

An Suvery On Indian Sewers Risking Their Lives Using Data Mining Techniques

Dr.I.Lakshmi, M Kavitha

Assistant Professor, PG Student,
Department of Computer Science,
Stella Maris College,
Chennai-600086,

Abstract

In this century, People are still cleaning sewers by hand in India. India's sewage system has killed ninety people so far but the government not even take care of sewers. In Kerala, they banned the concept of people cleaning sewers. They use some machine to clean. In India, particularly in urban India still people are cleaning sewers by hand. Kerala start-up finds Robotic Solution to end sewer cleaning deaths. Robot name was Bandicoot. Recently on July 22, 2018 bandicoot came to tamilnadu, kumbakonam. But this machine not fully generated in India. Why our Indian government not giving solution to this problem. This analysis says the way to save the sewers people.

Keywords: Commercialization, Privatization, Sewage system.

Introduction

Sewerage is the infrastructure that conveys sewage or surface runoff (storm water, melt water, rainwater) using sewers. It encompasses components such as receiving drains, manholes, pumping stations, storm overflows, and screening chambers of the combined sewer or sanitary sewer. Sewerage ends at the entry to a sewage treatment plant or at the point of discharge into the environment. It is the system of pipes, chambers, manholes, etc. that conveys the sewage or storm water.

Outcome of sewage problems

Improper and inadequate sewage treatments have impacted the environment and the citizens of Delhi in many ways:

- Malfunctioning septic systems have resulted in contamination of well water, ground water, river water and causing threats to public health
- Untreated and open drainages have produced conducive breeding for mosquitoes, flies, rodents, insects and other diseases carrying vectors.
- Untreated sewage has led to stinking and foul smell
- Direct physical exposure to wastewater for people bathing and washing clothes and utensils
- Toxic food farming has increased around the Yamuna river due to improper sewage

treatment, leading to various diseases like as vomiting, gastroenteritis, diarrhoea, blood infection, dehydration, kidney dysfunction and urinary infection.

- The toxins have polluted the ground water and soil.

Literature review

A. "Survey of people cleaning sewers by hand in this country-and they are dying, India" - by Jason overdorf

People are still cleaning sewers by hand in this country — and they're dying. In 2013, the Indian government increased penalties up to \$7,700 in fines and five years in prison for employers who let their worker's clean human solid waste by hand or build latrines that require manual maintenance. Prime Minister Narendra Modi's government has launched a massive Clean India campaign that has built more than 80 million latrines to improve public health by discouraging Indians from relieving themselves in the open. But the plight of sewer and latrine cleaners remains largely unchanged, said activist Bezwada Wilson of the non-profit Sanitation Workers Movement. Modi's government aims to build 210 million latrines by 2019. But the government has not improved sewage systems at the same pace. Even before the project began, only a third of urban toilets were connected to sewer lines. Many of them dump directly into river and canals. That's already causing environmental problems, in addition to harming the cleaners. "Urban India is already floating on sludge," said Mamata Dash of Water Aid India, an aid organization with offices across India. "The problem has only increased many fold."

B. "A Bandicoot to clear kumbakonam's sewers" - by S.Ganesan

Bandicoot to clear Kumbakonam's sewers: The Bandicoot Robotic Scavenger, developed by Genrobotics, a start-up promoted by a group of engineers from Kerala, would clear over 5,300 manholes of the underground sewer system in the temple town in the heart of the Granary of South India. The robot, which has been deployed in Thiruvananthapuram, has been gifted to the town by Indian Oil Corporation Ltd. under its corporate social responsibility

initiative at the behest of Pradeep Kumar, the sub-collector of the town. In this article, the first bandicoot machine introduced in tamilnadu by G. Prakash, Commissioner of Municipal Administration

C. “An Indian’s sewers cleaner keep working despite ban on job” - by Parth M.N

Indian sewer cleaners keep working despite ban on job. A study found that 80 of sewage cleaners in India die before age 60 because of work-related health problems. Worker use metal scrapers, brooms or their bare hands to clear drainage and sanitation lines twice a year, before and after the annual monsoon rains. An estimated 61 sewer divers have died in last six months alone.

D. “The dangers in indian sewers , they provide a myriad of dangers for those who work Within them” - by Nicolas parry

Here, what are the dangers in India’s sewers. Sewers provide a myriad of dangers for those who work within them. Toxic gases resulting from cleaning fluids and excrement may build up in areas of the sewer, rising to levels that pose severe risks to those breathing them. The septic environment poses severe risk of infection should the worker have any open cuts. This risk of infection is more considerable when taking into account the potential for open cuts occurring while within the sewer. The most abundant gas, hydrogen sulphide, is the result of the breakdown of human waste in the absence of oxygen. As such it is difficult to judge where this gas may be present without first testing oxygen levels within the sewer. Hydrogen sulphide toxicity poses a particular danger to those operating in the sewer alone. A key effect the gas has on the human body is to a person’s mental state. Excessive inhalation of the gas can cause delirium, or even unconsciousness.

E. “Down the Drain! A study on occupational and health hazards and the Perils of contracting faced by sewerage workers in Delhi” - by Pradeep Narayanan, Praxis Ashish Mittal (Dr.), OHSMCS

Over one million sewerage workers in India are involved in the sanitation and hygiene of our surroundings. They have historically been responsible for plunging bare-bodied into clogged sewers filled with fermented faces, urine and other chronic waste flushed down by millions³ to clean this with their hands, without the use of safety equipment. The demand for sewer and waste management services has always been high because of the rising population in cities as well as the vast urbanization of the country clubbed with expanding geographical limits of the existing cities. Contract work, unsafe work practices and apathy of the concerned authorities have been responsible for the increased vulnerability of these sewerage workers. The frequent accidental

deaths and illnesses among the sewerage workers have been only sporadically reported, as it does not make for saleable news. A few studies that have been undertaken on the health and safety issues of these workers, such Hole to Hell have established the significant occupational morbidity and mortality among sewerage workers. Some of these studies have triggered an enabling policy environment around the conditions of work and health and safety norms, but despite these, the working conditions of the sewerage workers have remained virtually unchanged for over a century

Problem Definition

People are still cleaning sewers by hand in India. India’s sewage system has killed many people so far but the government not even take care about these people. Bandicoot machine will save the lives of human.

Objectives of Research

✓ To examine how the sewers workers are struggling, what are the difficulties they are facing, Why our government not taking any proper solution. To know the various theories of sewage system of probably people who have cleaning the sewage by hand yet. To search for the possible results by government and the biological processes sub serving it. To provide a good way for drainage cleaners. To analyse the impact of truth in this problem.

Research hypothesis

Several hypotheses can be stated as follows they may be a financial problem to government. So, government is not taking care of poor people. Why they are working in this case Poverty is the another reason Bandicoot may or may not be good

Research Methodology

- The methodology of the paper is qualitative, analytical and descriptive. The study is based
- on primary data which is collected from varied homogeneous circle and also the data collected regarding predisposing factors is secondary data, which is collected from various journals, websites, articles, survey papers. etc. The research methodology used for this study includes a questionnaire for its qualitative approach.

Subject collection

- The participants for this study were comprised of about 100 students from various colleges in and around Chennai. The primary data was collected and analysed for this survey.
- With their consent, from the questionnaire the results were generated and used for analysing about the awareness and its prevalence.
- Many participants of this survey were undergraduate, postgraduate students and some were also working. The age group for this survey was focused on teens that were above 15 years of age. The questionnaire was

developed through Google forms and sent to respondents through different social media platforms (WhatsApp, Face book, Instagram). To reach the objective of this survey, the questions (refer appendix A) were included for assessment.

Statistical Analysis:

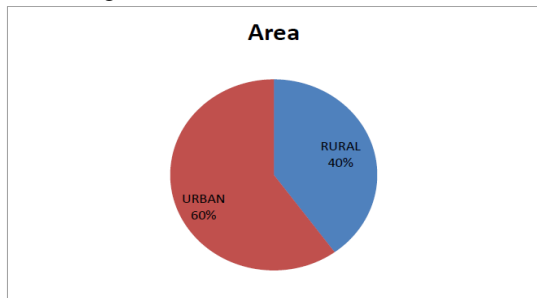
- Data was analysed and interpreted with the help of software's called Numbers - Mac and Excel - windows. The questionnaire was designed from Google forms.

Data Analysis

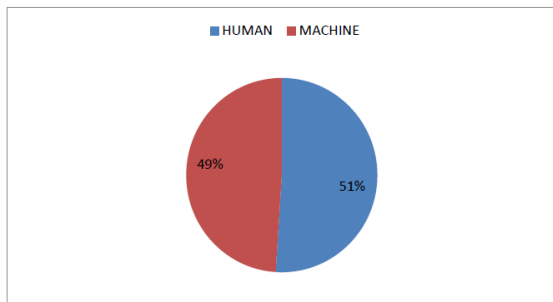
- A total of 100 participated in this survey and the primary data of varied homogeneous population was collected and analysed. The form used for this survey did not suffer from incompleteness and as well as any duplication. And thus 100 responses for the questionnaire were taken for analysis.

Results and Discussion

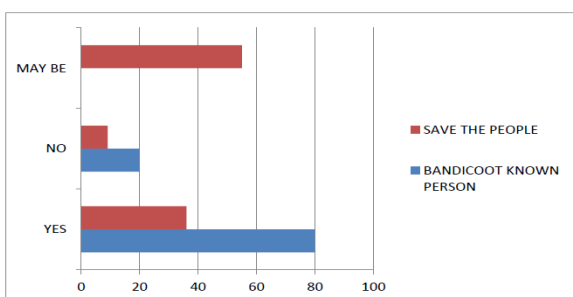
- The study reveals that about (60.4%) respondents were living in urban area and (40%) among the total 100 respondents were living in rural area



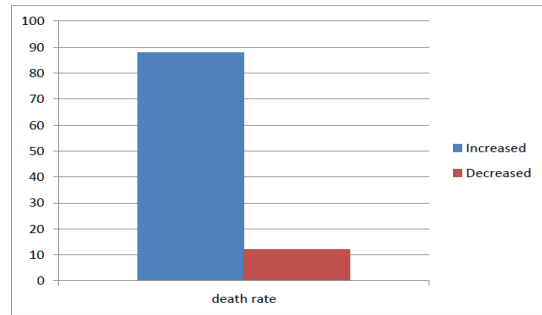
The study reveals that about (51%) area are cleaned by the human it is known that only (49%) among the total 100 respondents area are cleaned by that machine.



The study reveals that about whether they know about the machine called bandicoot or not here 50% was know the machine and 20% was not know about the machine.



And 36% was says it will save the human lives People who clean the sewage die due to several reasons their death rate is alarmingly increased are said 89% and 10% says it is decreased.



Conclusion

From this study, it is concluded that only 49% of human were aware of bandicoot whereas the rest 50% were not know about the machine. In these analyses we find many solutions for Sewers cleaner's people. They are also human so, government want to implement the machine for future implementations – Bandicoot must be implemented fully all over India.

REFERENCES

- [1] "Survey of Poly Cystic Ovarian Disease (PCOD) Among The Girl Students of Bishop Weber College, Trichirapalli, Tamil Nadu, India" by Nivetha.M and Susan G.Suganya.
- [2] "An epidemiological survey: Effect of Predisposing factors for PCOS in Indian urban and rural population" by R. Vidya Bharathi, S. Swetha, J. Neerajaa, J. Varsha Madhavica, Dakshina Moorthy Janani, S.N. Rekha , S. Ramya , B. Usha.
- [3] "A cross sectional study of polycystic ovarian syndrome among young women Bhopal, Central India" by Mahesh Gupta, Daneshwar Singh, Manju Toppo, Angelin Priya, Soumitra Sethia, Preeti Gupta.
- [4] "A cross-sectional study of polycystic ovarian syndrome among adolescent and young boys and girls in Mumbai, India"by Beena Joshi, Srabani Mukherjee1, Anushree Patil, Ameya Purandare, Sanjay Chauhan, Rama Vaidya.
- [5] "Acupuncture for polycystic ovarian syndrome – A systematic review and meta-analy-sis" by Junyoung Jo, Yoon Jae Lee, Hyangsook Lee.
- [6] <http://www.latimes.com/world/asia/la-fg-india-sewers-20140704-story.html>http://www.ijstmr.com/wp-content/uploads/2017/02/IJSTMR_V2I2_0577.pdf<https://www.firstpost.com/tech/news-analysis/a-sewer-cleaning-robot-called-bandicoot-will-clean-keralas-sewer-holes-4300963.html>
- [7] Bhasin, A. (2013) No exits from these tunnels of death,The Hindu, [Online], Available: <http://www.thehindu.com/opinion/op-ed/no-exits-from-these-tunnels-of-death/article4963941.ece>
- [8] Raju, P. (2012), Lack of safety gear killing Delhi's sewer workers, [Online], Available: <http://www.thinkindia.net.in/2012/06/lack-of-safety-gear-killing-delhis-sewer-workers.html> Venkat, V(2009)SewerRats,[Online], Available:[http:// infochangeindia.org/agenda/occupational-safety-and- health/sewer-rats.html](http://infochangeindia.org/agenda/occupational-safety-and-health/sewer-rats.html)