

A STUDY ON THE HUMAN IMPACT ON FOREST

AUTHORS – S.KANITHA SREE & ATCHAYA.S, STUDENTS AT SAVEETHA SCHOOL OF LAW, SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES (SIMATS), SAVEETHA UNIVERSITY, CHENNAI

BEST CITATION – S.KANITHA SREE & ATCHAYA.S, A STUDY ON THE HUMAN IMPACT ON FOREST, *INDIAN JOURNAL OF LEGAL REVIEW (IJLR)*, 4 (2) OF 2024, PG. 519-528, APIS – 3920 – 0001 & ISSN – 2583-2344.

ABSTRACT:

Humans have converted timber to agrarian and civic uses, exploited species, fractured wildlands, changed the demographic structure of timbers, altered niche, degraded the terrain with atmospheric and soil adulterants, introduced fantastic pests and challengers, and domesticated favored species. None of these conditioning is new, maybe with the exception of atmospheric pollution, they date back to prehistory. All have impacted inheritable diversity by their influence on the evolutionary processes of extermination, selection, drift, gene inflow, and mutation, occasionally adding diversity, as in the case of domestication, but frequently reducing it. Indeed in the absence of changes in diversity, sleeping systems were altered, changing the inheritable structure of populations. Atmospheric pollution and global warming will be a major trouble in the near future, particularly because timbers are fractured and migration is impeded. Accessible slice system is used in this study for collecting the samples. samples are collected grounded of vacuity of repliers 200 samples are collected and considered as sample size. Independent variables are age, gender, educational qualification and occupation. Dependent variable are effect due to mortal conditioning, protection of timber, goods on creatures. Bar graphs are the exploration tool used in this exploration. The main study is to find the reasons behind destroying the forest.

KEYWORDS: atmospheric, diversity, pollution, genetic, impacts

INTRODUCTION:

Humans have changed woods over to farming and metropolitan uses, taken advantage of species, divided wildlands, changed the segment design of timberlands, modified living space, corrupted the climate with barometrical and soil poisons, presented fascinating bugs and contenders, and tamed supported species. None of these exercises is new; maybe except for environmental pollution, they date back to ancient times.

All have affected hereditary variety (i.e., species variety and hereditary variety inside species) by their effect on the transformative cycles of elimination, determination, float, quality stream, and change, some of the time expanding variety, as on account of taming, however regularly lessening it. Indeed, even without a trace of changes in variety, mating frameworks

were adjusted, changing the hereditary design of populaces.

Segment changes (i.e., transformation of old-development to more youthful, even-matured stands) impacted choice by expanding the frequency of sickness. Presentation of fascinating sicknesses, bugs, mammalian herbivores, and contending vegetation has had the best-archived consequences for hereditary variety, decreasing the two species variety and intraspecific variety.

Introduction of exotic diseases, insects, mammalian herbivores, and competing vegetation has had the best-documented effects on genetic diversity, reducing both species diversity and intraspecific diversity. Deforestation has operated on a vast scale to

reduce diversity by direct elimination of locally-adapted populations. Atmospheric pollution and global warming will be a major threat in the near future, particularly because forests are fragmented and migration is impeded. Past impacts can be estimated with reference to expert knowledge, but hard data are often lacking. Baselines are needed to quantify future impacts and provide an early warning of problems. Genetic inventories of indicator species can provide the baselines against which to measure changes in diversity.

Developing countries including Nigeria are saddled with problems emanating from Environmental deterioration which has a great impact on climate change. These problems are glaring and threaten the existence of mankind. A wide range of human activities on forestland contribute to climate change, prominent among these are deforestation, desertification, industrialization, urbanisation and other socio-economic activities. In this paper, attempts have been made to trace the causes and consequences of these human activities especially they relate to climate change, while suggestions on possible solutions are proffered with a view to mitigating the effects of climate change on our environment and existence.

AIM:To aim to study the human impact of forest and to study and analyse it by graphical methods.

OBJECTIVES:

The main objectives of the present study are as follows

- To examine the effect of deforestation
- To find the reasons behind destroying the forest
- To analyze the human impact on forest

REVIEW OF LITERATURE:

Industrialization in emerging economics is expected to accelerate the loss of tropical forests within decades (Edwards 1986) There are reports of ongoing loss of native forests in tropical countries which will lead to loss of

biodiversity, species extinctions and accelerate carbon emissions into the atmosphere Data indicates that tropical forest cover has declined at an annual rate of 0.8% from 1910.4 million hectares in 1980 to 1756.3 million in 1990 (**Merelli et al. 2009**). Secondary forests also provide an important refuge for biodiversity and ecosystem services and therefore, from a functional and ecological point of view should be protected. Apart from timber the forests supply many products harvested and used or sold. These products are called NTFPs (Non-timber forest products) and minor forest products by the Forest Department in India. (**Boerboom and Wiersum 1983; Köhlin and Ostwald 2001**). It has been estimated that native forests in India have declined by 1.5%–2.7% per year from 1995 to 2005. (Edwards 1986; “Forest Ecology on Java: Human Impact and Vegetation of Montane Forest” 1993)

Therefore assessing the local causes of deforestation is important in order to conserve forests and biodiversity. (**National Research Council et al. 1999**). In India, 49% of household income comes from NTFPs Minor forest products contribute about 50% of the revenue of the Forest Department and 70% of forest-based product exports (**Schiefelbein and Jansen 2013**). Biodiversity rich countries such as Brazil and Indonesia have high rates of forest loss. Other countries such as India have high levels of forest degradation due to non-sustainable extraction of forest products (**Boerboom and Wiersum 1983**). Forests play a vital role in the global carbon cycle, absorbing and storing carbon in biomass and soil (Hämät-Ahti 1983). Tropical forests are an important carbon sink and deforestation not only increases carbon emissions into the atmosphere but removes an important sink known to absorb 18% of the carbon emitted in the atmosphere FAO in its State of the Forest Report (2005) has estimated that 13 million hectares of forest are lost every year. The total net change in forest area in the period 2000–2010 is estimated at -5.2 million hectares per year which is equivalent to either a loss of more than 140 km² of forest per day or,

an area slightly bigger than the size of Costa Rica. **(National Research Council et al. 1991; Rohde 2013)**. Deforestation is known to have multiple causes, among which are poverty, land use changes, overpopulation, urbanization and others that act in synergistic manner at local and larger scales to affect forest loss **(“Forest Ecology on Java: Human Impact and Vegetation of Montane Forest” 1993)**. Tropical forests are a repository for species and genes. Timber is one of the important products of tropical forests and has high value in the market economy. However, the effect of logging on biodiversity is mixed. Often logged forests have lower diversity and fewer rare species **(Boerboom and Wiersum 1983)**. People agreed to adopt alternative resources if access to forest resources were curtailed. Several studies have already been analyzed globally representing the factors influencing the attitudes of the local population towards protected areas such as in Africa **(Goudie 2018)**. The economic value of these has been estimated to be about 11 billion annually and of the 6.2 billion people on the planet, 25% rely on forest resources for their livelihood to varying extent, and estimated 350 million people living in or near dense forest are highly dependent on them for subsistence or livelihood **(Wang, Feng, and Ouyang 2001)**. Mature dry forests have been intensively exploited for thousands of years for many different purposes and have been converted to progressively species poor forests due to timber extraction, cultivation and grazing pressure. **(Salcito, n.d.)**. Tropical dry forests represent more than 40% of tropical forests in the world covering large areas in Africa, Australia, Central and South America, India and South-East Asia, but the original extent was probably around 52% , and this forest type has undergone rapid conversion and is now highly degraded and fragmented **(Smiet 1992)**. It has been estimated that only about 1 million km of tropical dry forest remains in tropical America, Eurasia and Africa. The threats to dry forests differ between continents. Because dry forests are easier for

humans to colonize and to clear for agriculture, human densities are higher in tropical dry and moist deciduous forests zones **(National Research Council et al. 1991)**. The soils are more fertile than the wet forests because less leaching occurs in a region with less rainfall, and the climate in the dry forest climate zone is favorable for livestock and successional vegetation tends to be less aggressive **(Grala et al. 2017)**. In India, tropical dry deciduous forests account for about 46% of the area under forest cover. Dry deciduous forests are extensive in Central India. In the Indian subcontinent, dry forests are important for supporting both human and animal populations, since many of the large mammals live predominantly in dry and deciduous forests **(Suzuki 2002)**. Mature dry forests have been intensively exploited for thousands of years for many different purposes and have been converted to progressively species poor forests due to timber extraction, cultivation and grazing pressure **(Slater and St C. Slater 1998)**. Protected areas seem to be last hope for protecting forests from human encroachment and human-induced deforestation. However, effectiveness of these protected areas in conserving terrestrial biodiversity needs to be assessed further because of multiple threats **(Suzuki 2002; Juříčková et al. 2013)**. Local people, those living in and around protected areas, have a long-standing relationship with these areas. India has about 551 wildlife sanctuaries and about 96 national parks covering an area of about 156,700 km² , which is approximately 4.95% of the total surface area. It is estimated that about five million people reside within these reserves and 147 million people depend on resources that these reserves provided **(Puhe and Ulrich 2012)**. The rural communities residing within and on the fringes of protected areas use the forests for livestock grazing, agriculture, hunting, fishing and wood and wood products, fuelwood and non-timber forest products **(Salbitano 1988)**. Increase in demand for land and other resources by a growing population, and increasing levels of consumption the demand

for resources is increasing. Therefore, long-term extractive use of forests has caused and will continue to create significant modifications in both vegetation structure and composition thereby affecting biodiversity (Goudie 2013)(Salbitano 1988)(Goudie 2013).

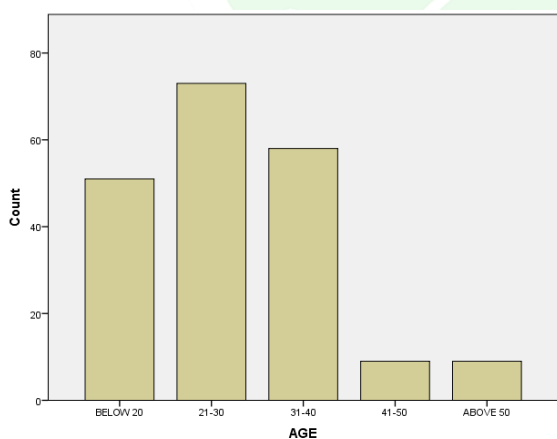
METHODOLOGY:

The present paper utilised both essential and optional data. The essential data was gathered from the overall population. The very much organised poll about the consciousness of issues identifying speculations of discipline flowed among the respondents. Type of research: doctrinal research and method of sampling random sampling method. The auxiliary data for the investigation was gathered from the articles, diaries, papers, enactments, standards, and bye laws established for the punishment. The sample size for the study is 200. Bar graph analysis has been done for analysis.

ANALYSIS AND DISCUSSION

FIGURE 1

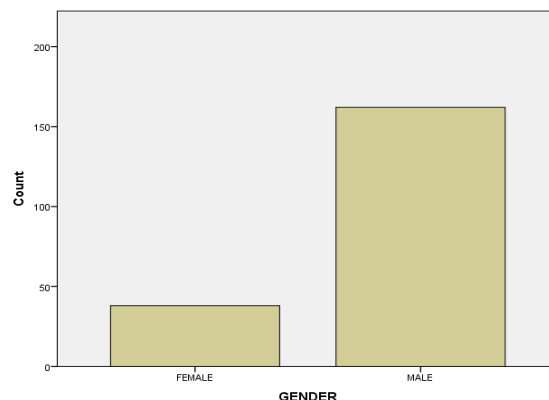
AGE



LEGEND : Figure 1 - This graph represents the age group category with respect to responses in the study of human impact on forest.

FIGURE 2

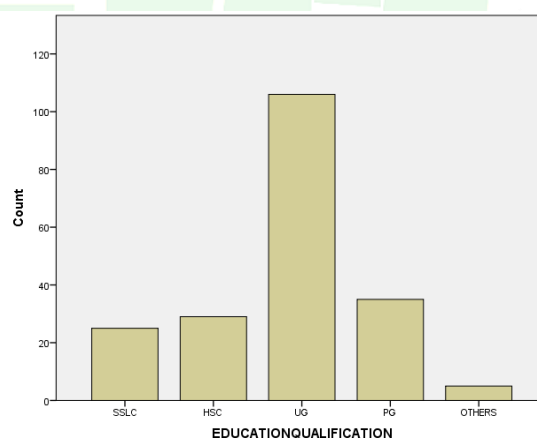
GENDER



LEGEND : Figure 2 - This graph represents the gender of different age group people with respect to responses in the study of human impact on forest.

FIGURE 3

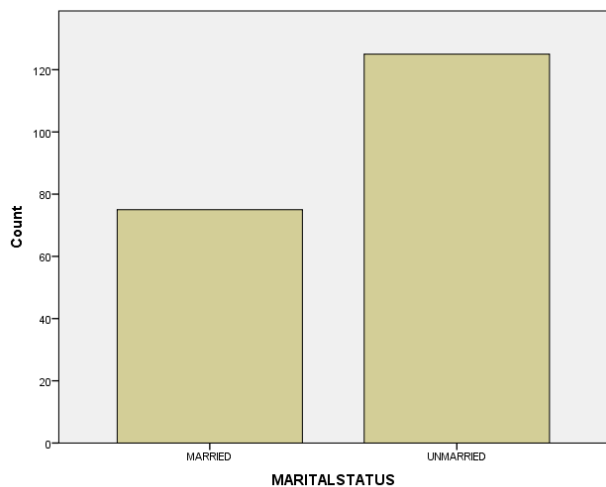
EDUCATION QUALIFICATION



LEGEND : Figure 3 - This graph represents the distribution of qualification of different age group people with respect to responses in the study of human impact on forest.

FIGURE 4

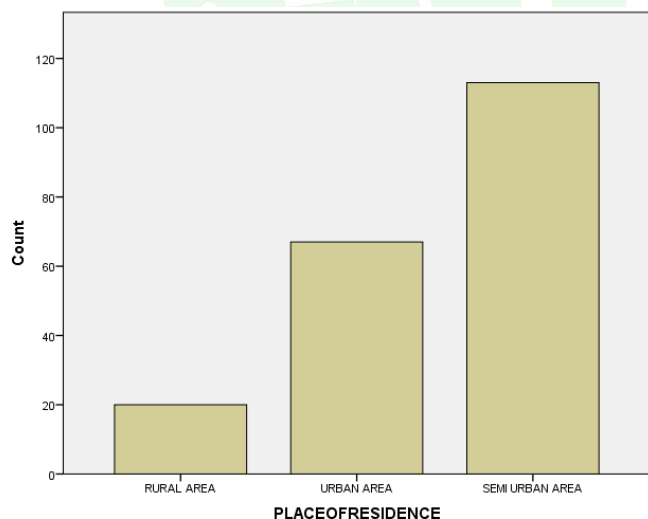
MARITAL STATUS



LEGEND : Figure 4 - This graph represents the distribution table of material status of different age group people with respect to responses in the study of human impact on forest.

FIGURE 5

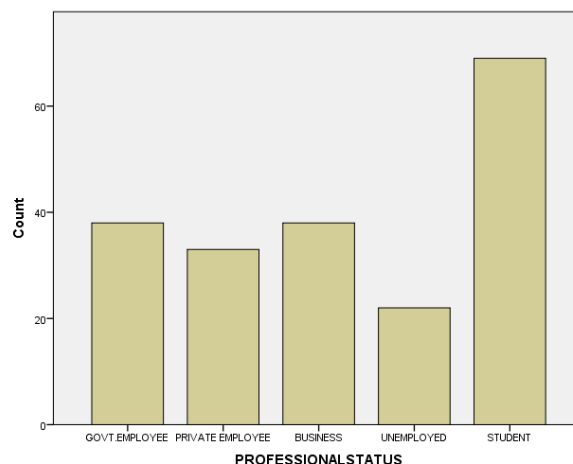
PLACE OF RESIDENCE



LEGEND : Figure 5 - This graph represents the distribution table of place of residence with respect to respondents in the study of human impact on forest.

FIGURE 6

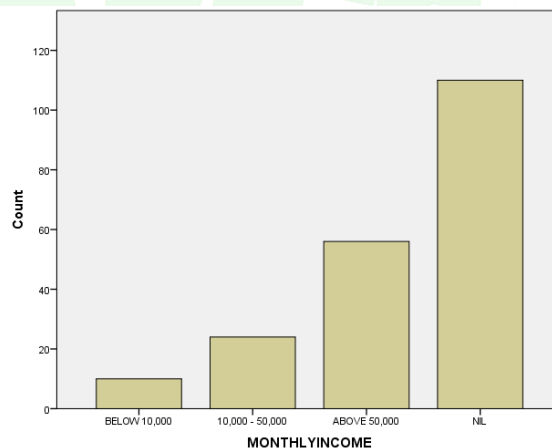
PROFESSIONAL STATUS



LEGEND : Figure 6- This graph represents the distribution table of different age group people engaging in different occupational work with respect to responses in the study of human impact on forest.

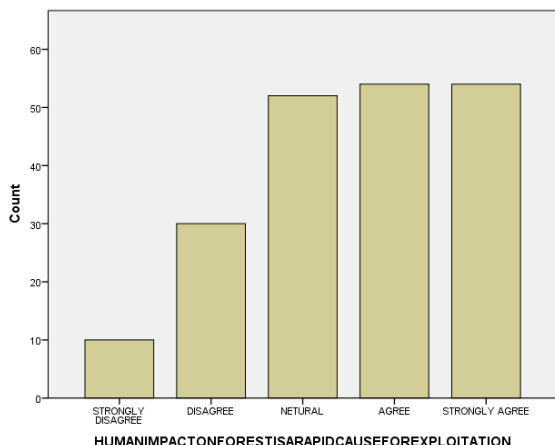
FIGURE 7

MONTHLY INCOME



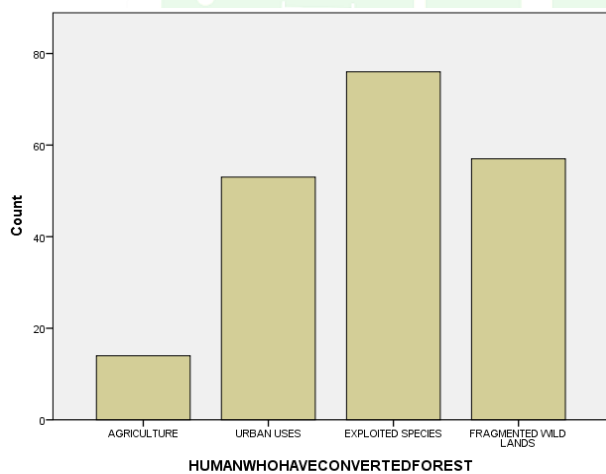
LEGEND : Figure 7- This graph represents the distribution table of income with respect to respondents in the study of human impact on forest.

FIGURE 8



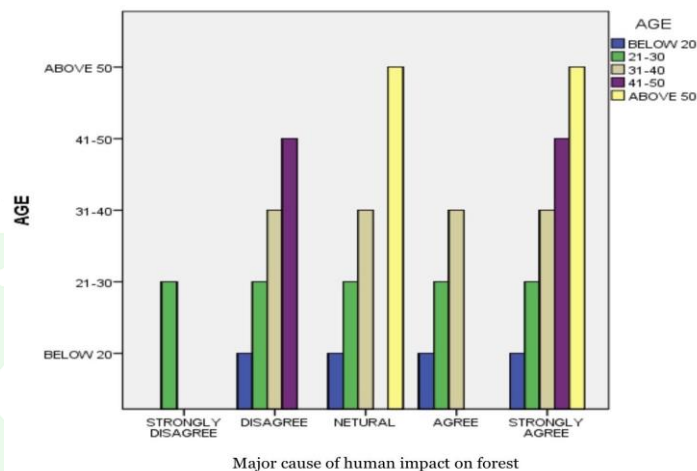
LEGEND : Figure 8 - This graph represents the distribution table of responses for the question of dependent variable that is human impact on forest is a rapid cause for exploitation with respect to responses in the study of human impact on forest.

FIGURE 9



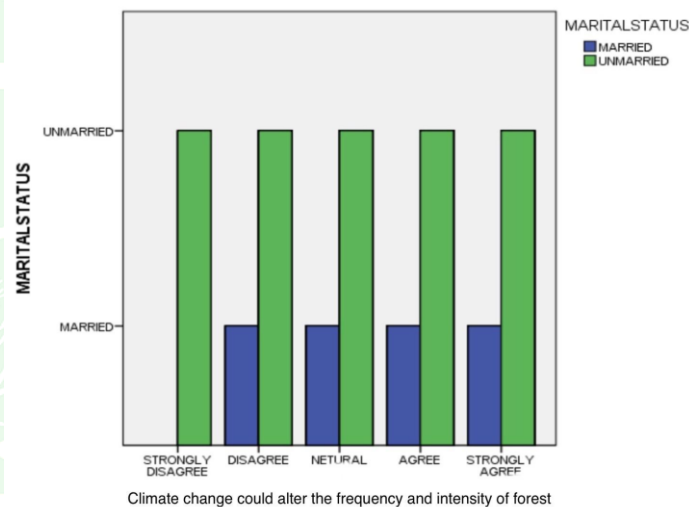
LEGEND : Figure 9 - This graph represents the distribution table of responses for the question of dependent variable that is opinion from the public about the reason for converting forest lands with respect to responses in the study of human impact on forests.

FIGURE 10



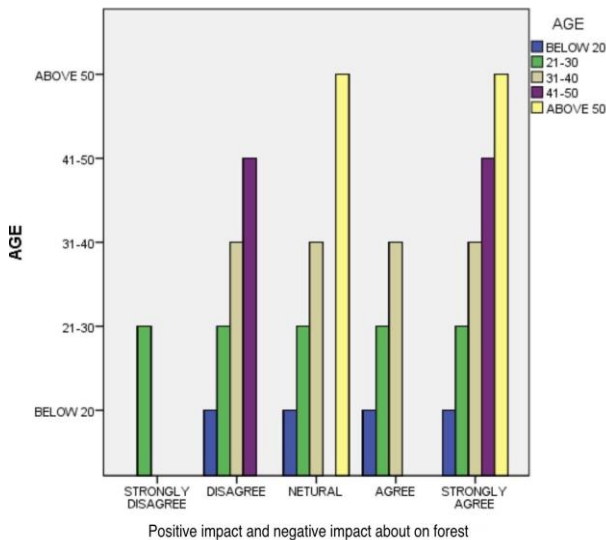
LEGEND : Figure 10 shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of human impact on forests is compared to age .

FIGURE 11:



LEGEND: Figure 11 shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of climate change could alter the frequency and intensity of forest.

FIGURE 12:



LEGEND :Figure 12 shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of positive impact and negative impact on forest.

RESULT :

In **figure 1** , the age group from 21 to 30yrs people is more in number in count and the age group above 35 yrs is less in number of count with respect to the opinion from the respondent in the study of human impact on forest. In **figure 2** , there are more responses from females than that of male respectively with respect to the opinion of the public from the respondent in the study of human impact on forest. In **figure 3** , there are more responses from undergraduate people and less responses from the illiterate group respectively with respect to the opinion of the public from the respondent in the study of human impact on forest. In **figure 4** , there are more number of responses from unmarried people than married people respectively with respect to the opinion of the public from the respondent in the study of human impact on forest. In **figure 5** , there are more responses from urban people as maximum and from rural people as fewer responses respectively with respect to the opinion of the public from the respondent in the study of human impact on forest. In **figure 6** , there are more responses

from students as maximum and business sector as less responses respectively with respect to the opinion of the public from the respondent in the study of human impact on forest. In **figure 7** , there are more responses from nil as maximum and below 10,000 category as less responses respectively with respect to the opinion of the public from the respondent in the study of human impact on forest. In **figure 8** , there are more responses from those who agree as maximum and strongly disagree as less responses respectively with respect to the opinion of the public from the respondent in the study of human impact on forest. In **figure 9** , there are more responses from exploiting species as maximum and agricultural need as less count respectively with respect to the opinion of the public from the respondent in the study of human impact on forest. In **Figure10** shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of human impact on forests is compared to age .**Figure 11** shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of climate change could alter the frequency and intensity of forest.**Figure 12** shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of positive impact and negative impact on forest.

DISCUSSION

In **figure 1** , states that there are more number of responses from 21 to 30 yrs, where the availability is more perhaps their opinion reflects in this study. In **figure 2** , states that there are more number of male respondents , thus this shows that there is much availability of this gender, perhaps their opinion reflects this study. In **figure 3** , states that there are more undergraduate people , this may be due to the availability of public as large, perhaps their opinion reflects in this study. In **figure 4** , states that all the Unmarried group people are engaging with differentiated jobs and some of

them pertaining knowledge. In **figure 5**, states that there are more urban people responding to the survey, this is because a sample survey was collected in the place of the urban side area. In **figure 6**, states that there are more students as respondents, thus this shows that they are under the access of education to pertain knowledge and to withstand the lifestyle conditions therefore their opinion reflects in this study. In **figure 7**, states that there are more students respondents to the survey, therefore there is no income earning capability for them. In **figure 8**, states that there are more human effects on forest which causes rapid exploitation therefore all are agreeing with statements mentioned in the survey and their opinion reflects in this study. In **figure 9**, states that most of the species got exploited due to degradation of forest therefore all are agreeing with statements mentioned in the survey and their opinion reflects in this study. In **Figure 10** shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of human impact on forests is compared to age may I opinion is the deforestation is the major Cause. **Figure 11** shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of climate change could alter the frequency and intensity of forest, it's strongly agree about it because of based on the climate changes the forest frequency will changed. **Figure 12** shows that major human opinion from the public about the reason for converting forest lands with respect to responses in the study of positive impact and negative impact on forest, the positive impact says that animals are living in the forest and so many medicines in the forest, negative impact is pollution and deforestation based on the forest is destroyed.

LIMITATIONS OF THE STUDY:

The major limitation of my study is the collection of sample frames from both online sources and also from the general public. There are different views and opinions for every

individual on their own survival standard and accommodation for living, thus it has drawbacks for school students to understand the concept and some students with undergraduate degrees where they were not involved in the outskirts of life yet. There is no proper solution for the problem faced by the public in online surveys. The physical factors are not the most impactful but difficult to get responses and awareness should reach all the public with a well organized style.

CONCLUSION AND SUGGESTION:

From all analysis done in this research paper we have a total study on the human impact on forest in this whole research paper. These findings imply that there is a relationship between human activities and forest resources. The level of fuel wood consumption is high in the area despite the electricity producing company being within proximity. This may help in increasing the education level, which will in the long run reduce unemployment rate and the use of forest resources. The study was able to give an insight into the possible impact on forest resources in the future. Although the situation is still manageable, so long there has not been any dramatic change in forest cover, the rates of forest cover loss seem to be under control, but could blow out of proportion if not controlled. This may help in increasing the education level, which will in the long run reduce unemployment rate and the use of forest resources. Hence the objective of the study: To examine the effect of deforestation proved, To find the reasons behind destroying the forest proved, To analyze the human impact on forest proved.

REFERENCES:

1. Boerboom, J. H. A., and K. F. Wiersum. 1983. "Human Impact on Tropical Moist Forest." *Man's Impact on Vegetation*. https://doi.org/10.1007/978-94-009-7269-8_8.
2. Edwards, Clinton R. 1986. "The Human Impact on the Forest in Quintana Roo,

- Mexico." *Forest & Conservation History*.
<https://doi.org/10.2307/4004876>.
3. "Forest Ecology on Java: Human Impact and Vegetation of Montane Forest." 1993. *Biological Conservation*.
[https://doi.org/10.1016/0006-3207\(93\)90244-u](https://doi.org/10.1016/0006-3207(93)90244-u).
 4. Goudie, Andrew S. 2013. *The Human Impact on the Natural Environment. Past, Present, and Future*. John Wiley & Sons.
 5. ———. 2018. *Human Impact on the Natural Environment*. John Wiley & Sons.
 6. Grala, Katarzyna, Robert K. Grala, Anwar Hussain, William H. Cooke, and J. Morgan Varner. 2017. "Impact of Human Factors on Wildfire Occurrence in Mississippi, United States." *Forest Policy and Economics*.
<https://doi.org/10.1016/j.forpol.2017.04.011>.
 7. Hämet-Ahti, L. 1983. "Human Impact on Closed Boreal Forest (taiga)." *Man's Impact on Vegetation*.
https://doi.org/10.1007/978-94-009-7269-8_15.
 8. Juříčková, Lucie, Jitka Horáčková, Vojen Ložek, and Michal Horskák. 2013. "Impoverishment of Recent Floodplain Forest Mollusc Fauna in the Lower Ohře River (Czech Republic) as a Result of Prehistoric Human Impact." *Boreas*.
<https://doi.org/10.1111/bor.12006>.
 9. Köhlin, Gunnar, and Madelene Ostwald. 2001. "Impact of Plantations on Forest Use and Forest Status in Orissa, India." *AMBIO: A Journal of the Human Environment*.
<https://doi.org/10.1579/0044-7447-30.1.37>.
 10. Merelli, Ivan, Andrea Caprera, Alessandra Stella, Marcello Del Corvo, Luciano Milanesi, and Barbara Lazzari. 2009. "The Human EST Ontology Explorer: A Tissue-Oriented Visualization System for Ontologies Distribution in Human EST Collections." *BMC Bioinformatics*.
<https://doi.org/10.1186/1471-2105-10-s12-s2>.
 11. National Research Council, Division of Behavioral and Social Sciences and Education, Board on Environmental Change and Society, and Committee on the Human Dimensions of Global Change. 1991. *Global Environmental Change: Understanding the Human Dimensions*. National Academies Press.
 12. National Research Council, Division of Behavioral and Social Sciences and Education, Policy Division, Board on Environmental Change and Society, and Committee on the Human Dimensions of Global Change and Committee on Global Change Research. 1999. *Human Dimensions of Global Environmental Change: Research Pathways for the Next Decade*. National Academies Press.
 13. Puhe, J., and B. Ulrich. 2012. *Global Climate Change and Human Impacts on Forest Ecosystems: Postglacial Development, Present Situation and Future Trends in Central Europe*. Springer Science & Business Media.
 14. Rohde, Klaus. 2013. *The Balance of Nature and Human Impact*. Cambridge University Press.
 15. Salbitano, Fabio. 1988. *Human Influence on Forest Ecosystems Development in Europe: Proceedings of a Workshop Held in Trento, Italy, 26-29 September 1988*.
 16. Salcito, Kendyl. n.d. "Human Rights Impact Assessment of Harvesting Operations at Green Resources? Uchindile Forest: The Health Impact Assessment Framework Repurposed." <Http://isrctn.org/>.
<https://doi.org/10.1186/isrctn58173038>.
 17. Schiefelbein, Ulf, and Florian Jansen. 2013. "Human Impact on the Lichen Floras of Two Forest Landscapes in Pomerania (Poland, Germany)." *Plant Diversity and*

Evolution. <https://doi.org/10.1127/1869-6155/2013/0130-0073>.

18. Slater, Guy St C., and Guy St C. Slater. 1998. "Human EST Sequences." *Guide to Human Genome Computing*. <https://doi.org/10.1016/b978-012102051-4/50010-6>.
19. Smiet, Alfred C. 1992. "Forest Ecology on Java: Human Impact and Vegetation of Montane Forest." *Journal of Tropical Ecology*. <https://doi.org/10.1017/s026646740000626x>.
20. Suzuki, Wajiro. 2002. "Forest Vegetation in and Around Ogawa Forest Reserve in Relation to Human Impact." *Diversity and Interaction in a Temperate Forest Community*. https://doi.org/10.1007/978-4-431-67879-3_4.

