

Journal of Geography & Development



Volume 9 No. 1
December, 2019

Authors	Articles	Page No.
Monday Akpegi Onah, Kwaghfan John Atim, Patricia Ali ³ and Grace Hembadoon Yiyeh ⁴ Tunde, A.M	Preliminary Evaluation of Groundwater Quality in Mining Areas of Azara, Awelga of Nasarawa State	1194
Adeleke, Elisha Ademola ¹ Jeje Olasunkanmi Gabriel ² and Sulyman Rukayat Eniola ¹	Gender Equality: A Key to Sustainable Development in Nigeria	1207
Adeleke, Elisha Ademola ¹ Jeje Olasunkanmi Gabriel ² and Jolaoso Olapeju Omolade ¹	Assessment of Farmers' Resilience to Effects of Climate Change in Asa Local Government Area, Kwara State, Nigeria	1217
Ishaya S* Dakyes S. P., and Amina S. A.	Climate Change and Perceptive Human Behavior in Surulere Local Government Area of Lagos State, Nigeria	1230
Johnson O. Mage ¹ Salemkaan A. Iorkua and Anthony J. Asaaga	Effect of Meteorological Factors on the Incidence of Malaria in Gwagwalada Town, Gwagwalada Area Council-Abuja, Nigeria	1246
Oroduen Joshua Ahile Jonathan Ityoafa Abawua	An Evaluation of Rainfall Intensity And Soil Loss in Benue State University, Makurdi, Nigeria.	1260
Ogbu, S. Okonkwo	Effect of Leucaena (leucaena Leucocephala) Prunings on Soil Ph Status in Igyungu Village of Ikôv District, Benue State, Nigeria	1270
Jenkwe E. D. And Magaji J.Y.	Analysis of Benefits from Industrial Activities At The Emerging Industrial Area of The 9th Mile, Enugu State, South Eastern Nigeria	1287
Adeniyi Enekoleesther	Assessing the Physiochemical Properties of Soils under various Cropping in Kwaliand Its Environs, FCT Abuja.	1307
	Socio-economic Contributions of Eco-tourism in selected Host Communities of Sepeteri and Igbeti in Old Oyo National Park, Nigeria.	1322

CLIMATE CHANGE AND PERCEPTIVE HUMAN BEHAVIOR IN SURULERE LOCAL GOVERNMENT AREA OF LAGOS STATE, NIGERIA

Adeleke, Elisha Ademola¹

Jeje Olasunkanmi Gabriel² and

Jolaoso Olapeju Omolade¹

¹Department of Geography & Environmental Management,
University of Ilorin, Ilorin Nigeria.

²Department of Geography and Regional Planning,
Federal University, Dusu-ma, Nigeria

Corresponding Author: P.M.B.1515, University of Ilorin, Nigeria.
adelekeelisha@yahoo.com, adeleke.ea@unilorin.edu.ng
(+2348032961258, +2348055353727)

ABSTRACT

Climate is one of the fundamental factors that determine human activities. Human activities and many sectors of economic activities depend on weather and climate in different ways. This study aims at assessing climate change and peoples' perception of human behavior in Surulere LGA of Lagos State. Data were gotten through the administration of 204 copies of questionnaires; secondary data sources on crime were gotten from the Nigerian police force Lagos state while the climatic data was gotten from Nigerian Meteorological Agency, Oshodi, Nigeria. Mean, Coefficient of variation, time series and correlation were used for data analysis. The result of the study revealed that rainfall, relative humidity, minimum temperature, maximum temperature and sunshine hours were on the increase in the area. Also, assault, rape, theft, breach of peace, burglary, cultism and false pretence were on the increase while robbery was on the decrease side during the period of study. The result showed that 85% of the respondents were aware of climate change, 80% indicated that climate influence their mood while 88% stated that climate influence their mode of dressing. Furthermore, 49% of the respondents feel irritated during hot afternoons, 71% stated that climate influence their water use behavior while 63% stated that climate affects their economic activities. Furthermore, majority of the respondents employ showering and removal of cloth as a coping strategy in hot afternoons, majority of the respondents construct drainages to reduce flood in the area while new diseases noticed by the respondents include Lassa fever, Ebola, bird flu and monkey pox. It could be concluded that climate influenced how people feel, react, and think. It influenced economic activities, infectious diseases and also affects the water use behavior of residents. It was therefore recommended that residents can stay under the trees during hot afternoons to cool down their body.

Key words: Climate, Health, Crimes, Behaviour, Diseases

1.0 Introduction

Climate is the average weather condition or the regular variations in weather in a region over a period of years usually 30-35 years (Tunde *et al.*, 2013). Climate is a global variable which has a direct influence on every aspect of human existence such as our natural environment, economies, political, cultural, special interactions and development (Wilhelm, 2012). The advancement of human development and technological improvement has had an intense

negative impact on the earth's climate. This technological improvement has led to a significant variation in the climate of the earth resulting to the problems of climate change which is considered as one of the world's greatest human development challenges (Barnett and Adger, 2007).

Climate change is a change in global or regional climate patterns. Intergovernmental Panel on Climate Change (IPCC, 2007) opined that climate change refers to statistically significant variation in either the mean state of the climate or in the variability of the mean state of climate, occurring for a long period (decades or longer), between 30 to 40 years. According to Odjugo (2011), climate change is caused by both natural (bio-geographical) processes and human (anthropogenic) activities. However, the current changes and those projected for the future differ in that they are largely driven by human behaviour (IPCC, 2007). Given that the human contribution to the problem is intimately related to sustainability behaviour, climate change is a central concern of psychology, especially environmental psychology, and other behavioural sciences.

Human behaviour is changing the climate, and humans are in turn impacted by climate change. According to IPCC (2007), climate change is highly likely to result in more frequent temperatures, floods, drought, extreme storms, heat related deaths, infectious disease epidemics, and decreases in crop yields and water quality. Although some uncertainty exists about the rate and intensity of these changes because they are contingent in part on the success of mitigation effort, many of these changes are irreversible (Pachauri, 2007). Thus, these impacts not only pose a considerable threat to human health and well-being, but they will also require much adaptation.

Evidence has associated climatic elements, like temperature, sunshine, humidity and wind speed, to the changes of human pathology, mood and cognition status, as well as the tendency for crime and suicides (Liu *et al.*, 2015). For instance, a paradox is that if daily weather changes lead to a particular behaviour (warm weather leads to violence) that in turn becomes a regional culture (people tend to be more violent), this behaviour pattern will eventually perpetuate independently (e.g. these people become more violent than others independent of weather). Furthermore, social scientists are increasingly discovering new evidence linking weather and human behaviour, such as sunshine and rainfall to stock buying and consumer decisions (Murray *et al.*, 2010). Abrupt climate change is linked to societal restructuring and climatic change toward warmer temperature and extreme rainfall is associated with the events of human violence (Hsiang *et al.*, 2013).

Humans constantly experience and react to temperature because temperature varies markedly across the world; it is conceivable that temperature shapes the fundamental dimensions of personality by affecting the habitual behaviour that underlies personality traits (Van de Velt, 2013). Temperature may shape personality directly by influencing individual behaviour (for example, exploring outdoors versus staying indoors), and less directly by influencing collective activities (for example, agriculture) that guide individual behaviour (Talhelm, 2014). Consequently, regions with different ambient temperatures may result in different patterns of personality traits. Temperature is a key factor that relates to personality. Mild temperatures encourage individuals to explore the outside environment, where both social interactions and new experiences abound; by contrast, when the temperature is either too hot or too cold, individuals are less likely to go outside (for example, to meet up with friends, or to try new activities) (Talhelm, 2014).

Ijzerman (2015) stated that individuals are more likely to explore their environments when they feel psychologically secure. Thus, individuals who grow up in more mild temperatures will be higher on both the socialization factor and the personal growth factor. More mild

temperatures facilitate social contact, for which agreeableness, conscientiousness and emotional stability are important. Moreover, clement temperatures have been shown to enhance positive mood and lead individuals to behave more pro-socially. Temperature affects agricultural activities (when and what to farm), individuals' migration decisions, and pathogen prevalence. Thus, ambient temperature likely has important explanatory power for geographical variation in Human behaviour (Tucker and Gillnad, 2007). In view of this, this study wants to examine the effect of climate on human behaviour in Surulere local government area of Lagos state.

2.0 The Study area

Surulere local government is located between Latitude 6°27' and 6°31' North of the equator and 3°19 and 3°23' East of the Greenwich meridian. It is bounded to the north by Oshodi Isolo local government, east by Lagos mainland local government, South and west by Ajeromi local government (Figure 1). It has an area of 23 square kilometre (Lagos state bureau of Statistics, 2009). In the Koppen's climate classification system, the study area has tropical wet and dry climate (Aw) that borders on a tropical monsoon climate (Am). The study area experiences two rainy seasons, with the heaviest rain falling from April to July and a weaker rainy season in October and November (Komolafe *et al.*, 2014). The dominant vegetation of the study area is the swamp forest consisting of the freshwater mangrove swamp forest both of which are influenced by the double rainfall pattern of study area, which makes the environment a wetland region. The geology of the study area is mainly sedimentary of tertiary and quaternary sediments. (Akanni, 2010).

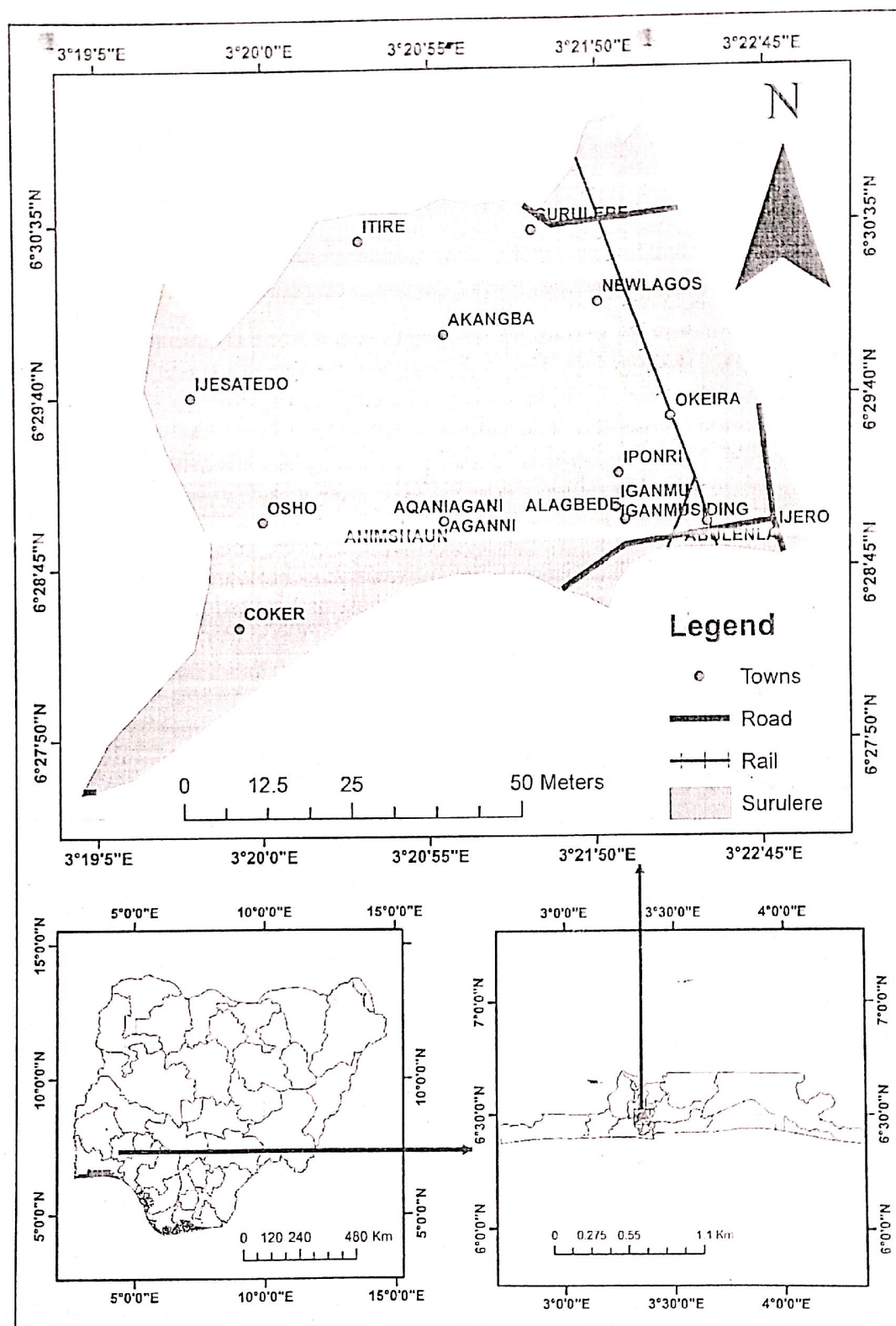


Figure 1.: Map of Surulere Local government Area
Source: Adapted from the Administrative Map of Lagos state (2019)

The drainage system of the study area is characterized by a maze of lagoons and waterways which constitute about 22 percent of 787 sq. kms (75,755 hectares) of the state total landmass. The major water bodies of the study area are Lekki Lagoons, Yewa and Ogun Rivers. Others are Ologe Lagoon, Kuramo Waters, Badagry, Five Cowries and Omu (Oshodi, 2013).

3.0 Materials and Methods

The data required for the study are sourced both primarily and secondarily. The data sourced primarily are incidence of some selected crime between 1982 and 2017, socio economic characteristics of the respondents, data on perception of residents to changing climate, data on effect of climate on human behavior and data on coping strategy employed by residents of the area. The data sourced secondarily are climatic variables of the study area which are rainfall amount, minimum temperature, maximum temperature, sunshine hours, relative humidity and wind speed (1975-2018).

The principal instrument used in this research is questionnaire, which was administered in the study area. The items were structured and designed to elicit responses on issues relevant to the study. 204 questionnaires are administered in the study area using a random sampling technique. The questionnaire was administered to the respondents who in compliance with the directive, filled the copies and returned them to the researcher. After the completion of administering the questionnaires, it was collected, compiled and summarized. Both descriptive (mean, standard deviation, coefficient of variation, charts and simple percentages) and inferential (time series analysis and correlation analysis.) statistics were used for data analysis. Weighted score was used to rank their perception of respondents on climate change issues.

4.0 Results and Discussions

4.1 Behaviour of Climatic Elements (1982-2017)

The Climatic variables in the area during the study period are presented in Table 1. The lowest rainfall in the area during the period of study was 74.60mm while the highest amount was 189.40mm. The mean rainfall for the study period was 131.84mm with a standard deviation of 25.69 and a coefficient of variation of 19.5%. This means that the mean annual rainfall received in the area during the period of study was homogeneous. The result revealed that the lowest relative humidity during the period of study was 77.60% while the highest was 85.50%. The mean relative humidity was 82.3% with a standard deviation of 1.70 and a coefficient of variation of 2.06%. This implies that the relative humidity received in the area during the period of study was homogenous. The result in Table 4.1 depicts that the lowest sunshine hours was 4.5hours while the highest was 5.6hours during the period of study. The mean sunshine hours received in the area during the study period was 5.06hours with a standard deviation of 0.29 and a coefficient of variation of 5.7%. This impliedly explained that sunshine hours received in the area during the period of study was homogenous.

Table : Climatic Elements in the study area (1981-2017)

Variable	Rainfall	R. Humidity	Sunshine	Min Temp	Max Temp
Lowest	74.60	77.60	4.50	22.60	30.2
Highest	189.40	85.50	5.60	26.0	32.2
Mean	131.84	82.3	5.06	23.7	31.2
STD	25.69	1.70	0.29	0.61	0.39
CV%	19.5	2.06	5.7	2.57	1.25

Source: Author's Computation (2019)

The result in Table 1 shows that minimum temperature recorded its lowest during the period of study with 22.6°C while the highest was 26.0°C. The mean minimum temperature was 23.7°C with a standard deviation of 0.61 and a coefficient of variation of 2.57%; meaning that the record in the area during the period of study was evenly spread. Furthermore, the result revealed that maximum temperature recorded its lowest during the period under study with 30.2°C while the highest was 32.2°C. The mean maximum temperature during the period under study was 31.2°C with a standard deviation of 0.39 and a coefficient of variation of 1.25%; meaning that the maximum temperature recorded during the period of study was homogenous. Furthermore, the nature of climatic elements was homogenous because coefficient of variation for all the variables was below 33% according to Olubusoye (2002).

Table : Types of Crime in the study area (1981-2017)

Variable	Assault	Rape	Theft	Robbery	Breach of peace	Burglary	Cultism	False pretence
Lowest	6	1	5	3	3	3	0	7
Highest	28	19	32	12	21	13	10	31
Mean	13	5	17	7	11	7	3	12
STD	5.11	3.72	6.05	2.55	3.97	2.45	2.21	5.4
CV%	39.3	74.4	35.4	36.4	36.1	35.0	73.7	45.0

Source: Author's Computation (2019)

As depicted in Table 2, the lowest case of breach of peace was 3 while the highest was 21. The mean case of breach of peace is 11 with a coefficient of variation of 36.1%; meaning that breach of peace was not evenly spread, meaning that some areas experienced the cases of breach of peace than other areas. Furthermore, the lowest case of burglary was 3 while the highest was 13. The mean incidence of burglary was 7 with a coefficient of variation of 35.0%; meaning that cases of burglary during the period of study was not evenly spread, meaning that some areas experienced the cases of burglary than other areas. Further, the lowest case of cultism was 0 while the highest was 10. The mean case of cultism during the period of study was 3 with a coefficient of variation of 73.7%; meaning that the cases of cultism for the period of study was not evenly spread, meaning that some areas experienced the cases of cultism than other areas. Also, the lowest case of false pretence was 7 while the highest was 31. The mean incidence of false pretence was 12 with a coefficient of variation of 45.0%; meaning that the cases of false pretence was not evenly spread, meaning that some areas experienced the cases

of false pretence than other areas.

4.2 Relationship between Climatic Variables and Crime Incidences

Table 3 presents the relationship between climatic variables and crime in the area. The result revealed that minimum temperature, relative humidity, rainfall and sunshine are directly related to assault while maximum temperature is inversely related to assault. Furthermore, minimum temperature, rainfall and sunshine hours were directly related to rape while maximum temperature and relative humidity were inversely related. Also, Minimum temperature, maximum temperature, relative humidity, rainfall and sunshine were directly related to incidence of theft. In same vein, maximum temperature, relative humidity and sunshine were directly related to robbery cases while minimum temperature and rainfall were inversely related to the incidence of robbery.

Table : Relationship between Climatic Variables and Crime Incidence

Variable	Assault	Rape	Theft	Robbery	Breach of peace	Burglary	Cultism	False pretence
Min Temp	0.019	0.086	0.409*	-0.101	0.041	0.227	-0.060	0.205
Max Temp	-0.125	-0.115	0.140	0.238	0.059	0.338*	0.436*	-0.036
R.H	0.379*	-0.027	0.059	0.052	-0.217	-0.136	-0.024	0.130
Rainfall	0.259	0.447*	0.410	-0.139	0.051	0.034	-0.124	-0.008
Sunshine	0.344*	0.104	0.294	0.068	0.071	-0.273	0.060	0.033

Source: Author's Computation (2019)

As shown in Table 3, minimum temperature, maximum temperature, rainfall and sunshine is directly related to breach of peace while relative humidity is inversely related to breach of peace. Minimum temperature, maximum temperature and rainfall is directly related to burglary while relative humidity and sunshine is inversely related to burglary. Maximum temperature and sunshine were directly related to cultism while minimum temperature, relative humidity and rainfall were inversely related to cultism. Furthermore, minimum temperature, relative humidity and sunshine hours were directly related to false pretence while maximum temperature and rainfall were inversely related to false pretence.

4.3 Socio Economic Characteristics of Respondents

Table 4 presents the socio-economic characteristics of the respondents. 57% of the respondents are males while 43% are females. This shows that majority of the respondents were males. Furthermore, 35% of the respondents are within the age of 15-30years, 35% within 31-45years, 20% within 46-60years while 10% are above 60years. These results showed that majority of the respondents are younger than the age of 46 thus it could be stated that the respondents are in their agile ages. Young generation are prone to commit different type of crime; this could provide possible explanation for the increase of crime in the area.

Table 4: Socio Economic Characteristics of Respondents

Socio Economic Characteristics	Frequency	Percentage
Sex		
Male	116	57
Female	88	43
Total	204	100
Age of Respondents		
15-30years	72	35
31-45years	72	35
46-60years	40	20
Above 60years	20	10
Total	204	100
Marital Status		
Single	76	37
Married	88	43
divorced	14	7
separated	8	4
widowed	18	9
Total	204	100
Education		
no formal education	16	8
primary	23	11
secondary	42	21
tertiary	100	49
others	20	11
Total	204	100

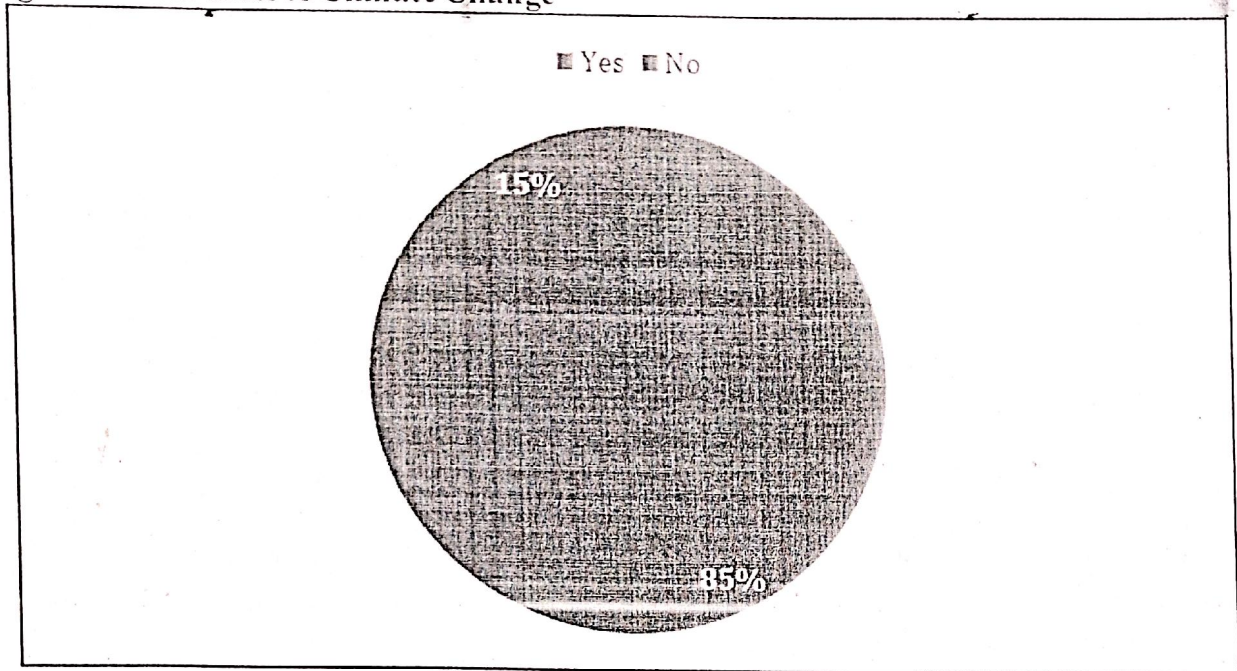
Source: Author's Field Survey (2019)

As depicted in Table 4, 37% of the respondents are single, 43% are married, 7% are divorced, 4% are separated while 9% are widowed. This result showed that majority of the respondents is married.

4.4 Awareness to Climate Change

Figure 2 shows the responses to awareness to climate change in the area. 85% of the respondents are aware of climate change while 15% are not aware of climate change. This result shows that majority of the respondents are aware about climate change.

Figure 2: Awareness to Climate Change



Source: Author's Field Survey (2019)

4.5 Perception of Climate Change

The perception of the respondents to issues regarding climate change is presented in Table 5. Weighted score was used to rank their perception of respondents about issues of climate change known to them. Climate change has led to excessive heat ranked 1st with a mean score of 3.71; this implies that this is the most common perception of climate change among residents of the area. Many people in urban Lagos including Surulere experience heat all through the year. This is due to excessive pollution, high population among others. In the same vein, increase in paved surface leads to increase in climate change ranked 14th (Table 5) This is the least statement perceived by majority of the respondents, most people are not aware of how paved surfaces influences climate change.

Table 5: Perception of Climate Change

S/N	Item	SA	A	D	SD	MWS	Rank
1	climate change has led to increase in temperature	150	21	15	20	3.41	2
2	climate change has led to increase in rainfall	125	38	25	16	3.20	4
3	climate change has led to increase in flooding	100	57	32	15	3.01	5
4	climate change has led to prevalence of diseases	75	48	22	59	2.56	8
5	climate change has affected livelihood of people	96	39	28	41	2.78	6
6	climate change has led to increase in sea level	45	62	25	72	2.25	9
7	extended rainy season	111	62	21	10	3.23	3
8	extended dry season	62	31	29	82	2.21	10
9	excessive sunshine	21	75	22	86	2.03	11
10	excessive heat	171	21	5	7	3.71	1
11	human activities have led to climate change	89	43	22	50	2.72	7
12	burning of fuel (vehicles, generators) increases likelihood of climate change	51	22	37	94	1.95	13
13	increase in paved surface leads to increase in temperature	41	25	62	73	1.82	14
14	removal of vegetation increases climate change	28	61	11	104	2.00	12

Source: Author's Field Survey (2019)

As stated in Table 5, climate change has led to increase in temperature ranked 2nd, extended rainy season ranked 3rd, climate change has led to increase in rainfall ranked 4th, climate change has led to increase in flooding ranked 5th while climate change has affected livelihood of people ranked 6th. Furthermore, the statement, human activities has led to climate change ranked 7th, climate change has led to prevalence of infectious diseases ranked 8th, climate change has led to increase in sea level ranked 9th, climate change has led to extended dry season ranked 10th, excessive sunshine ranked 11th, removal of vegetal cover ranked 12th while burning of fossil fuel increases likelihood of flood ranked 13th.

4.6 Effect of Climate Change on Human Behaviour

4.6.1 Climate Influences Mood

Table 6 presents the responses to how climate affects mood of respondents in the study area. 80% of the respondents stated that climate affects their mood while 20% stated that climate does not affect their mood. This result shows that climate affects the mood of majority of the respondents in the area. When people are comfortable, they tend to be calm but during hot

afternoon, people become aggressive.

Table 6: Climate Change Influence mood

Climate Influences Mood	Frequency	Percentage
Yes	164	80
No	40	20
Total	204	100

Source: Author's Field Survey (2019)

4.6.2 Climate Influences Thinking

The responses of climate influence on thinking are presented in Table 7. 71% of the respondents stated that climate influences how they think while 29% stated that climate does not influence how they think. This result shows that climate influences how majority of the respondents think.

Table 7: Climate Change Influences thinking

Climate Influences Thinking	Frequency	Percentage
Yes	144	71
No	60	29
Total	204	100

4.6.3 Climate Influences Dressing

Table 8 presents the responses to how climate influences dressing. 88% of the respondents stated that climate influences how they dress while 12% stated that climate does not influence how they dress. This result showed majority of the respondents indicate that climate influences how they dress. During the hot season, people wear light clothing to cope with the excessive heat while during cold season; people wear thick clothing's to shield themselves from cold.

Table 8: Climate Influences Dressing

Climate Influences Dressing	Frequency	Percentage
Yes	180	88
No	24	12
Total	204	100

Source: Author's Field Survey (2019)

4.6.4 Feeling during a Hot Afternoon

Figure 3 presents the responses of how the respondents feel during a hot afternoon. 5% stated that they are calm, 49% stated irritated, 32% stated aggressive while 14% stated that they feel tired. This result shows that majority of the respondents of the residents feel irritated during hot afternoons.

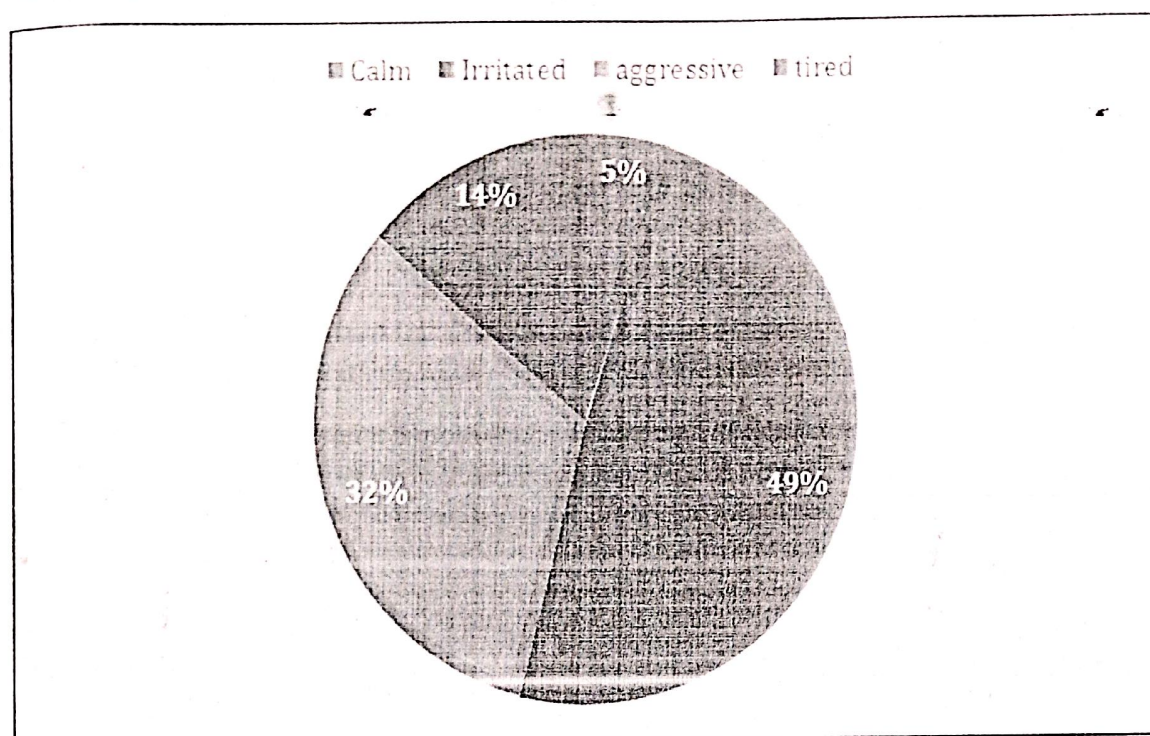


Figure 3: Feelings During a Hot Afternoon

Source: Author's Field Survey (2019)

4.6.5 Feeling during Rains

Table 9 presents the responses to feeling during rains. 34% of the respondents stated that they feel relaxed during rains, 31% stated they feel cold, 12% stated that they feel lazy while 23% stated that they feel sleepy during rains. This result shows that majority of the respondents feel relaxed during rains. Rainfall reduces the temperature of the area and increase relative humidity; this brings about psychological comfort to people making them feel relaxed.

Table 9: Feeling during Rain

Feeling During Rains	Frequency	Percentage
Relaxed	70	34
Cold	64	31
Lazy	24	12
Sleepy	46	23
Total	204	100

Source: Author's Field Survey (2019)

4.6.6 Season Crime is Rampant

Table 10 presents the season when crime is rampant in the area. 20% of the respondents stated that crime is rampant during the rainy season. 23% stated during the dry season while 57% stated all seasons. This result shows that crime occurs in the area with regards to season but it is lower during the dry season.

Table 10: Season when crime is rampant

Season Crime is Rampant	Frequency	Percentage
Rainy	40	20
Dry	46	23
All	118	57
Total	204	100

Source: Author's Field Survey (2019)

4.6.7 Season Infectious Diseases is Rampant

Figure 4 presents the seasons when infectious diseases are rampant in the area. 64% of the respondents stated that infectious diseases is rampant during the rainy season. 18% stated dry season while 18% stated all season. This result shows that infectious diseases are common during the rainy season. During the rainy season, groundwater sources are polluted due to flooding in the area which could result to the incidence of typhoid. Stagnant water in gutters will lead to the breeding of mosquitoes, faecal matter into water could result in diarrheal and cholera.

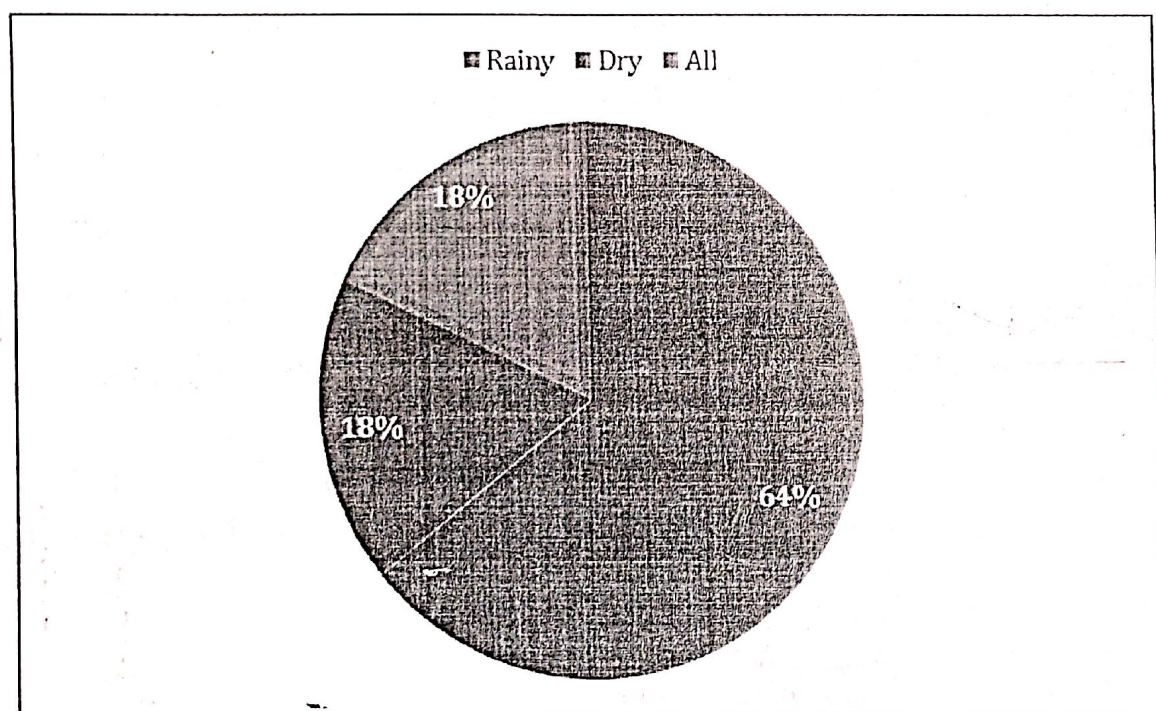


Figure 4: Season when infectious disease is rampant

Source: Author's Field Survey (2019)

4.6.8 Climate Influencing Water use Behaviour

As stated in Table 11, 71% of the respondents stated that climate influences their water use behaviour while 29% stated that it does not influence water use behaviour. This result shows that climate influences water use behaviour. People bath more during hot seasons increasing their consumption of water while the bath less during cold seasons.

Table 11: Climate influencing water use behaviour

Climate Influencing Water Use Behavior	Frequency	Percentage
Yes	144	71
No	60	29
Total	204	100

Source: Author's Field Survey (2019)

4.6.9 Climate Influencing Economic Activities

Table 12 presents the responses to climate influencing economic activities in the area. 63% of the respondents stated that climate influences economic activities while 37% stated that it does not influence economic activities.

Table 12: Climate Influences Economic Activities

Climate Influencing Economic Activities	Frequency	Percentage
Yes	128	63
No	76	37
Total	204	100

Source: Author's Field Survey (2019)

4.7 Coping Strategy Employed by Residents of the Area

4.7.1 Coping During Hot Afternoon

The coping strategy employed during hot afternoons is presented in Table 13. 20% stated that they stay under shade, 38% stated that they remove their cloth, 4% stated that they drink plenty water while 38% stated that they take shower.

Table 13: Coping During Hot Afternoon

Coping During Hot Afternoon	Frequency	Percentage
stay under shade	40	20
remove their cloth	78	38
drink plenty water	8	4
Taking a shower	78	38
Total	204	100

Source: Author's Field Survey (2019)

4.7.2 Hours of Sleep per day due to heat waves

Table 14 presents the responses of the hours of sleep per day due to heat waves. 10% of the respondents stated that they sleep less than 3hours. 51% stated within 3-5hours. 30% stated within 6-8hours while 6% stated that they sleep for more than 8hours daily.

Table 14: Hours of Sleep per Day due to heat waves

Hours of Sleep per day due to heat waves	Frequency	Percentage
less than 3	21	10
3-5	105	51
6-8	62	30
above 8	16	6
Total	204	100

Source: Author's Field Survey (2019)

5.0 Conclusion

Climate has been undoubtedly identified as one of the fundamental factors that determine human activities. Human activities and many sectors of economic activity depend on weather and climate in different ways. based on the findings of the study, it could be concluded that climate change has led to increase in the climatic elements in the area. This increase influences some criminal activities among residents of the area. It could be also concluded that climate influences hot people feel, hot people react and how people think. It influences economic activities, infectious diseases and also affects the water use behaviour of residents. The study recommended that trees should be planted in many parts of the area because this will help to absorb carbon and reduce heat waves in the area. Residents can also stay under the trees during hot afternoons to cool down their body. The Nigerian police force and other crime fighting agency should improve their activities because this will help curb the rate of increasing crime in the area.

References

- Akanni, C.O. (2010). Spatial and Seasonal Analysis of Traffic-Related Pollutant Concentrations in Lagos Metropolis, Nigeria. *African J. Agric. Res.*, 5: 1264-1272.
- Barnett, J., and W. N. Adger. (2007). Climate Change, Human Security and Violent Conflict. *Political Geography* 26 (3): 639-655.
- Centers for Disease Control and Prevention (2009a). *Air Quality and Respiratory Disease*. Available at <http://www.cdc.gov/climatechange/effects/airquality.htm>, last accessed 1 June 2010.
- Centers for Disease Control and Prevention (2009c). *Mental health*. Available at <http://www.cdc.gov/climatechange/effects/mentalhealth.htm>, last accessed 2 June 2010.
- Hsiang, S.M., Burke, M. and Miguel, E. (2013). Quantifying the Influence of Climate on Human Conflict. *Science* 3(4): 12-25
- Ijzerman, H. (2015). A Theory of Social Thermoregulation in Human Primates. *Front. Psychol.* 6, 464-471

- IPCC. (2007). *Climate change: Synthesis Report. Summary for policy makers*. pp. 1-22. Retrieved from February 26, 2016. <http://www.ipcc-wgl-ucar.edu/wgl/wgl-report.htm>.
- Komolafe, A.A., Adegboyega, S.A., Adeleye, Y.B., Akinluyi, F.O. and Awoniran, D.R. (2014). Air Pollution and Climate Change in Lagos Nigeria: Needs for Proactive Approaches to Risk Management and Adaptation. *American Journal of Environmental Sciences*. 10(4): 412-423
- Liu, Y., Kostakos, V. and Li, H. (2015). Climatic Effects on Planning Behaviour. *Plos One* 10(5): 2-11
- Murray, K.B., Di Muro, F., Finn, A. and Popkowski Leszczyc, P. (2010). The Effect of Weather on Consumer Spending. *Journal of Retailing and Consumer Services*. 17: 512-520.
- Odjugo, P.A. O. (2011). Climate Change and Global Warming: The Nigerian Perspective. *Journal of Sustainable Development and Environmental Protection*. 1(1): 6-17.
- Odjugo, P.A.O. (2010). Regional Evidence of Climate Change in Nigeria. *Journal of Geography and Regional Planning*. 3(6): 142-150
- Oshodi, L. (2013). Flood Management and Governance Structure in Lagos, Nigeria. *Regions Magazine*. 292: 22-24.
- Pachauri, R. K. and Reisinger A. (2007). *Climate Change 2007: Synthesis Report*. IPCC Secretariat; 2007.
- Talhelm, T. (2014). Large-Scale Psychological Differences Within China Explained by Rice Versus Wheat Agriculture. *Science*. 344, 603-608.
- Tucker, P. and Gilliland, J. (2007). The Effect of Season and Weather on Physical Activity: a Systematic Review. *Public Health*. 121, 909-92.
- Tunde, T.M., Adeleke, E.A. and Adeniyi, E.E. (2013). Impact of Climate Variability on Human Health in Ilorin, Nigeria. *Environment and Natural Resources Research*. 3(1): 127-134
- Van de Vliert, E. (2013). Climato-Economic Habitats Support Patterns of Human Needs, Stresses, and Freedoms. *Behav. Brain Sci*. 36, 465-52.
- Wilhelm, M. (2012). *Impact of Climate Change in Namibia*. A Case Study of Omusati Region. A Mini Thesis Submitted to Graduate School of Business. Polytechnic of Namibia.