

IMPACT OF PETROLEUM PRODUCTS ON ENVIRONMENT IN POSTINDUSTRIAL SOCIETY

A SOCIOLOGICAL STUDY

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Abstract

In the year 1990 India was opened for liberalization, privatization and globalization. In early days liberalization, privatization and globalization were in force in the name of the WTO. The World trade organization was controlling the trade practices among its member countries. India was also the member country at that time. Then Prime Minister Sri PV Narasimha Rao government signed for GATT agreement presented by the director of GATT by name Aurthur Dunkel. At that time it was a very hot issue for debate in the name of the GATT agreement (general agreement on tariff and trade). In the period of Sri PV Narasimha Rao between 21-06-1991 to 16-05-1996 India has agreed to abide for GATT agreement, after this India was opened to the world trade. This has given birth to post industrial society in India. Post industrial Society: Can be defined as the position of society's development when the service provider sector generates more wealth than the manufacturing sector of the nation's economy. 1) In this period the economy undergoes a transition from the production of goods to the provision of services, 2) Knowledge becomes valuable in the form of capital. 3) The production of ideas is the main way to the growth of the economy. 4) By the process of globalization demand for industry professionals, scientist, IT professionals and others gained the importance. 5) Behavioral and information sciences and technologies are developed and implemented.

Petroleum products are very essential products for transportation, heating, electricity generation, asphalt and road oil. They are used make chemicals, plastics and synthetic materials which we use in daily life. In the year 2016-2017 we consumed 23,765 metric tonnes of Petrol, 76,027 metric tonnes of Diesel. **Objectives:** - 1) To study the use of petroleum products as natural recourse for future generation of India 2) To assess the impact on the environment. **Hypothesis:** - There are possibilities to control the excessive use of petroleum products and to save the environment for future generation of India

Key words; petroleum products. Natural recourses. Excessive use, Environment. Post industrial society. GATT.



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Introduction:

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Post industrial Society: Can be defined as the position of society's development when the service provider sector generates more wealth than the manufacturing sector of the nation's economy. 1) In this period the economy undergoes a transition from the production of goods to the provision of services, 2) Knowledge becomes valuable in the form of capital. 3) The production of ideas is the main way to the growth of the economy. 4) By the process of globalization demand for industry professionals, scientist, IT professionals and others gained the importance. 5) Behavioral and information sciences and technologies are developed and implemented. Petroleum products created positive impacts on post industrial society in India. By the use of petroleum products for all developmental works, consumption of petroleum products volume also increased. Simultaneously the excessive use of petroleum products created some problems on environment also.

Petroleum products are very essential products for transportation, heating, electricity generation, asphalt and road oil. They are used make chemicals, plastics and synthetic materials which we use in daily life. In the year 2016-2017 we consumed 23,765 metric tonnes of Petrol, 76,027 metric tonnes of Diesel. According available statistics there are 24,24,00,000 vehicles are running on the roads of India.

The approximately daily consumption of petroleum products in India is 22,00,00,000 (Daily consumption 18,333 loads of the 12 KL TT) liters for vehicles only apart from power generators, trains, ships, and others also.

In Karnataka state approximately the daily consumption of petroleum products 1,80,00,000. Apart from power generators, trains, ships, and others also, (Daily consumption 1,500 loads of 12KL TT).

Environmental pollution: The sum total of all surroundings of a living organism, including natural forces and other living things, which provides good conditions for development and growth as well as of danger and damage. Natural resources such as lakes, rivers, forests, wildlife, etc. have a pivotal role in Indian lifestyle but growing population of the country is increasing pressure on environment.

Sound pollution: Sound pollution is also a part and parcel of environmental pollution. The sound is calculated in decibels followed by Canadian federal noise regulations. The sound occupational exposure limit (OELS) for noise is 85 decibels, In India db legislation act I-NCE-1997 has fixed minimum 90 decibels peak 140 decibels as upper limit. But usually vehicles will deliver more than peak upper limit in India, which will affect the environment. The government should impose penalty on sound polluters regularly. By the high noise will leads to a situation were in a normal person can lose the ability to hear properly.

Air pollution: Air pollution means Air pollution can be defined as the presence of toxic chemicals or compounds (including those of biological origin) in the air, at levels that pose a health risk. In an even broader sense, air pollution means the presence of chemicals or compounds in the air which are usually not present and which lower the quality of the air or cause detrimental changes to the quality of life (such as the damaging of the ozone layer or causing global warming).

Petroleum products as a natural resource: Crude oil is also important natural resources. From crude oil we get many petroleum products such as petrol diesel and gas. We use all these fuels for vehicles and to produce energy. But the crude oil is not evenly distributed all over the world. Crude oil will be explored in the available reasons, according to the needs.

Types of resources:-

Renewable resources can be explained as those resources which are constantly available like water, like vegetated lands. Animals are also renewable resources because they can reproduce offspring's to replace adult animals.

1. Organic renewable resource:-

Renewable resources from living things such as trees and animals can be called as organic renewable resources

2. *Inorganic renewable resource:-*

Renewable resources from non-living things such as water, sun and wind can be called as inorganic renewable resources.

3. *Non renewable resources:-*

Non renewable resources can be defined as those resources which cannot be easily replaced once they are destroyed. Like fossil fuels, minerals and others.

PETROL STATIONS IN INDIA: At present approximately there are 54,000 petrol pumps are working India. There are 4500 petrol pumps working in Karnataka state.

Review of earlier studies:

1) Srinivasa Chandrasekharan: Health, safety, and Environmental management, offshore and petroleum engineering The regulations of risks to health, safety, and environmental management that arise from the exploration and production works in the oil and gas industries are gaining more attention in the recent past. There is a growing necessity to maintain good and healthy workplace for people on board and also to protect the fragile ecosystem.

Objectives: -

- 1) To study the use of petroleum products as natural recourse for future generation of India
- 2) To assess the impact on the environment.

Hypothesis: - There are possibilities to control the excessive use of petroleum products and to save the environment for future generation of India

Limitations of the study:

My study area is Tarikere Taluk, in Chikkamagalore district and my respondents are vehicle owners and drivers who are having the experience of five years in driving and motor vehicle field.

Statement clarification:

- **Post industrial Society:**

In post industrial society after the commencement of LPG in India, development gained the momentum in all the fields of the society. Mainly the industries developed a lot and created millions of job. Especially the service sector like IT, BT medical industry, Hotel industry, Tourism industry, entertainment industry, education institutions also attracted the students from all over the world to India. The mining industry, power generation field like solar, wind, hydropower and atomic power also

developed. The agricultural field, horticultural field and its allied industries like food processing industries, cold storages, beverages, packing and marketing of food items, water packing industries, and others created millions of jobs including home industries and cottage industries in India. It attracted the lacks of crores of foreign direct investment (FDI) to India. The government also supported the FDI and overall development of India for all these developments the contribution of petroleum products is very important. Without petroleum products we cannot achieve development in this world. So to provide importance to petroleum products we must study about the conservation of petroleum products to future generation and for the proction of environment to save the mother earth is the need of the hour.

- **Petroleum products:-** Petroleum products are natural resources as said earlier. At present in India we are importing nearly 73% of petroleum products for our total Indian consumption.
- **Natural resources:-** Natural resources are very valuable resources which are available in the nature and earth. Human beings cannot build natural resources. These resources are decreasing day by day because of the heavy utilization of petroleum products by people.

Natural Resources	Products or Services
Air	Wind energy, tires
Animals	Foods (milk, cheese, steak, bacon,) and clothing (wool sweaters, silk shirts, leather belts)
Coal	Electricity
Minerals	Coins, wire, steel, aluminum cans, jewelry
Natural gas	Electricity, heating
Oil	Electricity, fuel for cars and airplanes, plastic
Plants	Wood, paper, cotton clothing, fruits, vegetables
Sunlight	Solar power, photosynthesis
Water	Hydroelectric energy, drinking, cleaning

Environment:

The Environment can be defined as complex of physical, chemical, biotic factors that can act upon living organism or an ecological community and ultimately determines its form and survival.

METHODOLOGY:

In this study, we have used simple random sampling method on selected 20 petroleum customers as respondents. We have used direct interview method for the collection of information by respondents.

Sources of information:-

- 1) **Primary resources:** - To collect the primary information I used a self prepared questionnaire on petroleum products as natural resource for future generation of India from 20 respondents.
- 2) **Secondary resources:-**we have collected information from Articles, journals, library, newspapers and websites.

Theoretical perspectives:

We studied for structural developmental and conservative prospective for this successful study.

TOPOGRAPHICAL FEATURES OF THE STUDY: Tarikere Taluk in Chikkamagalore district. The Tarikere is a taluk in the Chikkamagalore district in the state of Karnataka of India. The headquarters of Tarikere taluk is a town of the same name. The town derives its name from the number of water tanks by which the town is surrounded (Kere is a large water tank). There are a large number of tanks in and around Tarikere, namely, Chikkere, Doddakere, Dalavikere, Ramanayakankere, Kenddarahalla etc. Tarikere taluk is famous for horticulture crops like coconut, arecanut, mango, and coffee, tea plantation. And it is famous for commercial crops like chilies, onion, groundnut, sugarcane, paddy, etc. The following is the Hobli Headquarters within Tarikere Taluk. Ajjampura, Amruthapura, Lakkavalli, Lingadahalli, Shivani, Tarikere.

DATA ANALYSIS:

The data collected by using all the research methods, and other sources are analyzed by essential statistical techniques by using analysis of data research report. The data were collected on impact of petroleum products on environment after post industrialization on society.

Table. 1 Personal Profile of the Respondens

SL NO	Personal profile of the Respondents				
1	Age	18-28	29-39	40-50	51+
		10	04	04	02
2	Gender	Male			Female
		17			03
3	Caste	SC	ST	OBC	Others
		03	04	05	06
4	Religion	Hindu	Christian		Muslim
		18	01		01
5	Education	Illiterates	Primary education	Secondary education	Higher education
		00	08	05	07
6	Yearly Income	Up to 1,00,000	1,00,001to 1,25,000	1,25,001to 1,50,000	1,50,001+above
		05	06	08	01
7	Marriage	Married	Bachelor	Widow	
		18	02	00	
8	Family	Joint	Nuclear		
		02	18		

- **Age:** Age is the important factor at the time of interviewee because if the respondents are under 18 years age they will be considered as minors. They are not eligible into any contract, according to *Indian contract act-1872*. I have interviewed the respondents from age group 18 years and above.
- **Gender:** 85% of our respondents are male. 15% of our respondents are female.
- **Cast:** Caste is a major factor in our study area. 15% of our respondents are from SC category, 20% of our respondents are from ST category 25% of our respondents are from OBC category and 30% of our respondents are from others.
- **Religion:** constitutionally speaking India is a secular state, even though religions of respondents play an important role in our study area. 90% of our respondents are Hindus, 5% of our respondents are Christians and 5% of our respondents are Muslims.
- **Education:** Education plays an important role in using petroleum products in our society. 40% of our respondents are having primary education, 25% of our respondents are having secondary education and 35% of our respondents are having higher education.

- **Yearly Income:** Income of our respondents plays an important role in using petroleum products on the basis of their income. 25% of our respondents are having income of 1,00,000, 30% of our respondents are having income of 1,25,000, 40% of our respondents are having income with in 1,50,000 and 5% of our respondents are having income above 1,50,000 per year.
- **Marital status:** In Indian society, marital status of the respondents is an important factor. 90% of our respondents are married, 10% of our respondents are unmarried.
- **Family:** Family status is also a measuring scale for the economic status of respondents. 10% of our respondents are joint family and 90% of our respondents are nuclear family.

Table:2 Ways of Conservation of petroleum products and environment by respondents for future generation of India.

Sl no	<i>Ways to save petroleum products and the environment.</i>	Yes(%)	No(%)
01	Willing to ride a bicycle to save a petroleum product and the environment for future generation	10	90
02	Practice walking to cover small distances to save fuel and the environment	10	90
03	Use electric battery base vehicles	40	60
04	Use solar panels, vehicles	30	70
05	Maintaining ECG of vehicles (engine, clutch, gear)	80	20
06	Using public connivances for transportation	75	25
07	Avoiding speed breaker on highways	80	20
08	Are your vehicle's are emission free	75	25
09	Do you opine traffic holiday is necessary	85	15
10	Do you opine use of Bio Diesel is helpful for the environment	100	00
11	Do you opine ethanol blending with Petrol is useful for environment.	95	05
12	Do you opine petroleum products contributed for post industrial society	100	00
13	Do you opine excess use of petroleum products leads to air pollution	90	10
14	Do you opine petroleum products can be saved by proper education	85	15

1. **Willing to ride a bicycle to save a petroleum product and the environment for future generation:** 10% of our respondents are ready to ride bicycles to save petroleum products and the environment. 90% of our respondents are not ready to use bicycles to reach their destination and to save their health, petroleum products and environment, because of falls prestige. By using bicycles in daily life we can save the environment, health and large volume of petroleum product for future generation.

2. **Practice walking to cover small distances to save fuel and the environment:** 10% of the respondents are ready to walk to reach the small distances to save petroleum products and the environment for future generation. 90% of two, three, and four wheel respondents are not ready to walk, unnecessarily using above said vehicles to show their wealth. By this they are using petroleum products unnecessarily. By walking to their destination, they can save large volume of petroleum product and environment can be saved for future generation.
3. **Use electric battery base vehicles :** 40% respondents wanted to use the electric battery based vehicles to reach their destination. But at present electric battery vehicles are not easily available in the market. 60% of the respondents are not ready to use the electric battery based vehicles. By using electric battery vehicle we can save large volume of petroleum products and the environment for future generation.
4. **Use solar panels, vehicles:** 30% of respondents are willing to use solar panel vehicles. But solar panel vehicle are not available in the market right now. 70% of respondents are not ready to use solar panel vehicles. By using more number of solar panel vehicles we can save large volume of petroleum product and the environment for future generation.
5. **Maintaining ECG of vehicles (engine, clutch, gear):** 80% of the respondents will give importance to the engine, clutch, and gear system to save their vehicle and to save fuel. But 20% of respondents will not give importance to the ECG system of their vehicle because lack of knowledge of their engine technology. By correct maintaining ECG system we can save large volume of petroleum product and the environment for future generation.
6. **Using public convivances for transportation:** 75% of the respondents use public convinces like Buses, Trains, for their journey. But 25% of respondents will use their own separate vehicles in the name of convenience and time saving, they will waste the fuels for their vehicles by moving only one or two passengers in a four wheel vehicle. By using the public convenience of all people we can save large volume of petroleum products and the environment for future generation.
7. **Avoiding speed breaker on highways:** 80% of the respondents opine that government should avoid unnecessary speed breakers on highways. According to road transport congress of China country, one Hump on a National highway will incur loss of 6,00,000 rupees worth of fuel and spare parts of the transport vehicles. In our country so many

humps are constructed unscientifically in the middle of the road it will cause huge loss of petroleum products. 20% of the respondents opine that speed breakers are necessary on highways to avoid accidents. By avoiding humps on roads like state highways and national highways scientifically we can save large volume of petroleum products and the environment for future generation.

- 8. Are your vehicle's are emission free:** 75% of the respondents vehicles are emission free, in urban areas the RTO and Police authorities will check the vehicles for emission efficiency. Emission testing clinics are available only in urban areas. 25% of the respondents vehicles are not emission free, because they are running their vehicles in rural areas. In rural areas there will not be a regular emission efficiency check by RTO and Police authorities, in rural areas emission efficiency testing clinics are not available. By regular emission checks we can save large volume of petroleum products and the environment for future generation.
- 9. Do you opine traffic holiday is necessary:** 85% of the respondents opine they demand for holiday traffic. Traffic holiday will save petroleum products and the environment. 15% of the respondents don't believe in traffic holiday. They don't know the uses of traffic holiday. Traffic holiday is a new concept explored from environmentalists all over the world. By following the traffic holiday concept we can save large volume of petroleum products and the environment for future generation.
- 10. Do you opine use of Bio Diesel is helpful for the environment:** 100% of our respondents opine that Bio Diesel fuels are Eco friendly and farmers will get more income from Bio Diesel concept. To manufacture Bio Diesel neem seeds, sunflower oil seeds, groundnut seeds, dry coconuts, mize, and other agriculture food crops are also can be used. In the year 1893 a scientist by name Rudolf Diesel used groundnut oil in a Diesel engine. Bio Diesel engines emit less smoky air. This reduces the emission of benzene, which is contained in petroleum products. Benzene is highly carcinogenic. Long term inhalation of benzene may also cause cancer, which is a deadly disease. By using Bio Diesel petroleum products and environment can be saved for future generation. The governments may issue directions to concerned authorities to manufacture more bio diesel. Some Biodiesel pumps are working in India. By using Bio Diesel we can save large volume of petroleum products and the environment for future generation.

- 11. Do you opine ethanol blending with Petrol is useful for environment:** 95% of our respondents opine that 10% of ethanol blending with regular petrol is very Eco friendly fuel. It reduces the emission of dangerous smoke to the environment. Ethanol is a byproduct of sugar cane which grows in large scale in India. By using ethanol in petrol will increase the income of Indian farmers. It will help the sugar industry in India also. 5% of our respondents have no knowledge about ethanol blended petrol. By using ethanol, we can save large volume of petroleum products and the environment for future generation.
- 12. Do you opine petroleum products contributed for post industrial society :** 100% of our respondents opine that petroleum products as contributed a lot positively for the post industrial society. Without petroleum products development cannot be achieved. So it is very important to save petroleum product for future generation.
- 13. Do you opine excess use of petroleum products leads to air pollution:** 90% of our respondents opine that excessive use of petroleum products will definitely leads to air pollution, the petroleum products emits harmful elements like carbon dioxide, benzene and others. It is harmful to human health. 10% of our respondents opine that that they have no idea about air pollution.
- 14. Do you opine petroleum products can be saved by proper education:** 85% of our respondents opine that by providing proper education to petroleum products consumers we can save petroleum products, for this oil companies also working in a rapid way. The oil companies and the government should give more importance for the conservation of petroleum products. 15% of the respondents opine that only education regarding conservation petroleum products will not serve the purpose. They opine government should impose strict rules for the conservation of petroleum products.

Findings:

- Petroleum products influenced post industrial society in India.
- Post industrial society created new jobs in IT, BT and other sectors in India.
- Post industrial society enlightened about the environment also.
- Post industrial society has broken all the bindings of Swadeshi concept.
- Post industrial society contributed a lot to development of India.

Provement of hypothesis:

By above all study and statistics there are more possibilities to control the excessive use of petroleum products, to save foreign exchange which is used to buy petroleum products in the world market by paying poor Indian rupees in the form of American strong dollar currency. 1 USA dollars = 69.47 rupees has on 13-08-2018. We can save the environment which will contribute to the development of India in the postindustrial society era.

Suggestion :

- We have to rethink about the utility of petroleum products.
- We have to conserve oil for future generation has energy of India.
- The governments should support Eco friendly vehicles.
- The post industrial society in India has provided Job opportunities in large scale. In the same time the government should not leave the Swadeshi concept also.
- Alternative fuels like Biodiesel, solar power, battery power and other energy sources should be generated in India in large scale.

Conclusion:

By sincere efforts of all the citizens of India and the government we can save petroleum products, environment and can contribute to the development of India. Importing of petroleum products from foreign countries by paying American dollars can be reduced. It will help our country to build a strong economic based country in the world.

By using Eco friendly fuels, we can save 4% of petroleum products every day. Totally we can save 733 loads of 12 KL capacity trucks every day (87,99,840 liters) every day in India. In Karnataka we can save 60 loads of 12 KL capacity trucks every day (72,000 liters) in Karnataka.

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