



# **WAVOO WAJEEHA WOMEN'S COLLEGE OF ARTS & SCIENCE - KAYALPATNAM**

**(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)  
Run by Wavoo SAR Educational Trust  
(Minority Institution)**

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1	Dr. L. Noor Asma	Impact of GDP and International Trade on Pollution	16.09.2022	ISBN -978-81-947745-2-5



## Proceeding of UGC Sponsored National Seminar on

# GDP and the Indian Economy

Edited By  
**D. Hylin Reba**

**Post Graduate & Research Centre Department of Economics  
Scott Christian College (Autonomous)  
Nagercoil - 629 003**

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## **IMPACT OF GDP AND INTERNATIONAL TRADE ON POLLUTION**

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Over the last fifty years our world economy has changed vigorously. The definite size of the economic activity has increased as a result of increase in population and per capita income. When there is growth in the world economy, the economy has to realize environmental degradation, including deforestation, losses in bio-diversity, global warming, air pollution, depletion of ozone layer, overfishing and so on. The entire environmental community having a fear that international trade will increase the effects of poor environmental policies prevailing in the world. Economic growth driven by international trade will speed up the process of environment degradation unless sufficient environmental safeguards are set back.

Today we have enormous environmental awareness in our country, which acts as a strong check on the executives and the industries. Government along with public are working together to evolve policy and regulatory frameworks and monitor implementation. Government of India has been taking steps to reduce environmental pollution over the years. The policy of the government has also changed according to the change in time.

### **Statement of the problem**

Usually environmental pollution has been always linked to Industrialization. But recently environmental pollution has also been linked to International trade. There are many protests by NGO's and public to ban several International trade agreements due to environmental pollution issues. One of the foremost contentious sources of disagreement is over how environmental agreements / measures should be treated for trade purposes. Several high-profile cases concerning import bans supported environmental reasons are struck down by the WTO. Advocates for trade liberalization argue that such decisions are justified, that environmental concerns should be controlled through measures apart from trade such like eco-labelling. Environmentalists are much concerned that the WTO has not done enough to include environmental protection into its compulsion. The environmentalists have long been concerned over what they see because the links between trade liberalization and environmental danger. Some groups argue that polluters might not be permitted to operate in developed countries to take their operations to more compliant in developing countries. The developed countries drop their trade barriers by enough to make exporting back to these countries to make more profit. According to this view, to get the jobs some developing countries are happy and tolerating pollution. Environmentalists sometimes check with such relocations and exporting as "environmental dumping." This explanation is troubling, and whether it's widespread enough to be problematic or not, evidence suggests that poor countries sometimes pollute more as they grow.



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2	Mrs. S. Surya Selvi	The Contribution of Service Doctor to India's GDP	16.09.2022	ISBN-978-81-947745-2-5
3	Dr. J. Sugantham Parimala	The Contribution of Service Doctor to India's GDP	16.09.2022	ISBN-978-81-947745-2-5



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## THE CONTRIBUTION OF SERVICE SECTOR TO INDIA'S GDP

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India's services sector covers a wide variety of activities such as trade, hotel and restaurants, transport, storage and communication, financing, insurance, real estate, business services, community, social and personal services, and services associated with construction. The service sector, also known as the tertiary sector, is the third tier in the three-sector economy. Instead of product production, this sector produces services, maintenance, training, or consulting. Examples of service sector jobs include housekeeping, tours, nursing, and teaching. The sector gives a significant contribution to the GDP of the country. In addition to providing employment opportunities for a large number of people, it also trades in services to improve the economy in a significant way.

The Service sector also known as the tertiary sector of the economy is expanding at a faster rate. It is one of the three sectors of the economy. The "Soft" part of the economy in the service sector includes all activities in which people offer their knowledge and time to improve productivity, performance, potential, and sustainability and also known as advice, experience, and discussion include the service sector. The service sector involves activities beginning from the production of goods and service until it reaches the consumer. For the last 30 years, there has been a substantial shift from the primary and secondary sectors to the service sector. Now it has become the largest sector of the economy. Further, the service sector activities can be grouped into:

1. Trade, hotel, and restaurants.
2. Transport, storage, and communication which includes roads and railways, airways and inland and overseas, and water transport.
3. Financial institutions, insurance, real estate, and business services.
4. Community, social and personal services.

Even though there is a thin margin in distinguishing between the private sector and public services. While some services are being provided by both sectors. We can classify the service sector activities under both sectors. Private services include trade, commerce, transport, communication, hotel and restaurant, tourism, insurance, cinema, advertisement, sports, health and education, level service and NGOs, etc., The Government sector includes government establishment including the legislature, executive, judiciary, its various departments at central and state government, and its autonomous bodies and local bodies.



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
4	Dr. Thirumathi	Indian GDP Growth – Recent Developments and Government Initiatives	16.09.2022	ISBN-978-81-947745-2-5



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## INDIAN GDP GROWTH - RECENT DEVELOPMENTS AND GOVERNMENT INITIATIVES

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The Indian economy has totally recovered to the pre-pandemic real GDP level of 2019-20, in line with the probationalary estimates of GDP free on could 31, 2022. Real GDP growth in FY 2021-22 stands at eight.7%, which is 1.5% beyond the \$64000 GDP in FY 2019-20. These figures are related to stronger growth momentum, indicating accrued economic demand. The investment rate within the fourth quarter accrued to its highest level within the previous quarters. Moreover, capability employment within the producing sector rose within the fourth quarter, as against the third quarter, implying a build-up in demand, that is in step with the expansion objectives of the Indian economy.

### Statement of the Problem

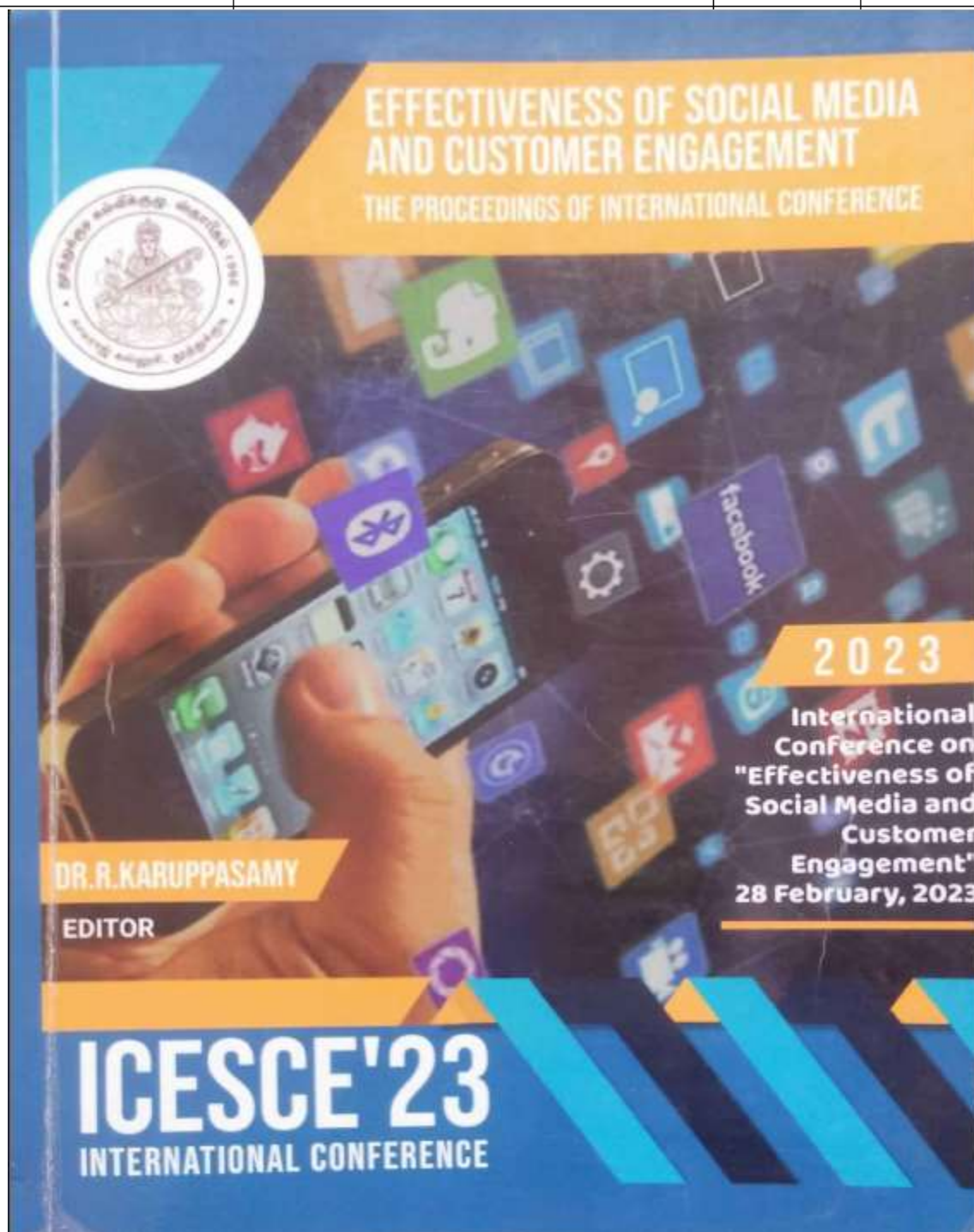
Development of Future capital disbursement of the govt. within the Indian economy is anticipated to be supported by factors like tax buoyancy, efficient legal system, thorough assessment and rationalisation of the tariff structure and digitization of tax filing. The medium term, a rise in capital disbursement on infrastructure and asset-building comes is about to extend growth multipliers. It is more, revival in monsoon and Kharif sowing helped the agriculture sector gain momentum. As of Gregorian calendar month eleven, 2022, the South-West monsoon has coated the whole country, leading to seven-membered higher rain than the traditional level. India has emerged because the fastest-growing major economy within the world, and is anticipated to be one in all the highest 3 economic powers globally over subsequent 10-15 years, backed by its sturdy democracy and robust partnerships. Most focus of this paper is on GDP growth of India, recent developments and Government initiatives.

### Market Size

- ❖ India's nominal GDP at current costs was calculable at Rs. 232.15 trillion (US\$ three.12 trillion) in FY22. With over one hundred unicorns valued at US\$ 332.7 billion, India has the third-largest imaginary creature base within the world. Govt. is additionally that specialize in renewable sources to get energy, and is going to win four-hundredth of its energy from non-fossil sources by 2030.
- ❖ According to the McKinsey world Institute, India must boost its rate of employment growth and build ninety million non-farm jobs between 2023 and 2030 and extend productivity and economic process. Employment rate must grow by one.5% each year from 2023 to 2030 to realize 8-8.5% GDP growth between this era. India's accounting



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5	Dr. L. Noor Asma	Impact of Social Media Marketing on Buying Decisions among Young Digital Customers at Kayalapatnam	28.02.2023	ISBN -987-81- 951473-4-2
6	Mrs. S Surya Selvi	Impact of Social Media Marketing on Buying Decisions among Young Digital Customers at Kayalapatnam	28.02.2023	ISBN -987-81- 951473-4-2



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# IMPACT OF SOCIAL MEDIA MARKETING ON BUYING DECISIONS AMONG YOUNG DIGITAL CUSTOMERS AT KAYALPATNAM

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Assistant Professor of Economics,  
Wavoo Wajeetha Women's College,  
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## Abstract

Digital transformation has tremendously changed the life style of the people in recent years. In today's life Social Media become useful tool using by the consumer in buying decisions. Fast Growth and acceptability of social media platform has plays a big role in consumer purchase decision. In current scenario youngsters are called innovator because they adopt any innovation or changes first. So that social media marketers mainly focusing on youngsters. Due to ease of use, the young generations are using the social media for various uses especially for purchasing goods and services. The present study has been undertaken to analyze how young digital customers perceive social media Influencers and whether they affect their purchasing intentions and buying decisions. For this purpose, primary data was collected from 150 respondents. Data was tabulated and analyzed with the help of statistical tools to achieve the objectives of study.

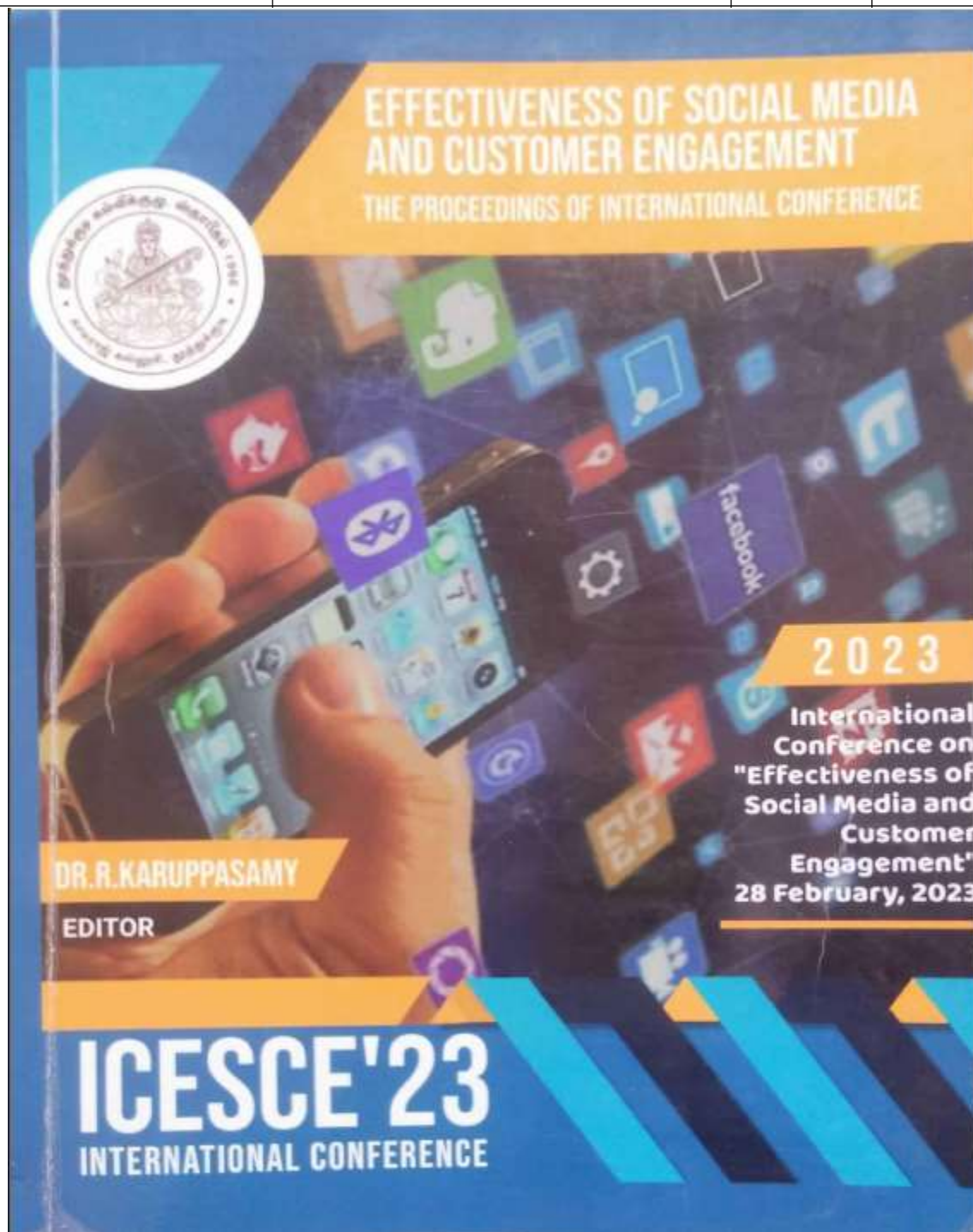
**Keywords:** Social Media Marketing, Buying Decisions, young digital customers

## 1. Introduction

Social media marketing has become the most dominant mode for companies seeking to reach out to their customers. It provides new opportunities for firms to engage consumers in social interaction on the internet. There has been tremendous growth in the use of social media platforms such as Whatsapp, Instagram, and Facebook over the past decade. Youngsters are the backbone of any nation and they are the major contributors in the economy. The buying behavior of the youngsters is very complex and is influenced by the number factors which vary from individual. Attracting youngsters are difficult task for social media marketers. Social media sites such as Facebook, YouTube, twitter, and many others are popular internet sites



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**S. Agustin Arputha Lizzy**

## **IMPACT OF SOCIAL MEDIA ON CONSUMER BUYING BEHAVIOR AT ARUMUGANERI**

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### **ABSTRACT**

Today, social media is one of the most popular and widely utilized forms of communication. People currently utilize social media to interact with one another all around the world. People have been using social media to discuss their experiences in recent years. This also includes experiences using a product or service or platform. These product reviews posted by social media users are read by thousands of people every day and they have become a source of influencing consumer buying behavior. Organizations have started to use social media to sell their products and services after realizing the value of this medium. Social media is being used today to effectively market products and services and to attract a wide demographic of audience. This paper aims at identifying how different aspects of social media can impact consumer buying behavior.

**Keywords:** Social media marketing, consumer behavior, social media

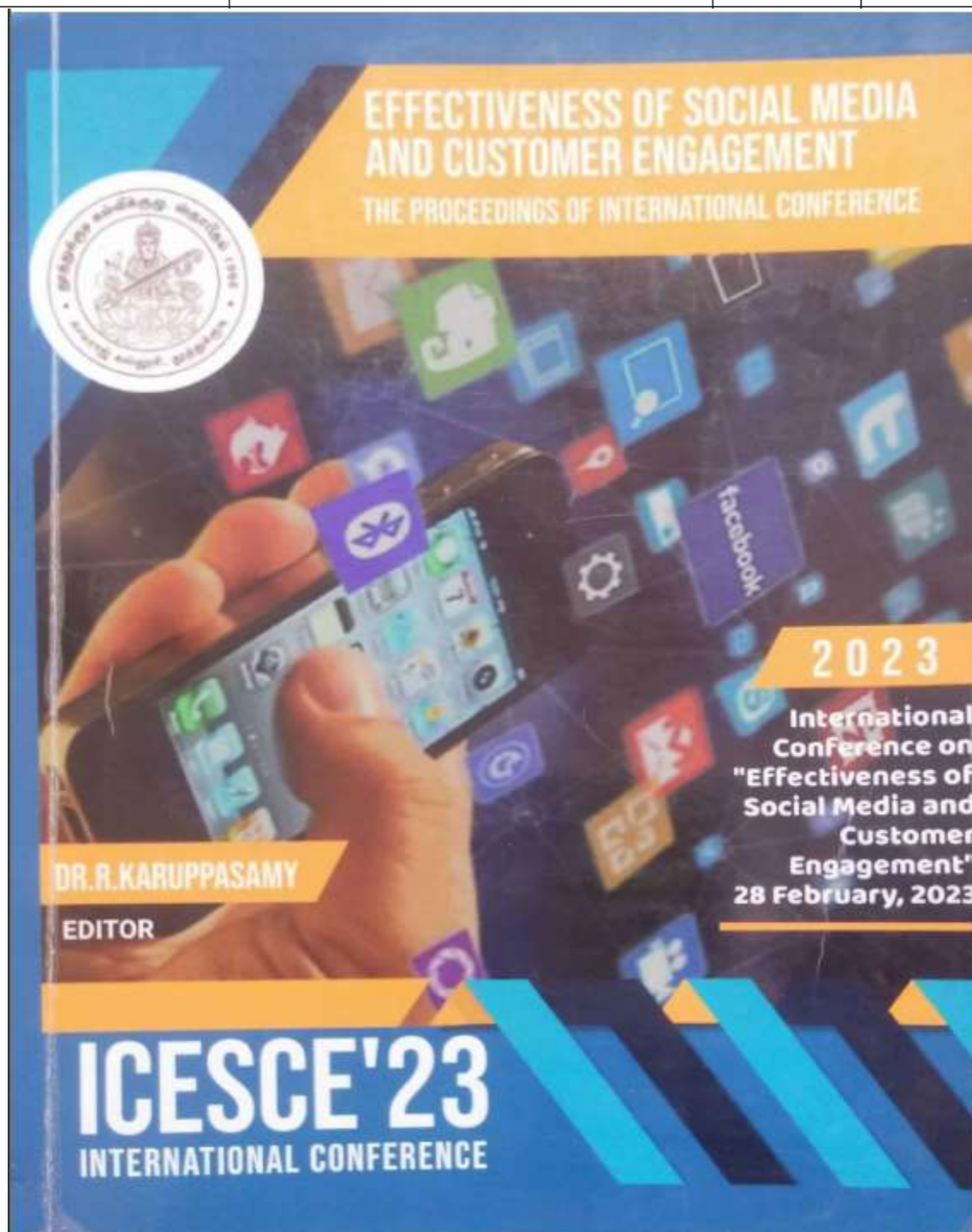
### **INTRODUCTION**

Social media allows exchange of ideas, opinions, stories and facts among individuals who may be living in different parts of the world. Facebook and Instagram are among the most popular social media platforms. These platforms often offer user-generated content and individualized accounts. There are currently 3.78 billion users of social media worldwide and by using social media brands can target this huge audience and generate significant leads.

Popular social media platforms that are used by companies to target their customers are:



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9	S. A. Rahmath Ameena Begum	Study on identifying Entrepreneurial Determinants and Challenges faced by Women Entrepreneurs at Kayalpatnam	28.02.2023	ISBN -987-81- 951473-4-2



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**S. Agustin Arputha Lizzy**

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# STUDY ON IDENTIFYING ENTREPRENEURIAL DETERMINANTS AND CHALLENGES FACED BY WOMEN ENTREPRENEURS AT KAYALPATNAM

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## ABSTRACT

Entrepreneurship is necessary to trigger the process of economic development of both developed and developing countries as it is the backbone of the economy of any country. Entrepreneurship is the process in which we combine the available resources of production in such a new way that it produces the goods and services more satisfactory to the customers. Entrepreneur is a catalytic agent of change. Every country tries to achieve economic development for good fortune and better life standards of people. Women entrepreneur is the another paradigm shift in developing countries like India. There are also few more states, districts and areas where women are job creators rather than job seekers. This paper deals with the women entrepreneurs residing at a entrepreneurial society called Kayalpatnam. Opportunities, challenges faced by women entrepreneurs in their daily life also analysed with the few basic statistical tools like percentage analysis, Garrett ranking and weighted average to know the results.

## 1.INTRODUCTION

"Entrepreneurship is the pursuit of opportunity beyond resources controlled"

-Stevenson

Today business is built around the human capital and women are one of the valuable factors. Globalization and liberalization of market encouraged women to come forward to become an entrepreneur and start new business. Today role of modern women is not restricted to traditional role as mother and housewife; it has an undergoing changes. As a women gets educated she begins to think of herself as an independent person, she becomes aware of her own identity, potentials and decision making capabilities. Interested women with productive and inventive ideas are coming forward to start the small and medium sized enterprises. It is common belief that majority of women in India



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Adaptation and Risk Communication Strategies for Environmental Health  
21<sup>st</sup> October 2022

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## ENVIRONMENTAL CONCERNS AND SUSTAINABLE DEVELOPMENT

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### ABSTRACT

Economic development is a process whereby an economy's real national income increases over a long period of time. There is direct relationship between environment and economy. Economic development without environmental considerations can cause serious environmental damage in turn impairing the quality of life of present and future generations. In the process of economic development, the environmental problems have been ignored or less concentrated. Now, the need of the hour is to concentrate on sustainable development. Sustainable development means, "Meeting the needs of present generation without compromising with the needs of future generations."

### Introduction

Economic development is a process whereby an economy's real national income increases over a long period of time. There is direct relationship between environment and economy. Economic development without environmental considerations can cause serious environmental damage in turn impairing the quality of life of present and future generations. In the process of economic development, the environmental problems have been ignored or less concentrated. Now, the need of the hour is to concentrate on sustainable development. Sustainable development means, "Meeting the needs of present generation without compromising with the needs of future generations."

In 1983, the United Nations set up the World Commission on Environment and Development called 'the Brundtland Commission' to examine the problems related to this area. The Commission in its report entitled "Our Common Future" submitted in 1987, used and defined this concept of sustainable development for the first time

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### OBJECTIVES OF SUSTAINABLE DEVELOPMENT

Sustainable development aims at the creation of the sustainable improvements in the quality of life for all people and this should be the principal goal of development policy. Accordingly, the main objectives of sustainable development are stated as under:

(1) Accelerating economic growth (2) Meeting basic needs (3) Raising living standards (4) Helping in ensuring clean environment free from all types of pollution (5) Maximizing the net effects of economic development (6) Preservation and enhancement of the stock of the environmental, human and physical capital (7) Inter generational equity and (8) Overall strict control on gross exploitation of the natural resources of each country.

The purpose of this paper is to review the current state of the environment and identifying the policy issues for promoting sustainable development. It is broadly divided into six sections they are i) Environment-economy linkages, ii) Review of major environmental concerns, iii) Impact of environmental degradation on society, (iv) the policies of sustainable development, v) Global Environmental Issues, and vi) Link between bio-diversity and climate change.



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## THE EFFECT OF URBANIZATION ON ENVIRONMENT IN INDIA

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### ABSTRACT

The main cause of declination of the terrain is rapid-fire urbanization because of all diligence, which created GHGs, located in civic area. The main focus of this paper is on Impact of solid waste on Environment, causes of increase in Green houses and Waste generation. The main source of civic environmental pollution is corruption of waste material into constituent chemicals. Urbanization directly contributes to waste generation and intuitive waste running which causes health hazards and civic terrain declination. Depending on their source and relations with other factors of the air, they can have different chemical compositions and health impacts. The quality of air in metropolises is a major environmental concern. It laterally affects climatic conditions and directly affects the health of the community. From artificial sources, pulp, and paper, as well as food and potables recycling diligence, responsible for utmost of the emigrations. Changes due to waste operation affect substantially the methane emigrations. The donation of Waste sector to the global methane emigration is projected to be around 90 Mt( million tons) annually, during the 1990s. There should be need of proper conservation of the civic mega city which is responsible for an environmental declination. The only policy timber isn't enough to attack the environmental problem, but there's need of taking strong way towards the conservation of the civic metropolises and safeguard of the terrain. Development is necessary, but development should be sustainable.

**Key Words: Environment, Solid Waste, Pollution, Urbanization, Green Houses**

### INTRODUCTION

The third world countries are passing a major demographic transition from a pastoral, agricultural society to an civic, artificial one. By 2050, seventy percent of the global population will live in civic areas, over from about half moment (United Nations, 2001). Urbanization is the increase in the proportion of people living in municipalities and cities. Urbanization is defined by the United Nations as the movement of people from the pastoral areas of a country to the civic areas with population growth equating to civic migration. Most of this increase in civic population will do in third world countries and further than half the growth will do in just two countries, India and China( Cohen, 2004). As Walsh notes, " in developing nations, the move from pastoral areas to metropolises frequently leads to an coexisting increase in income- and that increase in income leads to an increase in the consumption of food and energy, which in turns produces an supplement in carbon emigrations." India is no longer considerations Bharat of town lets. Because, in 1961, seventy- nine million people were living in civic areas but in 2001, roughly 285 million people live in civic areas. In 1991, there were only twenty- three metropolitan metropolises in India which increased to 35 in 2001. Some of the main metropolises, are Delhi, Chennai, Mumbai, Kolkatta, etc. with the rapid-fire process of urbanization, the demand for land for colorful civic conditioning also increases.



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12	Dr. Sugantham Parimala	Air Pollution in India: Major Issues and Challenges	21.10.2022	ISBN-13: 978-93-5577-299-2



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## AIR POLLUTION IN INDIA : MAJOR ISSUES AND CHALLENGES

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### ABSTRACT

Air quality in particular has suffered the worst and vehicular emissions have been identified as the main culprit. The considerable magnitude of air pollution pulls up the number of people suffering from respiratory diseases and many a times leading to deaths and serious health hazards. The paper concludes with some policy reflections. India was ranked the fifth most polluted country by WHO (2019), in which 21 among the top 30 polluted cities were in India. The Indian cities, on average, exceeded the WHO threshold by an alarming 500%. The lack of infrastructural facilities, inadequacy of financial resources to implement advanced infrastructural innovations, difficulty in relocation of the industries from the urban centres even after mandatory court decisions, and above all, the behavioural patterns among people in accepting the green solutions are some of the crucial impediments on the road to environmental protection that our country seems to be struggling to overcome today. This paper examines the main causes of air pollution in India. According to The Energy and Resources Institute (TERI), the emissions of SO<sub>2</sub>, NO<sub>x</sub>, and PM increased over 50 times from 1947 to 1997. The small-scale industries, which are not regulated like the major industries, use several energy sources apart from the primary source of state-provided electricity. Some of these fuels include the use of biomass, plastic, and crude oil. India is facing serious issues of poor air quality in many urban areas. Apart from the much discussed megacities, like Delhi, various reports suggest that several medium-scale cities are equally at the brunt of filthy air.

**Keywords:** Air Pollution, Emissions, Population Growth, Ammonia, Thermal Power Plants

### Introduction

Air pollution is one of the serious problems faced by the people globally, especially in urban areas of developing countries, which not only experiences a rapid growth of population but also industrialization which is accompanied by growing number of vehicles. The mega cities of India are beset by environmental problems, not the least of which is deteriorating air quality. Rapid population growth, industrialization, urbanization, crowded housing conditions; inadequate civic amenities and solid waste mismanagement in mega cities are adversely affecting the environment. All these in turn lead to an increase in the air pollution levels and have adverse effects on the health of people. The present paper is an attempt to examine effect of automobile emissions on air pollution and its concomitant human health hazards interfaced with case studies of mega cities of India. The data have been analysed from various censuses of India, transport statistics in India and compendium of environment statistics etc. Conducted an analysis of changes and trends over last fifty years.

The growth of population in mega cities of India leads to an increase in the air pollution levels. Air quality in particular has suffered the worst and vehicular emissions have been identified as the main culprit. The considerable magnitude of air pollution pulls up the number of people suffering from respiratory diseases and many a times leading to deaths and serious health hazards. The paper concludes with some policy reflections. The policy aimed at overall development should certainly include efforts to control population and air pollution for better health of present and future generation.



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13	Mrs. S Surya Selvi	E- Waste Management – Challenges and Strategies	21.10.2022	ISBN-13: 978-93-5577-299-2



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## **E-WASTE MANAGEMENT – CHALLENGES AND STRATEGIES**

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### **ABSTRACT**

In India, the quantity of "e-waste" or electronic waste has now become a major problem. Disposal of e-waste is an emerging global environmental and public health issue, as this waste has become the most rapidly growing segment of the formal municipal waste stream in the world. E-waste or Waste Electrical and Electronic Equipment (WEEE) are loosely discarded, surplus, obsolete, broken, electrical or electronic devices. In India most of the waste electronic items are stored at households as people do not know how to discard them. This ever-increasing waste is very complex in nature and is also a rich source of metals such as gold, silver, and copper, which can be recovered and brought back into the production cycle. So e-waste trade and recycling alliances provide employment to many groups of people in India.

### **Introduction**

E-waste is any electrical or electronic equipment that's been discarded. This includes working and broken items that are thrown in the garbage or donated to a charity reseller like Goodwill. Often, if the item goes unsold in the store, it will be thrown away. E-waste is particularly dangerous due to toxic chemicals that naturally leach from the metals inside when buried.

Consumers are the key to better e-waste management in India. Initiatives such as Extended Producer Responsibility; Design for Environment; (3Rs) Reduce, Reuse, Recycle technology platform for linking the market facilitating the circular economy aim to encourage consumers to correctly dispose of the e-waste, with an increased reuse and recycling rates, and also adopt sustainable consumer habits.

### **Global E-Waste Problem**

International treaties such as Basel Convention aim at reducing and regulating the movement of hazardous waste between nations. Even with the Convention, illegal shipment and dumping of e-wastes continue to take place. It is estimated that 50 million tonnes of e-waste was generated globally in 2018. Half of this is personal devices such as computers, screens, smart phones, tablets, and TVs, with the remainder being larger household appliances and heating and cooling equipment. Despite 66 per cent of the world's population being covered by e-waste legislation, only 20 per cent of global e-waste is recycled each year, which means that 40 million tonnes of e-waste is either burned for resource recovery or illegally traded and treated in a sub-standard way. In the US alone, more than 100 million computers are thrown away with less than 20 per cent being recycled properly. China discards 160 million electronic devices a year. In the past, China has been regarded as the largest e-waste dumping site in the world. Hundreds of thousands of people have expertise in dismantling electronic junk.

### **E-Waste Problem in India**

India ranks 177 amongst 180 countries and is amongst the bottom five countries on the Environmental Performance Index 2018, as per a report released at the World Economic Forum 2018. This was linked to poor performance in the environment health policy and deaths due to air pollution categories. Also, India is ranked fifth in the world amongst top e-waste producing countries after the USA, China, Japan, and Germany and recycles less than 2 per cent of the total e-waste it produces annually formally. Since 2018, India generates



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14	S. A. Rahmath Ameena Begum	Impact of Land Usage – A Case, Study on Cultural dynamics at Kayalpatnam	21.10.2022	ISBN-13: 978-93-5577-299-2
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# IMPACT OF LAND USAGE – A CASE STUDY ON CULTURAL DYNAMICS AT KAYALPATNAM

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## ABSTRACT

Rural environment continues to expand as semi urban or urbanization impact at an unprecedented rate to meet the demand of increasing population and economic development. This study evaluated spatial-temporal changes of land use and land cover in coastal area of Kayalpatnam due to a unique perspective – cultural dynamics. The results showed that the urban built environment has doubled in area in last 10 years. The land area and the cost of land has been increased. At the same time over usage of land near coastal area impact the environmental threats. This case study deals with the impact of land usage mainly due to cultural dynamics and the challenges impacts both environmental and societal problem. Construction activities in the rural coast is a typical phenomenon which involves social, psychological, economical, environmental, geological, political, global, national as well as local issues of concern.

**Keywords:** land usage, cultural dynamics, spatial-temporal changes

## Introduction

Coastal areas are highly important to be preserved as gifted by nature. These coastal land are mostly intensely used areas settled by human. Kayalpatnam is a coastal area and are also favorable for development activities, as they are driven by many economic rationales such as, presence of natural resources, accessibility of residential, small scale businesses which includes fishing a predominant role played and other dependent businesses like tourist spot.

As a result of this, changes of land use patterns are one of the most significant environmental issues in many coastal areas all over the world like Kayalpatnam. Impact of Coastal Land Use Change on Shoreline Dynamics in Yunlin County, Taiwan specifies land use changes in the Yunlin coastal area between 1996 and 2011 has created both positive and negative impacts on the shoreline. This study clearly illustrate how human induced land use changes can influence shoreline stability and especially how industrialization can change the natural environment of coastal areas and their negative consequences (Kwong Fai et al.,(2014)

In recent decades, the South-West coast of Kanyakumari district experience remarkable changes in land use and land cover features due to impacts of marine and terrestrial factors and human activities (Chandrasekar et al., 2013).

The alternative methods to restore beach such as beach nourishing and construction of an artificial reef are being attempted by making this study. In order to preserve coastal ecosystem. The movement of sediments along the coast, onshore-offshore sediment transport, impact of tides on sediment movement, and impact of engineering structures on sediment movement and areas under erosion and deposition, were studied using high temporal resolution satellite data Coastal zone management in India – present status and future needs (Shailesh Nayak 2017)

In earlier studies of coastal region, an attempted is made to monitor shoreline changes from Valinokkam to Thoothukudi, and to distinguish the places mostly affected by erosion in Valinokkam, and



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# AN IMPACT OF TOXIC WASTE OF CHEMICAL INDUSTRY ON ENVIRONMENT

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## ABSTRACT

One of the most renowned powerful sources of environmental pollution is Chemical industry. Since all of the chemical manufacturing processes use raw materials and consumables from each component of environment, it is clear that damages resulting from the activities in chemical industry are not due to the very industrial processes only, but because to exhaustion of natural resources too. In the 20th century oil, coal, minerals, wood, etc. have been extracted at extremely high rates, thus affecting the ecological balance in the nature and damaging the landscape. The primary effect of chemical industry on environment and on the lifestyle as well, is due to the pollution. Harmful chemicals in and around chemical industries causes cancer, reproductive damage, breathing problems such as asthma and emphysema, and birth defects, as well as other health problems such as headache, nausea, dizziness, and stress. Chemical industries are also a major source of the gases that causes global warming. Air pollution and climate change are two closely connected environmental concerns. India is making swift progress in terms of economic development but it has also caused change in air quality to reach a global scale. This paper discussed various problems caused to human health due to these emissions and their adverse effects on quality of air. It is also suggested some methods those may be employed to reduce the emission of these pollutants into the atmosphere.

**Keywords:** Chemicals, Emissions, Industries, Air pollution

## Introduction

With the coming of the Industrial Revolution, humans were able to advance further into the 21st century. Technology developed rapidly, science became more advanced, and the manufacturing age came into view. With all of these comes one more effect: industrial pollution. Earlier, industries were small factories that produced smoke as the primary pollutant. However, since the number of factories was limited and worked only a certain number of hours a day, the levels of pollution did not grow significantly. But when these factories became full-scale industries and manufacturing units, the issue of industrial pollution started to take on more importance. Chemicals are the elementary units that creates all living and non-living organisms on earth. Many chemicals exist naturally in the surroundings, and may constitute major part of our air, water, food, and homes. Some of these chemicals are artificial, and are used in conventional products from medicines to computers to fabrics and fuels. Other chemicals are not produced intentionally but are after-effects of chemical processes. Many chemicals are used to ameliorate the quality of our lives and most are not hazardous to the surroundings or human health. However, some chemicals have the promising history to cause damage, in certain amounts, and should only be used when the potential exposures are suitably managed. Some chemicals are of major concern as they can find their way into the food chain and eventually into the food web, spoiling the food cycle by accumulating and/or persisting in the environment for many years. Air pollutants and other harmful toxic chemicals are poured in the atmosphere from different sources that may be man-made or natural and have the capability to change the structure of air and affect the environment to huge extent. The concentrations of both depend on the ability of the atmosphere to either absorb or disperse these emissions and also on the quantities that are emitted from air pollution sources. There are various sources of these emissions which include vehicles, industries, domestic and natural sources. Out of all these sources, industries are the major cause of concern.



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17	V. P. Anusuya	A Study on recent trends in Biotechnology for Environment Sustainability and Pollution Prevention	21.10.2022	ISBN-13: 978-93-5577-299-2
18	K. Saranya	A Study on recent trends in Biotechnology for Environment Sustainability and Pollution Prevention	21.10.2022	ISBN-13: 978-93-5577-299-2



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# A STUDY ON RECENT TRENDS IN BIOTECHNOLOGY FOR ENVIRONMENT SUSTAINABILITY AND POLLUTION PREVENTION

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## ABSTRACT

In today's demanding world, Environmental pollutions are the biggest challenge faced by the society. Pollution is a global issue, it affect the natural resources and global livelihood. It plays a critical role in affecting people health and creating threat among the society. Pollution affect many things like biodiversity, eco system and human health worldwide. Biotechnologies offer immediate solutions to some very difficult environmental problems, such as removal and treatment of noxious wastes, improved energy sources and better ways to identify and detect pollutants. There is a growing, unsettled concern about environmental biotechnology to the international demand of nourishing the world's burgeoning population and sustain clean soil, air and water. The main technological expansions are in plant and microbial biology.

Environmental biotechnology is a coordination of scientific and engineering knowledge for the exploitation of microorganisms and their products in the prevention and removal of pollutants. This article provides a general idea of environmental biotechnology and its applications for environmental sustainability. Environmental biotechnology emerges as a great help to achieving the goal of sustainable development. The emerging trends takes care of the development, use and regulation of biological systems for remediation of contaminated environmental constituents, such as land, air and water, and adopts environmentally friendly processes, such as green manufacturing technologies and sustainable development. The aim of this article is to study the recent trends in biotechnology and know the environment sustainability and pollution prevention.

**Keywords:** Environmental pollution, biodiversity, biotechnology, microorganisms, environment sustainability

## Introduction

Environment biotechnology may be a department of science that employments living life forms and development to unravel natural issues successfully. It plays a noteworthy part in securing biodiversity i.e. plants, creatures, and human creatures. The drive for a more secure planet has led to the creation of different advancements to extend proficiency and advance supportability. Different educate are contributing to a great extent in natural biotechnology nowadays. As such, its future change openings to decrease mechanical squander, remediate natural defilement and anticipate contamination.

## **OBJECTIVES OF THE STUDY**

- To study the recent trends in biotechnology
- To know the environment sustainability and pollution prevention
- To discover the origin of environmental pollution
- To identify and explores biotechnological approaches for environmental protection

## **RECENT TRENDS IN BIOTECHNOLOGY**

The biotechnology relies on beneficial microorganisms to create a safe, greener environment. Some of the recent trends in environmental biotechnology are as follows:



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19	Ms. S Hameed Farhana	Health Impacts of Environmental Pollution	21.10.2022	ISBN-13: 978-93-5577-299-2



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# HEALTH IMPACTS OF ENVIRONMENTAL POLLUTION

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## ABSTRACT

Environmental issues are one of the most significant challenges that the humankind is facing with in today's world. Pollution is broadcasted everywhere, you hear it constantly, but what is environmental pollution? There are several types of environmental pollution that surrounds the environment: air, water, land, noise, radioactive, thermal and light pollution. While some may have a trivial impact there are others that may have a severe effect on population. To humans and any other living organisms such as plants, animals, etc., pollution of any kind is harmful. This paper is an attempt to know about the Health impact of Environmental Pollution.

### **Introduction**

Global development, continuing industrialization and rapid increase in world population, during the 20th century, has been a great contributor to several global issues; environmental changes being one of them. These environmental changes include also major global issues such as climate change, ozone depletion, changes in ecosystems, decreased biodiversity, depletion of natural resources and land degradation. As the population grows and consumption increases, these changes continue to threaten the health and wellbeing of humankind.

As human activities have a direct impact on the environment, leading to several serious problems such as pollution. The environmental pollution is an issue that also causes a negative impact on human health.

Among many other problems, environmental issues are one of the most significant challenges that the humankind is facing with in today's world. Pollution is broadcasted everywhere, you hear it constantly, but what is environmental pollution? There are several types of environmental pollution that surrounds the environment: air, water, land, noise, radioactive, thermal and light pollution. While some may have a trivial impact there are others that may have a severe effect on population. To humans and any other living organisms such as plants, animals, etc., pollution of any kind is harmful.

### **Health Effects**

#### **EFFECTS OF AIR POLLUTION**

Air pollution can harm us when it accumulates in the air in high enough concentrations. Millions of Americans live in areas where urban smog, particle pollution, and toxic pollutants pose serious health concerns. These pollutants are associated with diseases such as stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases.

- Reduced lung functioning
- Irritation of eyes, nose, mouth and throat
- Asthma
- Respiratory symptoms such as coughing and wheezing
- Increased respiratory disease such as bronchitis
- Headaches and dizziness



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21	Mrs. Jessie Jancy Rani	Analysis of underground water samples - A Spectro Chemical perspective	21.10.2022	ISBN-13: 978-93-5577-299-2



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# ANALYSIS OF UNDERGROUND WATER SAMPLES – A SPECTRO CHEMICAL PERSPECTIVE

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## ABSTRACT

The World environment comprises of the three basic amenity air, land and water. Among these water is the most essential component for survival of life on earth. The surface of the earth measures 50,000 million hectares in area of which 20% is land and remaining 80% is surrounded by Water. Man has polluted much of the limited quantity of water with sewage, industrial wastes and wide array of synthetic chemicals. Ground water pollution is characterised by many different types and sources of pollution. These are distributed throughout the landscape from sources at the surface to those in buried sediments. Some of the physical parameters determined by the analysis of ground water samples are appearance, odour, turbidity and some of the chemical parameters are pH, conductivity, total dissolved solids, total hardness etc. Random sampling method is used to collect samples in and around rubber industries of Madurai. The water samples were analysed on the basis of odour, appearance, Total Dissolved salts, electrical conductivity, pH, Alkalinity Hardness etc for the presence of metals. The trace amount of various metal elements were estimated and it is concluded that the water is portable with simple purification and it may become more worst as it continues and the industries should act with more responsibility to save the people in and around it.

**Keywords:** Pollution, Physico Chemical Parameters, Industry, Presence of Metals

## **1. Introduction**

Pollution can be naturally caused by hydrological process also in which decomposed animal and vegetable materials and weathering products of rocks, minerals and soil ingredients of the natural environment. One of the major causes of ill health in the under developed countries is largely due to lack of safe drinking water. Industrial effluents, pesticides and fertilizers from agricultural runoff and urban wastes have polluted rivers, lakes and ground waters. The effect of industrial discharge depends upon the nature of the raw materials used and manufacturing process involved.

### **1.1 Industrial Pollution of Ground water**

The most important Source is the waste generated by the industry which may be extremely dangerous acids or organic complexes. At present most of the industries especially in the small scale sector are discharging this sludge indiscriminately on land and on low lying areas.

### **1.2 Agriculture Pollution of Ground Water**

A primary characteristic of most agriculturally related ground water pollution is that it is often widely distributed (non point sources), from these sources come animal wastes, irrigation salts and various chemical applied to the fields. Nitrate, which results from the nitrification process and constituted almost all the nitrogen in leached waters has the general reputation of being quite mobile in soils and ground water.

### **1.3 Urban and Domestic Pollution of Ground Water**

Two major forms of domestic wastes generated by the modern society and threatening ground water quality. During rainy season leaching of toxic and harmful substances occur from the solid wastes causing pollution of ground water.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
22	Mrs. G Ebenezer Ilean	Unknown threats of known elements in 2.0 planet	21.10.2022	ISBN-13: 978-93-5577-299-2



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# UNKNOWN THREATS OF KNOW ELEMENTS IN THE 2.0 PLANET

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## ABSTRACT

It is a well known fact that all of our menfolk's responsibilities is to retain the environment clean and green. Recent years, the journey of life has been punctured with unexpected environmental changes. Major environmental threats include volcanic eruptions, sea level rising, climate changes, genetically modified foods, endangered species etc...Unclean environment leads to numerous diseases both in our physic as well as in our mind. The present paper aims to create awareness among the readers to establish a new environment which is free from natural disaster and also suggests solutions to protect our environment.

**Keywords:** Environment, disaster, diseases.

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## **Introduction**

The term environment has been derived from the term environ which means to surround, French term *environner*, Latin 'environ', thus etymologically environment means surrounding conditions and circumstances affecting people's life. (Colins P.H Dictionary)

Environment includes air, water, solid waste, noise, soil, wild life etc.. the protection of environment is a global issue and it is not an individual problem. Men and environment are inseparable. Environment can be categorized into two such as natural environment and man made environment. Natural environment contains four systems namely the atmosphere, the hydrosphere, the lithosphere and the biosphere. Man – made environment includes human groups, the materials built by man, factories and institutional systems. From children to adults should aware of the threats of the universe. Air, water, soil, metals, minerals, forest, fuels, plants, animals, sunlight are the main resources of the earth.

Men cannot live without water which is the liquid gold. Liquid, solid and vapour are the three forms of water. It is available in the following sources: Rain, Lakes, Ponds, Ground water, Rivers and seas. Minerals are one of the non – renewable resources. Minerals are taken from crusts and sea. Food comes under natural resources. It is badly need for both living and non - living organisms. It improves human beings' mental as well as physical health. Energy resources contain sunlight, coal, petrol, wind, waterpower, nuclear power etc.. soil is the acceptable term for the land. These are all the familiar elements of the earth. The present paper mainly focuses on the unfamiliar threats of these familiar elements.

Deforestation increases global warming and makes animals to loose their habitats. It causes soil erosion. Mixing of sewage with water areas from factories, release of noxious gases into the atmosphere, removal of earth in large scale while mining, operation of heavy machinery, construction of roads and for fuel to the factories and mines, the dust, sewage and gases released from the factories and mines are some of the causes for water, air, land, noise pollutions. The entire world faces the above mentioned problems for many decades. Climate change and E waste are the modern threats of the world.

Global warming is one of the biggest threats of the world. High temperature affects species ranges, phenology weather and so on. Climate change leads to floods, droughts, cyclones, displace the humanbeings from their home. It spreads water borne diseases like cholera, typhoid etc... it also merges many islands and creates millions of refugees. The paper presenter quotes Pallikarinai and Perungudi to make the readers to understand their stands. Pallikarunai has three hundred and above birds species whereas Perungudi overflows with waste. Both the places are situated very closer. A single road is in between the two places. It is an apt



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23	Dr. Y Muntaz Begam	Environmental Pollution	21.10.2022	ISBN-13: 978-93-5577-299-2



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## ENVIRONMENTAL POLLUTION

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### Introduction

Pollution is the introduction of harmful materials into the environment. These harmful materials are called pollutants. They may be natural (such as volcanic ash) or anthropogenic such as trash or runoff produced by factories. Pollutants damage the quality of land, air and water. Many things that are useful to people produce pollution. Burning coal to generate electricity pollutes the air. Pesticides which kills insects and weeds seep into waterways and harm wildlife. All living organisms depend on these natural resources. When these resources are polluted, all life forms are threatened. Pollution is an issue that happens worldwide. Although urban areas usually are more polluted than the countryside, pollution can spread to remote places where no people live. For example, pesticides and other chemicals have been found in the Antarctic ice sheet. In the middle of the northern Pacific Ocean, a huge collection of microscopic plastic particles formed, which is known as The Great Pacific Garbage Patch. Air and water currents carry pollution.

Winds can pick up radioactive material accidentally released from a nuclear reactor and scatter it around the world. Smoke from a factory drifts into another country.

### AIR POLLUTION

Sometimes, air pollution is visible. A person can see dark smoke pour from the exhaust pipes of large trucks or factories, for example. More often, however, air pollution is invisible. Polluted air can be dangerous, even if the pollutants are invisible. It can make people's eyes burn and make them have difficulty breathing. It can also increase the risk of lung cancer. Sometimes, air pollution kills quickly. In 1984, an accident at a pesticide plant in Bhopal, India, released a deadly gas into the air. At least 8,000 people died within days. Hundreds of thousands more were permanently injured. Volcanic gases, such as sulfur dioxide, can kill nearby residents and make the soil infertile for years. Mount Vesuvius, a volcano in Italy, famously erupted in 79, killing hundreds of residents of the nearby towns of Pompeii and Herculaneum. Most victims of Vesuvius were not killed by lava or landslides caused by the eruption. They were choked, or asphyxiated, by deadly volcanic gases. Most air pollution is not natural, however. It comes from burning fossil fuels—coal, oil, and natural gas. When gasoline is burned to power cars and trucks, it produces carbon monoxide, a colorless, odorless gas. The gas is harmful in high concentrations, or amounts. City traffic produces highly concentrated carbon monoxide.

#### 1. SMOG

Cars and factories produce other common pollutants, including nitrogen oxide, sulfur dioxide, and hydrocarbons. These chemicals react with sunlight to produce smog, a thick fog or haze of air pollution. The smog is so thick in Linfen, China, that people can seldom see the sun. Smog can be brown or grayish blue, depending on which pollutants are in it. Smog makes breathing difficult, especially for children and older adults. Some cities that suffer from extreme smog issue air pollution warnings. The government of Hong Kong, for example, will warn people not to go outside or engage in strenuous physical activity (such as running or swimming) when smog is very thick.

#### 2. ACID RAIN

When air pollutants such as nitrogen oxide and sulfur dioxide mix with moisture, they change into acids. They then fall back to earth as acid rain. Wind often carries acid rain far from the pollution source. Pollutants produced by factories and power plants in Spain can fall as acid rain in Norway. Acid rain can kill

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24	Mrs. M. Muthu Mohudhoom Fathima	Sustainable environment and Environmental Issues in India	21.10.2022	ISBN-13: 978-93-5577-299-2



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## **SUSTAINABLE ENVIRONMENT & ENVIRONMENTAL ISSUES IN INDIA**

**Mrs. S A K Muthu Mohudoom Fathima**

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### **ABSTRACT**

Achieving economic development is crucial for any country. But is it worth it if it comes at the cost of environmental degradation? We were made aware of the ill-effects of environmental degradation in our high schools. But what about the economic implications of such issues? or the benefit that sustainable development can offer to any economy? This article will break down the meaning & function of environment, the various environmental issues & concerns India is facing at the moment; and assess the alternative that sustainable development offers.

### **Introduction:**

**"Where spread fertility unfailing, where resides a band of virtuous men and those of ample wealth, call that a land"**

— said by 'Thiruvalluvar'.

Do you think many contradicts and conflicts that we facing in our day – to – day life because of environmental Hazards and needs, for and by humans. Let us discuss in more we are in such a land, as Thiruvalluvar said? Not, of course. There are details about the "Sustainable environment and consequent environmental issues".

### **Sustainable Development & Environmental Issues in India:-**

Achieving economic development is crucial for any country. But is it worth it if it comes at the cost of environmental degradation? We were made aware of the ill-effects of environmental degradation in our high schools. But what about the economic implications of such issues? Or the benefit that sustainable development can offer to any economy? This article will break down the meaning & function of environment, the various environmental issues & concerns India is facing at the moment; and assess the alternative that sustainable development offers.

**Sustainable development is the development that meets the need of the present generation without compromising with the needs of future generations.**

"This definition was put forward by the Brundtland Commission in its report "Our common Future" in 1987

The main features of sustainable development include

1. Increase in per capita income
2. Judicious use of natural resources
3. Preserving the resources for future generations

### **Important examples of sustainable development:-**

1. **Wind Energy:-** Wind energy is an easily available resource. It is also a free resource. It is a renewable source of energy and the energy which can be produced by harnessing the power of wind. The power of wind will be beneficial for everyone. Wind mills can produce energy which can be used to our benefits. It can be helpful source of reducing the cost of grid power and is a fine example of sustainable development.



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25	Dr. V Rama	வள்ளுவரும் காயல்பட்டினச் சுற்றுச் சூழ்ந்ம்	21.10.2022	ISBN-13: 978-93-5577-299-2
26	Dr. Christy Mercy	வள்ளுவரும் காயல்பட்டினச் சுற்றுச் சூழ்ந்ம்	21.10.2022	ISBN-13: 978-93-5577-299-2



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## வள்ளுவமும் காயல்பட்டணச் சுற்றுச்சூழலும்

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உதவிப் பேராசிரியர், தமிழ்த் துறை,

வாவு வஜீஹா வனிதையர் கலை மற்றும் அறிவியல் கல்லூரி, காயல்பட்டணம்.

"படைப்பெல்லாம் படைத்தான் மனிதனுக்காக மனிதனைப் படைத்தான் தன்னை வணங்க" என்பது முதுமொழி. இயற்கையைப் படைத்த இறைவன் இயற்கை அனுபவங்களைப் பெற மனிதனை உருவாக்கினார். மனிதனையும் பிற உயிரினங்களையும் தழ்ந்து இருக்கும் இயற்கை மற்றும் செயற்கைச் சூழலே சுற்றுச்சூழல் ஆகும். சுற்றுச்சூழல் "மற்றும் சுற்றுச்சூழல் பாதுகாப்பு குறித்து அறிஞர்களும் கவிஞர்களும் தங்கள் படைப்புகளில் பகர்ந்துள்ளனர். வள்ளுவத்தின் சுற்றுச்சூழல் அடிப்படையில் காயல்பட்டினத்தின் சுற்றுச்சூழல் இங்கு ஆராயப்பட்டுள்ளது.

### சுற்றுச்சூழலியல்

சுற்றுச்சூழலில் நீர், நிலம், காற்று, மரங்கள் முதலியன முக்கிய பங்கு வகிக்கின்றன. இவை உயிர் வாழ்க்கைக்கு இறைவன் கொடுத்த கொடைகளாகும் ஏனெனில் உயிரினங்களும் மனிதர்களும் உயிர் வாழ இவை உறுதுணையாக உள்ளன.

### சுற்றுச்சூழலில் இயற்கை

வாழ்க்கையின் தேவைகளை மகிழ்ச்சியோடு அனுபவிக்கத் தூய்மையான சூழ்நிலை அவசியம். இத்தகைய இயற்கையோடு பொருந்தி வாழ வேண்டும் என்பதே வள்ளுவரின் வேண்டுகோள்.

"செயற்கை அறிந்த கடைத்தும் உலகத்து

இயற்கை அறிந்து செயல்" (குறள் 637)

நூல்களைக் கற்று செயற்கையான அறிவைப் பெற்றாலும் இயற்கையை அறிந்து அதனோடு பொருந்துமாறு நடந்து கொள்ள வேண்டும். இயற்கையோடு இணைந்த வாழ்வு மாசுக்கட்டுப்பாட்டின் அடிப்படையானது. மனிதன் எவ்வித இடர்ப்பாடும் இன்றி இன்பமாக வாழ அவன் வாழும் நிலமும் சுவாசிக்கும் காற்றும் உயிர் வாழத்தேவையான நீரும் தூய்மையைப் பேணல் வேண்டும்.

### சுற்றுச்சூழலில் நீர்

"தாயைப் பழித்தாலும் தண்ணீரைப் பழிக்காதே" என்பது பழமொழி. தண்ணீரை அசுத்தப்படுத்தக் கூடாது என்பதை இப்ப பழமொழி கூறியுள்ளது. நீரின் இன்றியமையாமையை,

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
27	K. Maheswari	சுற்றுச் சூழலும் திருக்குறளும்	21.10.2022	ISBN-13: 978-93-5577-299-2



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சுற்றுச் சூழலும் திருக்குறளும்

**முனைவர் க. மகேஸ்வரி,**

உதவி பேராசிரியர்,

வாவு வஜீஹா வனிதையர் கலை மற்றும் அறிவியல் கல்லூரி  
காயல்பட்டினம்.

சுற்றுச்சூழலும் திருக்குறளும்

உலகிலேயே அதிகமான மொழிகளில் மொழிபெயர்க்கப்பட்ட இலக்கியங்களில் தலைமை வகித்து நிற்பது திருக்குறள் ஆகும். திருக்குறளில் இல்லாதது ஒன்றும் இல்லை என்று ஆன்றோரும் சான்றோரும் சொல்கின்றனர். அத்தகைய திருக்குறளில் வள்ளுவர் பல அறகருத்துக்களைப்பற்றியும் பல்வாழ்வியல் நீதிகளைப்பற்றியும், ஆன்மீக கருத்துக்களையும், பல உயர்ந்த பண்புகளையும் எடுத்துக் கூறுகின்றார். அதிலும் குறிப்பாக சுற்றுச்சூழல் பற்றியும் அதனை எவ்வாறு பாதுகாப்பது என்பதை பற்றியும் வழங்கியிருப்பதை பின்வரும் கட்டுரையின் வாயிலாக காண்போம்.

வள்ளுவரின் நிலம் பற்றி கருத்தாக்கம்

இன்றைய சூழலில் ஒரு நிலத்தின் தன்மையைப்பற்றி அறிவியல் அறிஞர்கள் அதில் வளரும் செடி கொடிகளைக் கொண்டு கணித்து விடுவர். ஆனால் தொழில்களில் உழவே முதன்மையானது என்பதை வள்ளுவர் மிக அழகாக சித்தரித்துள்ளார்.

உழவரின் செயல்பாடு குறைந்தால் உணவு என்பதே கிடைக்காமல் போய்விடும். எப்படி உழவு செய்து நிலத்தின் மாண்பை உயர்த்த வேண்டுமென எடுத்துரைத்துள்ளார். உழுத புழுதினாள் உலர காய வைத்து அதில் எருயிட்டு உழுத பின்பு நீர் பாய்ச்சி, பின்னர் களைகளை நீக்கி பயிரைக் காக்க வேண்டும் என்று கூறியுள்ளார். அத்தகைய முறைகளைக் கையாண்டு செய்த உழவு மிகவும் அதிகமான விளைச்சலை தந்தது. மக்கள் எந்த அளவு அவதிப்படாமல் வாழ்ந்தனர் என்பதும், இப்போது தொழிற்சாலைகளில் உள்ள கழிவுகளை நிலத்தின் மீது போடுவதால் விளைச்சல் குறைகின்றது மனிதர்களுக்கு நோய்களை ஏற்படுத்தி ஒவ்வாமையை உண்டு செய்கின்றது.

ஆகையால் வள்ளுவர் உழவர்களைப் போல நாமும் நிலத்தினைப் பேணிக்காத்தல் வேண்டும். நிலத்திற்கு மனிதர்கள் ஆகிய நாம் முக்கியத்துவம் கொடுத்தல் வேண்டும். ஆனால் இன்றைக்கு கிராமங்களில் உள்ள நிலங்கள் ரியல் எஸ்டேட் காரர்களுக்கு தங்களது நிலங்களை விற்றுவிட்டு கணிசமான தொகையுடன் வேறு தொழில்களில் முதலீடு செய்திட நகர்ப்புறங்களை நோக்கி பெருமளவு மக்கள் இடம் பெயர்கின்றனர். இதை தவிர்க்க வேண்டும் எனில் விவசாயத்தை அடிப்படையாகக் கொண்ட தொழிலை கிராமங்களில் தொடங்க வேண்டும் வேலைவாய்ப்பு இன்றி இருக்கும் விவசாயிகள் விவசாயக் கூலிகளைக் கொண்டே தொழில்கள் தொடங்க வேண்டும். இன்றைய விவசாயிகள் நிலை மிகவும் மோசமாக உள்ளது. மத்திய அரசு கடந்த 30 ஆண்டுகளில் 70000 கோடி மட்டுமே விவசாய கடன் தள்ளுபடி செய்துள்ளது. ஆனால் தொழில் நிறுவனங்களுக்கு மட்டும் ஐந்து ஆண்டுகளில் மட்டும் அரசு



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
28	Ms. M. Kavitha	E- Waste Management Challenges and Strategies	21.10.2022	ISBN-13: 978-93-5577-299-2



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## E-WASTE MANAGEMENT CHALLENGES AND STRATEGIES

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### ABSTRACT

The current practices of e-waste management in India suffer from a number of drawbacks like the difficulty in inventorisation, unhealthy conditions of informal recycling, inadequate legislation, poor awareness and reluctance on part of the corporate to address the critical issues. The consequences are that (i) toxic materials enter the waste stream with no special precautions to avoid the known adverse effects on the environment and human health and (ii) resources are wasted when economically valuable materials are dumped or unhealthy conditions are developed during the informal recycling. The paper highlights the associated issues and strategies to address this emerging problem, in the light of initiatives in India. The paper presents a waste management system with shared responsibility for the collection and recycling of electronic wastes amongst the manufacturers / assemblers, importers, recyclers, regulatory bodies and the consumers.

### INTRODUCTION

The electronic waste also known as e-waste is a dangerous waste consisting of unwanted electronic and electrical equipment. Developing countries are facing the problem of e-waste management enormously which is either internally generated or are imported from other countries. India is also facing the problem of e-waste management due to lack of awareness among people about dangerous effect of e- waste on environment and human being through informal e- waste collection and absence of implementation of rules for the process of e-waste in environment friendly manner. The paper discusses the condition of e-waste in India, the problem associated with e-waste, the method used for used for e-waste management and focuses light on the legislation work done regarding e-waste in India. As per the study it has been found that there is an instant need to address the issue related to e- waste in India in order to avoid its ill effect in future. Keyword- E- waste, formal and informal sector, hazardous, WEEE.

#### What is E-waste?

E-waste poses the huge risk to humans, animals, and the environment. E-waste typically consists of plastics, metals, cathode ray tubes (CRTs), printed cables, circuit boards, and so on. The valuable metals like copper, silver, gold, and platinum can be reused from e-wastes once they are scientifically processed. The presence of toxic substances like liquid crystal, lithium, mercury, nickel, selenium, polychlorinated biphenyls (PCBs), arsenic, barium, brominated flame retardants, cadmium, chrome, cobalt, copper, and lead makes it very hazardous, in case e-waste get dismantled and processed in a crude manner with the rudimentary techniques.

#### Objectives of E-Waste Management:

- Some of the e-waste consists of valuable covering or material inside which can be reused or recycled;
- EPR or Extended Producer Responsibility is one of the concepts introduced in e-waste management;
- One of the major objectives of e-waste management is to reduce, reuse & recycle;
- In this policy, the producers are given a vital responsibility for the disposal and treatment of the products;
- Whereas some of the electronic waste may contain hazardous chemical materials which should be disposed of carefully without causing harm to nature.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
29	Dr. I Malini	Renewable Energy for Sustainable Development in India : Current Status and Challenges	21.10.2022	ISBN-13: 978-93-5577-299-2



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# RENEWABLE ENERGY FOR SUSTAINABLE DEVELOPMENT IN INDIA : CURRENT STATUS AND CHALLENGES

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## ABSTRACT

According to the World Resource Institute Report 2017 [4, 5], India is responsible for nearly 6.65% of total global carbon emissions, ranked fourth next to China (26.83%), the USA (14.36%), and the EU (9.66%). Climate change might also change the ecological balance in the world. Hence, strategies to promote investment opportunities in the renewable energy sector along with jobs for the unskilled workers, technicians, and contractors are discussed. This article also manifests technological and financial initiatives, policy and regulatory framework, as well as training and educational initiatives launched by the government for the growth and development of renewable energy sources. The main focus of this is on estimation of global energy consumption, projected energy consumption in India and Gross installed capacity of renewable energy in India. The increase in India's energy consumption will push the country's share of global energy demand to 11% by 2040 from 5% in 2016. Emerging economies such as China, India, or Brazil have experienced a process of rapid industrialization, have increased their share in the global economy, and are exporting enormous volumes of manufactured products to developed countries. This shift of economic activities among nations has also had consequences concerning the country's energy use. To accomplish a reliable system, it is strongly suggested that renewables must be used in a hybrid configuration of two or more resources along with conventional source and storage devices. Regulatory authorities should formulate the necessary standards and regulations for hybrid systems.

**Key Words:** Renewable energy, Sustainable development, Energy, Pollution, Government

## INTRODUCTION

The sources of electricity production such as coal, oil, and natural gas have contributed to one-third of global greenhouse gas emissions. It is essential to raise the standard of living by providing cleaner and more reliable electricity. India has an increasing energy demand to fulfill the economic development plans that are being implemented. The provision of increasing quantity of energy is a vital pre-requisite for the economic growth of a country. The National Electricity Plan [NEP] framed by the Ministry of Power (MoP) has developed a 10-year detailed action plan with the objective to provide electricity across the country, and has prepared a further plan to ensure that power is supplied to the citizens efficiently and at a reasonable cost. According to the World Resource Institute Report 2017, India is responsible for nearly 6.65% of total global carbon emissions, ranked fourth next to China (26.83%), the USA (14.36%), and the EU (9.66%). Climate change might also change the ecological balance in the world. Intended Nationally Determined Contributions (INDCs) have been submitted to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement. The latter has hoped to achieve the goal of limiting the rise in global temperature to well below 2 °C.

## Statement of the Problem

A mixture of push policies and pull mechanisms, accompanied by particular strategies should promote the development of renewable energy technologies. Advancement in technology, proper regulatory policies, tax deduction, and attempts in efficiency enhancement due to research and development (R&D) are some of the pathways to conservation of energy and environment that should guarantee that renewable resource bases are used in a cost effective and quick manner. Hence, strategies to promote investment opportunities in the renewable energy sector along with jobs for the unskilled workers, technicians, and contractors are discussed.



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
30	Dr. A Aysha	Environmental and Health Impacts of Air Pollution	21.10.2022	ISBN-13: 978-93-5577-299-2



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## ENVIRONMENTAL AND HEALTH IMPACTS OF AIR POLLUTION

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### ABSTRACT

One of our era's greatest scourges is air pollution, on account not only of its impact on climate change but also its impact on public and individual health due to increasing morbidity and mortality. There are many pollutants that are major factors in disease in humans. Among them, Particulate Matter (PM), particles of variable but very small diameter, penetrate the respiratory system via inhalation, causing respiratory and cardiovascular diseases, reproductive and central nervous system dysfunctions, and cancer. Despite the fact that ozone in the stratosphere plays a protective role against ultraviolet irradiation, it is harmful when in high concentration at ground level, also affecting the respiratory and cardiovascular system. Furthermore, nitrogen oxide, sulfur dioxide, Volatile Organic Compounds (VOCs), dioxins, and polycyclic aromatic hydrocarbons (PAHs) are all considered air pollutants that are harmful to humans. Carbon monoxide can even provoke direct poisoning when breathed in at high levels. Heavy metals such as lead, when absorbed into the human body, can lead to direct poisoning or chronic intoxication, depending on exposure. Diseases occurring from the aforementioned substances include principally respiratory problems such as Chronic Obstructive Pulmonary Disease (COPD), asthma, bronchiolitis, and also lung cancer, cardiovascular events, central nervous system dysfunctions, and cutaneous diseases. Last but not least, climate change resulting from environmental pollution affects the geographical distribution of many infectious diseases, as do natural disasters. The only way to tackle this problem is through public awareness coupled with a multidisciplinary approach by scientific experts; national and international organizations must address the emergence of this threat and propose sustainable solutions.

**Keywords:** air pollution, environment, health, public health, gas emission, policy

### INTRODUCTION

Pollution is defined as the introduction into the environment of substances harmful to humans and other living organisms. Pollutants are harmful solids, liquids, or gases produced in higher than usual concentrations that reduce the quality of our environment.

Human activities have an adverse effect on the environment by polluting the water we drink, the air we breathe, and the soil in which plants grow. Although the industrial revolution was a great success in terms of technology, society, and the provision of multiple services, it also introduced the production of huge quantities of pollutants emitted into the air that are harmful to human health. Without any doubt, the global environmental pollution is considered an international public health issue with multiple facets. Social, economic, and legislative concerns and lifestyle habits are related to this major problem. Clearly, urbanization and industrialization are reaching unprecedented and upsetting proportions worldwide in our era. Anthropogenic air pollution is one of the biggest public health hazards worldwide, given that it accounts for about 9 million deaths per year.

Pollutants harm our environment either by increasing levels above normal or by introducing harmful toxic substances. Primary pollutants are directly produced from the above sources, and secondary pollutants are emitted as by-products of the primary ones. Pollutants can be biodegradable or non-biodegradable and of natural origin or anthropogenic, as stated previously. Moreover, their origin can be a unique source (point-source) or dispersed sources.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
31	Dr. P. Shanthi	Electronic Waste : A Growing Concern in Today's Environment	21.10.2022	ISBN-13: 978-93-5577-299-2



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# ELECTRONIC WASTE : A GROWING CONCERN IN TODAY'S ENVIRONMENT

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## ABSTRACT

Over the recent past, the global market of electrical and electronic equipment (EEE) has grown exponentially, while the lifespan of these products has become increasingly shorter. More of these products are ending up in rubbish dumps and recycling centers, posing a new challenge to policy makers. The purpose of this paper is to provide a review of the e-Waste problem and to put forward an estimation technique to calculate the growth of e-Waste.

## Introduction

Over the past two decades, the global market of electrical and electronic equipment (EEE) continues to grow exponentially, while the lifespan of those products becomes shorter and shorter. Therefore, business as well as waste management officials are facing a new challenge, and e-Waste or waste electrical and electronic equipment (WEEE) is receiving considerable amount of attention from policy makers. Predictably, the number of electrical devices will continue to increase on the global scale, and microprocessors will be used in ever-increasing numbers in daily objects.

## **Definition Of E-Waste**

As a popular and informal term, electronic waste (e-Waste) is loosely refers to any white goods, consumer and business electronics, and information technology hardware that is in the end of its useful life. Specifically, Puckett et al. define e-waste as "a broad and growing range of electronic devices ranging from large household devices such as refrigerators, air conditions, cell phones, personal stereos, and consumer electronics to computers which have been discarded by their users". According to Sinha-Khetriwal [14], "e-Waste can be classified as any electrical powered appliance that has reached its end-of-life".

## **Objectives of E-Waste Management**

- The objective is the disposal of unwanted electronic gadgets;
- Compared to the past days the e-waste products or items have increased abundantly nowadays;
- The major everyday use electronic products are computers, ACs, mobile phones, television, fax machines, etc.;
- A proper methodology should be followed to control the pollution caused by e-waste products.

## **Global Significance of E-Waste**

E-Waste has raised concerns because many components in these products are toxic and do not biodegrade easily if at all. Based on these concerns, many European countries banned e-Waste from landfills in the 1990s. Ming Hong et al. found alarming levels of dioxin compounds, linked to cancer, developmental defects, and other health problems; in samples of breast milk, placenta, and hair, these compounds are linked to improper disposal of electronic products. Furthermore, surveys have indicated that much exported US e-Waste is disposed of unsafely in developing countries, leaving an environmental and health problem in these regions.

## **Current Challenges for E-Waste Elimination**

In many cases, the cost of recycling e-Waste exceeds the revenue recovered from materials especially in countries with strict environment regulations. Therefore, e-Waste mostly ends up dumped in countries where



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
32	Mrs. K Muthu Lakshmi	Health Impact of Environmental Pollution	21.10.2022	ISBN-13: 978-93-5577-299-2
33	Mrs. M. S Haseena Begam	Health Impact of Environmental Pollution	21.10.2022	ISBN-13: 978-93-5577-299-2



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## HEALTH IMPACT OF ENVIRONMENTAL POLLUTION

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### ABSTRACT

Air pollution is becoming a major health problem that affects millions of people worldwide. In support of this observation, the World Health Organization estimates that every year, 2.4 million people die because of the effects of air pollution on health. Air pollution threatens the health of humans and other living beings in our planet. It creates smog and acid rain, causes cancer and respiratory diseases, reduces the ozone layer atmosphere and contributes to global warming. In this industrial age, air pollution cannot be eliminated completely, but steps can be taken to reduce it.

**Keywords:** air pollution, health impact, prevention, respiratory disease

### Introduction

Environmental health examines the interaction between the environment and our health. Global development, continuing industrialization and rapid increase in world population, during the 20th century, has been a great contributor to several global issues; environmental changes being one of them. These environmental changes include also major global issues such as climate change, ozone depletion, changes in ecosystems, decreased biodiversity, depletion of natural resources and land degradation. As the population grows and consumption increases, these changes continue to threaten the health and wellbeing of humankind.

As human activities have a direct impact on the environment, leading to several serious problems such as pollution. The environmental pollution is an issue that also causes a negative impact on human health.

### HEALTH IMPACTS OF ENVIRONMENTAL POLLUTION

Environmental issues is the most significant challenges that the humankind is facing with in today's world. Pollution is broadcasted everywhere, you hear it constantly, but what is environmental pollution? There are several types of environmental pollution that surrounds the environment: air, water, land, noise, radioactive, thermal and light pollution. While some may have a trivial impact there are others that may have a severe effect on population.

To humans and any other living organisms such as plants, animals, etc., pollution of any kind is harmful. For years, researchers have focused and studied the influence of the pollution on human health. Many results of the studies taken from the highly polluted sites around the world indicate the possible health impacts of high levels of environmental pollution. The correlation between these two is inevitable. Especially air, water and land pollution, these are the major environmental hazards that pose great risks to living organisms, in particular, human health.

### POLLUTION

Pollution is the introduction of contaminants into natural environment that cause adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat or light, air.

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34	Mrs. P. Rama Lakshmi	A Review on Thoothukudi region Pollution caused by Industries	21.10.2022	ISBN-13: 978-93-5577-299-2



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## A REVIEW ON THOOTHUKUDI REGION POLLUTION CAUSED BY INDUSTRIES

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### ABSTRACT

Though several issues were raised and demands placed by fishermen in Thoothukudi even meetings convened by the fisheries department to redress their grievances, and politician in charge they were not responding but people suffered because of the industries and factories in an around Thoothukudi. Especially fisherman in Thoothukudi suffered because of the pollution caused by industries and it reflected in ocean. many endangers species were affected because of the high pollution. people facing so many health issues for eating contaminates water sea food and industrial pollution. The paper focuses the impact of thermal emission Thoothukudi coast was being treated as a dumping ground and all industrial effluents were let into sea. The sought steps to control pollution after highlighting these factors and also to conduct a comprehensive environmental impact assessment study by Tamil Nadu Pollution Control Board officials, issues concerning environmental protection put forth to an environmentalist, hogged the attention. but remedies we ourselves should follow for the sake of people.

The people in Thoothukudi reported out that the industries did not have authorization to dispose of hazardous waste between 2013 and 2018. the industries reportedly contended that they did not provide the authorization, despite the factories following it up through reminders, and added that it was following earlier norms. The industry allegedly handed the waste to other private parties who were not authorized to handle such waste. The interveners environmentalist also said that the company dumped other waste like copper slag and gypsum at a number of locations in the district, which caused problems like flooding. The company, however, insisted that the slag was inert and was not the responsibility of the generator, once disposed through other parties. The air quality around the Sterlite plant had improved since its closure. However, some argue that part of the data gathering was not scrupulous. For instance, the level of sulphur dioxide on September 22 last year was compared with that of the levels on October 12 and 13. coastal water temperature reached eight degrees beyond its normal level after the effluent from the thermal stations were deposited in sea. On a daily average, 20, 096 tonnes of fly ash, 2,960 tonnes of noxious sulphur and 612 tonnes of nitrogen were being discharged.



fig -1 Thoothukudi geographical image

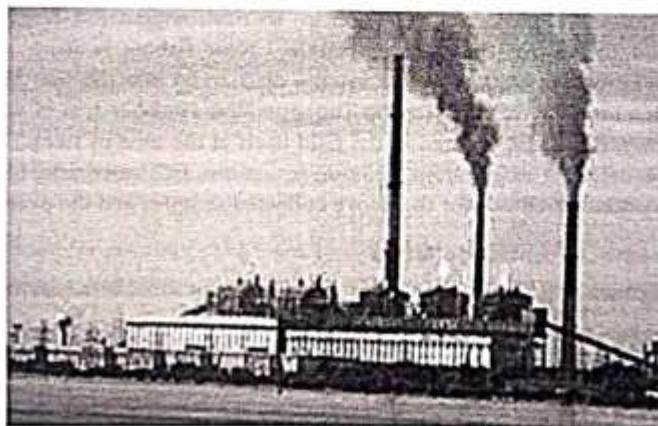


fig - 2 air pollution in Thoothukudi



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
35	Mrs. M Muthu Mohudhoom Fathima	அரபுத்தமிழ் : தேற்றம் வளர்ச்சி வீழ்ச்சி	Mar-23	ISSN (P) :0973-0303, ISSN (O) :2582-5941

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# JARJ

## Jamal Academic Research Journal : an Interdisciplinary



# அரபுத்தமிழ் இலக்கியங்கள்

## Arabu Tamil Literature

பதிப்பாசிரியர்கள்

முனைவர் **அ.சையத் ஜாகீர் ஹசன்**  
 ஹாஜி வாவு **S.செய்யிது அப்துல் ரஹ்மான்**  
 முனைவர் **M.அப்துல் காதர்**  
 முனைவர் **S.சாமுவேல் ஆசீர் ராஜ்**  
 திருமித **கா.முகமது இஸ்மாயில்**  
 முனைவர் **மு.நசீர் அகமது**  
 முனைவர் **சே.சையது அப்தாகீர்**



**வெளியீடு :**  
**ஜமால் முகமது கல்லூரி (தன்னாட்சி)**  
 தேசியத் தர மதிப்பீட்டு மூன்றாம் சுற்றில் 'A' தரச்சான்று பெற்றது  
 (பாரதிதாசன் பல்கலைக்கழக இணைவு பெற்றது)  
 திருச்சிராப்பள்ளி - 620 020, தமிழ்நாடு. இந்தியா

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அரபுத்தமிழ் தோற்றமும், வளர்ச்சியும்  
Origin and Development of Arabic Tamil

திருமதி சே.அ.கா.முத்து மொகுதாம் பாத்திமா  
ஆலிமா முஅஸ்க்கரிய்யா., அப்சலுல் உலமா., எம்.ஏ., எம்.ஏ., எம்.ஃபில்.,  
அரபுத் துறைத்தலைவர்,  
வாவு வஜீஹா வனிதையர் கலை மற்றும் அறிவியல் கல்லூரி  
காயல்பட்டணம்

**Mrs. S.A.K. Muthu Mohudoom Fathima**  
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**ஆய்வுச் சுருக்கம்**

மொழி என்பது எண்ணங்களை எடுத்துரைக்கும் ஒரு கருவி. அம்மொழி தனித்துத் தோன்றி செல்வாக்கு பெற்றமையும் உண்டு; இரண்டு மொழிகள் இணைந்த கூட்டுமொழியாக இருந்து மொழியினத்தில் பெருமை பெற்றதும் உண்டு. அவ்வகையில் கடல் வழியாக இந்தியா வந்து தென்தமிழகத்தில் குடியேறிய இசுலாமியர்கள் தமிழகத்தில் காலான்றிய இடங்களில் எல்லாம் பண்பாலும், கலையாலும் தமிழுடன் இரண்டறக் கலந்து தன்தேச அரபுமொழியையும் வாழ்விடத்தின் தமிழ்மொழியையும் இணைத்து அரபுத்தமிழ் என்னும் கூட்டுமொழியை உருவாக்கினர். அந்த அரபுத் தமிழ் மொழியின் தோற்றம் பற்றிய செய்திகளையும் அம்மொழி பரவி இருந்த இடங்கள் பற்றியும் அரபுத் தமிழ் மொழியின் அமைப்பு, இலக்கண அமைப்பு போன்றவற்றையும் இந்த ஆய்வுக் கட்டுரையும் தொகுத்துரைக்கின்றது. அதோடு அரபுத் தமிழ் மொழியில் படைக்கப்பட்ட பல்துறை நூல்கள் பற்றிய சில செய்திகள், அரபுத் தமிழ் செழித்து வளர்ந்த காயல்பட்டணத்தின் வரலாறு அரபுத் தமிழில் அமைந்துள்ள விதம், குர்ஆனுக்கு அரபுத் தமிழில் விளக்கவுரை எழுதி பெருமக்கள், இவை போன்ற தகவல்களையும் இக்கட்டுரை தருகிறது. அரபுத் தமிழின் வீழ்ச்சி, அதை மீட்டெடுக்க செய்யப்படும் சில முயற்சிகள் இவற்றையும் இங்கு பதிவு செய்யப்பட்டுள்ளது.


Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
36	Dr. L. Noor Asma	Why Arabic Tamil has become an unperturbed language in recent days	Mar-23	ISSN (P) :0973-0303, ISSN (O) :2582-5941

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## Arabu Tamil Literature

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 திருமதி **கா.முகமது இஸ்மாயில்**  
 முனைவர் **மு.நசீர் அகமது**  
 முனைவர் **சே.சையது அப்தாகீர்**



**வெளியீடு :**  
**ஜமால் முகமது கல்லூரி (தன்னாட்சி)**  
 தேசியத் தர மதிப்பீட்டு மூன்றாம் சுற்றில் 'A' தரச்சான்று பெற்றது  
 (பாரதிதாசன் பல்கலைக்கழக இணைவு பெற்றது)  
 திருச்சிராப்பள்ளி - 620 020, தமிழ்நாடு. இந்தியா



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## WHY ARABIC - TAMIL HAS BECOME AN UNPERTURBED LANGUAGE IN RECENT DAYS

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### **Abstract**

*Arabic-Tamil (Arwi) language originated in 8<sup>th</sup> century and flourished during the medieval ages. But nowadays its usage has been declined. It is necessary for us to understand the historical factors underlying the origin of Arabic Tamil<sup>1</sup>. When Islam spread among the Tamil-speaking Muslims in South India, those who accepted Islam continued to speak the Tamil language. However, due to the tight connection between Islam and Arabic, knowledge of Arabic was necessary to fulfill their daily religious duties, so they must learn to read Arabic. In recent days the usage Arabic Tamil language has declined rapidly. In this paper, the origin and the usage of Arabic Tamil among Tamil speaking Muslims has been focused. Also this study attempts to analyse why Arabic Tamil has become an unperturbed language in recent days.*

**Keywords:** Arabic-Tamil, language, origin, Quran

### **Introduction:**

Arabu-Tamil (Arwi) language originated in 8th century and flourished during the medieval ages. Arwi (Arabic: الأروى السنن, Alisan al-Awiyy) is a dialect of the Tamil language written in an extended Arabic script, with extensive lexical and phonetic influences from Arabic. It is used by Tamil Muslims in the Indian state of Tamil Nadu and in Sri Lanka. But nowadays its usage has been declined. It is necessary for us to understand the historical factors underlying the origin of Arabic Tamil<sup>1</sup>. When Islam spread among the Tamil-speaking Muslims in South India, those who accepted Islam continued to speak the Tamil language. However, due to the tight connection between Islam and Arabic, knowledge of Arabic was necessary to fulfill their daily religious duties, so they must learn to read Arabic.

In recent days the usage Arabic Tamil language has declined rapidly. In this paper, the origin and the usage of Arabic Tamil among Tamil speaking Muslims has been focused. Also this study attempts to analyse why Arabic Tamil has become an unperturbed language in recent days.

### **Arabic and Tamil**

Arabic language is a wonderful language that created literary justice. It is the language of heaven. The fact that Arabic has chosen as the language for the Holy Quran is an example of its excellence and the structure. Grammatical form and literary elegance of this language cannot be found in other languages. Arabic is the official language of about 25 countries and it is the mother tongue of 19 crore people. Nearly 25 million people can speak and write in Arabic. Arabic is one of the official languages of the United Nations, and is the second most used language in world trade after Chinese.



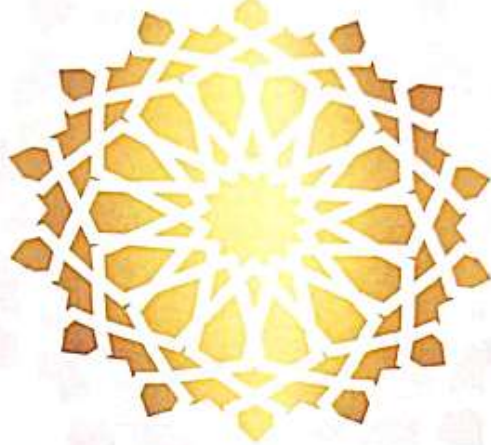
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38	K. Maheswari	காயல்பட்டினம் காமில் ஒலி ஸாம் 'ஹாபுத்தின் நாயகம் (ஹஹ) அவர்களின் சின்ன ஹத்தி மாணிக்க மாலை	Mar-23	ISSN (P) :0973-0303, ISSN (O) :2582-5941

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# அரபுத்தமிழ் இலக்கியங்கள்

## Arabu Tamil Literature

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**Kayalpatnam Kamil Oli Sam of Shihabuddin Nayagam (Rah) of Chinna Hadeeth  
Manika Malai**

காயல்பட்டணம் காமில் ஒலி ஸாம் ஷிஹாபுத்தீன் நாயகம் (ரஹ்) அவர்களின் சின்ன ஹதீது  
மானிக்க மாலை

**Dr. Mrs. V. Rama, M.Sc., M.Phil., Ph.D.,**

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Wavoo Wajeeha Women's College of Arts and Science  
Kayalpatnam

**Abstract**

Arabic-Tamil related fundamental Islamic religious concepts should be inculcated in Tamil families. That is, in the early period of the 13th and 14th century, in families in Tamil Nadu, men and women were mostly illiterate. They had acquired the knowledge to read the Arabic language through the Holy Quran. Muslim Tamil poets created many literatures based on it. Among them is the Chinna Hadeeth of Kamil Oli Sam Shihabuddin Nayagam (Rah) which is the Manika Malai. His book was published in Arabic Tamil first edition 01.02.1385, reprint 1947, 02.06.1964. Chinna Hadeeth Manika Malai is the content information.

1. A Kalima that ennobles God's worship
2. Five hours of prayer
3. fasting
4. Zakat
5. Hajj is a pilgrimage

It is the message of this book that anyone who fully reads and acts on these concepts contained in the Arabic Tamil book is sure to be a winner.

**ஆய்வுச்சுருக்கம்**

அரபு-தமிழ் அடிப்படையான இஸ்லாமிய மதக் கருத்துக்கள் தமிழ்க் குடும்பங்களில் புகுத்தப்பட வேண்டும். அதாவது, 13 மற்றும் 14 ஆம் நூற்றாண்டின் தொடக்க காலத்தில், தமிழகத்தில் உள்ள குடும்பங்களில், ஆண்களும், பெண்களும் அதிகம் படிக்காதவர்களாகவே இருந்தனர். திருக்குர்ஆன் மூலம் அரபு மொழியை படிக்கும் அறிவைப் பெற்றிருந்தார்கள். முஸ்லிம் தமிழ்க் கவிஞர்கள் அதன் அடிப்படையில் பல இலக்கியங்களைப் படைத்தனர். அவற்றில் கமில் ஒலி சம் ஷிஹாபுத்தீன் நாயகம் (ரஹ்) அவர்களின் சின்ன ஹதீஸ் மானிக்க மாலை ஆகும்.

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# A Spectral-Spatial Classification of Hyperspectral Image Using Bi-Lstm-Mrf

<sup>\*1</sup> M. Preethi, <sup>2</sup>K.Muthulakshmi, <sup>3</sup>M.S.Hazeena Begam

<sup>1,2,3</sup>WavooWajeeha Women's College, Kayalaptnam

Affiliated to Manonmaniam Sundaranar University, Tirunelveli

## Abstract

In this paper, we proposed a novel Bi-LSTM-MRF (Bi-Dimensional Long Short Term Memory and Markov Random Field) based approach for hyper-spectral image (HSI) classification. In recent years, HSI is the most significant and predominant technology in classification. HIS is more complicated due to the presence of large number of spectral bands. To solve the problem, this work analyzes a Bi-LSTM for spectral-spatial method in HSI data. There are two steps for the HSI classification in the proposed techniques. In the first framework, the spectral-spatial features are feed into Bi-LSTM network. This network processes the features in two ways, one from past to future and other from future to past which contain two hidden layers. Using Bi-LSTM, the activation function is used to predict the spectral-spatial features. In the second framework, the obtained features are additionally smoothed by MRF effectively. The proposed Bi-LSTM-MRF produces the good classification accuracy compared to Bi-LSTM network. For the experimental result, the Indian pines data set and university data set are utilized. Finally, the proposed Bi-LSTM-MRF approach provide the good classification accuracy



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12	திருப்பாவை கூறும் ஆன்மீகமும், அறிவியலும் சு. தெய்வ ஜெயஜோதி & முனைவர் இரா. திலகா	57	26	திருக்குறள் கூறும் அறிவியல் உண்மைகள் உ. அஸிபா பேகம்	
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23	மனவளக்கலை மன்றத்தின் பணியும் பயனும் முனைவர் பா. சிங்காரவேலன்	109	37	பெண்மொழி மு. பேச்சியம்மாள்	172
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## திருவாசகம் உணர்த்தும் அறிவியல்

முனைவர் அ. கல்பனாதேவி

தமிழ்த்துறை உதவிப்பொருத்திய  
வாவு வஜ்ஜிண வந்தைப்  
கலை மற்றும் அறிவியல் கல்லூரி, காயல்பட்டணம்

ஆய்வுச் சுருக்கம்  
பக்தி இலக்கிய உலகில் அனைவராலும் போற்றத்தக்க திருவாசகம் பல அறிவியல் கருத்துகளை  
உள்ளடக்கியதாக அமைந்துள்ளது மாணிக்கவாசகர் சிவபெருமானிடம் அணுவாக, புல்லாக, மரங்களாக, கருத்துகளை  
விவரஞ் சொல்லி மக்களாக என எல்லாப் பிறப்புகளும் பிறந்து ஓய்ந்தேன் என்று கூறுவதிலிருந்து பல்வகை  
உயிணங்களின் தோற்றம் பற்றிய கருத்துகள் வெளிப்படுகிறது. இறைவன் ஐம்பூதங்களின் வழவழமாக இருப்பதை  
என்ற எடுத்துரைக்கப் பட்டுள்ளது. உலகம் உருண்ட என்ற கருத்தின் மூலம் தெளிந்த வாழ்வை அறிவு  
வெளிப்படுகிறது. அணுச்சேர்ப்புக் கொள்கை, அணுப்பிரிப்புக் கொள்கை பற்றிய கருத்துகள் எடுத்துக் கூறப்பட்டுள்ளது.  
உடலில் கருக்கொண்ட உயிரானது ஒவ்வொரு மாதமும் எவ்வகை வளர்ச்சி அடைந்து பல இன்னல்களுக்கிடையே  
பூமியில் எவ்வாறு பிறப்பெடுக்கிறது என்பதை அழகாக எடுத்தியம்புகிறது. காரகாலத்தில் மெய்யானது கடல் தீர  
ஆவியாகக் கொண்டு கருக்கொண்டு எவ்வாறு மழைநீராக பூமியில் பொழிகிறது என்ற கருத்தை விவரிக்கிறது.  
இதனை இக்கட்டுரையின் ஆய்வுச் சுருக்கமாகும்.

### முன்னுரை

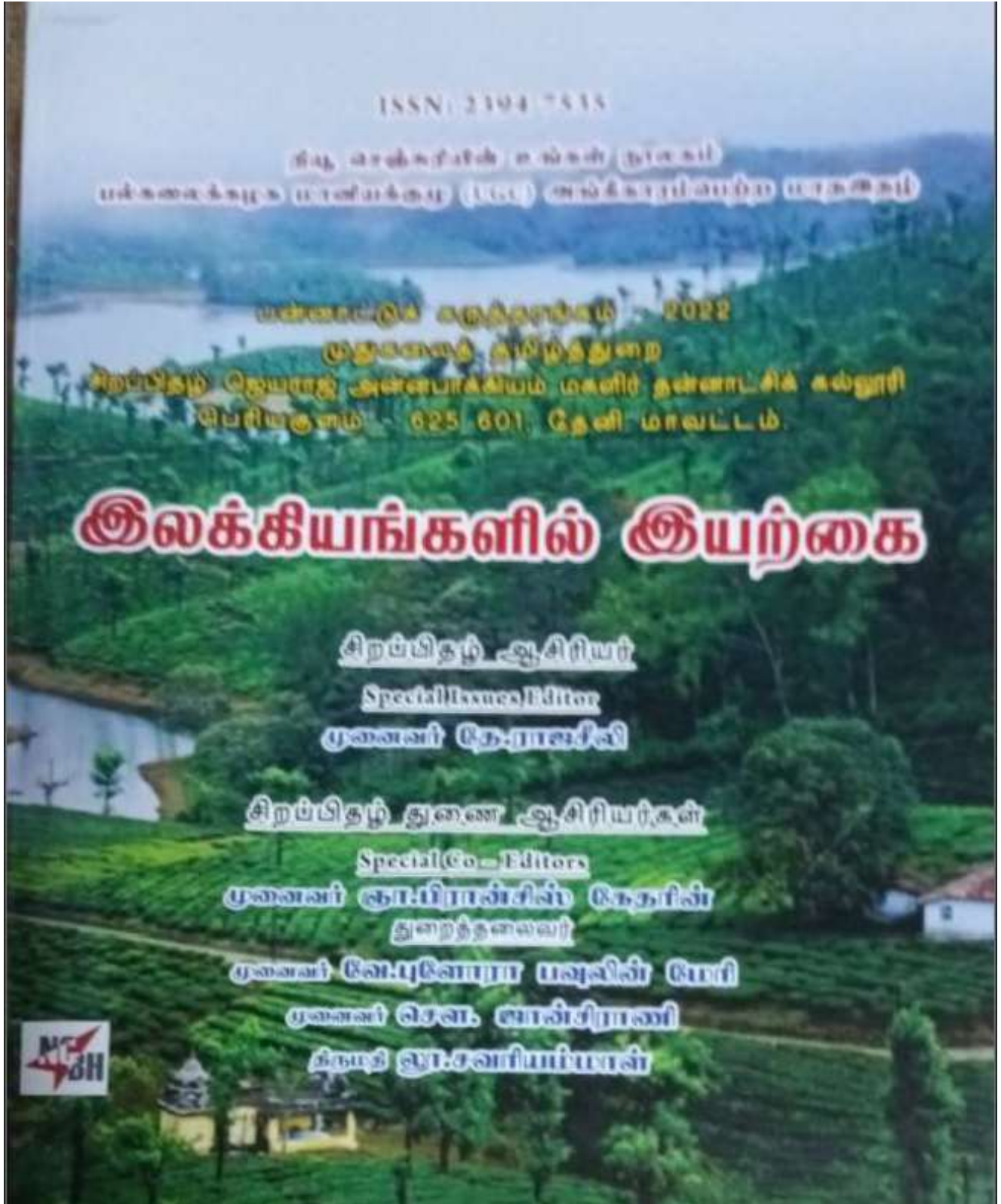
மானிடச் சிந்தைக்கு எட்டாத விந்தைகளை  
வியந்து அவை மனித சக்திக்கு அப்பாற்பட்டவை  
என்று அகற்றப் புரக்கவிடாமல் உண்மையை  
உணரும் விதம் உரைப்பதே அறிவியல்.  
இத்துறை பல பிரிவுகளை உள்ளடக்கியதாக  
இருப்பினும் இவற்றைத் தன்னுள் அடக்கி  
மிளிரச் செய்வது தமிழ் இலக்கியமே!.  
அறிவியல் சிந்தனைகள் என்பது பல்லாயிரம்  
ஆண்டுகளுக்கு முன்பே நம் முன்னோர்களால்  
கையாளப்பட்டு வந்துள்ளது பல ஆண்டுகளுக்கு  
முன் இருந்த தமிழ் இலக்கியங்களை  
அருளிச் செய்த புலவர் பெருமக்களும்  
மன்னர்களும் சித்தர்களும் ஞானிகளும்  
அறிவியல் கருத்துகளை தம் தம்  
இலக்கியங்களில் பதிவு செய்துள்ளனர்.  
அவ்வகையில் மாணிக்கவாசகர் எழுதிய  
திருவாசகம் உணர்த்தும் அறிவியல் கருத்துகளை  
எடுத்துரைப்பதாக இக்கட்டுரை அமைகிறது.

### அறிவியலும் திருவாசகமும்

எந்தவொரு கருத்தையும் செய்தியாக மட்டும்  
கருதாது அதனை ஒரு பரிசோதனை மூலம்  
செய்து உணர்த்துவதே அறிவியலாகும்.  
இயற்கையாகவே நாம் செய்யக்கூடிய  
ஒவ்வொரு செயலுக்குப் பின்பும் அறிவியல்  
கூறு இருக்கிறது. அன்றாட வாழ்வில் நாம்  
அருந்துகிற நீ முதலாகப் பயன்படுத்தலாகும்  
பொருட்கள் வரை எல்லாவற்றிலும் அறிவியல்  
சார்ந்த நிகழ்வுகளே இடம் பெறுகின்றன.  
இயற்கை நிகழ்வுகளான மழை, இடி,  
மின்னல் கூட வேதிவினையின் காரணமாக  
நிகழ்கின்றன. எனவே மனிதனையும் அறிவியல்  
கூறுகளையும் பிரிக்க இயலாத நிலையில்  
நாம் வாழ்ந்து கொண்டிருக்கிறோம்.

பக்தி இலக்கியக் காலம் என்னும்  
அளவிற்குப் பரந்து விரிந்து கிடக்கும் பக்தி  
இலக்கியப் பரப்பில் மாணிக்கவாசகரால்  
படைக்கப்பட்ட திருவாசகம் முக்கியத்துவம்  
வாய்ந்ததாகும். படித்தோரைத் தன்பால்  
இழுத்து மனதை உருகச் செய்யும் திருவாசகம்  
தமிழ் மொழியின் இணையற்ற படைப்பாகும்.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
44	பேராசிரியர் வி.செல்வி	முத்துக்குமாரசாமி பிள்ளைத்தமிழில் இயற்கைப்புனைவு	19.12.2022	ISSN 2394-7535





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45	பேராசிரியர்.வி.செல்வி	வளையாபதியில் அறம்	10.03.2023	E-ISSN 2852-1113

வளையாபதியில் அறம்

வி செல்வி

தமிழ்த்துறைத் தலைப்பாசிரியர்,

வாவு வந்திழைவனியைநடாக்கத்தார்,

காயல்பட்டணம்.

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## Virtue in Bangapati

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### ABSTRACT :

The mind is a magical devil and changes itself according to the situation. To control such a mind .The mind canbe controlled only by the grace of god.To obtain the grace of god one must have a pure mind . To obtain pure mind one must do good deeds. Human life is a mixture of pleasure and pain. Laughing in pleasure and crying in pain. Human nature is born and only God can remove suffering, pleasure and pain or constant and alternate status. Human life is changing. Human life is foolish to believe that the world will stand still. The human mind refuses to know that attachment in this world is of no use. Instead arrogance and power flourishes so that man tries to do evil deeds and suffers because of it. The human mind is not matured in the mindset of accepting suffering. He realizes that this pleasure will lead to evil only after he was experienced it. So the thought of doing good deeds only after taining in such suffering arises of that thought. He believes that he can do good deeds only by seeking God. Temphasizes that a man who has done good deeds things to do good deeds to himself and there by attains God by doing good deeds by reading good books and listening to witness. It is virtue to give up evil deeds and do good. This article emphasizes that when we do good to others by giving up last and attachment to wealth. We will get the corresponding benefits not only in this life but also in the hereafter.

### Keywords:

Human mind, good and evil deeds,pleasure,suffer,emphasizes

### ஆய்வுக்கருக்கம்:

மனம்என்னும்மாயப்பிசாகுத்திறலைக்கேற்றவாறு தன்னை மாற்றிக்கொள்ளுகிறது .மனம்என்னும்மாயப்பிசாகுத்திறலைக்கேற்றவாறு தன்னை மாற்றிக்கொள்ளுகிறது . அத்தகைய மனத்தைஅடக்குவதற்குகிறவனின் அருள்வேண்டும்.இதறவனின் அருளைப்பெறுவதற்கு தூய்மையான மனம்வேண்டும் தூய்மையான மனத்தைப்

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46	S. Jesintha Rosalynd	Adorn	27-02-2023	ISBN 979-8889864318

#### ABOUT THE BOOK

This Book shares views on life, happiness and hardwork. It deals with various themes with rhymes and entertainment. Love and Faith hold the central part of the poems which are the most special ingredients that add flavour to life.

#### ABOUT THE AUTHOR

S. Jesintha Rosalynd is an accomplished assistant professor of English at a college. Her debut book MASK created a wonderful impact which motivated her to write her second book. Her poems often draw on themes from her own life. Throughout her career, Rosalynd has demonstrated a passion for teaching and a commitment to excellence in her work. She is highly respected among her colleagues and students, and is known for her engaging teaching style and deep knowledge of the English language.

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# ADORN



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47	S. Jesintha Rosalynd	Mask	30-12-2022	ISBN-979-93-95414-11-1

### About the Book

This book shares view on Life and Society. It is fun filled and entertaining with rhymes. The diction refreshes mind and soul.

### About the Author

S. Jesintha Rosalynd is an accomplished assistant professor of English at a college. She is also a talented poet who is known for her satirical and philosophical works. Her poems often draw on themes from her own life, and she is currently working on her next book. Throughout her career, Rosalynd has demonstrated a passion for teaching and a commitment to excellence in her work. She is highly respected among her colleagues and students, and is known for her engaging teaching style and deep knowledge of the English language.

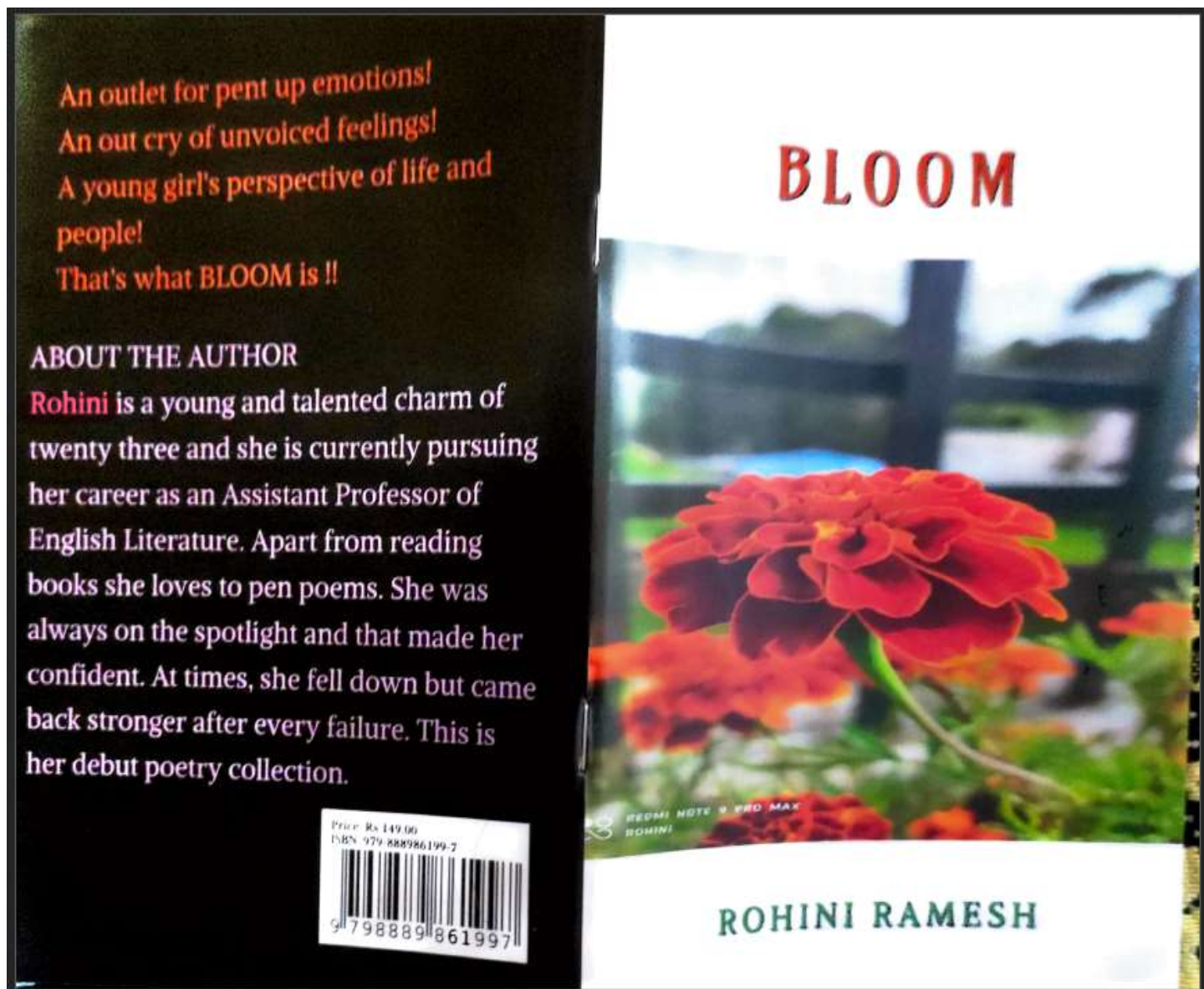
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ISBN 979-888923719-8



# MASK

BY JC

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
48	Rohini Ramesh	Bloom	15-07-1905	ISBN -979-888986199-7





Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
49	G. Ebenezar Helan	Kana Kanum Kalam	2022	ISBN978-93-95414-11-1



19. கு. பாக்கியலெட்சுமி
20. மு. பாரதி
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40. A. B. Hairun Nisha





கனா காணும் காலம்

நிலாவில் உலா வந்த நேரம்  
சிந்தனைகள் சிறகடித்த நேரம்  
கதைமாந்தர் கனவுகளான நேரம்  
உற்சாகம் உறவாடிய நேரம்  
பதுமைகளாய் வலம் வந்த நேரம்  
துன்பங்கள் தூரமான நேரம்  
இன்பங்கள் இயல்பான நேரம்  
முகப்பருக்கள் முன் நின்ற நேரம்  
கல்லூரியில் தடம்பதித்த நேரம்  
தாவணியை தழுவிய நேரம்  
கொஞ்சலும், கெஞ்சலும், வெட்கமும்,  
வீரமும், துள்ளலும் வேகமாய்  
ஊற்றெடுத்தப் பயமறியா எழில்  
பருவமே பதினம் பருவம்.

G. Ebenezer Helan

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
50	T. Bhuvaneshwari	Yendrum Pathinaru	2022	ISBN978-93-95414-11-2





19. கு. பாக்கியலெட்சுமி
20. மு. பாரதி
21. த.புவனேஸ்வரி
22. அ.மகேஸ்வரி
23. செ.மதனபிரியா
24. கி.ஜெ மிராக்லின் பிரைட்டி
25. சு. மீனா
26. க. முருகலெட்சுமிகனகராஜ்
27. பா.வன பிரியா
28. மு. வான்மதி
29. ஜெ.வித்யா
30. இ.ஜீனத் நிஸா
31. மு.ஜெய ஷர்மிலி
32. ஜெனிற்றா மெர்லின்
33. பெ.ஷைனி
34. கு.ஹஸீனா
35. A. Agnes Roshiba
36. V.P.ANUSUYA
37. G. Ebenezar Helan
38. E.Fathima Asmiya
39. J.S.FUSAIHA
40. A. B. Hairun Nisha



### என்றும் பதினாறு

எனக்கு,பொறுப்பு என்று எதுவுமில்ல வீட்டுப் பாடத்தை தவிர,  
அலங்காரமும் பெரிதாக இல்ல  
கோயில் திருவிழாவைத் தவிர,  
பலவீனம் என்று எதுவுமில்லை பரிட்சையைத் தவிர,  
பிரச்சனை என்று எதுவுமில்லை  
சகோதரச் சண்டையைத் தவிர,  
காதல் என்று எதுவுமில்லை  
என் வீட்டு ஆட்டுக்குட்டியைத் தவிர,  
பயம் என்று எதுவுமில்லை  
அப்பாவின் கண்டிப்பைத் தவிர,  
அனுபவம் பெரிதும் இல்லை  
தொண்ணூறுகளில் பிறந்ததைத் தவிர,  
என் கடந்த காலம் எதுவும் இல்லை என்னைத் தவிர,  
ஆசையென்று எதுவுமில்லை என்றும் பதினாறாய்  
இருப்பதைத் தவிர.

முனைவர்.த.புவனேஸ்வரி



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
51	S. Jesintha Rosalynd	Ilamaiyin Sirappu	2022	ISBN978-93-95414-11-3



41. A.Jacith
42. S. Jesintha Rosalynd
43. K.Kathireson
44. Dr.K.Maheswari
45. MALAR
46. S. Monika
47. P.Nachiyar
48. M. M. NACHI NAAZNEEN
49. R.Pavithra
50. RAHMATH AMEENA BEGUM S A
51. S. Ramani
52. A.Rejoice Beula
53. Rebakal Praisyy .A
54. K.Salma beevi
55. N.Sheeba Sharon
56. E.Subha
57. L.Suguna
58. Udhayalakshmi
59. R. VIJAYALAKSHMI





இளமையின் சிறப்பு

கிடைத்தற்கரிய கனி, சுவைக்கும் முன்பே,  
கரையும் பகல் பனி. பயில்வதற்கு ஆயிரம்,  
முயல்வதற்கு ஆயிரம்,  
ஏறும்பு போல் வாழும் நேரம்,  
குடும்பத்தின் அரவணைப்பில்,  
நண்பர்களின் பேச்சிசையில்,  
பறவை போல் ஆனந்தம்.  
வாழ்க்கை வளர, துன்பம் நகர,  
சிந்தனையும் உழைப்பும் கைசேர,  
பெயர் வரலாற்றில் இடம்பெறும்.  
மழை போன்ற வயது, செழிப்பாவதும்,  
வெள்ளமாவதும், நம் செயலில்.  
பஞ்சம் இல்லாச் சிரிப்பு, இவ்வயதின் சிறப்பு,  
ஒழுக்கம் உடையாமல், கவனமாய் நடக்க வேண்டிய பாலம்.

Mrs. செ. ஜெசிந்தா

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
52	Dr. L. R Subha	Nalaiya Ulagam	2022	ISBN978-93-95414-11-4





### எழுத்தாளர்களின் பெயர்

1. மா. இசக்கியம்மாள்
2. செ. இசைமதி
3. க. எஸ்தர்
4. பூ.காயத்ரி
5. செ.கார்த்திகா ஜெயந்தி
6. ஆ. காளி
7. மை.கிறிஸ்டி மெர்சி
8. அ.கோபிஅபிலாஷ்
9. மு.சக்தி
10. மா.சக்திகனி(எ)பிரியங்கா
11. செ.சந்தியா
12. க.சாரதா
13. லெ.ரா.சுபா
14. செல்வ சுபிக் ஷா
15. செல்வரதிகனகராஜ்
16. மு.ச.தௌஃபிகா பீவி
17. மு. பத்மஜோதி
18. ஜா.பனிமய மேரி அமுதா



நாளைய உலகம்

நாளைய உலகம் இளைஞர்களின் கையில்!  
மூன்றாம் கையான நம்பிக்கையை இழக்காதீர்!!  
நாளைய உலகின் சுடரும், வெளிச்சமும் நீயே!  
தோல்வியில் துவண்டு போகாதே!  
சட்டென்று தாக்கி எறிந்திடு.  
தாக்கத்திலும் உன் இலச்சியம் வெல்ல துடித்துக் கொண்டு  
விழி!  
மதி கெடுக்கும் மதுவைத் தவிர்த்திடு!  
பெண்மை போற்றிடு!  
உன் செயல்களையும், எண்ணங்களையும்  
சோதனையில் ஆரம்பித்துச் சாதனையாக்கு!  
கடமைக்குச் செய்யாமல் கடமையைச் செய்  
நாளைய உலக இளைஞர் உன் கையில்.

Dr.L.R Subha



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
53	A Kali	Pathinma Vayathu	2022	ISBN978-93-95414-11-5



### எழுத்தாளர்களின் பெயர்

1. மா. இசக்கியம்மாள்
2. செ. இசைமதி
3. க. எஸ்தர்
4. பூ.காயத்ரி
5. செ.கார்த்திகா ஜெயந்தி
6. ஆ. காளி
7. மை.கிறிஸ்டி மெர்சி
8. அ.கோபிஅபிலாஷ்
9. மு.சக்தி
10. மா.சக்திகனி(எ)பிரியங்கா
11. செ.சந்தியா
12. க.சாரதா
13. லெ.ரா.கபா
14. செல்வ சுபிக் ஷா
15. செல்வரதிகனகராஜ்
16. மு.ச.தௌஃபிகா பீவி
17. மு. பத்மஜோதி
18. ஜா.பனிமய மேரி அமுதா





பதின்ம வயது

ஆற்றல் ஆர்பரிக்கும் அழகிய பருவம்  
நன்மை தீமை பிறித்தறியா பருவம்  
தன்னம்பிக்கை துளிர்க்கும் பருவம்  
தத்துவங்களை வெறுக்கும் பருவம்  
அளவில்லா நண்பர்களைக் கொண்ட பருவம்  
\*நான்\* என்ற எண்ணம் நிறைந்த பருவம்  
வாழ்க்கை கரையில் தவழ்ந்த பருவம்  
கவலை மறந்து பறந்த பருவம்  
இப்பொழுது எண்ணுகின்றேன் இந்த  
இன்ப மயமான நாட்களைத்  
திரும்ப பெற இயலாதென்று .

ஆ . காளி

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
54	Dr. K. Maheshwari	Yethum Ariya vayathu	2022	ISBN978-93-95414-11-6





41. A.Jacith
42. S. Jesintha Rosalynd
43. K.Kathireson
44. Dr.K.Maheswari
45. MALAR
46. S. Monika
47. P.Nachiyar
48. M. M. NACHI NAAZNEEN
49. R.Pavithra
50. RAHMATH AMEENA BEGUM S A
51. S. Ramani
52. A.Rejoice Beula
53. Rebakal Praisys .A
54. K.Salma beevi
55. N.Sheeba Sharon
56. E.Subha
57. L.Suguna
58. Udhayalakshmi
59. R. VIJAYALAKSHMI



ஏதும் அறியா வயது

கல்வி அறியா  
காதல் அறியா  
காமம் அறியா  
உண்மை அறியா  
உழைப்பு அறியா  
இன்பம் அறியா  
துன்பம் அறியா  
சூத்தோர் சொல் அறியா  
அறியுமே! அறியுமே!  
நட்பு மட்டுமே  
பதினம் வயதில்.

Dr.K.Maheswari



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
55	A S. A Rahmath Ameena Begum	En pathinna vayathu	2022	ISBN978-93-95414-11-7



41. A.Jacith
42. S. Jesintha Rosalynd ✓
43. K.Kathireson
44. Dr.K.Maheswari
45. MALAR
46. S. Monika
47. P.Nachiyar
48. M. M. NACHI NAAZNEEN
49. R.Pavithra
50. RAHMATH AMEENA BEGUM S A
51. S. Ramani
52. A.Rejoice Beula
53. Rebakal Praisy .A
54. K.Salma beevi
55. N.Sheeba Sharon
56. E.Subha
57. L.Suguna
58. Udhayalakshmi
59. R. VIJAYALAKSHMI



என் பதின்ம வயது

அப்பாவின் கண்களில் கண்ணீர் நல்கியது  
மகிழ்ச்சியில்  
அம்மாவின் புடவை தாவணியாய் மாறியது.  
நெகிழ்ச்சியில்  
புரியாத புதிராய் நான் மலர்ந்தேன்.  
புத்துணர்ச்சியில்  
மகிழ்ச்சி நெகிழ்ச்சி எல்லாம் முடிவடைந்தது இன்று  
மறுநாள் கிளம்ப சொன்னாள் அம்மா எங்கே என்றேன்.  
வளமையான செங்கல் சூளைக்கு  
அனைத்தும் கனவாய் மறைந்தது. என் பதின்ம வயது!

RAHMATH AMEENA BEGUM. S. A



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
56	M. Christy Mercy	Sigaramey Puriyatha Puthirey	2022	ISBN978-93-95414-11-8



### எழுத்தாளர்களின் பெயர்

1. மா. இசக்கியம்மாள்
2. செ. இசைமதி
3. க. எஸ்தர்
4. பூ.காயத்ரி
5. செ.கார்த்திகா ஜெயந்தி
6. ஆ. காளி
7. **மை.கிறிஸ்டி மெர்சி**
8. அ.கோபிஅபிலாஷ்
9. மு.சக்தி
10. மா.சக்திகனி(எ)பிரியங்கா
11. செ.சந்தியா
12. க.சாரதா
13. லெ.ரா.சுபா
14. செல்வ சுபிக் ஷா
15. செல்வரதிகனகராஜ்
16. மு.ச.தௌஃபிகா பீவி
17. மு. பத்மஜோதி
18. ஜா.பனிமய மேரி அமுதா



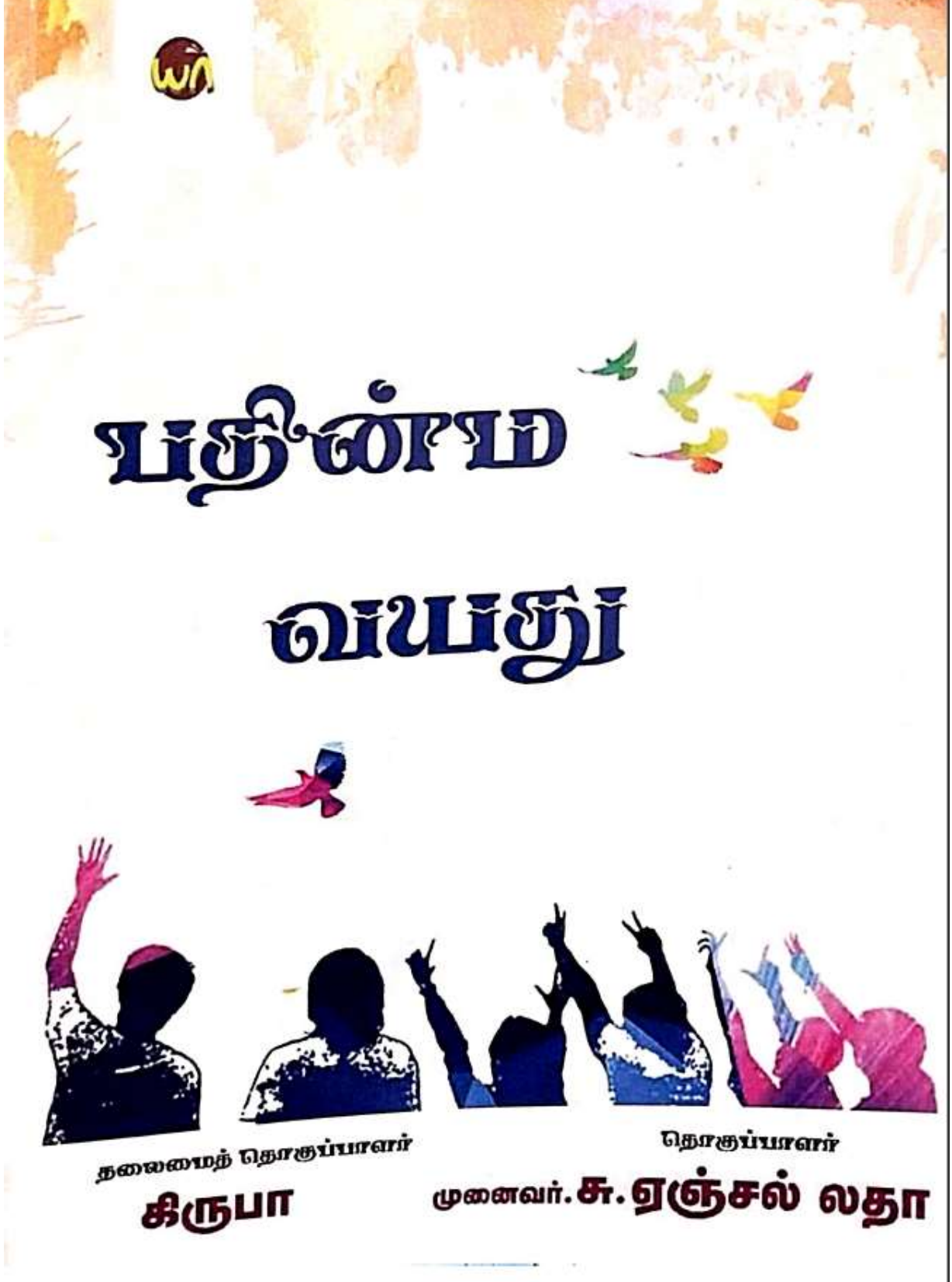
சிகரமே! புரியாப் புதிரே!

கனாக் காண்பதையே கருத்தாய்க் கொள்கின்றாய்  
வினா விடுப்பதிலே விவரமாய் இருக்கின்றாய்  
தேனாய் இனிக்கின்ற சொற்களால் ஈர்க்கின்றாய்  
நானா செய்தேனென்று என்னையே வியக்கின்றாய்  
கோனாய்ச் செயல்பட்டு வியக்கவும் வைக்கின்றாய்  
கோணா வாழ்வையே பெறுதற்குத் துடிக்கின்றாய்  
எனினும் வீணாய்ச் சிந்தித்தே வருத்தம் அடைகின்றாய்  
போனால் போக்கென்றே பொழுதைக் கழிக்கின்றாய்  
கானாக் கற்பனையில் என்றுமே மிதக்கின்றாய்  
தானாய் அகப்பட்டு மதியினை இழக்கின்றாய்  
சிகரமே! பதின்ம வயதே நின்னைப் புரிகிலேன்.

மை.கிறிஸ்டி மெர்சி



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
57	Dr. Angel Latha	Pathinma vayathu	2022	ISBN978-93-95414-11-9



## பதின்ம வயது

வாழ்க்கையின் ஏணிப்படிகள்  
பதின்ம வயது சிறந்தொரு பள்ளிப்பருவம்.  
பள்ளியில் சுகநண்பர்களோடு விளையாட்டு...  
வீட்டுப்பாடம் எழுதாமல் ஆசிரியரிடம்  
தண்டனை வாங்கியது சிலகாலம் ...  
தேர்வில் பெற்ற மதிப்பெண்களால்  
ஆசிரியரிடமும் சுக மாணவர்களிடமும் பெற்றப்  
பாராட்டுக்கள் ஏராளம்...  
வைரத்தைப் பட்டைத் தீட்டுவது போல்  
ஆசிரியரின் அறிவுரையால்.....  
சிந்தனை மண்டலம் சீரடைந்தது.  
பதின்ம வயதில் பெற்ற அனுபவங்கள்  
வாழ்க்கையின் ஏணிப்படிகளாயின...

முனைவர்.சு.ஏஞ்சல் லதா.





9	புறநானூற்றில் சமுகநீதி முனைவர் ஆ.பெ. மகேஸ்வரி	45
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## பெருஞ்சோற்று உதியஞ்சேரலாதனின் சமூகநீதி

முனைவர் க. ஏஸ்ரத் கதிரேசன்

உதவிப் பேராசிரியர், தமிழ்நாடு பல்கலைக்கழகம், கரையோரம் வளர்ச்சிப் பகுதி, கரையோரம் வளர்ச்சிப் பகுதி, கரையோரம் வளர்ச்சிப் பகுதி

“சமூகநீதி என்பது தனிமனித உரிமைகளின் தொகுப்பு” என்று க.வேரா. பொரியாரின் கருத்தாகும். “மனிதர்களின் மொத்தக் கூடுதல் ஒரு சமூகம். ஒரு சமூகம் நேர்மைகளும் நியாயமாகவும் மனித நேயமாகவும் தவறுகளின் மேல் கோபங்கொள்ளும் விதமாகவும் அறிவியல் மனப்பான்மை மிக்கதாகவும் அனைவருக்கும் சமண்ப்பு அளிப்பதுமாக இருத்தலே சமூகநீதியாகும்” என்பது மாசிராஜின் கருத்தாகும்.

மேற்கூறிய கருத்துக்களிலிருந்து தனி மனிதர்கள் சேர்த்துக்கொள்ள சமூகம். இந்தச் சமூகத்தில் மக்கள் எல்லாவிதமான சுதந்திரத்தையும் வாழ்வதே சமூகநீதி ஆகும் என்னும் கருத்து உணரலாம்.பதிற்றுப்பத்தில் கூறப்பட்டுள்ள உதியஞ்சேரலாதனின் சமூகநீதியை எடுத்துக்கூறுவதே இக்கட்டுரையின் நோக்கமாகும்.

சங்ககாலத்தில் மன்னராட்சி என்பது மண்ணாசை, பொண்ணாசை பெண்ணாசை காரணமாக போரும், பூசலும் மிகுந்த காலமாகும். அக்காலத்திலும் மன்னர்கள் போர்அறத்தைக் கடைப்பிடித்தல் இதனை,

“ஆவும் ஆனியற் பார்ப்பன மக்களும்

பெண்டிரும் பிணியுடையிரும் பேணித்

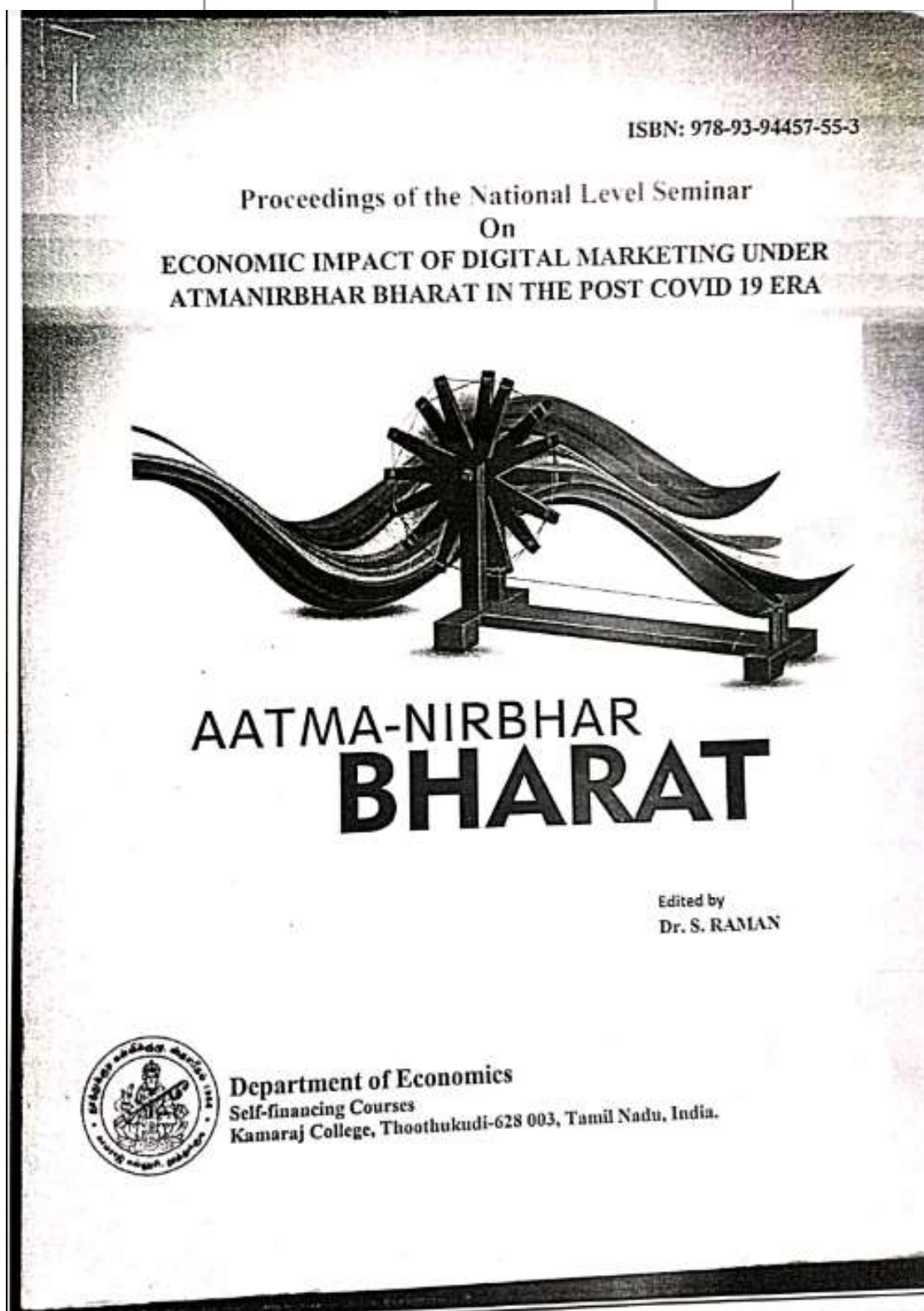
தென்புல வாழ்தர்க் கடன் இறுக்கும்

பொன்போல் புதல்வர்ப் பெறு அதீரும்

எம்மம்பு கடிவிடுதும் நும்மரண் சேர்மின்” (புறம். 9: 1-5)

என்னும் புறநானூற்றுப் பாடல்களில் நெட்டிமையார் எடுத்துக் கூறுகின்றார். பசு, பத்தினிப்பெண்டிர், பிணியுடையோர், மக்கள்பெறு அற்றோர் ஆகியோரைப் பாதுகாக்கும் நிலைகாணப்பட்டது. இது போர்க்காலங்களில் கடைப்பிடிக்கும் சமூகநீதியாகும்.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
59	Mrs. P. Naseera Banu	Impact of COVID-19 on Online Ordering Application	2022-2023	978-93-94457-55-3





# IMPACT OF COVID\_19 ON ONLINE FOOD ORDERING APPLICATION

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## **Abstract**

Internet era has opened a gateway of vast variety of opportunities for the businesses. There has been a rapid rise in usage of the internet since last few years. Nowadays, many businesses carry over the marketing activities with the help of internet. Especially, online food ordering services have a significant change in the food industry. The usage of (OFD) application has been slightly increased after the pandemic period. Online food industries utilize the covid-19 period to capture the market from the potential customers. In the post pandemic period, OFDs sustained in the mind of the customer. This study has been undertaken with sample size of 120 respondents. The main objective of this research is to analysis the level of attitude towards online food ordering application and assesses the factors influenced to ordering food through online with the help of Chi-square test and Garrett ranking techniques.

**Keywords:** Sustainable, OFD (Online food delivery), Internet, Third party.

## **Introduction:**

With the advancement of technology and usage of the internet has a drastically changes in the e-commerce. Things that seemed impossible because of technological advances are now possible Internet as a good platform for rendering their services to the society or individual or business people who use this opportunity in the right way. Virtual marketing strategies have the potential to reach the ultimate customer in speedy at low cost.

**'Anita Vinaik' (2019),** Technology has played a major role in introduction and advancement of mobile food Apps. Apps such as Zomato, Swiggy, UberEats, etc. are the most commonly and frequently used apps by the consumers. Mobile food Apps have tie-ups with many restaurants and act as a link between restaurants and people. There are many factors which lead to increase in their sales such as convenient to use, easy payment methods, variety of food and restaurants, delivery time, customer services, etc.

The customers can order food from their favourite restaurants, their choice of cuisines, can decide whether to get it delivered to pick up from the restaurant and can choose to pay from various modes such as cash on delivery, debit card, credit card, or any other mobile wallet.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
60	Mrs. P. Naseera Baiti	Online Food Delivery – An Opportunity for Sustainability	21.10.2022	978-93-94457-55-3



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## ONLINE FOOD DELIVERY – AN OPPORTUNITY FOR SUSTAINABILITY

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### ABSTRACT

Due to the COVID 19 outbreak, the reach of the online food delivery has made changes in the economic, environmental and social culture. In the current scenario customers are moving into ordering their food from online rather than traditionally visiting into the restaurant. Now days are customers are more adjustable based on the businesses' goal. The exposure of online food ordering application has been welcomed by the society. It holds numerous benefits not only to the restaurant itself but society at large. For sustainable development could be achieved by economic growth, social inclusion and save the environment. It assist in better Life for present and future descendants, to achieving long term economic growth. Protect the environment by strict controlling of pollution.

**Keywords:** OFD (Online food delivery, Socio-Economic-Environmental)

### Introduction

In India, there are many food delivery applications available for smart phones that can be downloaded from the comfort of homes to place food orders while out and about. The numerous advantages that online food delivery services offer, such as food delivered right to the customer's door, multiple payment choices, alluring discounts, rewards, and cash back offers, can be credited for their popularity. Increasing disposable money is the key factor driving the demand for online meal delivery. The market is expected to increase as a result of shifting demographics, rising internet usage and smart lifestyle changes, a young population, high consumption levels, a higher proportion of women in the workforce, aggressive marketing tactics used by food entrepreneurs, and rising ordering convenience. Among the best meal ordering aggregators now present in the Indian market are Food Panda, Swiggy, Faasos, and Zomato. The quality of food services offered in the form of mobility, discounts, promotions, and quick and simple order cancellation plans has greatly benefited from online food marketing.

Consumers' eating habits are changing as a result of the economic, social, and cultural developments. Online food aggregators have grown in number as a result. Online ordering companies were pushed to boost their connectivity and level of services due to greater product knowledge, intense competition, and modifications in local eating customs.

The restaurant conduct their business by two forms. First, the restaurant have an own website to deliver the food and beverage to ultimate customer. Secondly, the restaurant make tie-up with third party service provider like Swiggy and Zomato etc. Small businesses and restaurants need to take use of it as well in this day and age where having a presence online is essential. Websites that allow you to order food online just offer the choices. The structured and unorganised segments of the Indian hospitality business are vastly different from one another. The food service industry is also included in this, in addition to hotels. Aside from structured corporate restaurants, most eateries serve locals, frequently on a micro market scale.

In a cloud kitchen, food is only prepared in a commercial kitchen for delivery or takeaway; there are no dine-in guests. With the help of cloud kitchens, restaurateurs can easily grow an already-existing business or launch a digital brand. This gives restaurants the ability to reach a wider audience and scale out.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
61	S. Thangam	Portrayal of the Natural World in Amitav Ghosh's "The Hungry Tide"	30-31.03.2023	ISSN 2349-5189



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## PORTRAYAL OF THE NATURAL WORLD IN AMITAV GHOSH'S "THE HUNGRY TIDE"

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### ABSTRACT

*The paper deals with the well known fiction of Amitav Ghosh's, "The Hungry Tide". This fiction was published in 2004. Amitav's works mostly speaks about the ecological issues and it mainly consists of the historical elements. The novel is set in the Sundarbans delta, easternmost coast of India, Bay of Bengal. The novel deals with so many aspects of environmental issues and humanitarianism. When it comes to the part of environmental issues, the author has beautifully portrayed the 'the other side' of the nature, which is quite a savior at times and a demolisher most times. The geographical area with a unique pattern of climatic and tidal conditions of the easternmost coast has been a livelihood for many people and it also acted as the most dangerous habitat at times. And he also portrayed the wild beauty of the nature including the 'Irrawady dolphins and other deadly creatures' of the area. Even though the geographical area of the habitat acts as vulnerable or prone to the natural calamities, people live in that place with an emotion of motherland and never had or even have a second thought of leaving the same. Whatever the struggles they had faced or facing, they wanted to live a life in the hands of the motherly earth rather than in a busy urban life where people come far away from the mother nature. The life of the people who has a cordial relationship with the ups and downs of the mother earth has been captured well by the author in the fiction.*

**Key words:** Ecological Concern, Climatic Changes, Nature, Motherland, Cordial Relationship



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
62	S. Pushpa	Effect of Vermicompost as Organic Amendment on Soil Physical Properties with Green Gram	08.08.2022	ISSN: 1673-064X

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## EFFECT OF VERMICOMPOST AS ORGANIC AMENDMENT ON SOIL PHYSICAL PROPERTIES WITH GREEN GRAM

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### ABSTRACT

A field experiment was conducted at Mullaperi village in Thoothukudi district of Tamil Nadu, South India in 2018, which is situated at 8.5649° latitude and 77.9910° longitude, to study the effect of different organic amendments with various combinations on physical properties of the soil and the impact on green gram. The experiment was laid out in randomized block design with three replications. The treatments of this study were Vermicompost (VC), Farm yard manure(FYM), and Poultry manure (PM) and their combinations at three different concentrations 8.5, 12.5 and 16.5 t ha<sup>-1</sup>. The organic amendments were applied and the soil samples were collected in each plot and analysed. The physical properties such as Bulk density(BD), Particle density(PD), water holding capacity(WHC), Pore space(PS) and Saturated moisture (SM) were determined. The yield was high in the treatment VC@ 12.5 t ha<sup>-1</sup> and it was found as 1112 Kg ha<sup>-1</sup> in which the control had 260 Kg ha<sup>-1</sup>. The bulk density and particle density of the soil had decreased in all treatments other than control. The percentage of water holding capacity, pore space and saturated moisture had increased. Thus, the application of organic manure increases crop growth, yield and soil nutrient status without polluting the environment.

**Key Words:** Farm yard manure, Vermicompost, Physical properties, Organic amendments.



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
63	G. Padma Karthiyayini	A New Approach for Finding Minimization Cost in Transportation Problem - An Algorithm by using Python Language	Nov,2022	978-81-957695-3-7

## A New Approach For Finding Minimization Cost In Transportation Problem – an Algorithm by using Python language G. Padma karthiyayini<sup>1</sup>, Dr.S. Ananthalakshmi<sup>2</sup>

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### ABSTRACT:

In this paper the package Numpy from the programming language Python is presented as a computational tool that can help to solve the initial basic feasible solution involving transportation problem. This is also extension of our previous paper. The objective of this paper is to find how to minimize the transportation cost (TC) and to save a significant amount of time.

**Keywords:** Transportation Problem (TP), Initial Basic Feasible Solution (IBFS), Operations Research, Python language

**2010 Mathematics Subject Classification:** 90B06, 90B10, 90C46

### 1 Introduction:

The transportation problem is a special kind of the network optimization problem. It is one of the most useful techniques in many branches in pure and Applied Mathematics. Transportation model plays a vital role to ensure the efficient movement and in time availability of raw materials and finished goods from sources to destinations. TP is a Linear Programming Problem (LPP) stemmed from a network structure consisting of a finite number of nodes and arcs attached to them. The objective of the TP is to determine the shipping schedule that minimizes the total shipping cost while satisfying the demand and supply limit. In the transportation problem, the availability can be equal to the demand (balanced problem), the availability may be superior to the demand and the availability may be less than the demand. One of the first and important applications of the linear programming techniques, was the formulation and the solution of the transportation problem. The basic transportation problem was originally stated by Hitchcock [1]. The linear programming formulation and the associated systematic method for solution were first given in Dantzig [2, 3].

Md.Mizanur Rahman, Dr.Md.Bellel Hossain and Dr.Md. Mosharraf Hossain are presented and discussed gives an initial basic feasible solution of the transportation problem with equal constraints, in minimization of time [4]. Mollah Mesbahuddin Ahmed, Aminur Rahman Khan, Md.Sharif Uddin, and Faruque Ahmed deals a new approach named allocation table method (ATM) for finding an initial basic feasible solution of transportation problems is proposed. Efficiency of allocation table method has also been tested by solving several number of cost minimizing transportation problems and it is found that the allocation table method yields comparatively a better result [5]. Z.A.M.S. Juman and N.G.S.A. Nawarathne deals with an alternative technique of attaining an initial feasible solution to a transportation problem [7]. Carlos Sotomayor- Beltran, Alexi Delgado deals with the package PuLP from the programming language Python is presented as a computational tool that can help Peruvian industrial engineering students to solve optimization problems involving linear programming [8]. Roberto Salazar deals with an IpSolve package from R contains specific functions for solving linear programming transportation problems [9] and G. Padma Karthiyayini, S. Ananthalakshmi and R.Usha Parameswari

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
64	G. Padma Karthiyayini	An Efficient Method to Solve Transportation Problem for Finding Initial Basic Feasible Solution	Oct.2022	978-93-84734-75-6

## AN EFFICIENT METHOD TO SOLVE TRANSPORTATION PROBLEM FOR FINDING INITIAL BASIC FEASIBLE SOLUTION

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### ABSTRACT

Transportation modeling is a technique that is used to shipping of supplies from a number of sources to a number of destinations as to minimize the total shipping cost. This kind of problem is known as transportation problem(TP). In this paper, a new method to find an initial basic feasible solution to transportation problem.

**Keywords:** Transportation Problem(TP), Initial Basic Feasible Solution(IBFS), Transportation Cost, Transportation Table (TT).

### INTRODUCTION:

Transportation problem is being prioritized in both service and manufacturing industries. It is a network optimization problem which is known as operation research. This problem is not used in transportation problem but also in various fields like scheduling, assignment, product mix problems, etc. Now a days, the business environment competition is raising a day by day and it is most important for every goods to deliver products to customers in the cost effective way by satisfying their demands for dealing with human needs[1,2]. Transportation Problem was developed by Hitchcock[3] concerning its special structure for finding initial basic feasible solution. Mollah, Aminur, Sharif and Faruque[4] deals a new approach to find solution. Z.A.M.S.Juman and N.G.S.A. Nawarathne [5] give an efficient alternative approach to solve a TP. Joshua et.al[6] developed a NWCM to give an initial basic feasible solution for TP. Palanivel and Suganya[7] gives a harmonic mean approach, Padma Karthiyayini et.al[8] gives an innovative method to solve transportation problem. On the basis of the above mentioned Efficient Proposed Approach to find Initial Basic Feasible



Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISBN number of the proceeding
85	G. Padma Karthiyayini	A New Approach to Determine the Initial Basic Feasible Solution By Using SDP Method	2022	978-93-94293-01-4

### USING SDP METHOD

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#### Abstract

A new and heuristic for obtaining the initial basic feasible solution (IBFS) of the transportation problem (TP) is introduced in this paper. Various traditional methods are used to solve this problem and allocated optimal resources to minimize the transportation cost. The proposed method is illustrated with numerical examples.

**Keywords:** Transportation Problem (TP), Initial Basic Feasible Solution (IBFS), Transportation Cost (TC), Transportation Table (TT), SDP (Standard Deviation Penalty).

#### Introduction:

The transportation problem deals with the concept of optimization of resources to minimize the cost that is incurred in transporting products from sources to destination. Transportation method is a simplex technique that is used for solving a linear programming problem in a simplified manner. The main aim is that the minimizing TC of any goods that is to be delivered from a number of sources to destinations. The cost required for shipping from one place to another is proportionate to the number of units that are shipped. The basic transportation problem was originally stated by Hitchcock [1]. The linear programming formulation and the associated systematic method for solution were first given in Dantzig [2]. To find optimal solutions to TP different methods are discussed in many papers [3, 4, and 7] and so far. There are three well-known methods namely, North West Corner Method[5], Least Cost Method[5], Vogel's Approximation Method[5] to find the initial basic feasible solution of a transportation problem. In the last years, several researchers have developed alternative methods for finding initial basic feasible solution. This problem has been studied since long and is well known by S.M. Abul Kalam Azad, Md. Bellel Hossain, Md. Mizanur Rahman. [6], Md. Mizanur Rahman, Dr. Md. Bellel Hossain and Dr. Md. Mosharraf Hossain [8], deals a new approach for minimization of Transportation Time: An Algorithmic Approach, Mollah Mesbahuddin Ahmed, Aminur Rahman Khan, Md. Sharif Uddin, Faruque Ahmed[9], all are deals allocation table method for finding an initial basic feasible solution, G. Padma Karthiyayini, Dr. S. Ananthalakshmi and Dr. R. Usha Parameswari[10], deals a Modern Approach For Finding Minimization Cost In Transportation Problem, S.M. Abul Kalam Azad and Md. Bellel Hossain[11], deals a New Method for Solving Transportation Problems Considering Average Penalty", Opera Jude, Oruh Ben Ifeanyichukwu, Iheagwara Andrew Ihuoma, and Esemokumo Perewarebo Akpos[12], deals a New and Efficient Proposed Approach to Find Initial Basic Feasible Solution of a Transportation Problem.

In this paper we experiment with a new approach transportation method that leads to an improved initial feasible solution to transportation problems.

#### Proposed Algorithm:

##### Step 1:

Construct the transportation matrix from the given transportation problem.

##### Step 2:

Check if the given problem is balanced or not. In case the problem is unbalanced then



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## A Modern Algorithmic Approach to find Initial Basic Feasible Solution of a Transportation Problem

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### Abstract

In this paper, we introduce a new approach to find initial basic feasible solution. Transportation Problem have various purposes in logistics and supply process for reducing the transportation costs. The details of the developed algorithm with some numerical illustrations are discussed.

**Keywords:** Initial Basic Feasible Solution(IBFS), Transportation Problem(TP), Transportation Table(TT), Transportation Cost(TC), VAM.

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67	R. Mariyal Jebasty	Microwave assisted Expedient Synthesis and Biological Evaluation of Benzo[a]xanthenones using Copper Oxide Nanoparticles as Green Catalyst	2022-2023	978-93-5812-971-7
68	Dr. V. Rama	Microwave assisted Expedient Synthesis and Biological Evaluation of Benzo[a]xanthenones using Copper Oxide Nanoparticles as Green Catalyst	2022-2023	978-93-5812-971-7

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**Microwave assisted Expedient synthesis and Biological evaluation of Benzo[a]xanthenones using Copper Oxide Nanoparticles as Green Catalyst**

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**Abstract**

In this present study, we reported a simple, convenient and low-cost method for the synthesis of copper oxide nanoparticles using *Aerva lanata*, *Gymnema sylvestre* leaf extracts as reducing and stabilizing agent. The morphology of the synthesized CuO nanoparticles was confirmed by SEM and TEM. The size of the nanoparticles was found to be 6.9 and 5.1 nm from XRD. One-pot, three component xanthene derivatives were brought to lime light using biosynthesized copper oxide (CuO) nanoparticles as best heterogeneous catalyst under solventfree conditions using microwave irradiation within short reaction time. This protocol follows a simple, rapid, atom economical pathway with good tolerance, greener with good reusability. The synthesized organic moieties showed promising activities against HeLa cell lines and microorganisms *via* MTT assay and Kirby-Bauer method. Because of their wide variety of applications, xanthenes are now excellent candidates for synthetic synthesis, which emphasises the need to create better methods for scaffold modification of xanthenes derivatives.

**Keywords:** *Aerva lanta*, *Copper oxide nanoparticles*, *HeLa cell lines*, *Microorganisms*.

**Introduction:**

One of the most common classes of natural substances are xanthenes. The varied biological features of xanthenes and benzoxanthenones, including their usage as colours and fluorescent materials<sup>1</sup>, as well as their antiviral, anti-inflammatory, and antibacterial activity, have drawn a lot of attention to multicomponent one-pot access techniques throughout the years<sup>2-4</sup>. Several of them have been employed in photodynamic treatment (PDT) and as antagonists for drug-resistant leukaemia lines, paralyzing the activity of zoxazolamine<sup>5</sup>. In many chemical processes nanoparticles (NPs) drawn a lot of attention as effective catalysts because of its high surface-to-volume ratio and coordination parts, which offer more active sites per unit area compared to their heterogeneous counter

sites<sup>6</sup>. Due to little pollution and simple setup requirements, organic conversions using heterogeneous catalyst in solvent-free conditions have gained significant relevance. Among various metal oxides NPs, CuO nanoparticle catalyzed reactions have received a lot of attention recently, and major advancements have been made in this field.<sup>7-10</sup> Therefore, in this study we have explored CuO (NPs) as catalyst.

**Experimental method:**

TEM images were retrieved from JEOL/ JEM 2100 TEM instrument with voltage 200KV. The SEM images were studied using a JEOL 7401F instrument. The XRD pattern of the catalyst were measured using a Cu K $\alpha$  radiation, K = 1.54056 Å and operating condition of 40 kV and 30 mA in the 2 $\theta$  range 10-80° at the