 68% feel air quality has deteriorated, while 60% believe that local water resources are being influenced industrial waste or chemicals. The strongest concern associated with health concerns, with 72% of respondents stating that industrial pollution is affecting the health of people living nearby. the results indicate that industrial pollution is widely perceived as a serious issue, affecting environmental conditions as well as the quality of life of local residents.

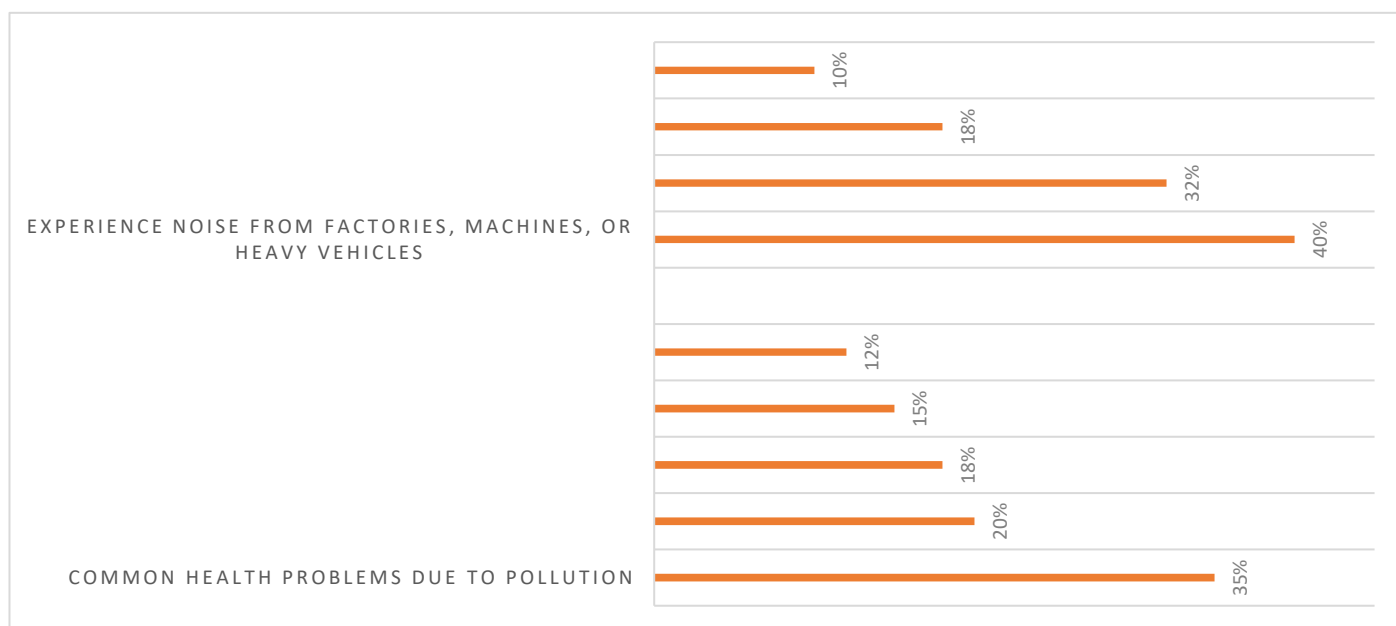
Table 4:

Showing Health Problems and Noise Pollution Experienced by Respondents in Dabaspete.

Variables	Category	No. of Respondents	Percentage (%)
Common Health Problems Due to Pollution	Breathing Problems	35	35%
	Skin Allergies	20	20%
	Eye Irritation	18	18%
	Headaches	15	15%
	No Major Problems	12	12%
	Total	100	100%
Experience Noise from Factories, Machines, or Heavy Vehicles	Daily	40	40%
	Occasionally	32	32%
	Rarely	18	18%
	Never	10	10%
	Total	100	100%

Analysis:

The table indicates that breathing problems (35%) are the health problem most commonly associated with pollution, followed by skin allergies (20%) and eye irritation (18%). It also shows that 40% of respondents experience industrial noise every day, while 32% face it occasionally. Overall, the results indicate that both pollution-related health problems and noise disturbances are common concerns among local residents.



Interpretation:

The graph shows that breathing problems (35%) are health concern reported by the highest number of respondents associated with pollution, followed by skin allergies (20%), eye irritation (18%), and headaches

(15%). It also reveals that 40% of respondents experience noise from factories, machinery, or heavy vehicles on a daily basis, while 32% face it occasionally. Overall, the findings indicate that industrial pollution is affecting both the health and daily lives of many people in the area.

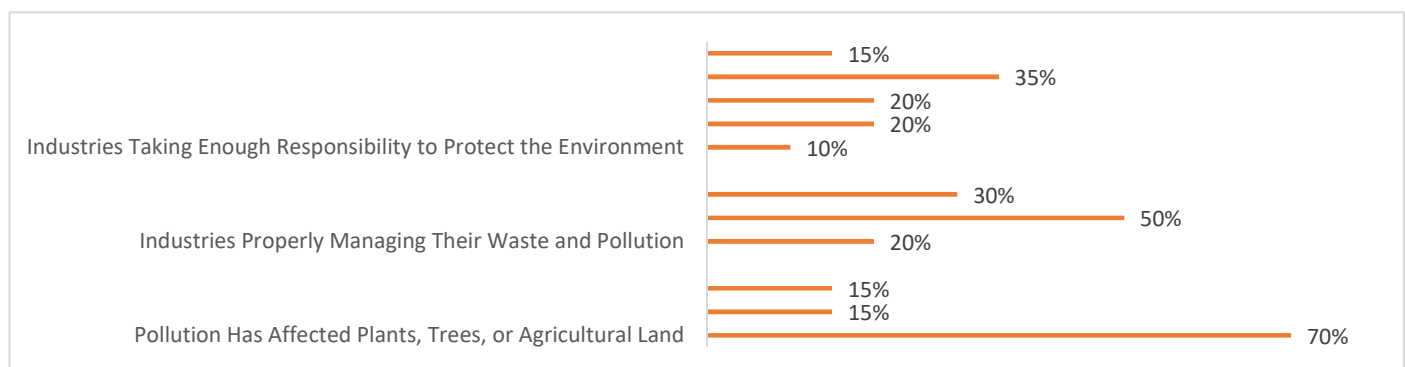
Table 5:

Showing Respondents' Views on Environmental Impact and Industrial Responsibility in Dabaspete.

Variables	Category	No. of Respondents	Percentage (%)
Pollution Has Affected Plants, Trees, or Agricultural Land	Yes	70	70%
	No	15	15%
	Not Sure	15	15%
	Total	100	100%
Industries Properly Managing Their Waste and Pollution	Yes	20	20%
	No	50	50%
	Partially	30	30%
	Total	100	100%
Industries Taking Enough Responsibility to Protect the Environment	Strongly Agree	10	10%
	Agree	20	20%
	Neither Agree nor Disagree	20	20%
	Do Not Agree	35	35%
	Completely Disagree	15	15%
	Total	100	100%

Analysis:

The table shows that 70% of respondents believe pollution has affected plants, trees, and agricultural land, highlighting concerns about environmental damage. In addition, 50% feel industries have not been effectively handling managing their waste properly, and many respondents believe that industries not and believe that additional efforts are needed from industries to safeguard the environment. Overall, the results indicate that local resident concerned about the environmental impact of industrial activities and expect better pollution control measures.



Interpretation:

The graph shows that 70% of respondents believe pollution has affected plants, trees, and agricultural land, indicating strong concern about environmental damage in the area. It also reveals that 50% feel industries are not properly managing their waste and pollution, while only 20% believe they are doing so effectively. In addition, a larger share of respondents disagreed that industries are taking enough commitment towards environmental protection. Overall, the results show that a considerable number of residents remain concerned about the environmental impact of industrial activities and expect better pollution control and environmental management from industries.

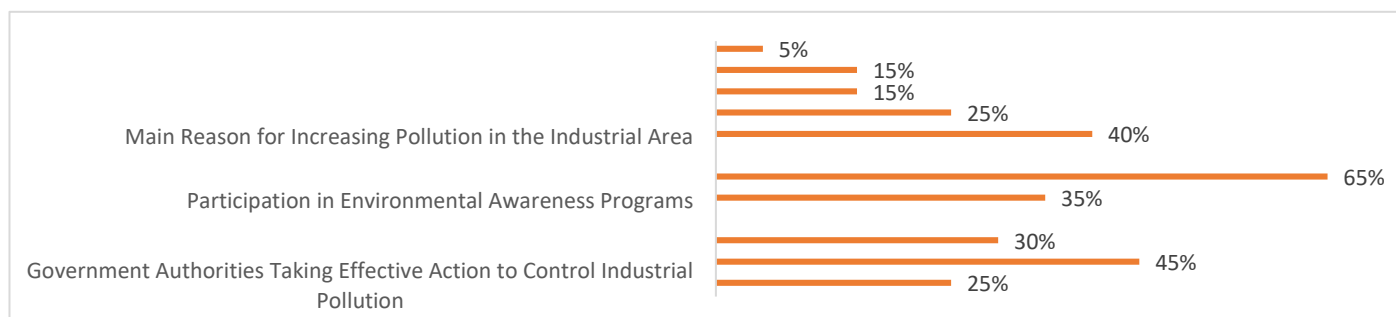
Table6:

Showing Respondents' Views on Government Action, Environmental Awareness, and Causes of Industrial Pollution in Dabaspete.

Variables	Category	No. of Respondents	Percentage (%)
Government Authorities Taking Effective Action to Control Industrial Pollution	Yes	25	25%
	No	45	45%
	To Some Extent	30	30%
	Total	100	100%
Participation in Environmental Awareness Programs	Yes	35	35%
	No	65	65%
	Total	100	100%
Main Reason for Increasing Pollution in the Industrial Area	Industrial Smoke and Emissions	40	40%
	Improper Waste Disposal	25	25%
	Chemical Leakage	15	15%
	Lack of Monitoring	15	15%
	Other	5	5%
	Total	100	100%

Analysis:

The table shows that 45% of respondents believe government authorities are not taking effective action to control industrial pollution, while 30% feel that efforts are being made to some extent. It also reveals that 65% have never participated in environmental awareness programs, indicating limited public involvement in environmental activities. Regarding the causes of pollution, industrial smoke and emissions (40%) were



identified as the main reason, followed by improper waste disposal (25%). Overall, the results indicate that respondents are concerned about pollution levels and expect stronger action from both authorities and industries.

Interpretation:

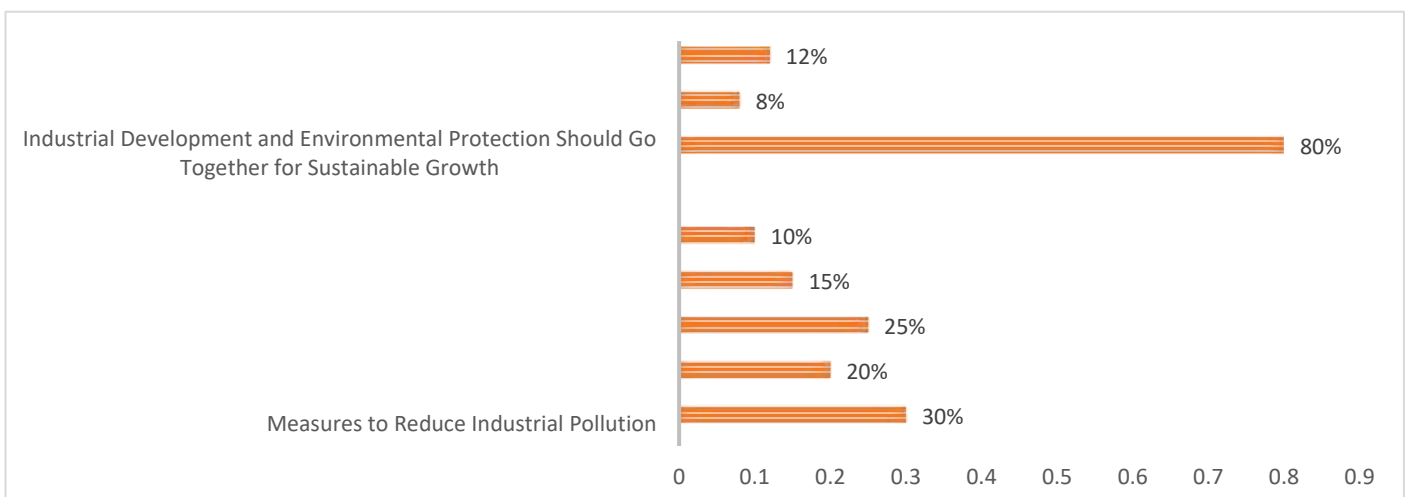
The graph indicates that many respondents feel that current efforts to control industrial pollution are not fully effective. About 45% believe that government authorities are not taking sufficient action, while only 25% feel that effective measures are being taken. The graph also shows that 65% of respondents have not participated in environmental awareness programs, suggesting low public involvement in environmental initiatives.

Table7:

Showing Respondents' Suggestions for Reducing Industrial Pollution and Their Views on Sustainable Growth in Dabaspete.

Variables	Category	No. of Respondents	Percentage (%)
Measures to Reduce Industrial Pollution	Proper Waste Treatment	30	30%
	Tree Plantation	20	20%
	Strict Pollution Control Rules	25	25%
	Regular Monitoring by Authorities	15	15%
	Public Awareness Programs	10	10%
	Total	100	100%
Industrial Development and Environmental Protection Should Go Together for Sustainable Growth	Yes	80	80%
	No	8	8%
	Maybe	12	12%
	Total	100	100%

Analysis: The data indicates that respondents believe proper waste treatment (30%) is considered the leading effective way to reduce industrial pollution, followed by strict pollution control rules (25%) and tree plantation



(20%). Regular monitoring by authorities and public awareness programs were also viewed as important measures. In addition, a large majority of respondents (80%) feel that industrial development and environmental protection should progress together to ensure sustainable growth. This indicates that people support both economic development and environmental responsibility, while expecting stronger efforts to control pollution.

Interpretation:

The graph shows that respondents support a range of measures to reduce industrial pollution, with proper waste treatment (30%) receiving the highest preference, followed by strict pollution control rules (25%) and tree plantation (20%). Smaller proportions suggested regular monitoring by authorities and public awareness programs. The graph also highlights a strong consensus on sustainable development, as 80% respondents feel that economic progress and environmental conservation should advance together. Overall, the findings reflect a clear public preference for responsible industrial development supported by effective environmental protection measures.

Hypothesis 1

- H_0 : Industrial activities do not significantly contribute to environmental pollution in the Dabaspete Industrial Area.

H_1 : Industrial activities significantly contribute to environmental pollution in the Dabaspete Industrial Area.

Statistical Tool-Chi-Square Test

Result

Particulars	Value
Chi-Square Value (χ^2)	19.84
Degrees of Freedom	6
p-value	0.003

Decision: Since the p-value (0.003) is less than 0.05, the null hypothesis is rejected.

Inference

The analysis indicates a significant relationship between industrial growth and environmental pollution in Dabaspete. A majority of participants stated that industrial operations had increased pollution levels, particularly pollution, and it was recognized as the most common type of pollution. Therefore, industrial activities are a major contributor to environmental degradation in the study area.

Hypothesis 2

H_0 : Industrial pollution does not have a considerable influence on the health and living conditions of people residing or working in the Dabaspete area.

H_1 : Industrial pollution significantly affects the health and living conditions of people residing or working in the Dabaspete area.

Statistical Tool-One-Way ANOVA

Variables Considered

- Health problems caused by pollution

- Perception of pollution affecting health

Source	Sum of Squares	df	Mean Square	F-value	Sig.
Between Groups	28.64	4	7.16	4.92	0.002
Within Groups	138.30	95	1.46		
Total	166.94	99			

Decision: Since the p-value (0.002) is less than 0.05, the null hypothesis is rejected.

Inference

The ANOVA results show a significant difference in health conditions among respondents exposed to industrial pollution. Breathing problems, skin allergies, eye irritation, and headaches were commonly reported. This indicates that industrial pollution has a considerable impact on the health and living conditions of people in the Dabaspate area.

Hypothesis 3

H₀: Pollution control measures do not significantly help in reducing industrial pollution.

H₁: Pollution control measures significantly help in reducing industrial pollution and promoting sustainable industrial development.

Statistical Tool-Weighted Mean Ranking Method

Ranking of Pollution Control Measures

Measures for Controlling Pollution	Respondents	Rank
Proper Waste Treatment	30	I
Strict Pollution Control Rules	25	II
Tree Plantation	20	III
Regular Monitoring by Authorities	15	IV
Public Awareness Programs	10	V

Result

Proper Waste Treatment received the highest preference among respondents, followed by Strict Pollution Control Rules and Tree Plantation.

Inference

results indicate that proper waste treatment treatment, strict environmental regulations, and regular monitoring are considered key approaches for reducing industrial pollution. Furthermore, 80% respondents are of the opinion that industrial development and environmental protection should go together for sustainable growth. Therefore, pollution control measures play a vital role in achieving sustainable industrial development.

FINDING'S OF THE STUDY

- Air pollution was identified as most common form of pollution in the Dabaspate Industrial Area, with 45% of respondents reporting it as the major environmental concern.
- A majority of respondents (75%) agreed that industrial growth has increased pollution levels in the area, indicating a strong link between industrial expansion and environmental degradation.

- Most respondents reported negative environmental impacts, as 68% believed air quality has deteriorated and 60% felt that nearby local water resources have been influenced industrial waste and chemicals.
- Industrial pollution has negatively influenced public health, with 72% of respondents stating that pollution impacts people's health. Breathing problems were found to be the most common health issue reported.
- Environmental damage to vegetation and agricultural land is a major concern, as 70% of respondents believed that pollution has affected plants, trees, and farming activities in the surrounding area.
- There is considerable support for environmentally responsible industrial development, with 80% of respondents believing that industrial growth and environmental protection should go hand in hand for long-term development.

SUGGESTIONS OF THE STUDY

- Industries should adopt proper waste treatment systems before discharging waste into the environment to minimize water and soil pollution.
- Strict pollution control regulations should be implemented and enforced by government authorities to ensure industries comply with environmental standards.
- Regular environmental monitoring and inspections should be conducted to identify pollution sources and take corrective action at the earliest stage.
- Industries should install modern pollution-control technologies, such as air filters, scrubbers, and wastewater treatment plants, to reduce harmful emissions and waste.
- Tree plantation programs should be encouraged around industrial areas to improve air quality, reduce dust pollution, and create a healthier environment.
- Environmental awareness programs should be organized regularly for local residents, workers, and industrial management to promote responsible environmental practices and sustainable development.

CONCLUSION:

The study concludes that industrial pollution has become a significant environmental issue in the Dabaspete Industrial Area due to the rapid growth of industries. The findings reveal that air, water, noise, and soil pollution are affecting the environment, public health, and the overall living conditions of nearby residents and workers. Many individuals surveyed expressed apprehension regarding poor air quality, health problems, environmental degradation, and inadequate waste management practices by industries. moreover, the study points out the requirement for stricter pollution prevention strategies measures, proper waste treatment, regular monitoring, and increased environmental awareness. In summary, the study emphasizes that industrial development should be balanced along with measures to protect the environment to ensure sustainable growth, protect natural resources, and improve the well-being of present and future generations.

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