TITLE: IOT_Phase2

INTRODUCTION:

An IoT-based noise monitoring system is a system that uses the Internet of Things (IoT) technology to monitor the noise or sound intensity in the environment for the safety of human beings . The system comprises a sound sensor, an IoT platform called NodeMCU, LCD, and LEDs . The sound sensor module is a small board that mixes a microphone (50Hz-10kHz) and some processing circuitry to convert sound waves into electrical signals . This electrical signal is fed to an on-board LM393 High Precision Comparator to digitize it and is made available at the OUT pin . The module features a built-in potentiometer for sensitivity adjustment of the OUT signal . The IoT decibel meter measures sound in decibels (dB) using a sound sensor and displays it on an LCD display . It also pushes the readings to the Blynk IoT platform, making it accessible from across the world . A device like this will be useful in places like hospitals and schools to track and monitor the sound levels and take action accordingly .

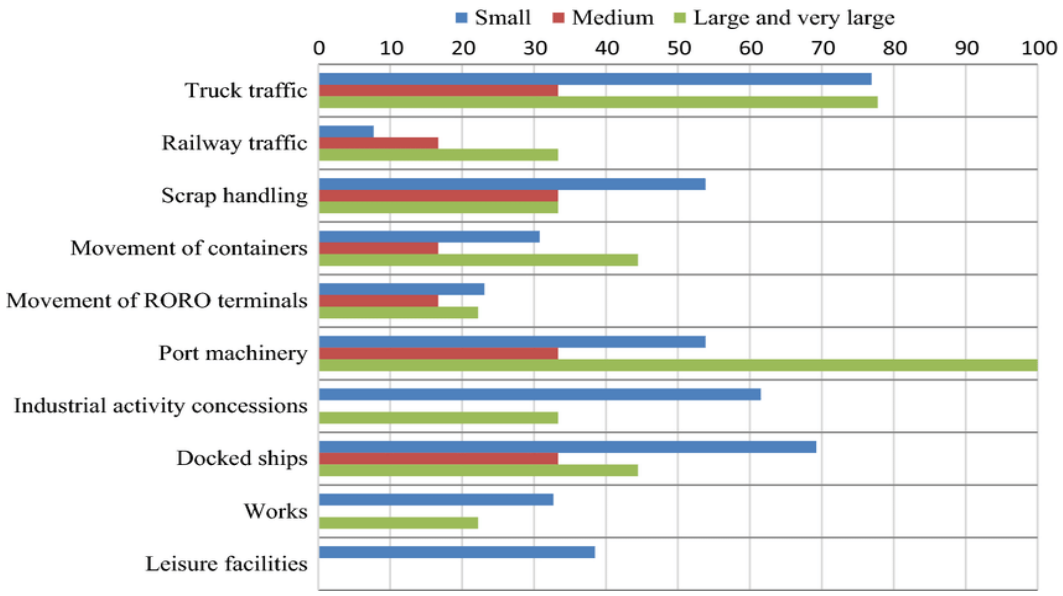
ANALYSIS:

NOISE POLLUTIONS PATTERNS:

I found some information on noise pollution patterns and data analytics. One study published in the International Journal of Environmental Research and Public Health analyzed the sampling methodologies for noise pollution assessment and their impact on the population. The study concluded that the selection of a suitable method for performing noise maps through measurements is essential to achieve an accurate assessment of the impact of noise pollution on the population.

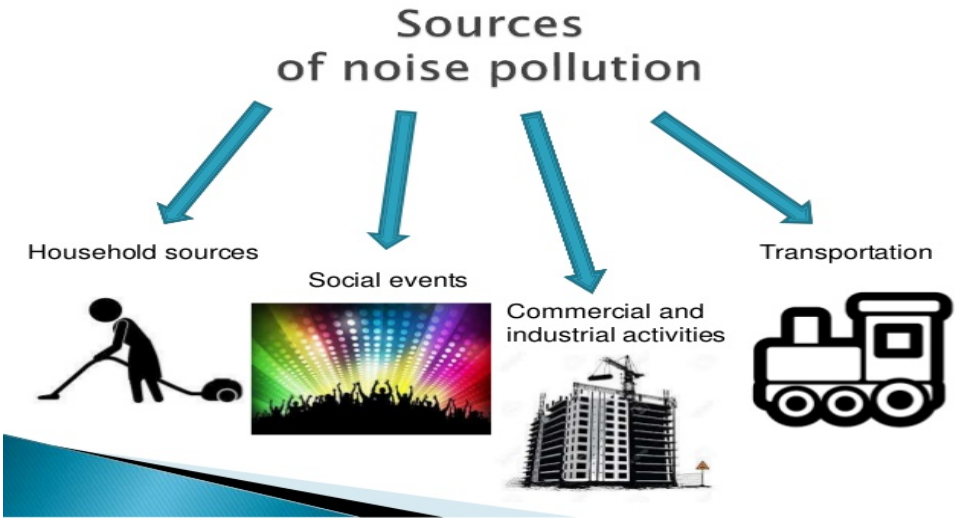
Another source suggests that data analysis is a great tool for noise mapping. This procedure involves analyzing large amounts of data on noise levels, studying trends and patterns, identifying high noise level areas and potential sources, and prioritizing areas for action.

HIGH NOISE AREAS



Noise pollution is the propagation of noise or sound with ranging impacts on the activity of human or animal life, most of which are harmful to a degree . The source of outdoor noise worldwide is mainly caused by machines, transport and propagation systems . Poor urban planning may give rise to noise disintegration or pollution, side-by-side industrial and residential buildings can result in noise pollution in the residential areas . Some of the main sources of noise in residential areas include loud music, transportation (traffic, rail, airplanes, etc.), lawn care maintenance, construction, electrical generators, wind turbines, explosions and people .

SOURCES:



Noise pollution is a type of environmental pollution that can cause health problems for people and wildlife, both on land and in the sea . Noise can come from many sources, including household gadgets like food mixers, grinders, vacuum cleaners, washing machines, dryers, coolers, and air conditioners . Other sources include loudspeakers of sound systems and TVs, iPods, and earphones . Social events such as places of worship, discos and gigs, parties, and other social events also create a lot of noise for the people living in that area . In many market areas, people sell with loudspeakers. Others shout out offers and try to get customers to buy their goods . Commercial and industrial activities such as printing presses, manufacturing industries, and construction sites contribute to noise pollution in large cities . In many industries, it is a requirement that people always wear earplugs to minimize their exposure to heavy noise. People who work with lawnmowers, tractors, and noisy equipment are also required to wear noise-proof gadgets . Transportation such as airplanes flying over houses close to busy airports like Heathrow (London) or O'hare (Chicago), overground and underground trains, vehicles on roads are always making a lot of noise .

CONCLUSION:

Noise pollution is a growing concern in many parts of the world. According to a report by NoiseOFF, community noise can have a range of adverse health effects, including hearing impairment, startle and defense reactions, aural pain, ear discomfort speech interference, sleep disturbance, cardiovascular effects, performance reduction, and annoyance responses. The report also highlights that the sources of outdoor noise worldwide are mainly caused by machines, transport, and propagation systems.