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A Study on Global Warming and Greenhouse Gas Effect in India

M. Kalaiyarasi
BA.LLB. (HONS) 5TH YEAR
Saveetha School of Law, Saveetha Institute of Medical and Technical Sciences (SIMATS), Chennai
kalaiadv29@gmail.com

Abstract: *An unnatural weather change is an expansion in normal temperature on earth's environment and seas because of regular nursery impact brought about by the nursery gasses (carbon dioxide, water fume, nitrous oxide, and methane) trap intensity and light from the sun in the world's climate, which builds the temperature. This damages many individuals, creatures, and vegetation. Many can't take the risk, so they pass on. Nursery gasses will be gasses in the world's environment that gather intensity and light from the sun. With an excessive number of nursery gasses in the air, the world's air will trap a lot of intensity and the earth will get excessively hot. Subsequently individuals, creatures and plants would pass on in light of the fact that the intensity would be too strong. For the reason for the review we have utilized optional information and auxiliary information have been gathered from different diaries, books, magazines and related sites. The point of the concentrate on an Earth-wide temperature boost and environment changes in India and its effect on the climate. The aim of the study is to study the impact of global warming and greenhouse gasses in the environment.*

Keywords: Global warming, climate, weather, greenhouse gasses, carbon emmission

I. INTRODUCTION

An unnatural weather change is the expansion in normal temperature on earth's environment and seas because of regular nursery impacts brought about by the nursery gasses (carbon dioxide, water fume, nitrous oxide, and methane) trap intensity and light from the sun in the world's climate, which expands the temperature. This damages many individuals, creatures, and plants. Many can't take the risk, so they bite the dust. The nursery impact is the point at which the temperature climbs on the grounds that the sun's intensity and light is caught in the world's air. This resembles when intensity is caught in a vehicle on an extremely hot day, the vehicle gets more smoking when it is out in the parking area. This is on the grounds that the intensity and light from the sun can get into the vehicle, by going through the windows, yet it can't get back out. This is how the nursery impact treats the earth. The caught heat is transmitted back to earth and that keeps our planet warm even in the evenings. Without this impact, our planet would be at 0 degree Celsius without daylight. Despite the fact that earth has its own nursery arrangement, the human exercises are causing irregularities in the regular nursery. People utilize petroleum products and consume them for everything from food to transportation. The outcome is an expanded measure of CO2 in the environment. Expanded CO2 unavoidably prompts expanded nursery impact and more intensity is caught over the world's surface. Reasons for An Earth-wide temperature boost: Numerous things cause a dangerous atmospheric deviation. The first and significant reason for a worldwide temperature alteration is the outflow of nursery gasses like carbon dioxide, methane, nitrous oxide and so on into the climate. The significant wellspring of carbon dioxide is the power plants. At present on the planet 40% of all CO2 discharges are brought about by power plants. These are consuming coal, petroleum gas and diesel fuel. These power plants radiate a lot of carbon dioxide created from consuming petroleum products with the end goal of the power age. This is valid for the vast majority of the fostered nations' structures; both business and private address a bigger wellspring of an unnatural weather change contamination than vehicles and trucks. Working of these designs requires a ton of fuel to be signed which produces a lot of carbon dioxide in the air. The principal wellsprings of nitrous oxide incorporate nylon and nitric corrosive creation, vehicles with exhaust systems, the utilization of

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manures in agribusiness and the consuming of natural matter. The second reason for a dangerous atmospheric deviation is deforestation that is brought about by cutting and consuming of woods and trees with the end goal of home and industrialization. With less trees, it is more earnest for individuals to inhale in light of the fact that there is more CO2 in the air, and we don't inhale CO2, we inhale oxygen. Establishes gather the CO2 that we inhale out, and they offer back oxygen that we take in. With less trees and different plants, for example, green growth, there is less air for us, and more nursery gasses are sent out of sight. This implies that it is vital to safeguard our trees to stop the nursery impact, thus we can inhale and live. The third reason for a worldwide temperature alteration is electrical contamination. Power causes contamination in numerous ways, some more terrible than others. By and large, petroleum products are signed to make power. Non-renewable energy sources are made of dead plants and creatures. Impacts OF An Earth-wide temperature boost: The impacts of an unnatural weather change are felt most emphatically in the Polar Locales, where there is a ton of super durable ice. Ice sheets and glacial masses are liquefying rapidly and can't renew as a direct result of hotter winter temperatures. The staggering proof from many icy masses and ice covers on each landmass that an Earth-wide temperature boost is seriously influencing the water and frosty patterns of the planet. Likewise species that are being impacted worldwide, however these impacts are less serious and possibly reversible. The aim of the study is to study the impact of global warming and greenhouse gasses in the environment.

OBJECTIVES

- To identify the causes and effect of global warming on the economy.
- To investigate the impact of global warming on society.
- To determine preventive measures to control global warming.

II. LITERATURE REVIEW

Mahdi (2019) In the context, this book “Climate change and agriculture in India: Impacts and Adaptations.” is an attempt to provide a basic understanding of climate change showcasing the specific sectoral research trend in the country's important cereals crops, paddy and wheat, inland fisheries and temperate region horticultural crops.(Mahdi and Mohammed 2022)

(**Reddy, 2015**) Climatic change is a long term abutment weather condition specifically concerned with temperature and precipitation. This climate change may be the result of natural calamities such as volcanic eruptions or anthropogenic activities like forest fires, greenhouse gas emission, and land-use changes .(Reddy 2006)

(**Srinivasarao et al., 2018**) Climate change is perceived to bring in increased temperature attended precipitation patterns with increased frequency and severe extreme weather events. It is very much evident that climate change has a severe impact on global food production influencing both demand and supply of food grains, globally.(Ellis et al. 2018)

(**Dubash, 2019**) India does not bear responsibility for rising temperatures. Despite being home to 17.8% of the world’s population, India accounts for only 3.2% of cumulative emissions.Yet India cannot achieve its development aspirations without taking climate change into account. (De Marco et al. 2020)

(**Connors et al., 2019**) Global warming has consequently accelerated and average temperatures around the world were 1°C above pre-industrial levels in 2017.(Sharma et al. 2020)

(**Mazdiyasni et al., 2017**) Rising average temperatures are leading to more frequent and severe heat waves across the country. Between 1985 and 2009, western and southern India experienced 50% more heatwave events than in the previous 25 years. Heatwaves in 2013 and 2015 killed more than 1,500 and 2,000 people across the country.(Mazdiyasni et al. 2017)

(**Roxy et al., 2017**) Warmer air can hold more moisture than cooler air, while warmer water evaporates faster. The combination of higher air and ocean temperatures is therefore causing more frequent episodes of heavy rainfall across the subcontinent. In central India there was a threefold increase in extreme precipitation events between 1950 and 2015.(Roxy et al. 2017)

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(**Zaveri et al., 2016**) Climatic trends in India are intersecting with development trends in ways that often multiply risk and vulnerability. For example, as rainfall has declined, the proportion of precipitation that is infiltrating the soil and recharging aquifers has also fallen because more land is covered by hard surfaces.(Zaveri et al. 2020)

(Mekonnen and Hoekstra, 2016) The interplay between climatic and development factors, a billion people in India face severe water scarcity for at least one month of the year; 180 million face severe water scarcity all year round. These shortages take place in a context where many people lack adequate water for drinking, sanitation or hygiene.(Mekonnen et al. 2019)

(Unnikrishnan et al., 2015) Higher average temperatures are also driving rising sea levels, partly because the oceans expand as they warm and partly because melting ice sheets are increasing the volume of water. (Holla et al. 2022)

(Burke and Tanutama, 2019) Climate change is already slowing the pace of poverty reduction and increasing inequality in India. The districts that have warmed the fastest have seen gross domestic product (GDP) grow on average 56% less than those that have warmed the slowest.(Lee et al. 2022)

Kompas et al. (2018) looked at some of the other channels through which climate change may slow economic development in India. Focusing on declining agricultural productivity, sea-level rise and health expenditure, they find that 1°C of global warming would cost India 3% of GDP a year; at 3°C, that cost rises to 10% a year.(Lee et al. 2022)

(Lam et al., 2019) Coral reefs in the Indian Ocean are already in decline due to pollution, habitat destruction and eutrophication. They face an additional threat from ocean acidification, caused by the absorption of carbon dioxide. Above a certain level of acidity, the calcium carbonate in many corals dissolves faster than it can be built.(Timal et al. 2020)

(Dubash, 2013) India has many other urgent priorities and less of a global obligation to mitigate climate change, as recognised by the principle of 'common but differentiated responsibility' in the climate accords. This understanding has long shaped debates about climate policy within India, as well as the country's position in global climate negotiations.(Caon et al. 2014)

(Hartmann et al. 2013) The amount of CO2 in the earth's atmosphere has increased by more than 40 per cent during the past 150 years, on account of burning of fossil fuels (coal, oil, and natural gas), deforestation, and other land use changes.(Wiencek et al. 2022)

(Jansen et al. 2007) Rate of increase in global mean temperature is much faster than the changes in the global mean temperature that have occurred in the past on account of natural climate variations. When the earth emerged from the last Ice Age, about 20,000 years ago, the global mean temperature increased at the rate of 1°C in 1,000 years.(Simsek et al. 2022)

(Rajeevan and Nayak 2017) In India, we have excellent observations recorded by the India Meteorological Department, based on more than 1,000 stations, for the past 120 years. These stations contain thermometers, rain gauge, and instruments to measure winds and relative humidity. Based on these records, the all-India annual mean surface air temperature has increased by 0.6°C during the period 1901–2010.(Simsek et al. 2022; Rajeevan and Nayak 2016)

(Watts et al. 2015) In India the combination of declining air quality and climate change will pose new challenges. There has been a dramatic decline in air quality defined by the presence of particulates and gasses such as sulphur dioxide and oxides of nitrogen in India during the last three decades. Air quality has significant, direct health impacts..(Patenaude et al. 2022)

Rajendran and Kitoh (2008) have shown that a high-resolution climate model simulates the spatial structure of Indian monsoon rainfall very well. This model predicts that Indian monsoon rainfall will increase in most regions of India in the twenty-first century, on account of the increase in CO2, but there will be a decrease in rainfall over Kerala.(Sundaresan et al. 2013)

Guiteras (2009) found that in the short-run (2010–2039), climate change would lower the yields between 4.5 to 9 percent, whereas, in the long-run (2070–2099), it will drastically reduce the yields by at least 25 percent in the absence of adaptation. (Sundaresan et al. 2013; Jiménez, Companyó, and Guiteras 2009)

Takahashi, Honda, and Emori (2007) have indicated that an increase in temperature will cause a large increase in mortality due to heatwaves in Asia. Most models also predict an increase in monsoon rainfall in the twenty-first century. (Dogra and Srivastava 2012)

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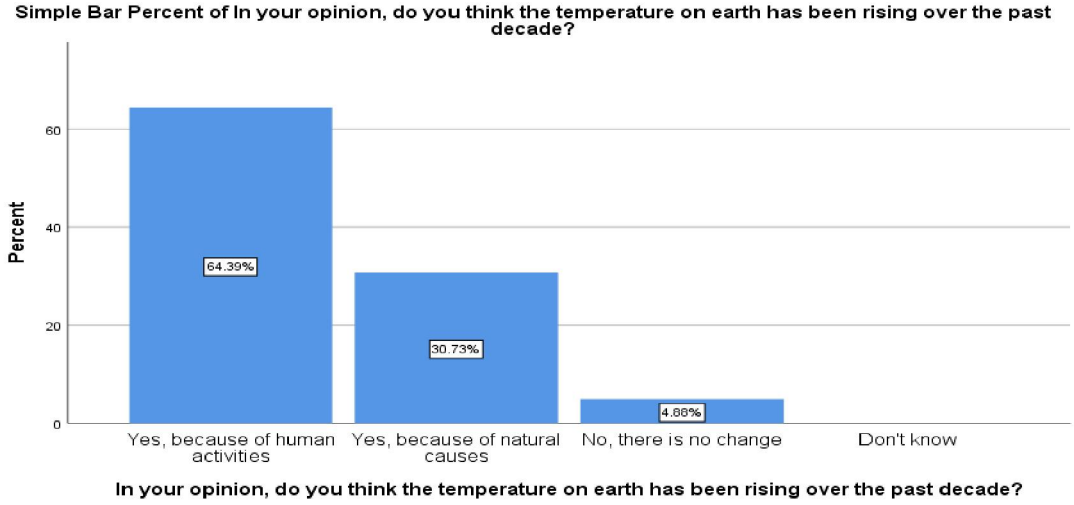
III. METHODOLOGY

The research method followed is empirical research. The information is collected through a questionnaire and therefore the sample size is 200. A Convenient sampling method is adopted within the study to gather the info . The samples were collected online , from friends and relations . The independent variables are gender, age group, income level and education level, occupation & legal status of respondents. The dependent variables are the initiatives taken by various organizations to reduce Climate change and set new personal platforms, about climate changes. The researcher used graphs to research the info collected.

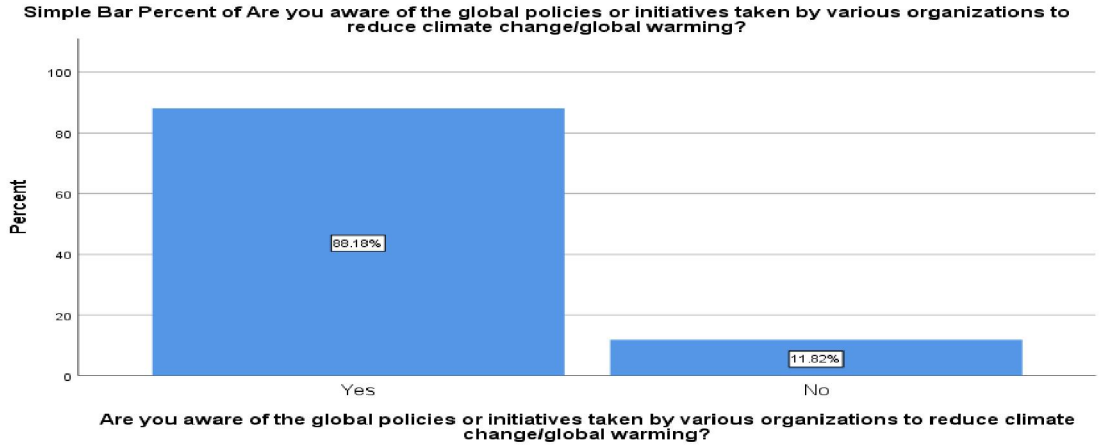
IV. ANALYSIS

FIGURE 1



LEGEND: Figure 1 represents in your opinion, do you think the temperature on earth has been rising over the past decade?

FIGURE 2



LEGEND: Figure 2 represents are you aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming.

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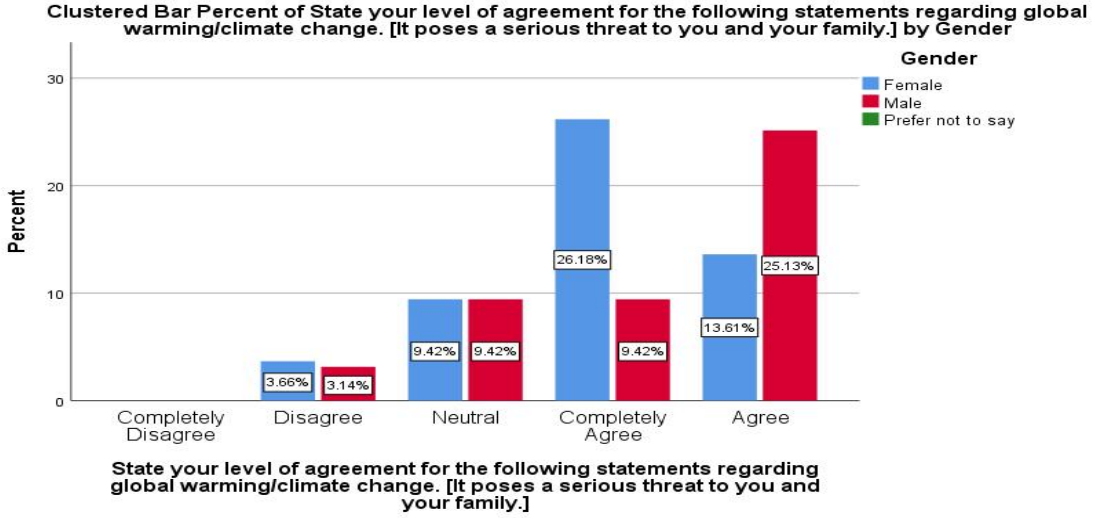
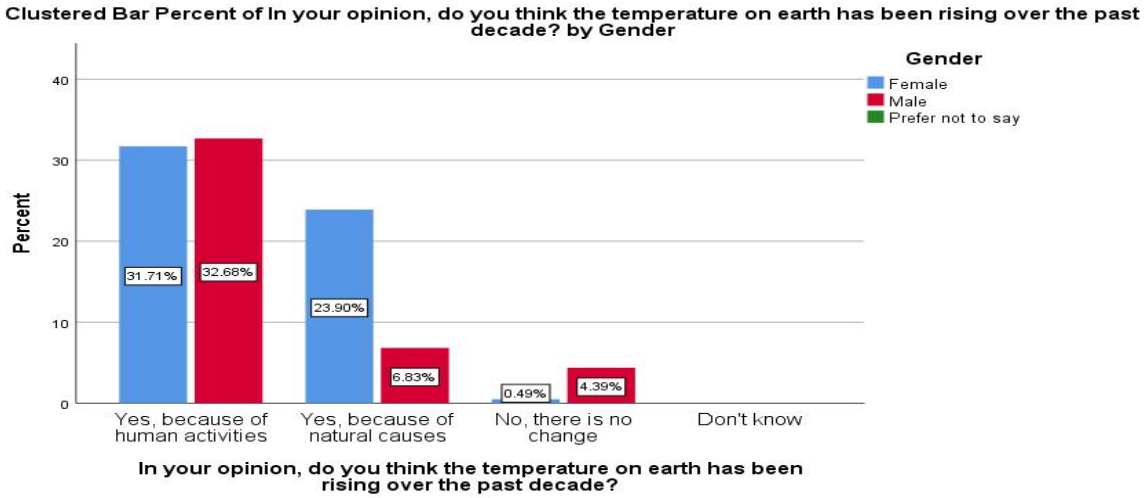
FIGURE 3



LEGEND: In figure 3, it represents state your level of agreement for the following statements regarding global warming climate change with respect to gender

FIGURE 4



LEGEND: In figure 4, it represents in your opinion, do you think the temperature on earth has been rising over the past decade with respect to gender of the respondents

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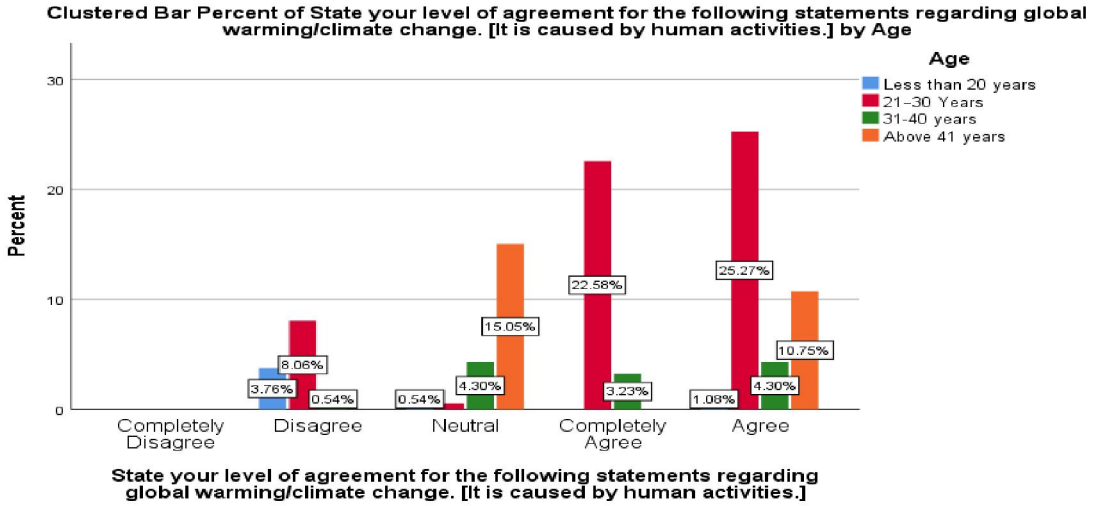
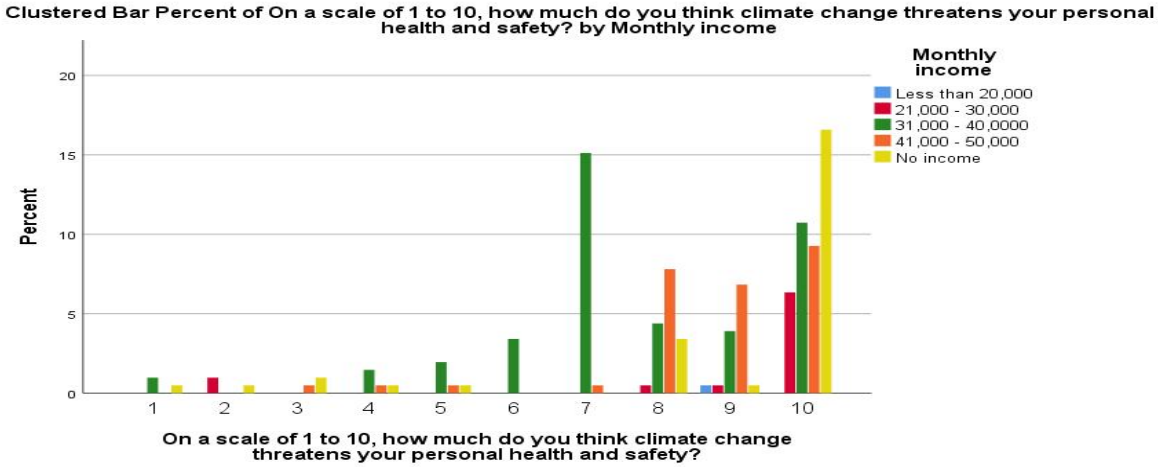
FIGURE 5



LEGEND: In figure 5, it represents your level of agreement for the following statements regarding global warming climate change with respect to age of the respondent.

FIGURE 6



LEGEND: In figure 6, it represents on a scale of 1-10 , how much do you think climate change threatens your personal health and safety with respect to monthly income of the respondent

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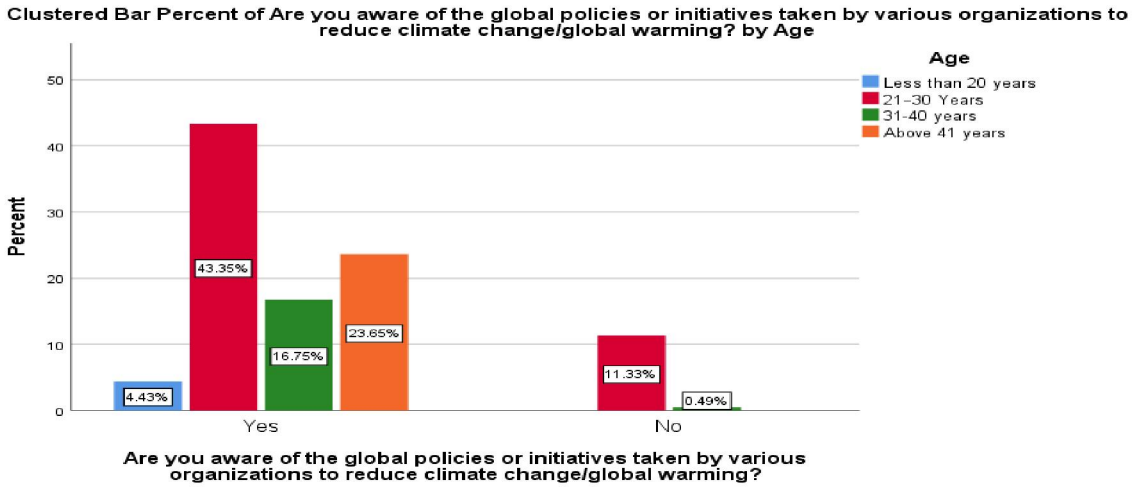
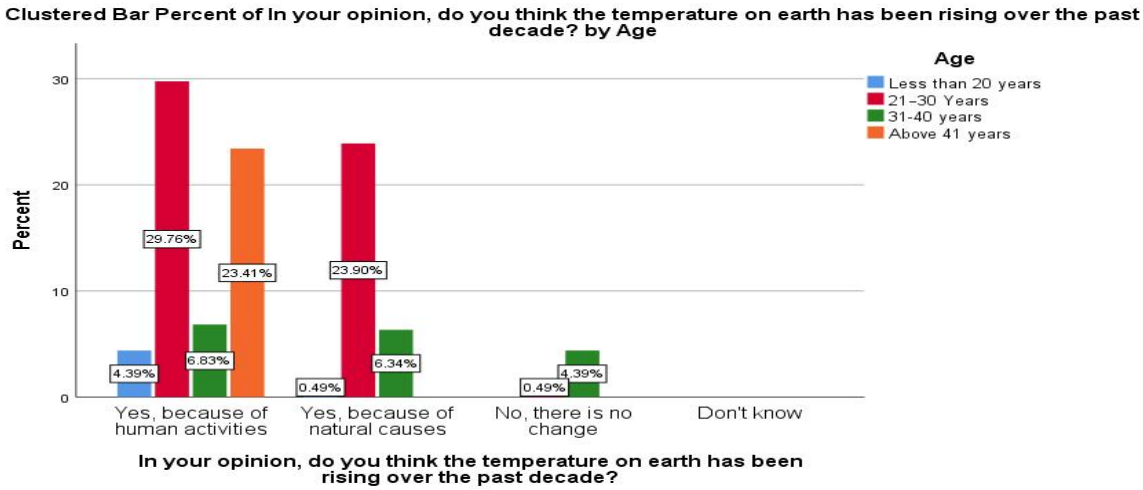
FIGURE 7



LEGEND: In figure 7, it represents are you aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming with respect to age of the respondent.

FIGURE 8



LEGEND: In figure 8, it represents in your opinion, do you think the temperature on earth has been rising over the past decade with respect to age of the respondent.

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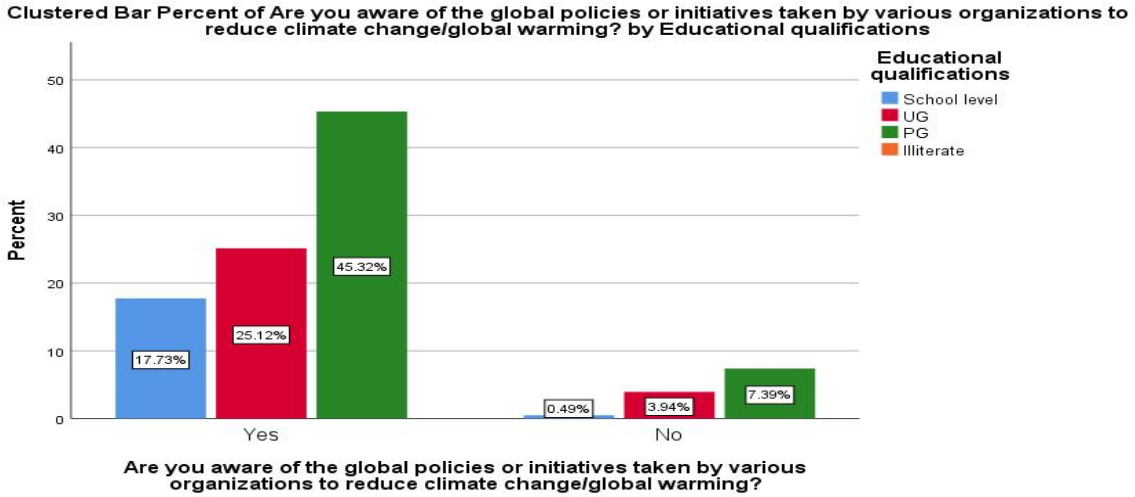
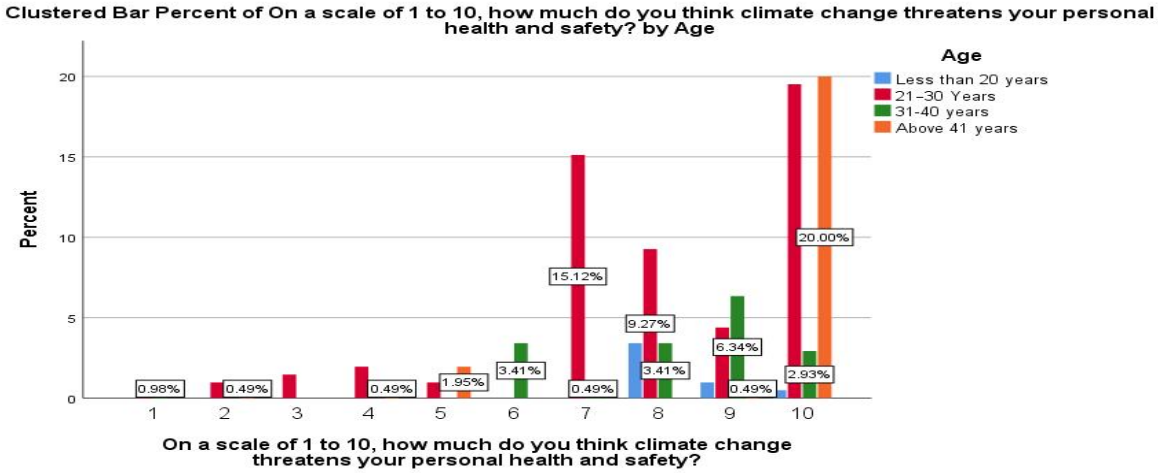
FIGURE 9



LEGEND: Figure 9, represents are you aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming with respect to education qualification.

FIGURE 10



LEGEND: In figure 10, it represents on a scale of 1-10 , how much do you think climate change threatens your personal health and safety with respect to the age of the respondents.

V. RESULT

Figure 1, we assume that most of the respondents had said that the temperature on earth has been rising over the past decades because of human activities. **Figure 2,** we can assume that most of the respondents are aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming. **Figure 3,** we can assume that most of the female respondents completely agreed that global warming and climate change leads to a serious threat to you and your families. **Figure 4,** we can assume that male and female respondents have said that the

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temperature on earth has been rising over the past decade due to human activities. **Figure5,**we can assume that most of the respondents of the age 21-30 years agreed that global warming and climate change occurs due to human activities. **Figure 6,** we can assume that 31,000-40,000 monthly income are the most respondents who said 10 out of 7 climate changes threaten your personal health and safety. **Figure 7,** we can assume that most of the respondents who aged 21-30 years are aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming. **Figure 8,** we can assume that most of the respondents aged 21-30 years have said that the temperature on earth has been rising over the past decade due to human activities. **Figure 9,** we can assume that most PG respondents are aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming. **Figure 10,** we can assume that most of the respondents aged above 40 have scaled 10 out of 10 that climate change threatens your personal health and safety .

VI. DISCUSSION

Figure 1, 64.39% of the respondents had said that the temperature on earth has been rising over the past decades because of human activities because Burning fossil fuels, releasing chemicals into the atmosphere, reducing the amount of forest cover, and the rapid expansion of farming, development, and industrial activities are releasing carbon dioxide into the atmosphere and changing the balance of the climate system. **Figure 2,** 88.18% respondents are aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming . So these are the government policies on climate change,The Government of India launched the National Action Plan on Climate Change (NAPCC) on 30thJune, 2008 outlining eight National Missions on climate change. These include: National Solar Mission. National Mission for Enhanced Energy Efficiency. **Figure3,** 26.18% of the female respondents completely agreed and 25.13% of the male respondents agreed that global warming and climate change leads to a serious threat to you and your families because Extreme temperatures leave many families living in poverty with less food, less clean water, lower incomes and worsening health. Children's immune systems are still developing, leaving their rapidly growing bodies more sensitive to disease and pollution. **Figure 4,** 32.66%of the male and 31.71% of the female respondents have said that the temperature on earth has been rising over the past decade due to human activities because Burning fossil fuels, releasing chemicals into the atmosphere, reducing the amount of forest cover, and the rapid expansion of farming, development, and industrial activities are releasing carbon dioxide into the atmosphere and changing the balance of the climate system. **Figure 5,**25.27% of the respondents of the age 21-30 years agreed that global warming and climate change occurs due to human activities because Burning fossil fuels, cutting down forests and farming livestock are increasingly influencing the climate and the earth's temperature. This adds enormous amounts of greenhouse gasses to those naturally occurring in the atmosphere, increasing the greenhouse effect and global warming. **Figure 6,** 43.35% of the respondents who aged 21-30 years are aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming. **Figure 7,** 43.35% of the respondents who aged 21-30 years are aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming because these are the government policies on climate change,The Government of India launched the National Action Plan on Climate Change (NAPCC) on 30thJune, 2008 outlining eight National Missions on climate change. These include: National Solar Mission. National Mission for Enhanced Energy Efficiency. **Figure 8,** 29.76% of the respondents aged 21-30 years have said that the temperature on earth has been rising over the past decade due to human activities because Burning fossil fuels, releasing chemicals into the atmosphere, reducing the amount of forest cover, and the rapid expansion of farming, development, and industrial activities are releasing carbon dioxide into the atmosphere and changing the balance of the climate system. **Figure 9,** 45.32% of the respondents are aware of the global policies or initiatives taken by various organizations to reduce climate change/global warming because these are the government policies on climate change,The Government of India launched the National Action Plan on Climate Change (NAPCC) on 30thJune, 2008 outlining eight National Missions on climate change. These include: National Solar Mission. National Mission for Enhanced Energy Efficiency. **Figure 10,** 20% of the respondents aged above 40 have scaled 10 out of 10 that climate change threatens your personal health and safety .Climate change increases the risk of illness through increasing temperature, more frequent heavy rains and runoff, and the effects of

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storms. Health impacts may include gastrointestinal illness like diarrhea, effects on the body's nervous and respiratory systems, or liver and kidney damage.

VII. LIMITATION

The study was purely based on the information received through the limited scope and purview of the survey. The study was relevant to the existing market scenario and the information, judgment and predictions of the respondents may differ accordingly with time, status, mind-set and situations. The study also relates to the boom and demands of adventure tourism at the current hour and would differ in case of a change in climate or demographics.

VIII. CONCLUSION

We need to comprehend and acknowledge the way that the outflow of carbon and GHGs can't be halted totally and as we push forward it's simply going to increase. We need to find an answer that tackles the more serious issue as well as remains forever inseparable with monetary development. Consequently to limit the impact of a dangerous atmospheric deviation, instruct as many individuals around you about an Earth-wide temperature boost. Then, at that point, no one but we can forestall the utilization of petroleum products and accordingly decline the emanation of nursery gasses. There are bunches of things to teach individuals like there are a few sites covering the subjects of an unnatural weather change mindfulness.. A model was created to work out carbon motions from horticultural soils. The model incorporates the impacts of harvest (species, yield and turn), environment (temperature, precipitation and evapotranspiration) and soil (carbon content and
water maintenance limit) on the carbon spending plan of rural land. The progressions in nature of harvest deposits and natural material because of changes in CO2 fixation and changed administration were not viewed as in this model. The model was defined for a few harvests and fields. The public authority is doing numerous things to stop an Earth-wide temperature boost. The public authority made a regulation called "The Perfect Air Act" so there is less air contamination. By 2015 all items recorded on the Perfect Air Act.

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