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City Residents And Climate Change: A Study On Awareness, Knowledge And Action

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Abstract: As urban centers continue to experience the direct and indirect impacts of climate change, understanding how city residents perceive and respond to these challenges is crucial for effective policy and community engagement. This study explores the levels of awareness, knowledge and climate-related actions among residents in selected municipal areas of Dibrugarh city. A random sampling method is used to collect information through a semi-structured interview schedule. Findings reveal a significant gap between climate change awareness and actionable knowledge with socio-economic status, education level. The study highlights the need for targeted communication strategies, community-based programs and inclusive urban policies to bridge the gap between concern and action. These insights are essential for fostering resilient urban communities capable of responding effectively to climate challenges.

Keywords: City residents, climate change, awareness, knowledge action

Introduction

Climate change is one of the most pressing challenges of the 21st century, with its impacts manifesting through rising global temperatures, extreme weather events, sea level rise and loss of biodiversity (IPCC, 2023). Urban areas, being centers of industrial activity, transportation, and high population density, contribute significantly to greenhouse gas emissions and are especially vulnerable to the effects of climate change (UN-Habitat, 2020). Therefore, raising climate change awareness among city residents is crucial to promoting sustainable urban living and ensuring effective climate action.

Cities account for over 70% of global carbon dioxide emissions due to transportation, energy consumption, building infrastructure and waste generation (IEA, 2022). The rapid urbanization process often leads to increased vehicle use, high energy demand and the reduction of green spaces, all of which exacerbate environmental degradation (Seto et al., 2014). Without adequate public awareness and engagement, even well-designed policies may fail to generate the behavioural changes needed to mitigate climate change.

Climate change awareness levels vary widely across urban populations. In many high-income cities, residents are better informed due to access to education, media coverage and environmental programmes (Leiserowitz et al., 2021). These populations often engage in sustainable practices like recycling, using energy-efficient appliances and supporting clean energy. Conversely, in low and middle-income urban centers, climate awareness is often limited. A significant portion of the urban population may not fully comprehend the causes and consequences of climate change due to barriers such as low

literacy rates, limited access to accurate information, and lack of formal environmental education (UNESCO, 2021). Socio-economic challenges also restrict the capacity of many residents to prioritize environmental concerns over immediate survival needs.

Importance of the Study

Awareness serves as the foundation for behavioural change and policy acceptance. When city residents understand how their daily actions contribute to environmental degradation, they are more inclined to reduce waste, conserve energy, use public transport and support green initiatives (Moser, 2016). Public awareness also fosters civic engagement, empowering citizens to demand better urban planning, cleaner energy policies and more inclusive environmental governance. In addition, informed communities are better prepared to respond to climate-induced hazards such as urban flooding, heatwaves and air pollution. Thus, awareness enhances both mitigation and adaptation capabilities at the local level (UNDP, 2020).

Objectives of the Study

To examine the levels of awareness, depth of knowledge and corresponding actions regarding climate change among urban residents and to identify key socio-demographic and contextual factors influencing these dimensions.

Methodology of the Study

This study employed a mixed-methods research design combining both quantitative and qualitative approaches. This design enabled a comprehensive exploration of urban residents' awareness, knowledge and climate-related practices. The research was conducted in municipal areas of Dibrugarh city, chosen for their high population density, diversity in socio-economic and cultural backgrounds.

The survey included 200 respondents, evenly distributed across five age groups (40 respondents per group). A random sampling technique was employed to ensure representation across age, gender, socio-economic status, and education level. Personal interviews were conducted using a semi-structured interview schedule.

Findings of the Study

The findings of the study are presented in the following table, accompanied by interpretations.

The Table 1 presents how environmental awareness varies among people of different age groups, based on a field survey of 200 respondents. Each age group has 40 individuals. Their awareness was assessed across seven environmental issues.

Table: 1
Age of the respondents and their awareness on environment

Age of the Respondent (in years)	Number of Respondent	Awareness						
		Global Warming	Climate Change	Ozone Layer Depletion	Air Pollution	Noise Pollution	Solid Waste	Water Pollution
10- 20	40	23	20	05	36	24	38	18
21-30	40	33	24	12	38	34	39	25
31-40	40	20	31	28	34	28	38	34
41-50	40	34	29	19	30	26	39	22
51+ years	40	27	33	15	27	22	33	19
Total	200	137	137	79	165	134	187	118

Source: Field survey

Out of 200 respondents 165 are aware of air pollution. Highest awareness is seen in the 10–30 age groups. Solid waste awareness is also very high with 187 respondents. High awareness across all age groups, especially 10–50. Both have equal overall awareness (137 respondents). Ages 21–30 and 41–50 show the highest awareness of global warming while ages 31–40 and 51+ show strong awareness of climate change. Regarding Ozone layer depletion only 79 respondents are aware. Especially low awareness among the youngest group 10–20 years. On water pollution 118 respondents with mid-age groups (31–40 and 21–30) show relatively better awareness of water pollution. 134 respondents have awareness on noise pollution specially 31–40 and 21–30 age groups.

It is noteworthy that young adults (21–30) tend to have the highest environmental awareness across most categories. Air pollution and solid waste issues receive the most attention across all age brackets while Ozone depletion is a relatively neglected issue among all age groups.

Table: 2

Knowledge of the respondents on environment degradation

Age of the Respondent (in years)	Number of Respondent	Knowledge						
		Global Warming	Climate Change	Ozone Layer Depletion	Air Pollution	Noise Pollution	Solid Waste	Water Pollution
10- 20	40	19	18	4	34	23	36	17
21-30	40	32	22	11	36	32	37	21
31-40	40	19	29	26	33	26	36	32
41-50	40	32	27	17	29	24	37	20
51+ years	40	24	32	14	26	20	32	17
Total	200	126	128	72	158	125	178	107

Source: Field survey

The table 2 presents survey data on how people of different age groups understand various environmental issues. The number of people who had knowledge of each environmental issue, by age group. 21–30 age group tends to show high awareness across nearly all environmental issues, possibly due to education, media exposure, or activism. 10–20 age group has low awareness, particularly in more complex issues like ozone depletion. 31–40 and 41–50 age groups show moderate to high knowledge, depending on the topic. 51+ age group shows good awareness of climate change, but lower awareness in pollution-related issues.

Educational focus on youth (10–20) may be needed, especially on topics like ozone depletion and water pollution. Adults aged 21–30 are a key target group for environmental action and awareness campaigns. Older adults (51+) may benefit from updated environmental education, especially in rapidly evolving topics like noise and air pollution.

Conserving the environment means protecting natural resources and reducing human impact on ecosystems to ensure a healthy planet for current and future generations. This study includes following parameters for environment conservation to collect information from the respondents.

Table: 3

Parameters for environment conservation

Reduce, Reuse, Recycle	Use fewer resources (e.g. avoid single-use plastics).
	Choose reusable bags, containers, and bottles.
	Separate recyclable materials like paper, glass, and plastic.
Energy Saving	Switch off lights and electronics when not in use.
	Use energy-efficient appliances (LED bulbs, inverter ACs).
	Opt for renewable energy if available (solar panels, wind energy).
Water Conservation	Fix leaks in taps and toilets.
	Use water-saving fixtures.
	Avoid wasting water while brushing, bathing or washing.
Eco-Friendly Transport	Walk, cycle or use public transport.
	Carpool or share rides to reduce emissions.
	Choose electric or hybrid vehicles if possible.
Plant Trees and Green Spaces	Trees absorb carbon dioxide and provide oxygen.
	Join or organize tree-planting drives.
	Maintain home gardens or support urban green spaces.
Proper Waste Management	Compost kitchen and garden waste.
	Avoid burning waste, especially plastics.
	Support community clean-up drives.
Control Pollution	Avoid using harmful chemicals and pesticides.
	Support industries that follow pollution control norms.
	Promote awareness about noise, air, and water pollution.
Educate and Advocate	Spread awareness in your community, school, or workplace.
	Support environmental laws and organizations.
	Participate in campaigns like Earth Day, World Environment Day, etc.
Support Sustainable Products	Choose eco-friendly, biodegradable, and locally made products.
	Avoid products that harm wildlife (e.g. ivory, endangered species products).
	Buy only what you need — avoid overconsumption.
Protect Wildlife and Natural Habitats	Avoid littering in forests, rivers, and beaches.
	Support conservation efforts and eco-tourism
	Report illegal wildlife trade or habitat destruction.

Source: Compiled by investigator

Table: 4

Environmental conservation practices undertaken by the respondents

Age of the Respondent (in years)	Number of Respondent	The respondents' environmental conservation behaviours									
		Reduce, Reuse, Recycle	Energy Saving	Water Conservation	Eco-Friendly Transport	Plant Trees and Green Spaces	Proper Waste Management	Control Pollution	Educate and Advocate	Support Sustainable Products	Protect Wildlife and Natural Habitats
10- 20	40	21	12	23	14	36	10	9	8	6	9
21-30	40	26	16	31	22	37	15	18	21	17	27
31-40	40	30	24	32	24	38	29	22	25	22	25
41-50	40	31	25	33	25	38	33	27	29	30	30
51+	40	35	27	32	27	39	28	36	35	35	31
Total	200	143	104	151	112	188	115	172	118	110	122

Source: Field survey

The Table 4 presents data on how individuals across different age groups are practicing various methods of environmental conservation. Age groups divided into 5 ranges and number of respondents 40 in each age group, totaling 200. Age groups 10–20 years show some participation in tree planting (36) and water conservation (23). And very low participation in energy saving, advocacy and supporting

sustainable products likely due to lack of resources or decision-making power. Conversely age groups 21–30 years show moderate participation in most practices. Higher in water conservation (31) and tree planting (37). Showing potential for engagement, but lower in areas like waste management and pollution control. Age groups 31–40 & 41–50 years show strong engagement across almost all practices. Particularly good in recycling, tree planting, water conservation, and advocacy. Reflects a high sense of responsibility and possibly better access to resources or community programs.

Age groups of 51+ years show highest participation in 9 out of 10 practices. This age group leads in pollution control (36), sustainable products (35), and education/advocacy (35). Likely due to experience, awareness, and a strong sense of civic duty.

Overall participation across all age groups reveals the highest engagement in tree planting and maintaining green spaces, with 188 out of 200 respondents practicing this activity—indicating strong environmental values. In contrast, the lowest participation was observed in energy-saving practices (104) and in education/advocacy efforts (118), suggesting gaps in awareness or access to relevant tools. Older age groups (31 and above) are more active across nearly all conservation practices, while younger age groups, particularly those aged 10–20, show significantly lower participation. This highlights the need for enhanced environmental education and youth-targeted engagement programs.

Strategies to Improve Climate Change Awareness

Education and Outreach: Climate education should be integrated into school curricula and extended to community workshops and adult education programs. Studies have shown that environmental education improves climate literacy and encourages sustainable behaviour (Anderson, 2012).

Media and Technology: Digital tools, including social media platforms, mobile apps, podcasts and documentaries, can help communicate climate science in accessible and engaging ways, particularly among younger demographics (Corner et al., 2015).

Government and NGO Initiatives: City governments and non-governmental organizations should launch targeted awareness campaigns, incentivize sustainable practices, and promote green infrastructure such as bike lanes, solar panels, and public parks (ICLEI, 2019).

Community Engagement: Grassroots movements, resident welfare associations, and youth-led climate groups can act as powerful catalysts for peer-to-peer education and community-based solutions (Ray & Poonamallee, 2017).

Conclusion

While climate change is a global phenomenon, its effects are experienced locally often most intensely in urban environments. Enhancing climate change awareness among city residents is not just a moral imperative but a strategic necessity for fostering sustainable, resilient and inclusive cities. Governments, educational institutions, media and civil society must work collaboratively to ensure that all urban citizens are informed, equipped and motivated to participate in climate action. Awareness is the first step toward responsibility and a more sustainable future.

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