

Changes In Income Levels And Consumption Patterns: The Demographic Drivers Of Climate Change In Jalingo Metropolis Of Taraba State, Nigeria.

John Wajim^{1*}, Andeskebtso Yohanna Adaki², Amadi Gloria Ekenedilichukwu³.

1. Department of Sociology, Faculty of Social Sciences, Federal University Wukari, Taraba State, Nigeria.

2. Department of Sociology, Faculty of Social Sciences, Taraba State University, Jalingo, Nigeria.

3. Institute of Climate Change Studies, Energy and Environment, University of Nigeria, Nsukka, Nigeria.

Abstract

Income levels and consumption patterns are said to be significant contributors to the rising temperatures worldwide, while climate change has been a critical global challenge. As the global population continues to grow and urbanize, the demand for energy,/*transportation, and goods rises which influence climate change. Two theories were adopted for the study which include; Environmental Kuznets Curve (EKC) Theory and Ecological Modernization Theory. The study employed a cross-sectional survey design which efficiently enabled the researchers to collect data from a sample within a short period of time and make broader conclusions on the entire study's population. For the comprehensive exploration of the research issues related to the influence of changes in income levels and consumption patterns on climate change in Jalingo Metropolis, Taraba State; Taro Yamane's formula was adopted to generate 400 sample size out of the 581,000 population of the study's universe. Two-Way ANOVA was employed to test the hypothesis since it deals with two independent variables and a dependent variable analysis. The findings of the study were significant at the P-value of 0.007. This implied that changes in income levels and consumption patterns are significantly responsible for climate change in Jalingo Metropolis, Taraba State. Based on the findings, the study recommends that environmental regulations should be strictly enforced and offenders should be handsomely fined in respect to uncontrolled dumping of waste resulting from their behavioral consumption patterns, public awareness campaign on the dire consequences on waste generation should be organized, including the effective implementation of recycling programmes. In addition, waste

reduction practices that can limit greenhouse gas emissions related to waste disposal should also be advocated for.

Keywords: Climate change, consumption patterns, income levels, demographic drivers, Jalingo.

INTRODUCTION

Climate change is a pressing global issue that is characterized by rising global temperatures, extreme weather events, and environmental disruptions. The role of income levels and consumption patterns in driving climate change is of paramount importance and requires examination from global to local perspectives. Income levels and consumption patterns are significant contributors to the rising of global temperatures. As the global population continues to grow and urbanize, the demand for energy, transportation, and goods rises. Regions with high incomes, particularly in the Global North, exhibit consumption patterns emphasizing resource-intensive lifestyles. This global perspective underscores the need for collective action to address climate change by reevaluating consumption patterns and promoting sustainable development [16].

Europe is marked by diverse income levels and consumption patterns. While Western European countries demonstrate high incomes and consumption rates, Eastern European nations are in an economic transition. The European Union (EU) has taken notable steps in advocating sustainable consumption and production through initiatives like the European Green Deal. These endeavors seek to reduce the environmental footprint of consumption patterns in Europe and combat climate change [17].

Asia, home to a multitude of countries with varying income levels and consumption patterns, faces rapid economic growth in nations such as China and India. This growth has led to increased energy consumption, industrialization, and subsequent emissions. Given its status as the most populous continent, Asia plays a critical role in global climate change. Several Asian countries are striving to adopt greener and more sustainable consumption patterns, recognizing their contribution to climate change [18].

Africa grapples with distinctive challenges in addressing climate change. Many African nations contend with lower income levels and limited resource access. However, they are highly susceptible to the adverse consequences of climate change, including droughts, food insecurity, and population displacement. Africa's sustainable development hinges on responsible resource use, energy efficiency, and the adoption of renewable energy. Promoting such consumption patterns is vital for the continent's progress [19].

Nigeria, the most populous country in Africa, experiences a dual challenge of economic growth and climate change impacts. Income disparities are evident, with high-income urban areas juxtaposed with lower-income rural communities. Consumption patterns in Nigeria exhibit wide variations, influenced by urbanization, lifestyle choices, and cultural norms. The Nigerian government has initiated climate policies and is exploring strategies to encourage sustainable consumption and reduce emissions [20].

Taraba State in northeastern Nigeria exemplifies the impact of climate change on a regional scale. The state has witnessed shifts in precipitation patterns, impacting agriculture and livelihoods. Income levels

fluctuate across the state, with urban centers like Jalingo Metropolis experiencing higher incomes due to commercial activities. Consumption patterns in Jalingo Metropolis influence energy consumption and waste generation, making an understanding of these patterns crucial for localized climate change mitigation strategies [21].

Jalingo Metropolis, the capital of Taraba State, contends with challenges brought by urbanization. Increasing income levels have led to heightened energy demands and resource consumption. Urban heat islands have emerged, contributing to localized temperature rises. The consumption patterns in Jalingo Metropolis, encompassing energy usage and transportation choices, impact the area's climate change contribution. Addressing these issues is fundamental for mitigating climate change at the local level [22].

It is following from here that this study seeks to explore on the influence of changes in income levels and consumption patterns on climate change in Jalingo Metropolis, Taraba State.

OBJECTIVE OF THE STUDY

The specific objective of the study is to ascertain how the changes in income levels and consumption patterns of the residents in Jalingo Metropolis influence changes in climatic condition of the said area.

Conceptual Clarification/Literature Review

Climate Change

Intergovernmental Panel on Climate Change [16], sees climate change as a change in the state of the climate that can be identified (e.g., using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. [27] reiterates that climate change is a long-term change in the average weather patterns that have come to define Earth's local, regional, and global climates. It emphasizes the significance of these changes occurring over an extended period. [26] opined that climate change is a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere, and which is in addition to natural climate variability observed over comparable time periods.[25] defined climate change as changes in the mean and variability of the properties of the Earth's atmosphere, oceans, and land surface, and their interactions over extended periods, typically decades to millions of years. [23], a prominent climate scientist, asserted that climate change is the long-term change in the temperature and average weather patterns in a place.

Income and Consumption Patterns

[31] the renowned economist sees income as the annual labor and produce of any nation, which can be applied to the maintenance and reproduction of its labor. This definition, found in Smith's seminal work, "An Inquiry into the Nature and Causes of the Wealth of Nations," forms the foundation of modern economic thinking. [32] defined income as the reward for the services of all factors of production. He introduced the concept of aggregate income, encompassing all earnings within an economy. [30] a Nobel laureate economist Milton Friedman sees consumption patterns as the relationship between a household's

consumption and its disposable income. He emphasized the importance of consumer behavior and preferences in understanding economic choices. [29], a sociologist and economist, introduced the concept of "conspicuous consumption" in his book "The Theory of the Leisure Class." He defined consumption patterns as the observable ways in which individuals and groups within a society allocate resources and display their social status through their choices of goods and services. [28] defined consumption patterns as a reflection of identity and social norms, where people make consumption choices to conform to their perceived role in society. They introduced the concept of identity economics.

The Influence of Changes in Income Levels and Consumption Patterns on Climate Change

Climate change represents a global crisis with profound implications for the environment, society, and the economy. It is essential to comprehend the intricate relationship between income levels and climate change, particularly in urban areas, where a substantial portion of the world's population resides. This study delves into the ways in which changing income levels influence climate change within urban environments, with a specific emphasis on both the root causes and potential remedies for this critical issue. The Environmental Kuznets Curve (EKC) theory offers a valuable framework for grasping the connection between income levels and their environmental impact [3]. The EKC posits that, initially, as a nation's income levels increase, so does environmental degradation. This upsurge is attributed to heightened consumption of energy and resources, expanded industrial activities, and increased emissions of greenhouse gases. In urban areas, the swift progression of industrialization and urbanization often leads to elevated income levels, accompanied by augmented energy consumption and emissions, thus contributing to climate change.

However, as societies continue to evolve economically and urban regions become more prosperous, they typically reach a turning point. In mid-income stages, there is a trend towards investment in cleaner technologies, improved energy efficiency, and the institution of environmental regulations. At this stage, greenhouse gas emissions may stabilize or even decline. In high-income stages, further reductions take place as cleaner energy sources and sustainable consumption patterns gain prevalence. Urbanization is intricately linked with income levels and plays a central role in shaping the climate change scenario within urban landscapes. Urban areas serve as economic hubs, attracting individuals and boosting income levels. However, this process brings about several climate-related challenges:

- i. **Increased Energy Consumption:** Escalating income levels in urban areas result in heightened energy consumption. A wealthier urban populace often demands more electricity and depends on energy-intensive technologies and transportation systems. This results in elevated greenhouse gas emissions and increases environmental impacts [12].
- ii. **Urban Heat Islands (UHIs):** Urbanization contributes to the formation of Urban Heat Islands (UHIs), localized areas within cities that endure considerably higher temperatures compared to their rural surroundings. The formation of UHIs is attributable to heat-absorbing surfaces such as concrete and asphalt. As cities expand, UHIs intensify, exacerbating local temperature increases and disrupting climate patterns (Oke, 1982).

To mitigate the influence of income-driven climate change within urban areas, a multifaceted strategy is indispensable:

- i. **Energy Efficiency:** Promoting energy-efficient technologies, advocating for public transportation, and reducing energy consumption through astute urban planning are crucial steps in curtailing energy-related emissions [15].
- ii. **Transition to Renewable Energy:** Shifting to cleaner energy sources, including renewables, and diminishing dependence on fossil fuels is of paramount importance. Government incentives and policies are instrumental in facilitating this transition [6].
- iii. **Green Urban Planning:** Implementing urban designs that prioritize green spaces, trees, and sustainable infrastructure can help combat Urban Heat Islands and enhance air quality [5].
- iv. **Environmental Regulations:** Stringent environmental regulations are essential to curtailing pollution and emissions within urban areas. These regulations should be enforced rigorously to ensure compliance [7].
- v. **Promotion of Sustainable Lifestyles:** Encouraging residents to embrace eco-friendly consumption patterns, such as employing energy-efficient appliances and endorsing sustainable practices, can contribute significantly to reducing the environmental impact of urbanization [15].

The intricate relationship between income levels and climate change within urban areas calls for a well-informed and multi-faceted response. The EKC theory suggests that, over time, wealthier societies are better positioned to prioritize environmental sustainability. Nonetheless, the swift urbanization and increasing incomes in these areas also lead to higher energy consumption and localized climate effects. Finding the equilibrium between economic growth and environmental responsibility is a momentous challenge. It necessitates comprehensive policies that guide urban areas toward sustainability and empower individuals to make eco-conscious choices. Addressing income-driven climate change in urban areas necessitates a collective effort with global implications for the fight against climate change.

Consumption patterns to how individuals, households, and societies utilize resources and engage in the consumption of goods and services have negative influence on climate change. These patterns are intimately connected to climate change, as they shape the demand for energy, products, and resources. In urban areas, consumption patterns are often shaped by factors such as income levels, lifestyle choices, and cultural norms.

- i. **Energy Consumption:** Urban residents with high consumption patterns tend to exhibit elevated energy consumption for both household needs and transportation. This heightened energy demand results in increased greenhouse gas emissions, contributing to global warming and climate change [15].
- ii. **Resource Depletion:** High consumption often leads to the depletion of natural resources, including water, minerals, and forests. Unsustainable resource utilization not only disrupts ecosystems but also contributes to climate change by disturbing the natural balance [12].

- iii. **Waste Generation:** Excessive consumption yields higher waste production, including non-biodegradable materials. The management and decomposition of waste generate greenhouse gases, exacerbating the climate crisis [11].
- iv. **Deforestation:** Certain consumption patterns fuel deforestation, particularly for products such as beef, palm oil, and soy. Deforestation releases stored carbon into the atmosphere, exacerbating climate change [9].

To alleviate the influence of consumption patterns on climate change in urban areas, a shift toward sustainable consumption patterns is imperative:

- i. **Energy-Efficient Products:** Encouraging the adoption of energy-efficient appliances and vehicles can substantially reduce energy consumption and emissions.
- ii. **Reduced Meat Consumption:** Promoting a reduction in meat consumption, particularly beef, can aid in curbing deforestation and greenhouse gas emissions associated with the meat industry [14].
- iii. **Public Transportation:** Developing and expanding public transportation systems in urban areas can reduce the reliance on private vehicles, leading to lower emissions [10].
- iv. **Recycling and Waste Reduction:** Implementing effective recycling programs and advocating waste reduction practices can limit greenhouse gas emissions related to waste disposal [15].
- v. **Consumer Education:** Raising awareness and educating consumers about the environmental impact of their choices can empower them to make more sustainable decisions [13].

The connection between consumption patterns and climate change in urban areas is significant. High consumption often results in elevated energy use, resource depletion, waste generation, and deforestation, all of which contribute to the climate crisis. To address this issue, a transition to sustainable consumption patterns is necessary. Efforts to encourage the adoption of energy-efficient products, reduce meat consumption, improve public transportation, promote recycling and waste reduction, and provide consumer education are all essential. By promoting these changes, urban areas can reduce their impact on climate change and work towards a more sustainable and environmentally responsible future.

Theoretical Underpinnings

Environmental Kuznets Curve (EKC) Theory

The EKC theory offers a framework for understanding how variations in income levels impact climate change in urban environments. It suggests that as incomes rise, environmental degradation initially worsens but then improves beyond a certain income threshold [3]. This theory can be applied to urban contexts, where economic growth often coincides with increased consumption and energy use.

- a). **Stage One (Low Income):** In the initial phases of economic development, characterized by low incomes and rapid urbanization, consumption patterns tend to favor resource-intensive industries and high-pollution activities. This results in the escalation of greenhouse gas emissions and other forms of environmental harm in urban areas [4]

b). Stage Two (Middle Income): As urban populations become more prosperous, they typically begin to invest in environmental protection measures and cleaner technologies. This can lead to a stabilization or even a reduction in emissions and pollution [4].

c). Stage Three (High Income): In the advanced stages of economic development, emissions and pollution may substantially decrease. Urban areas may adopt cleaner energy sources, advanced waste management systems, and stringent environmental regulations. At this stage, consumption patterns might shift towards more sustainable products and practices [8].

To effectively apply the EKC theory in urban areas especially in Jalingo Metropolis of Taraba State, it's essential to implement policies and strategies that promote sustainable urban development, encourage energy efficiency, and support the adoption of clean technologies at all stages of development [4].

Ecological Modernization Theory:

The Ecological Modernization theory focuses on the transformation of consumption patterns and production processes as a response to environmental challenges. It suggests that as societies modernize, they can transition to more sustainable, eco-friendly consumption patterns and technologies [1].

a). Green Innovation: In urban areas, the theory highlights the role of technological innovation and industrial restructuring. As income levels rise, there is often greater investment in green technologies, energy-efficient urban infrastructure, and cleaner production processes [1].

b). Sustainable Lifestyles: Ecological Modernization also emphasizes the potential for shifts in consumer preferences. As urban populations become more environmentally aware, they may adopt eco-friendly consumption patterns, such as choosing public transportation over private cars, embracing energy-efficient appliances, and supporting sustainable urban planning [1].

To apply the Ecological Modernization theory in urban areas, policymakers and urban planners ought to prioritize sustainable development, encourage green innovation, and promote sustainable lifestyles among urban residents. This theory proposes that urban areas can mitigate their impact on climate change by modernizing in an environmentally responsible manner.

METHODOLOGY

The research employed a cross-sectional survey design to efficiently collect data from a sample and make broader conclusions about the entire study population in a short time frame. To ensure a comprehensive exploration of the research issues related to the influence of changes in income levels and consumption patterns on climate change in Jalingo Metropolis, Taraba State. The study used a methodological triangulation approach, combining both primary and secondary data collection, analysis, and interpretation methods. This approach provided a thorough understanding of the subject.

The study's target population included all residents of the research area, and a multistage sampling technique was applied. The study universe was divided into eleven clusters based on existing areas within the metropolis, such as Angwan Abuja, Angwan Kasa, Angwan Sarki, Magami, Mayo Dasa, Mayo Goi,

Mile Six, NTA, Nukai, Nyamusala, and Road Block. Each of these areas was fairly represented in the sample selection process. To achieve this fairness, a proportional sample was drawn from a total of 400 samples using Taro Yamane's formula, considering the estimated population projection of 581,000 for the city as of November 2022.

The statistical tool employed for the study's data analysis was Two-Way ANOVA, this statistical tool was chosen because it can assess the influence of two independent variables and their interactions on a dependent variable. The two independent variables of the study include; changes in income levels and consumption patterns, while the dependent variable of the study is climate change. This approach was selected to effectively examine the relationships between the variables under investigation in order to ascertain whether the independent variables have significant influence on the dependent variable or not.

RESULTS

Socio-Demographic Characteristics of Respondents

A total number of 400 copies of questionnaire were administered. However, only 390 copies of the questionnaire were completed and returned. Based on the aforesaid, the analysis was based on the 390 respondents. The findings were presented in the table below:

Table 1: Socio-Demographic Characteristics of Respondents

Age	Frequency	Percentage
18-25	50	13%
26-32	70	18%
33-40	150	38%
41-46	40	10%
47-50	60	15%
51 and above	20	5%
Total	390	100%
Gender		
Male	245	63%
Female	145	37%
Others	0	0
Total	390	100
Religion		
Christian	276	71%
Muslim	114	29%
Total	390	100
Educational Qualification		

No formal education	45	12%
First school leaving certificate	55	14%
Senior Secondary School certificate	100	26%
National Diploma/ NCE	50	13%
Higher National Diploma/ B.Sc Degree	130	33%
M.sc/ PhD	10	2%
Total	390	100%
Marital Status		
Single	12	3%
Married	270	69%
Divorced	45	12%
Widow/widower	63	16%
Total	390	100%
Occupation		
Student	20	5
Civil servant	70	19
Trader/business	120	30
Farmer	110	28
Artisan	44	11
Unemployed	26	7
Total	390	100%

Source: Field Survey, 2024

The above table revealed that the age of the respondents. 50 respondents representing (13%) of the study's population age were between the ages of 18-25, 70 respondents representing (18%) of the research population were between the ages of 26-32, 150 respondents representing (38%) of the study's population were between the ages of 33-40, 40 respondents representing (10%) of the respondents were between the ages of 41-46, 60 respondents representing (15%) of the study's population were between the ages of 47-50, 20 respondents representing (5%) of the respondents were between the ages of 51 and above.

On the gender of the respondents, 245 respondents representing (63%) of the research population were male, 145 respondents representing (37%) were female. On the religion of the respondents, 276 respondents representing (71%) of the research population were Christian, 114 respondents representing (29%) were Muslims. On the educational qualification of the respondents, 45 respondents representing (12%) of the research population has no formal education, 55 respondents representing (14%) of the research population were First School Leaving Certificate Holders, 100 respondents representing (26%) of the research population were Senior Secondary School Certificate Holders, 50 respondents representing (13%) of the research population were National Diploma/ National Certificate in Education Holders, 130 respondents representing (33%) of the research population were B.sc Degree Holders/ Higher National Diploma Holders while 10 respondents representing (2%) of the research population were Masters/ PhD holders.

On the Marital Status of the respondents, 12 respondents representing (3%) of the research population were single, 270 respondents representing (69%) of the research population were married, 45 respondents representing (12%) of the research population were divorced while 63 respondents representing (16%) of the research population were widowed/widower. On the occupation of the respondents, 20 respondents representing (5%) of the research population were students, 70 respondents representing (19%) of the population were civil servants, 120 respondents representing (30%) of the population were traders, 110 respondents representing (28%) of the population were farmers, 44 respondents representing (11%) of the occupants of Jalingo Metropolis were artisan, 26 respondents representing (7%) of the study's population were unemployed.

Data Presentation and Analysis

The study determined the influence of changes in income levels and consumption patterns on climate change. The cutoff point of the mean was 3.50. Therefore, the mean value of 3.50 and above indicated acceptance, while the main value of less than 3.50 indicated rejection. Based on the results of the study, all the indicators have the mean that were above 3.50. This implied that changes in income levels and consumption patterns are significantly responsible for climate change in Jalingo Metropolis, Taraba State. These findings were presented on the table below:

Table 2: Ratings on the influence of changes in income levels and consumption patterns on climate change in Jalingo Metropolis, Taraba State

Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	X	STD
Higher income levels and increased in consumption of goods and services among the residents of Jalingo Metropolis is responsible for the higher levels of energy consumption and greenhouse gas emissions.	39(10)	178(45.6)	8(2.05)	59(15.1)	106(27.1)	4.15	.873
Higher income levels among the residents of Jalingo Metropolis drives them to purchase more goods and services that require energy to produce and consume, such as vehicles, air conditioning, electronics, etc.	162(41.5)	187(47.9)	3(0.76)	23(5.8)	15(3.8)	3.55	.849

Changes in income levels among Jalingo residents influence the increase levels of meat consumption which is linked to higher greenhouse gas emissions from livestock production	185(47.4)	127(32.5)	2(0.5)	45(11.5)	31(7.9)	3.98	.609
As Jalingo residents incomes rises, they often demand for the higher standards of living, which is leading to changes in land use and agricultural practices that is also contributing to climate change.	224(57.4)	126(32.3)	1(0.25)	21(5.3)	18(4.6)	3.74	.830

Source: Field Survey, 2024

Findings from the table above revealed that all the indicators on the changes in income levels and consumption patterns were accepted with the mean scores of above 3.50, and the standard deviation ranged from 0.609 and 0.873. This indicated that, the standard deviation were close to each other which also shows how close the variables were.

Test of Hypothesis

Hypothesis: Changes in income levels and consumption patterns have no significant influence on climate change in Jalingo Metropolis, Taraba State

Table 3: ANOVA Test on the influence of changes in income levels and consumption patterns on climate change in Jalingo Metropolis, Taraba State.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	191.090	4	45.733	47.444	.007
Residual	10.210	154	.549		
Total	201.300	158			

Source: Field Survey, 2023

Table 3 above indicated that Analysis of Variance (ANOVA) was used to determine the influence of changes in income levels and consumption patterns on climate change. After the analysis, the sum of square of regression and residual results were 191.090 and 10.210 respectively. While the P-value was

0.007 which is less than 0.05 at 4 degree of freedom. This signified that changes in income and consumption patterns have significant influence on climate change. Therefore, the researcher rejects the null hypothesis that says, "Changes in income levels and consumption patterns have no significant influence on climate change in Jalingo Metropolis, Taraba State", and accepted the alternate hypothesis that read, "Changes in income levels and consumption patterns have significant influence on climate change in Jalingo Metropolis". This implies that as the income levels and consumption patterns of the residents of Jalingo Metropolis rises, the people are more likely to purchase more goods and services that can lead to higher levels of energy consumption and greenhouse gas emissions which can contribute to climate change. In sum, the results of the ANOVA test showed that there is a statistically significant influence of changes in income levels and consumption patterns on climate change. The "Regression" statistics indicated that changes in income levels and consumption patterns explain a significant portion of the variance in climate change. The F-value and the associated p-value both support the conclusion that there is a meaningful relationship between changes in income/consumption patterns and climate change in this context.

The study's findings revealed that there is a statistically significant influence of changes in income levels and consumption patterns on climate change in Jalingo Metropolis. The findings were in consonant with the views of [12], who reiterated that escalating income levels in urban areas result in heightened energy consumption. In addition, wealthier urban populace often demands more electricity and depends on energy-intensive technologies and transportation systems. This results elevated greenhouse gas emissions and increases environmental impacts. The findings were also in agreement with [15] who asserted that high consumption patterns tend to exhibit elevated energy consumption for both household needs and transportation. This heightened energy demand results in increased greenhouse gas emissions, contributing to global warming and climate change. [12] corroborated that high consumption often leads to the depletion of natural resources, including water, minerals, and forests. Unsustainable resource utilization not only disrupts ecosystems but also contributes to climate change by disturbing the natural balance. Excessive consumption yields higher waste production, including non-biodegradable materials. [11] opined that the management and decomposition of waste generate greenhouse gases, exacerbating the climate crisis. [9] unveiled that certain consumption patterns fuel deforestation. They further reiterated that deforestation releases stored carbon into the atmosphere, exacerbating climate change.

CONCLUSIONS / RECOMMENDATIONS

Consumption patterns to how individuals, households, and societies utilize resources and engage in the consumption of goods and services contribute to climate change. In urban areas, consumption patterns are often shaped by factors such as income levels and lifestyle choices. Findings from the study showed that there is a statistically significant influence of changes in income levels and consumption patterns on climate change with the P-value of 0.007. This implied that as the income levels and consumption patterns of the residents and immigrants in Jalingo Metropolis are improving, the people are more likely to purchase more goods and services that can result to higher levels of energy consumption and greenhouse

gas emissions which can be harmful to humans' health and as well serves as a threat to sustainable development.

Based on the findings of the study, it's recommended that there should be environmental regulations, strict enforcement and handsome fines for offenders in respect to uncontrolled dumping of waste resulting from their behavioral consumption patterns, public awareness campaign on the dire consequences of waste generation and impact of climate change on human's health, implementation of effective recycling programmes, waste reduction practices that can limit greenhouse gas emissions related to waste disposal should be advocated for, and government should provide social amenities and employment opportunities to the people in rural areas in order to curtail the rate of the influx of people to Jalingo which is the capital city of Taraba State. In addition, those migrating to Jalingo for settlements without any aim should be regulated by the government.

REFERENCES

- [1] Mol, A. P., & Sonnenfeld, D. A. (2000). Ecological modernization around the world: An introduction. *Environmental Politics*, 9(1), 1-16.
- [2] Mol, A. P. J., & Spaargaren, G. (2000). Ecological modernization and consumption: A reply. *Environmental Politics*, 9(1), 77-98.
- [3] Grossman, G. M., & Krueger, A. B. (1995). Economic growth and the environment. *The Quarterly Journal of Economics*, 110(2), 353-377.
- [4] Stern, D. I. (2004). The rise and fall of the environmental Kuznets curve. *World Development*, 32(8), 1419-1439.
- [5] Akbari, H., Pomerantz, M., & Taha, H. (2001). *Cool roofs and pavements*. Oak Ridge National Laboratory.
- [6] Bosetti, V., Cattaneo, C., Verdolini, E., & Peri, M. (2015). The future prospect of PV and CSP solar technologies: An expert elicitation survey. *Energy Policy*, 80, 173-189.
- [7] Crespo Cuaresma, J., Danylo, O., & Fritz, S. (2018). Economic development and forest cover: Evidence from satellite data. *Ecological Economics*, 146, 231-241.
- [8] Grossman, G. M., & Krueger, A. B. (1995). Economic growth and the environment. *The Quarterly Journal of Economics*, 110(2), 353-377
- [9] Gibbs, H. K., Rausch, L., Munger, J., Schelly, I., Morton, D. C., Noojipady, P., & Walker, N. F. (2015). Brazil's soy moratorium. *Science*, 347(6220), 377-378
- [10] Gössling, S., Scott, D., & Hall, C. M. (2019). *Tourism and water: Interactions and impacts*. Channel View Publications.
- [11] Hoornweg, D., & Bhada-Tata, P. (2012). *What a waste: A global review of solid waste management*. The World Bank.
- [12] Liu, W., Viard, B., & Fan, J. (2017). *Income and consumption: A global perspective*. *Journal of Economic Perspectives*, 31(2), 131-154.

- [13] Lanzini, P., & Acheampong, A. O. (2021). The role of education in changing consumption behavior for more sustainable living: A systematic review. *Sustainability*, 13(4), 1996.
- [14] Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), 987-992.
- [15] Sovacool, B. K., & Brown, M. A. (2010). Competing dimensions of energy security: An international review. *Energy Policy*, 38(1), 81-90.
- [16] IPCC. (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, Pachauri, R. K. and Meyer, L. A. (Eds.)]. IPCC.
- [17] European Commission. (2019). *The European Green Deal*. Retrieved from https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
- [18] UNESCAP. (2019). *Sustainable Consumption and Production Policies in Asia and the Pacific*. Retrieved from <https://www.unescap.org/sites/default/files/Sustainable%20consumption%20and%20production%20policies%20in%20Asia%20and%20the%20Pacific%20%28Advance%20copy%29.pdf>
- [19] African Development Bank. (2019). *Africa and the Green Climate Fund: A Call for Greater African Involvement*. Retrieved from <https://www.afdb.org/en/news-and-events/africa-and-green-climate-fund-call-greater-african-involvement-19369>
- [20] Federal Ministry of Environment Nigeria. (2016). *Nigeria's Intended Nationally Determined Contributions (INDC)*. Retrieved from <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Nigeria%20First/INDC%20Nigeria%20submitted%20to%20the%20UNFCCC.pdf>
- [21] Taraba State Government. (2018). *Taraba State Climate Change Policy*. Retrieved from <https://www.climatelinks.org/sites/default/files/asset/document/2018-08/TARABA%20STATE%20CLIMATE%20CHANGE%20POLICY.pdf>
- [22] Jalingo Local Government Area. (2019). *Welcome to Jalingo Local Government Area*. Retrieved from <http://www.tarabastate.gov.ng/jalingo-local-government-area/>
- [23] Hansen, J. (2007). Scientific reticence and sea level rise. *Environmental Research Letters*, 2(2), 024002.
- [24] IPCC. (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, Pachauri, R. K. and Meyer, L. A. (Eds.)]. IPCC.
- [25] World Meteorological Organization (2019). *Climate: WMO Statement on the State of the Global Climate*. Retrieved from https://library.wmo.int/index.php?lvl=notice_display&id=21510#.YhYmR2_0nX4.
- [26] United Nations Framework Convention on Climate Change. (1992). *United Nations Framework Convention on Climate Change*. Retrieved from <https://unfccc.int/resource/docs/convkp/conveng.pdf>.
- [27] NASA. (n.d.). *Climate Change: How Do We Know?* Retrieved from https://climate.nasa.gov/climate_resources/139/.

-
- [28] Akerlof, G. A., & Kranton, R. E. (2000). Economics and Identity. *The Quarterly Journal of Economics*, 115(3), 715-753.
- [29] Veblen, T. (1899). *The Theory of the Leisure Class*. Macmillan.
- [30] Friedman, M. (1957). *A Theory of the Consumption Function*. Princeton University Press.
- [31] Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*. W. Strahan and T. Cadell.
- [32] Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. Harcourt, Brace.