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Gender-Climate Anxiety Nexus: Addressing Non-Economic Loss and Damage among Urban Women in Pakistan



Zainab Naeem, Ebadat ur Rehman, Amna Urooj, Nelam Pari, Ihtesham Ul Haq and Soha Nisar

Working Paper

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Executive Summary

The nexus between gender and eco-anxiety has recently explored as a critical area of concern wherein urban Pakistani women are the worst-hit. The climate-induced environmental stressors such as heatwaves, air pollution, and disasters disproportionately impact women due to existing socio-economic and gender inequities. These stressors contribute to rising eco-anxiety, depression, and other mental health challenges, which are often aggravated by limited access to resources, decision-making power, and lack of institutional support. Despite growing awareness of the gender-climate nexus, the psychological dimension, which is usually considered as non-economic loss and damage (NELD), remains hardly incorporated in Pakistan's climate policies and adaptation strategies.

Like men, working women in urban areas are equally contribute to different professions and face unique vulnerabilities due to climate change. These include increased risks of gender-based violence (GBV), economic instability, and food insecurity. Urban women who encounter environmental risks tend to have more stress, anxiety and depression. On top of that, overusing unsustainable means of transportation, having poor work policies and lacking mental health support only adds to the anxiety climate change brings.

A main finding of the study is that urban women often know about climate issues but do not always act. Many people believe climate change is impacting their lives, but they hardly find any help because of obstacles built into the system. Since mental health services and counselling are not widely used, it is necessary to make mental health support more accessible and integrated in climate adaptation programmes.

This study emphasizes that mental healthcare and eco-anxiety should be the main elements in Pakistan's strategy to become more resilient to climate change. It suggests that eco-anxiety and mental health should be seen as the key and closely linked parts of NELD among a country's climate planning efforts and ensure that both current climate change policies and the public private climate platforms include sensitive mental health measures.

It also supports engineering of urban spaces that shield the city from the harmful effects of heat and pollution. Strategies need to emphasise using environment-friendly ways to travel, methods of cooling cities and making sure people can access outdoor green areas. There is a need to push businesses to introduce flexible schedules in hot weather, provide ways for workers to take care of their health and launch campaigns focused on eco-anxiety. Furthermore, localised mental health efforts should be made to fulfil the needs of urban women. These may involve community resilience initiatives, climate-informed psychotherapy services, and peer support networks.

While defining eco-anxiety as a legitimate psychological reaction to climate change, this study calls for a comprehensive strategy to climate resilience that may tackle both economic and non-economic repercussions. Integrating mental health into climate action plans would not only bolster the well-being of urban women but also increase their ability to adapt to and reduce the negative consequences of climate change, providing equitable development space for a resilient society.

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1. INTRODUCTION

Climate change is a global emergency causing far-reaching consequences on human wellness in terms of their nutritional needs. It has emerged as a major health hazard across the globe, affecting not only the physical health of people but also their mental and emotional well-being (Watts et al. 2021). The impacts of climate change are neither uniform nor egalitarian; they disproportionately affect certain demographic groups and geographic locations. The urban areas, particularly in the developing countries, are at the forefront of this crisis due to their dense populations, poorly planned infrastructure and socio-economic disparities (United Nations, 2022). The situation is even worse for women in marginal parts of large cities where gender inequality force them to bear the biggest stress caused by climatic events. In this situation, heatwaves, flooding, dirty air and food issues come together to add to the region's vulnerabilities (Aadhar & Mishra, 2019). Often, women look after their families, handle household finances, face problems when resources are limited, and managing scarce resources often under challenging conditions. (Myers et al. 2012, Sithole 2019).

Several research reports and studies claim that urban women are y affected psychologically by climate change. When the climatic events cause stress because of food shortage, and an unstable household economy, people's mental health problems such as anxiety and depression are aggravated. Owing to some shared risks, women living in cities are even more likely to suffer from disasters (Howard & Huston, 2019; García-Moreno & Chawla, 2011). Additionally, exposure to gender-based violence (GBV), which is becoming increasingly common, is made more intense by the mental pressures brought on by changing climates (Gibbs et al. 2018; Izugbara et al. 2020; Cardoso et al. 2016). Many places are seeing more cases of depression and anxiety, along with an especially uneasy trend among women living in cities. Around times like early adulthood, these concerns become bigger for women because they deal with many social, financial and health challenges. The study indicate that the pandemic exposed the weaknesses of mental health facilities and increased existing risks, mostly in cities. As climate-related emergencies are worsening, so women in cities need to handle environmental impacts, including heatwaves, pollution and disasters in the backdrop of economic and social pressures.

The connection among climate change, unfair gender treatment and mental health shows why gender-sensitive and environmentally protective strategies are so important right now. Responding to the challenges of urban life for women means adding mental health support to the efforts of climate action. By acknowledging the compounded vulnerabilities that women face, particularly in conflict-affected or resource-constrained urban settings, policymakers can craft more equitable and effective interventions. This study explores the intricate relationship between climate change, eco-anxiety, and the mental health of urban women, emphasizing the need for targeted, gender-responsive policies to enhance resilience and well-being in the face of a rapidly changing climate.

Key objectives of the study include:

- To examine how climate-induced environmental stressors specifically extreme heat, climate disasters contribute to rising eco-anxiety and mental health issues among urban women,
- To explore the lack of integration of mental health, particularly eco-anxiety into existing climate policies and governance frameworks,
- To propose actionable recommendations and advocate for addressing and integrating mental health as a Non-Economic Loss and Damage within existing policies and action plans pertaining to climate change.

2. METHODOLOGY

The study employed a mixed-method approach to comprehensively examine the impact of climate-related anxiety on urban women. Its research design spreads over literature review, stakeholder consultations, and survey-based data collection, followed by structured data analysis to derive meaningful insights.

To build a solid framework, the study team carefully reviewed the existing research, including research papers and reports from academia, government and international organisations such as the United Nations Development Programme (UNDP), World Meteorological Organization (WMO), Intergovernmental Panel on Climate Change (IPCC) and World Health Organization (WHO).

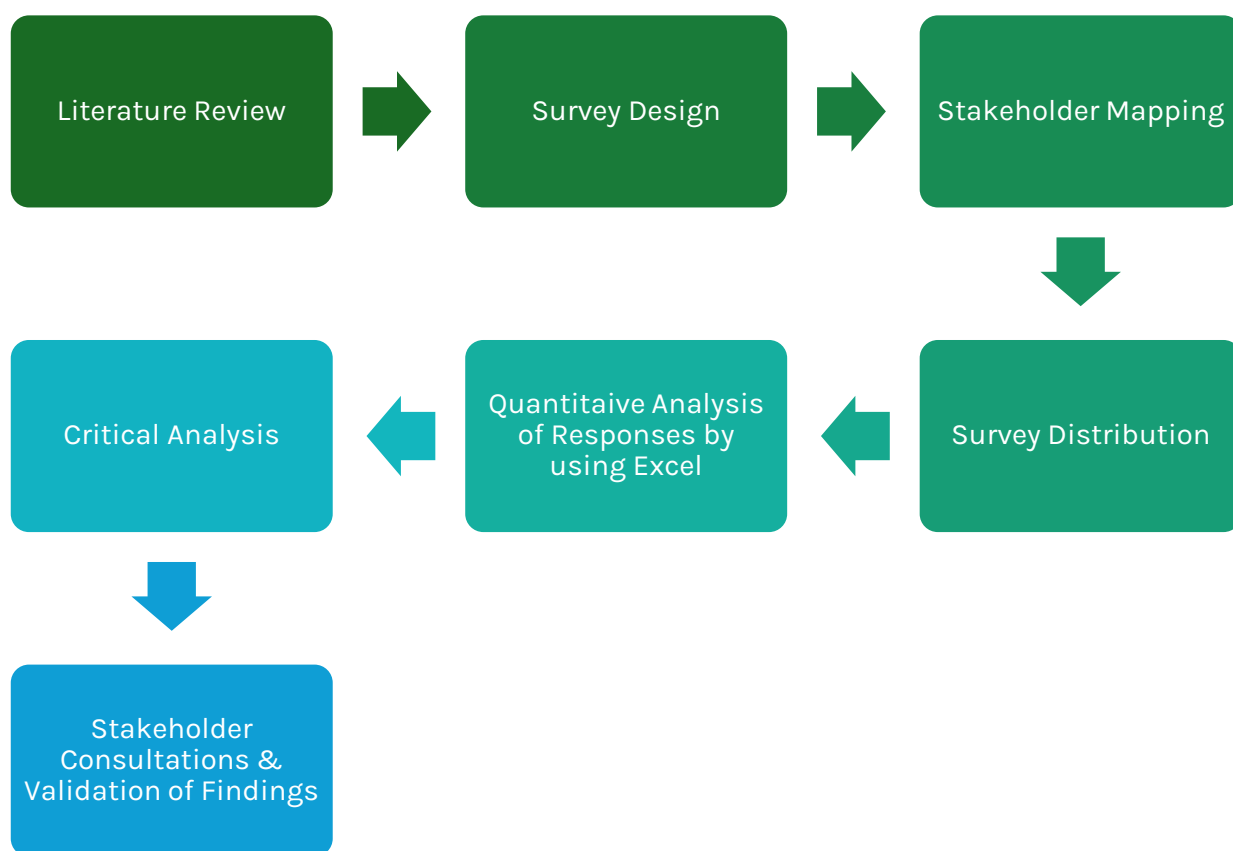
Furthermore, consultations were conducted with professionals and experts related to the theme. Among them were mental health professionals, urban planners, policy analysts, gender rights activists and representatives of community-based organizations. Psychologists and mental health practitioners provided insights as to how climate-related stress affect emotional well-being, while urban planners and environmental specialists discussed how infrastructure, pollution, and urban heat islands contribute to women's anxiety. Gender specialists identifies as to how socio-cultural aspects impact women's experiences with climate concern, particularly in low-income urban contexts. Representatives from community organizations shared real-world accounts of how women cope with climate-induced stress and the support mechanisms available to them. These discussions provided qualitative depth and practical perspectives that enriched the contents of the study.

A systematic survey was then carried out to collect quantitative data. The questionnaire, generated through Google, had 26 closed-ended questions and two open-ended questions around five main themes: demographics, climate change awareness, mental health indicators, coping techniques, and views of institutional support. The demographic portion collected data on age, education, occupation, and income level to analyse differences in responses. The climate awareness component considered human experiences with environmental changes and perceived threats. Mental health indicators assessed self-reported anxiety, stress, and emotional discomfort associated with climate change. Coping techniques were investigated by examining access to psychological assistance, community networks, and personal

resilience strategies. Finally, the institutional support component assessed respondents' perspectives on government policies, NGO initiatives, and community-level responses.

The survey was distributed to a diverse group of 300 participants across multiple professional backgrounds, including healthcare workers, policy practitioners, educators, and social workers mostly residing in metropolitan cities. It was disseminated through email and social media to expand the outreach. Ethical considerations were upheld by maintaining participant anonymity and confidentiality, with respondents providing informed consent before participation.

Data analysis followed a structured approach. Quantitative responses were processed using descriptive statistics to identify trends and variations in climate anxiety across different demographics. Thematic analysis was applied to open-ended responses and insights from stakeholder consultations, allowing qualitative patterns to emerge.



2.1 Limitations of the Study

With some limitations, the study focuses on survey data gathered through self-reporting techniques, which increases the chances of participants providing biased responses about their climate anxiety levels. Most of the participants comprises women from urban areas with formal education whereas rural women participants include those who had experienced

psychological distress at greater levels due to climate change. Future research must use mixed method approach, which combine qualitative interviews with longitudinal studies to thoroughly investigate climate anxiety across different population groups.

3. LITERATURE REVIEW

3.1 Global Trends of Climate Anxiety and Nexus with Gender

Climate change is no longer a distant threat or an abstract concern; it is a defining crisis of our time putting severe consequences on human health, livelihoods, and global economic stability. The World Health Organization (WHO) and the Lancet Countdown on Health and Climate Change highlight that climate-induced health crisis has reached a critical threshold with direct and indirect effects threatening billions worldwide (Watts et al. 2021). The United Nations Framework Convention on Climate Change (UNFCCC) reports that women and marginalized communities bear the brunt of these impacts due to pre-existing socio-economic vulnerabilities and physiological sensitivities to climate stressors.

The impact of climate change on human health now extends beyond respiratory illnesses from air pollution or vector-borne diseases to ecosystems. Heat stress, extreme weather events, and worsening mental health are emerging as major public health challenges:

- **Heat Stress and Women's Vulnerability:** Women are 14% more likely than men to suffer heat-related mortality (Basu & Ostro 2008). Physiological factors, including higher core body temperature during pregnancy and lower sweat gland activity, exacerbate their risk of heat exhaustion and heat strokes (Pörtner et al. 2022; Başkaya, Bıdık & Yolcu, 2024). Studies in South Asia indicate that outdoor female workers, particularly in agriculture and informal labour markets, face productivity losses of up to 30% due to extreme heat (Intergovernmental Panel on Climate Change IPCC, 2022).
- **Climate Anxiety and Mental Health:** The psychological distress linked to climate change, termed eco-anxiety, has surged in recent years. The American Psychological Association (APA) defines eco-anxiety as "chronic fear of environmental doom." A 2021 global survey across 10 countries found that 67% young people (16-25 years) experience high levels of climate anxiety with 45% reporting that climate-related concerns negatively affect their daily lives and mental health (Hickman et al. 2021; Hogg et al. 2024). Among urban women, these concerns are compounded by caregiving responsibilities, professional duties, economic stress, and exposure to climate-induced displacement (Jalin et al. 2023).

3.1.1 Rising Global Temperatures and Unprecedented Climate Disruptions

The IPCC's Sixth Assessment Report (2023) confirms that global temperatures have already risen by 1.2°C above pre-industrial levels and are projected to exceed 1.5°C as early as 2030 unless drastic emission reductions occur. The consequences of these rising temperatures are evident:

- **Record-Breaking Heatwaves:** The year 2024 was the hottest in the last 2,000 years, with monthly temperature anomalies exceeding 1.5°C in several regions (Copernicus

Climate Change Service, 2024). Southern Europe, China, and the United States faced heat indexes surpassing 50°C, causing a surge in hospital admissions for heat-related illnesses.

- **Deadly Floods and Extreme Weather Events:** Pakistan's 2022 floods, which displaced over 33 million people, were exacerbated by climate change, with rainfall intensity 75% higher than historical averages (World Weather Attribution, 2023). Similar events in Spain, Kenya, and Libya highlight the increasing frequency of extreme precipitation.
- **Wildfires and Air Pollution:** In 2023, Canada experienced the worst wildfire season in its history, with over 18 million hectares burned, releasing more CO₂ into the atmosphere than its entire economy emitted in a year (European Space Agency, 2023). Simultaneously, the Amazon rainforest, a key carbon sink, is nearing a tipping point, where deforestation may soon transform it into a net carbon emitter (Lovejoy & Nobre, 2018).

3.1.2 Fossil Fuels, Economic Costs, and Health Inequities

Despite the catastrophic impacts of climate change, global carbon emissions continued to rise in 2023, reaching a record-high 37.3 gigatons (Global Carbon Project, 2023). This trend is fuelled by extensive reliance on fossil fuels, with US\$7 trillion in explicit and implicit subsidies supporting the industry in 2022 (International Monetary Fund, 2023). The economic burden of climate change-related health impacts is staggering:

- Heat-related productivity losses are projected to reach US\$2.4 trillion annually by 2030 due to reduced labour capacity, particularly in tropical and subtropical regions (International Labour Organization 2019).
- Air pollution from fossil fuels accounts for 8.7 million premature deaths annually, with women and children in low-income countries disproportionately affected due to indoor air pollution from biomass burning (Vohra et al., 2021).

The United Nations emphasizes that climate action must be people-centred and gender-responsive. The WHO's COP29 Special Report on Climate and Health (2024) calls for:

- Phase-out of fossil fuel subsidies to redirect investments towards clean energy and climate-resilient health systems;
- Integration of climate and health policies, ensuring that healthcare systems are climate-proofed and that adaptation efforts prioritize mental health support for vulnerable populations; and
- Sustainable urban planning to address the urban heat island effect, increase green spaces, and promote heat-resilient infrastructure.

3.2 Global Frameworks addressing Gender and Climate Nexus

As climate change is not gender-neutral and disproportionately affects women due to pre-existing socio-economic inequalities, limited access to resources, and their primary role in caregiving, therefore, various global frameworks and policies have been developed to ensure gender-responsive climate action. These frameworks aim to integrate gender equity into climate policies, promote women's leadership, and improve their resilience to climate-related

challenges (Afzal & Akhtar 2021). However, a significant gap remains: most policies fail to address climate anxiety and mental health impacts on women. As climate-related disasters increase in frequency and severity, women, especially those in vulnerable communities, face heightened psychological stress, eco-anxiety, and mental health burdens that remain largely unrecognized in mainstream climate policies.

Table 1: Global Frameworks and Policies Addressing Gender in Climate Action

Framework/Policy	Description	Key Gender Focus	Consideration of Climate Anxiety and Mental Health Impacts on Women
Lima Work Programme on Gender (LWPG) and Gender Action Plan (GAP)	Established at COP20 in 2014, the LWPG aims to advance gender-responsive climate action within the UNFCCC framework. The GAP outlines priority areas such as policy implementation, women's leadership, capacity building, and monitoring progress on gender equality in climate policies.	Recognizes that climate change is not gender-neutral and emphasizes women's representation in climate governance.	Does not explicitly address climate anxiety or mental health impacts on women.
UNDP Framework for Enhancing Gender and Poverty Integration in Climate Finance	This framework proposes integrating gender equality and poverty reduction into climate finance through governance, resource planning, accountability, and capacity building.	Emphasizes the inclusion of women in climate finance decisions to ensure equitable resource distribution.	Does not specifically mention mental health or climate anxiety among women.
World Health Organization (WHO) Policy Brief on Mental Health and	WHO emphasizes integrating mental health support into national climate action plans, highlighting the	Acknowledges that mental health impacts of climate change are unequally distributed, with	Explicitly addresses the need for mental health support in climate action

Climate Change (WHO, 2024)	risks climate change poses to mental well-being.	certain groups, including women, being disproportionately affected.	plans but does not focus solely on women's mental health.
WMO Gender Equality Policy and Action Plan	The World Meteorological Organization's policy promotes gender equality across its operations, with an action plan outlining concrete steps in governance, strategic planning, capacity development, and service provision.	Aims for increased female representation in governance and emphasizes capacity building for women in meteorology and related fields.	Does not address mental health impacts or climate anxiety among women.
National Policies Integrating Gender and Climate Action	Various countries have developed policies linking gender equality with climate action. For example, Chile's Framework Law on Climate Change prioritizes climate justice and gender equity, establishing initiatives like the Gender and Climate Change Roundtable.	Ensures women's participation in climate action and addresses gender disparities in climate vulnerability.	Generally, national policies, including Chile's, have not systematically incorporated mental health support or addressed climate anxiety among women.

3.3 Theoretical Foundations of Climate Anxiety

There is a growing acceptance to this notion that eco-anxiety, a constant worry about the environment, can result from climate change. As a result, it arises as stress, agony, lack of control and emotional discomfort due to environmental destruction. According to Clayton and Karazsia (2020), eco-anxiety and its effects on women in urban parts of climate-vulnerable regions are better understood through Environmental Distress Theory, Solastalgia and Theory of Planned Behaviour. Using these ideas, we recognize the effects of environmental disasters on mental health and actions taken by both men and women.

3.3.1 Environmental Distress Theory and Solastalgia

Eco-anxiety often happens when someone experiences distress in response to cultural changes in the environment. A crucial part is the term solastalgia which demonstrates that environmental changes that affect a person's home environment can cause distress (Albrecht et al., 2007). While nostalgia is the sadness for a lost home, solastalgia is when you feel anxious about the damage your surroundings are facing right now because of climate changes.

Australian researchers observed that solastalgia develops in individuals due to droughts and damaging mining. As a result, they feel helpless and sad (Albrecht et al. 2007). Based on studies and reports on climate anxiety, those who face rising temperatures, extreme weather and ecological destruction can experience anxiety, sadness, anger, a feeling of helplessness (Clayton, 2020). Urban women in climate stressed areas may thus be demonstrating eco-anxiety as a logical psychological response to real environmental threats (Versey, 2021).

3.3.2 Theory of Planned Behaviour and Climate Anxiety

The Theory of Planned Behaviour (TPB) suggests that what we intend to do is affected by our attitudes, the judgments of significant others and how much control we think we have over the behaviours (Ajzen, 1991). Lately, researchers have made TPB useful for understanding mood around climate issues, showing that eco-anxiety is a strong factor in influencing people to act for the environment. Climate worry turned out to influence pro-environmental actions as strongly as having positive attitudes (Jylhä et al. 2022).

Using the TPB in our study suggested that women living with a lot of eco-anxiety might work to help the environment by supporting activism or living in eco-friendly ways or they could end up feeling so overwhelmed that they do not act at all. It will study whether eco-anxiety prompts action on climate change or adds to mental health problems.

3.4 Climate Change Impacts and Gendered Vulnerabilities in Pakistan

Pakistan is particularly impacted by climate change and has been hit by more frequent extreme weather that has led to deaths, moves to other places and challenges to economy. The period from 1999 to 2018 saw Pakistan earn the fifth place among those hit most often by climate disasters (Abubakar, 2020). The 2022 floods influenced more than 33 million individuals, ruined farm products worth around \$2.3 billion and featured a big migration of people to major cities (Somani, 2023). Further concerns are being raised as June monthly highs surpass 46°C in many locations (Raza, 2023). There were 126 heatwaves in Pakistan from 1997 to 2015 that led to major health problems (Nasim et al. 2018).

It's clear that because of their social and economic situations, duties as caregivers and lack of access to help, climate change leads to additional mental health difficulties for women and young girls in South Asia (Cunsolo & Ellis, 2018; Gore et al. 2011). The damaging effects of climate change, including harsh weather, lingering drought and higher temperatures, bring harm to women's mental health, reproduction and safe economic standing (Bhatta et al. 2015).

3.4.1 Water Scarcity, Harassment, and Psychological Stress

In South Asia, water shortage is becoming a serious issue in South Asia where the responsibility for collecting water at home falls unfairly on women and girls (Agarwal & Narain, 2021; Kafle et al. 2023). When water in rivers and streams is scarce, women often go much farther to find it. As a result, they are more likely to suffer from tiredness, depression and face dangers from harassment and gender violence (Van Daalen et al. 2022). Women in water-stressed areas in South Asia experience more anxiety and mental pressure and many girls drop out because sanitary facilities at school are either unsafe or insufficient (Sultana, 2018; Patel et al. 2019). Droughts and unpredictable monsoons cause many people to develop chronic mental health problems such as depression and post-traumatic stress disorder (PTSD).

3.4.2 Food Insecurity and Mental Health Burden

In South Asia, climatic events are a big hurdle in producing enough food, which mostly affects women. Many times, women have to reduce their food so that they can care for children and men in their household (Hogg et al. 2021). Being nutrient poor among women and teenage girls negatively affects their health and can result in poor thinking skills, greater anxiety and a raised chance of perinatal depression (Dhimal et al. 2021). A lack of food during pregnancy in some regions can lead to difficult births, sometimes stillbirths and depression after birth, which cause risks for mothers because of climate-related food shortages (Van Daalen et al. 2022; Kaya et al. 2024).

3.4.3 Extreme Heat and Cognitive Impairment

Increasing heat on account of climate change directly worsens women's mental health when they work outdoors, clean their house or care for others. According to research, staying out in hot weather for a long time can cause women to become dehydrated, feel slower mentally and find it harder to work and handle household tasks (Razanadrakoto et al. 2020). As heatwaves in urban Pakistan are becoming more severe, women have a higher risk of both heat exhaustion and feverish, anxious feelings owing to the lack of power outlets and reliable cooling equipment or suitable areas to cool off (Pihkala, 2018; Nasim et al., 2018). Heat stress causes problems for both women's physical and mental health and by consequence, they have a higher risk of developing diseases connected to pregnancy (Kuehn & McCormick, 2017).

3.4.4 Climate Displacement, Gender-Based Violence, and Mental Trauma

Gender-based violence, exploitation and increased mental stress often affect women, who are displaced due to flooding or serious storms. In 2022, researchers noted an increase in sexual assault and domestic abuse at crowded flood relief centres where displaced women said they felt very anxious and suffered from PTSD (Siddiqui et al. 2023). Losing your home and your career as well as social help can create long-term mental health issues for people and this is much worse for single mothers and young girls, who may decide to obtain financial security by marrying earlier (Van Daalen et al. 2022).

3.5 Policy Frameworks & Action Plans to Address Gender-Climate nexus in Pakistan

Pakistan has implemented various national and provincial policies to integrate gender-responsive techniques into climate adaptation, mitigation, and catastrophe risk reduction measures. The policies and frameworks (as included in Table 1) explore initiatives to connect gender and climate action, promoting inclusive and equitable solutions to the climate crisis.

Table 2: National and Local Policies Linking Gender and Climate in Pakistan.

Policy/Framework	Description	Key Gender Focus
Pakistan Climate Change Policy (2012)	A comprehensive policy addressing the impacts of climate change, including adaptation, mitigation, and disaster risk reduction.	Recognizes the disproportionate impact of climate change on women, encouraging gender-responsive measures.
Pakistan Climate Change Policy (2021)	The revised climate change policy approved in 2021, focusing on climate adaptation, disaster risk reduction, and sustainable development.	Recognizes that women are disproportionately impacted by climate change, calling for gender-responsive adaptation strategies.
Framework for Implementation of Climate Change Policy (2014-2030)	A roadmap to implement Pakistan's climate policies, focusing on agriculture, water, energy, and disaster management.	Calls for gender-sensitive strategies in climate action, particularly focusing on rural and vulnerable women.
Punjab Women Empowerment Package (PWEP) (2012)	A package of initiatives in Punjab aimed at empowering women, including climate adaptation strategies related to agriculture and water management.	Includes provisions for women's involvement in climate resilience projects, particularly in agriculture.
National Disaster Risk Reduction (DRR) Policy (2013)	Outlines strategies to reduce disaster risks from climate impacts, focusing on preparedness, risk mitigation, and adaptation at national and community levels.	Highlights the need for a gender-responsive approach in disaster risk reduction and recovery efforts.

Punjab Women Development Policy (2018)	A policy aimed at promoting gender equality and empowering women in Punjab, including through climate action in agriculture and resource management.	Focuses on women's roles in adapting to climate change in rural and agricultural sectors.
Climate Change Gender Action Plan (ccGAP) (2022)	Designed to strengthen the implementation of national climate change policies by ensuring women's inclusion in all stages of planning, development, and implementation.	Demonstrates the government's commitment to ensuring women's participation and leadership in climate action, in line with the priority sectors listed in the 2021 National Climate Change Policy (NCCP).
National Adaptation Plan (NAP) (2023)	Provides a framework for implementing adaptation strategies, promoting inclusivity, and fostering collaboration among stakeholders to enhance climate resilience.	Emphasizes the importance of gender-responsive adaptation strategies, acknowledging the unique vulnerabilities and contributions of women in addressing climate change.

Despite these extensive regulations, there is still a huge gap in addressing the mental health implications of climate change, notably climate anxiety, which is connected to gender in Pakistan. Climate change has a disproportionate impact on the mental health of young people especially women. The 2022 floods in Pakistan caused major problems for the physical and mental health and social standing of 33 million. Still, the policies in place today lack specific steps to handle these mental health concerns, revealing a major subject for future lawmaking.

3.6 Climate Anxiety and its Impact on Urban Women

Fear, hopelessness and anguish about the future of the Earth, known as eco-anxiety, are the major causes of women's mental health issues (Lino et al. 2019). Since they are main caregivers, workers and home managers, therefore, urban and climate-vulnerable women are to face more challenges and become more stressed in weather-related emergencies (Goudet, 2023). Largely, the higher rate of anxiety and depressive disorders prevail in women because of their traditional gender roles, money worries and limited healthcare services (Heeren et al. 2021). Climate change adds to existing problems, as it has a bigger effect on women from lower economic backgrounds. Such a women, who have little to no access to resources, are subject to violence and face customary boundaries (Goudet et al. 2011). Together, these economic and natural problems increase the chance that urban women will suffer from mental health issues.

Climate change affects communities differently, thus their ability to manage, respond, and adapt varies according to their location, livelihood, and socioeconomic position

(Intergovernmental Panel on Climate Change IPCC, 2014a). It disproportionately impacts the poor, particularly those who rely on natural resources and have limited ability to endure natural disasters and extreme weather occurrences (Food and Agriculture Organization of the United Nations FAO, 2015a). Women, as a demographic group, are more susceptible owing to systematic disparities in resource access and decision-making processes (United Nations Development Programme UNDP, 2016). Despite their increased vulnerability to climate threats, women are under-represented in policymaking and climate action conversations (Profeta, 2017). Their exclusion is not only a problem of equality; it also undermines the efficacy of climate resilience efforts. Evidence from around the world shows that gender-responsive interventions greatly improve natural resource management, food security, and community resilience (Food and Agriculture Organization of the United Nations FAO, 2011; World Bank, 2011).

In cities, it is often the women who look after their families and finances, as the environment becomes more stressful because of climate change (Amjad, 2020). The challenge of climate change leads to extra stress and anxiety, affecting mostly women and children (Rothschild & Haase, 2022). In addition, urban women are usually not involved in making decisions about climate adjustments and responses to disasters, which limits their connection to important support groups (Nahar et al. 2014). Their lives are affected now and might suffer lasting economic effects because they are ignored by vital services. In essence, when they are properly supported by society and feel part of their community, urban women are better prepared to handle environmental emergencies and have improved mental health. Steps that educate, provide care and offer financial support are crucial for reducing the stress climate change puts on women.

It is more common for women to feel eco-anxiety, which is related to how much they see climate change in the media and how often they have seen the environment deteriorate around them (Zacher & Rudolph, 2023). Living in cities can aggravate these mental health problems since women are often near the sources of extreme heat, polluted air, lots of noise, crowded places and extreme weather (Cianconi et al. 2023). Besides, having less money or power affects women's ability to get healthcare, education and employment, making their problems worse (Rothschild & Haase, 2022). Since women in cities often use public transit, that's why air pollution and the heat around public places worsen their physical and mental health (Hajat et al. 2022). Because of these continuing problems, women's mental health problems prevent them from coping with their circumstances and finding the help they require.

Research indicates that urban women are much more likely to worry about climate change, revealing greater gender disparity in emotional responses to environmental stresses. Climate change causes anxiety more in women than men—almost twice as many, according to recent studies (Heeren et al. 2022). Women with this anxiety experience mental and emotional difficulties that can affect the way they care for their families, interact with people and work (Ajani & Geest, 2021). In Canada, women feel more climate change stress compared to men, after factoring out general psychological problems (Closson et al. 2022). Additionally, research shows that climate change can cause depression, suicide inclination and PTSD among women (Rothschild and Haase, 2023). It means we have to include gender-sensitive mental health

support in our plans to combat climate change events to make sure that the women's mental health is looked after.

Assisting urban women affected by the mental effects of climate change needs both special support services and good policies. Understanding how people react mentally to climate change helps develop better therapies for women (Reser & Swim, 2011). Local mental health programmes, networks created to help and laws that support those at risk are necessary for addressing anxiety caused by climate change. Include mental health problems in your plans to adapt to climate change and this can benefit your general well-being. Make sure women are involved in climate discussions and help create gender-sensitive actions to make sure their views matter in decision-making (Demir et al. 2022). Urban women might deal better with climate-related stress if they can join community-based support networks that give mental health support and help form tight-knit groups.

Table 3 brings together the most important reasons for urban women to be climate anxious, showing how stress from society, nature and thoughts raise the risk of mental health problems.

Table 3: Factors Contributing to Climate Anxiety among Urban Women.

Category	Factors	Anxiety related Impacts
Socio-economic Factors	Financial insecurity, job instability, reliance on informal economies	Increases stress, uncertainty, and vulnerability to climate impacts
Gender Inequality	Exclusion from decision-making, gender-based violence, domestic responsibilities	Limits coping mechanisms and access to climate adaptation resources
Urban Environmental Stressors	Air pollution, heatwaves, overcrowding, inadequate housing	Exacerbates mental health conditions, increases anxiety and stress
Climate Disasters	Floods, heatwaves, droughts, displacement, loss of livelihoods	Increases psychological distress, eco-anxiety, and PTSD
Health and Well-being	Limited access to healthcare, increased exposure to pollutants, poor nutrition	Aggravates physical and mental health issues

Social and Community Networks	Breakdown of community support systems, forced migration	Reduces emotional and financial stability, increases isolation
Media Exposure	Constant exposure to climate change news, disaster imagery	Heightens eco-anxiety, fear, and sense of helplessness
Cultural and Psychological Factors	Social expectations of women as caregivers, stigma around mental health	Limits access to psychological support and stress relief mechanisms

3.7 Climate Anxiety and its Effects on Women Living in Urban Slums

Among the climate-vulnerable groups, women from urban slums are especially affected by a range of factors that cause more climate anxiety. Many times, they take on the main role of gathering food, water and shelter for their families (United Nations Development Programme UNDP, 2022). When flooding, heatwaves and city droughts happen, the resources people depend on face danger, which makes people more anxious and depressed (Lissner et al. 2014; Cianconi et al. 2020). Since the housing in these areas is poor, they are more at risk due to weather disasters.

In Pakistan, urban slums are linked to a rise in heat-related illnesses and psychological discomfort among women because of heat stress (Shaikh & Tunio, 2023). Furthermore, leaving home and losing work after a disaster causes more stress and strengthens climate anxiety in many people (Versey, 2021; Valkengoed, 2023). Many women, who live in slum areas, mainly earn from street sales, domestic jobs and daily work, but all these workplaces are threatened by changes in the weather (International Labour Organization ILO, 2021).

Extreme weather troubles the economic situation and causes more people to worry about their ability to keep earning a living. Adapting to climate change leads to expensive projects, like repairing flooded houses and building places that do not overheat which causes financial distress that intensifies poor mental health (World Bank Group WBG, 2022). Moving to escape climate impacts separates slum women from their community networks, which make them feel safer and more secure. When a crisis happens, women and girls become more at risk of GBV, including domestic abuse, sexual exploitation and trafficking (UN Women, 2023).

In these urban slums, interviews with women suggested that their fear of attack forces them to stay at home which raises their anxiety and strains caused by climate-related trauma (Neumayer and Plümper, 2007). While women in slums often live with a lot of mental health concerns related to climate change, they typically do not have access to mental health support, social assistance or ways to deal with climate challenges (World Health Organization WHO, 2023). The gap in women's mental health support for situations like eco-anxiety in poor regions is caused mainly by the failure of most climate policies and adaptation approaches to consider mental health issues that are unique to women. In addition, they are regularly left out of climate leadership and decision-making, which makes it difficult for them to solve the problems they face (United Nations Framework Convention on Climate Change UNFCCC, 2022).

3.8 Climate Anxiety as Non-Economic Loss and Damage (NELD)

One problem that isn't talked about enough is how the climate crisis causes stress and anxiety. Rising fear and anxiety about climate change among groups most at risk are considered Non-Economic Loss and Damage (NELD), recognized in global climate talks but often not included in reports. It encompasses psychological discomfort, loss of cultural identity, social structure upheaval, and emotional suffering as a result of climate change.

NELD is a critical yet often overlooked aspect of climate impact assessments. According to the Warsaw International Mechanism (WIM) for Loss and Damage, NELD includes:

- **Loss of Life and Health Impacts** (including mental health issues such as climate anxiety, PTSD, and stress-related disorders)
- **Loss of Cultural Heritage** (displacement of communities leading to the erosion of cultural identity)
- **Social and Psychological Well-being** (increased feelings of helplessness, distress, and trauma)

3.8.1 Why Pakistan Should Have Reported Climate Anxiety as NELD Post-2022 Floods:

Despite international recognition of climate anxiety as part of NELD, Pakistan has not included it in its official reporting, even after the devastating 2022 floods, which displaced 33 million people and triggered widespread mental health crisis.

a) Missed Opportunity in Post-Disaster Needs Assessment (PDNA)

Pakistan's PDNA for the 2022 floods focused heavily on economic damage to infrastructure, agriculture, and housing, but did not systematically document the mental health crisis, climate anxiety, or PTSD among flood victims. This resulted in:

- Lack of funding for climate mental health programmes
- Absence of psychological support in disaster response policies
- Failure to leverage the Loss & Damage Fund for NELD recovery

b) Absence of Climate Anxiety in National Climate Policies

Pakistan's National Climate Change Policy (2021) and National Adaptation Plan (NAP) recognize gender and disaster resilience but lack provisions for climate-induced mental health impacts.

c) Gender Climate Budget Tagging (CBT) and Mental Health Gaps

Pakistan has started implementing Gender Climate Budget Tagging (CBT) to track climate expenditures benefiting women. However, mental health support for climate-affected women remains largely absent in budget allocations.

4. DISCUSSION AND ANALYSIS

The survey data provided comprehensive details about how Pakistanis experience climate change impacts while sharing their approach to climate anxiety. The following are the key findings gathered from analysis:

4.1 Demographic Analysis

A total of 141 participants completed the survey which enabled the examination of different demographic backgrounds affected by climate anxiety. The data showed that male participation reached 60.3% while females made up only 39.7% of the respondents (Figure 1). The significant number of participating women demonstrates their important role in climate anxiety research despite possible social variations in survey involvement rates.

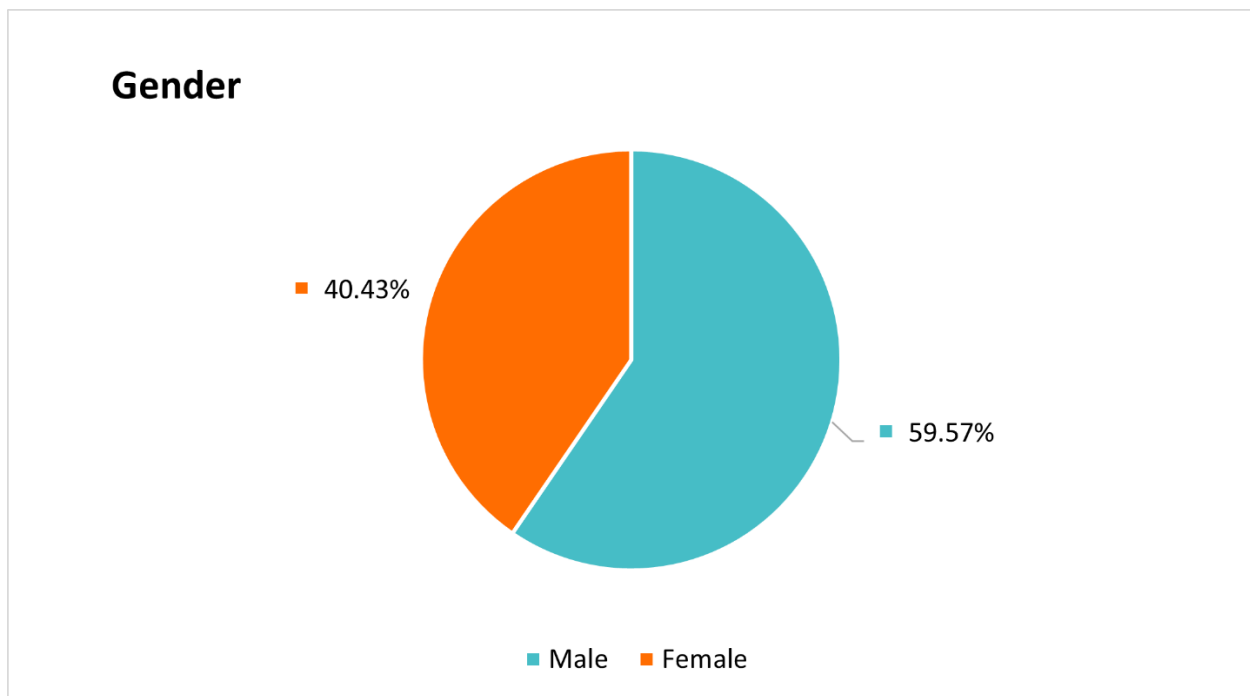


Figure 1: Gender Distribution of Survey Respondents

The demographic distribution of survey participants-maintained equilibrium as 30.5% belonged to the 18-30 age segment and 30.5% belonged to the 45-60 age range. Climate anxiety affects people from all age ranges, indicating the widespread nature of this concern across various life stages. Notably, 16.3% of respondents aged 60 and above contributed to the survey, suggesting that older generations, traditionally less associated with climate activism, are also becoming aware of and affected by climate-related stress (Figure 2).

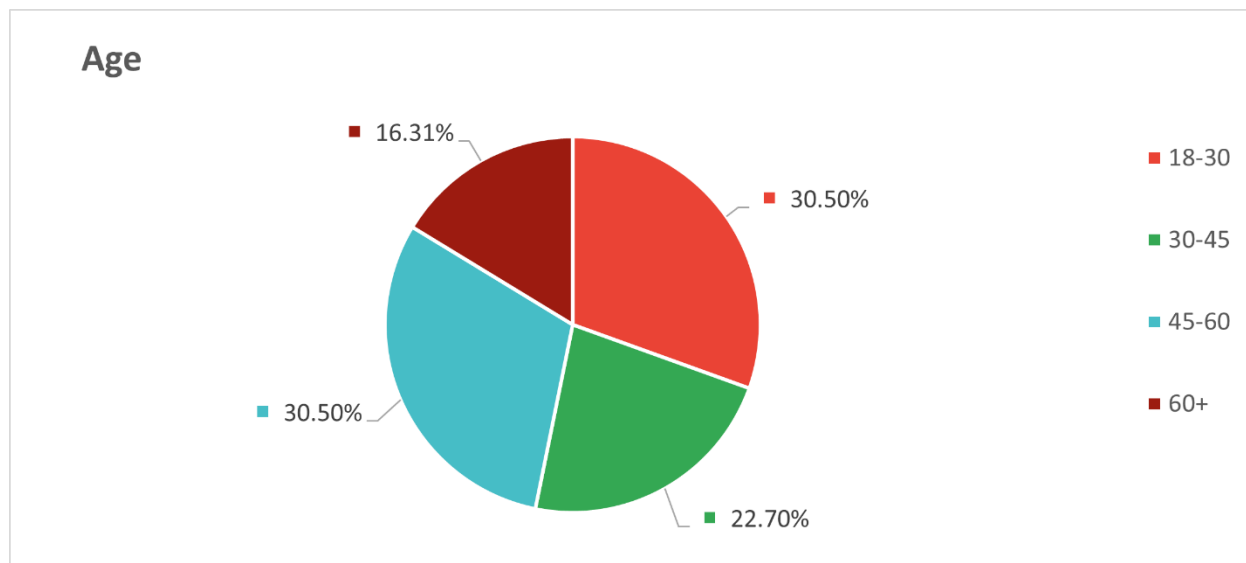


Figure 2: Age Distribution of Survey Respondents

In terms of education, the survey revealed that a significant proportion of respondents held advanced degrees, with 47.5% holding a Master's or MPhil degree. This was followed by those with Bachelor's degrees at 28.4%, and a smaller percentage with Doctorate degrees at 14.9%. Additionally, 5.7% of respondents had professional or specialized qualifications, and 3.6% had completed only high school or its equivalent (Figure 3). This educational breakdown indicates a highly educated respondent pool, with the majority possessing graduate-level education or higher, suggesting that the participants are likely to have a well-developed understanding of climate change and its implications.

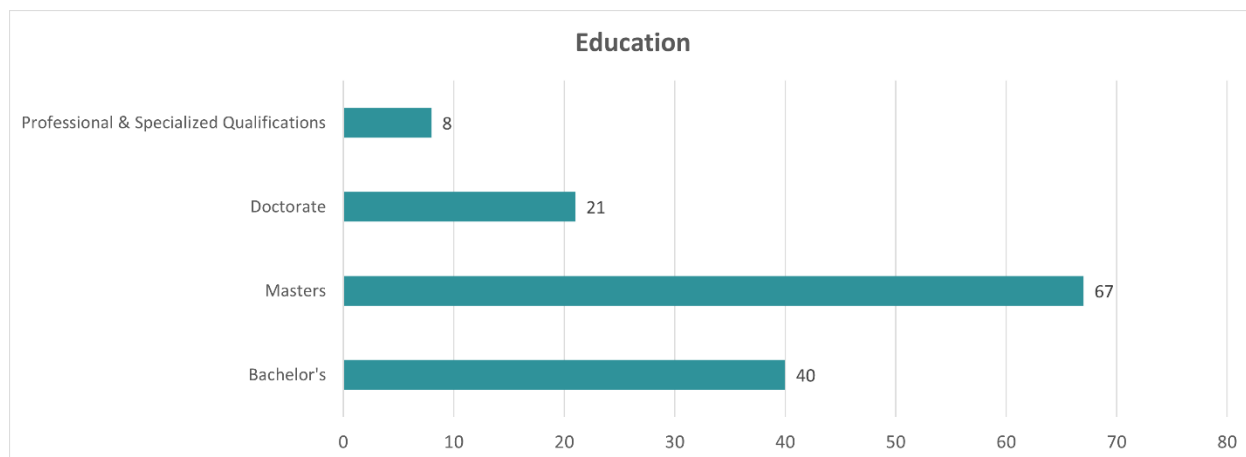


Figure 3: Educational Background of Survey Respondents

Regarding the respondents' occupation, majority (51.77%) were employed full-time, which shows that climate anxiety is most prevalent among individuals who are actively engaged in the workforce. A smaller proportion (7.80%) were employed part-time, while only 0.71% identified

as homemakers. Retired individuals made up 8.51% of the respondents, and 10.64% were self-employed. Additionally, 17.73% of the respondents were students, indicating a significant representation of younger individuals, who may be particularly vulnerable to climate anxiety due to concerns about their future. A small percentage (2.84%) were unemployed, reflecting the challenges that unemployment can present in terms of both financial insecurity and mental well-being in the face of climate change (Figure 4). The diverse occupational representation provides a basis to explore how professional roles and financial stability influence perceptions of climate risks and coping mechanisms.

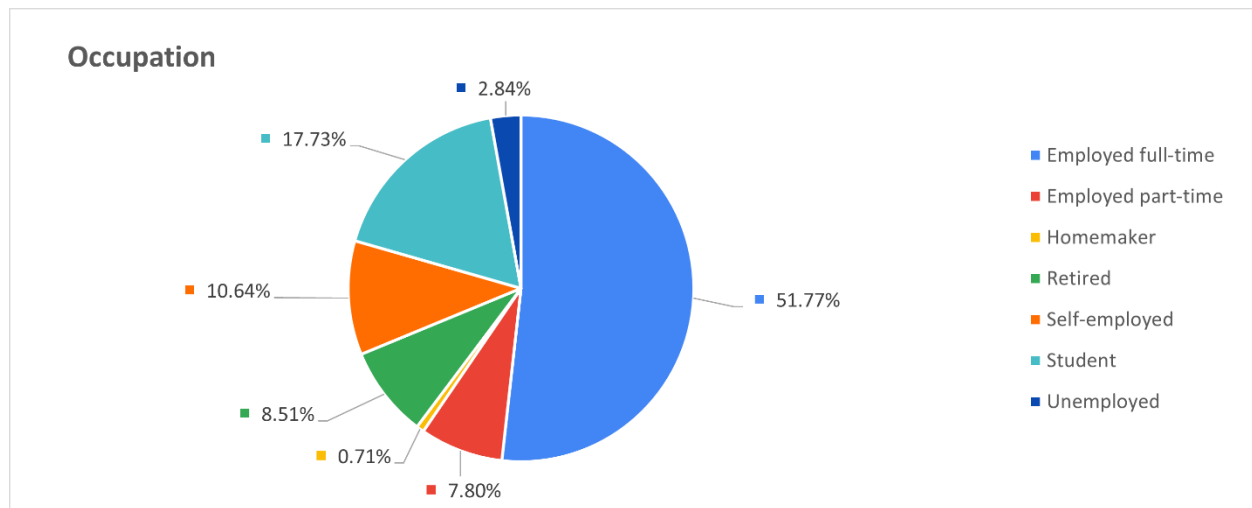


Figure 4: Occupational Status of Survey Respondents

The survey population was predominantly urban, with 94.3% of respondents living in cities (Figure 5). Islamabad had the largest representation, i.e. 43.26% followed by Lahore (26.24%) and Karachi (10.64%). Other cities like Faisalabad (1.42%) and Rawalpindi (6.38%) had smaller shares, while smaller towns like Attock, Gujranwala, and Multan had minimal participation. The survey also included respondents from Riyadh (0.71%) and Toronto (0.71%), providing a broader perspective on climate anxiety in urban areas (Figure 6). This urban-centric data suggests that climate anxiety is more prevalent in larger cities, where residents are more exposed to climate-related risks.

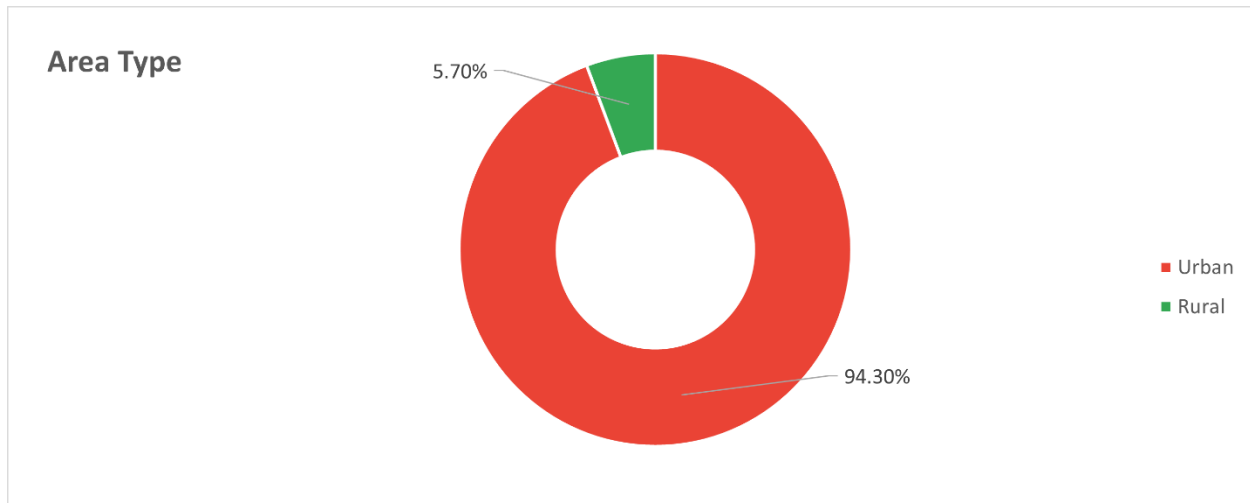


Figure 5: Urban vs. Rural Residency of Survey Respondents

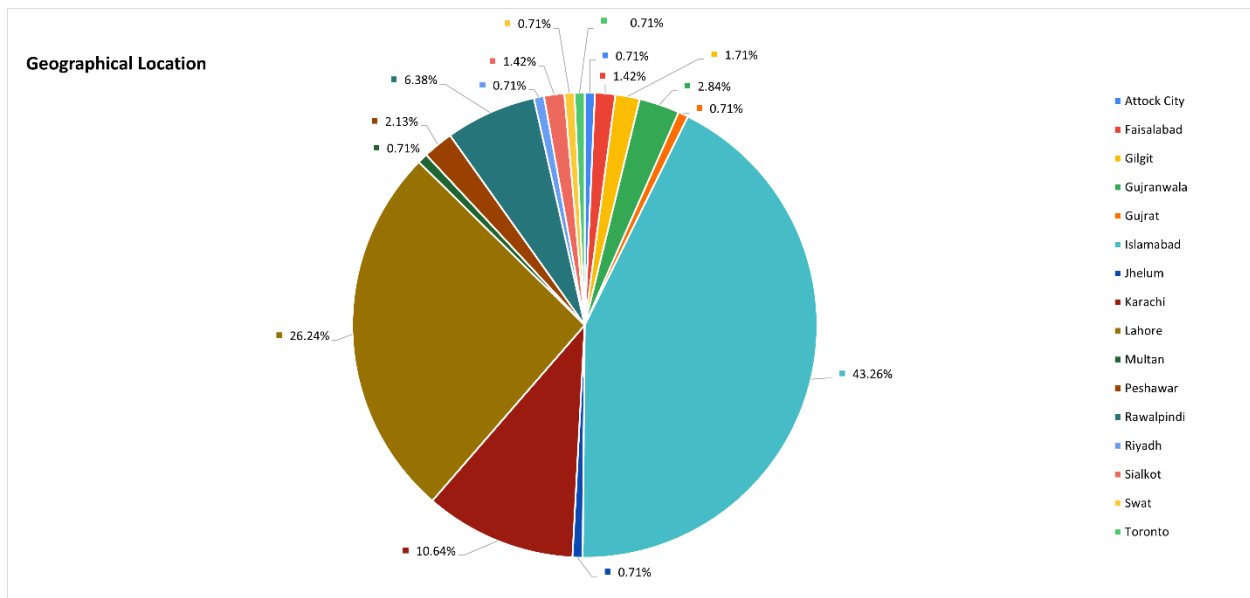


Figure 6: Geographical Distribution of Survey Respondents

4.2 Daily Impact of Climate Change

As shown in Figure 7, the survey results indicated a strong reliance on personal cars for daily commuting, with 68.80% of respondents using their own vehicles, which suggests that personal car ownership was common, especially in urban areas like Islamabad, Lahore, and Karachi. Public transport usage was reported by 15.60% of respondents, which was lower than personal car use, potentially reflecting challenges in transportation infrastructure. Motorcycles were the second most common mode of transport (12.06%) due to their affordability and flexibility in congested urban environments. Carpooling was the least popular option, with only 1.42% of respondents using this mode, possibly due to logistical or cultural factors.

In terms of frequency, 82.98% of respondents used transport daily, highlighting the necessity of transport for work and daily activities, while smaller proportions reported weekly (11.35%) or monthly (3.55%) use (Figure 8). The data reflected a high dependence on personal and public transport, with opportunities to improve sustainable transport options and promote carpooling to alleviate congestion and reduce environmental impact.

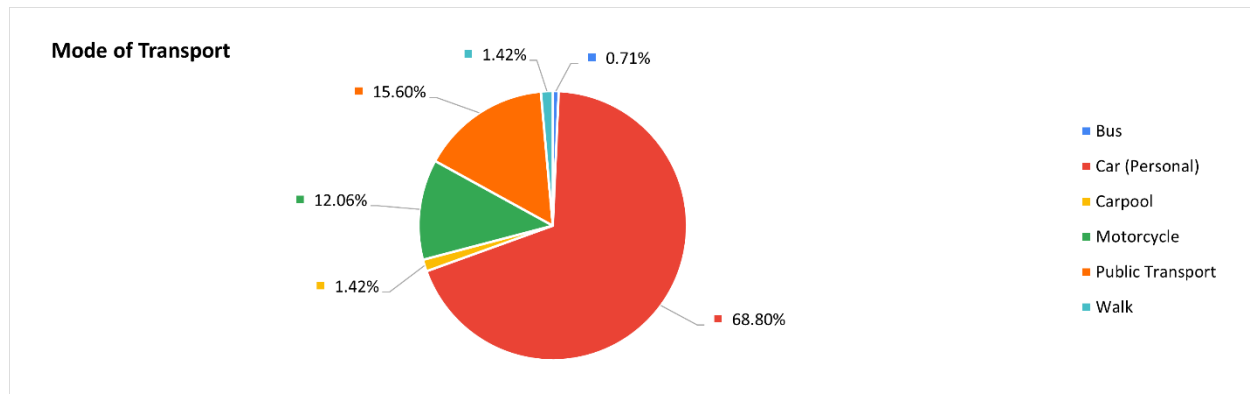


Figure 7: Mode of Transport Used by Survey Respondents

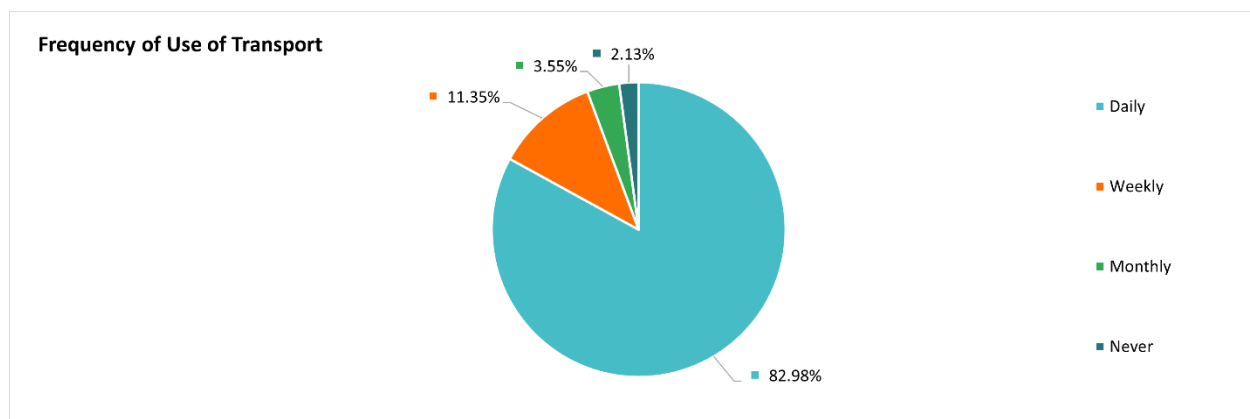


Figure 8: Frequency of Transport Use by Survey Respondents

The data on the impact of heat on commute shows that 38.30% of respondents experienced significant discomfort due to high temperatures during their commute, while 22% and 19.86% reported moderate and mild impacts, respectively (Figure 9). Only 12.77% of respondents found the heat to have minimal or no effect on their commute, indicating that most commuters in the survey felt the heat had some level of impact on their daily transportation.

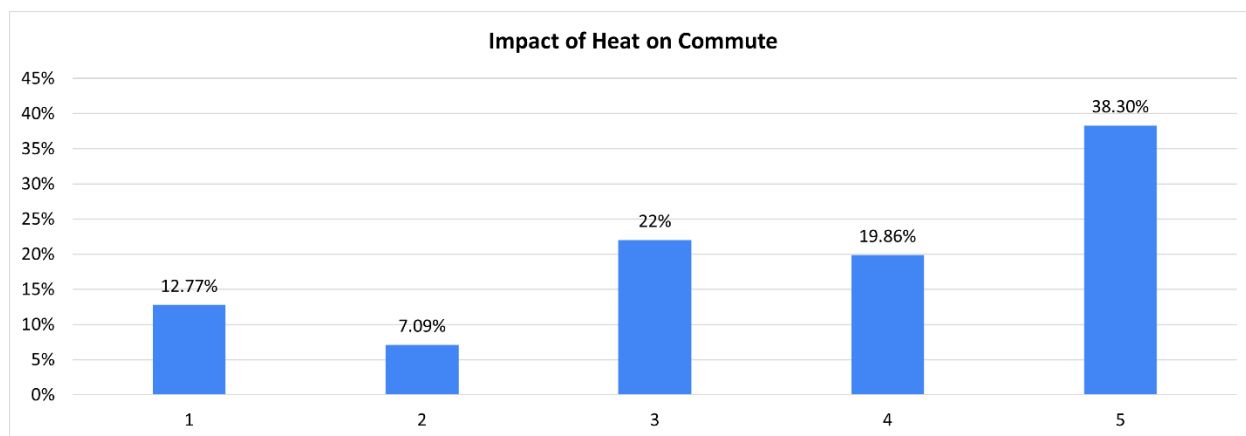


Figure 9: Impact of Heat on Commute

Regarding psychological impacts due to heatwaves, the data reveals that the most reported symptoms were fatigue (100 respondents), followed by stress (61 respondents), which indicates that the heat had a profound effect on physical energy and emotional well-being. Impaired concentration (56 respondents) and anxiety (25 respondents) were also noted, suggesting that the heat affected cognitive functioning and mental health. Depression (12 respondents) was the least commonly reported psychological symptom, though still significant (Figure 10). This highlights that the heatwaves not only disrupted physical commuting but also contributed to various psychological challenges, particularly in terms of fatigue and stress.

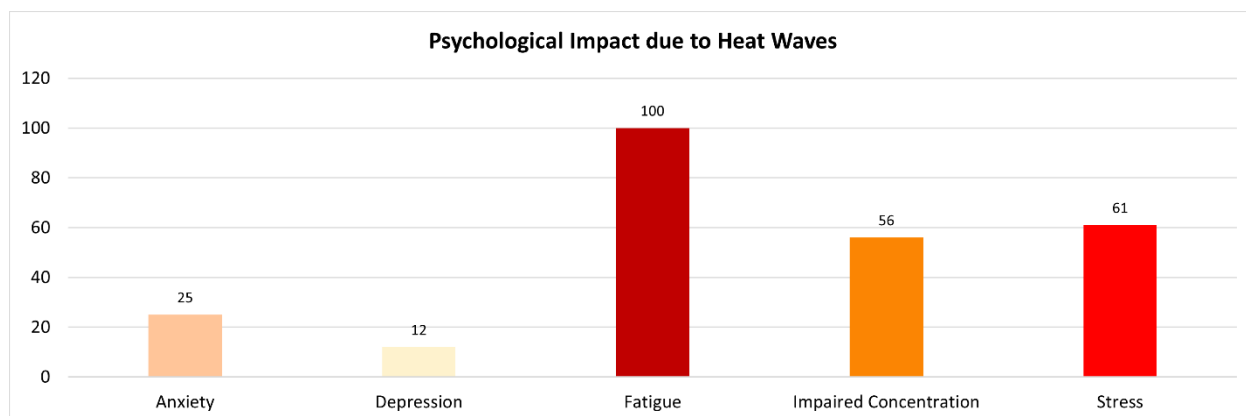


Figure 10: Psychological Impact due to Heatwaves

The data on experience discomfort during immense heatwaves shows that 46.81% of respondents reported experiencing significant discomfort during heatwaves, while 24.82% felt moderate discomfort and 16.31% reported mild discomfort (Figure 11). Only a small proportion, i.e. 5.67%, indicated minimal discomfort, which suggests that most respondents were significantly affected by extreme heat.

Regarding the physical impact/health issues due to heatwaves, 15.60% of respondents reported experiencing health issues such as heat-related illnesses, while 84.40% did not report any physical health concerns (Figure 12). This indicates that while a significant portion of the population experienced discomfort, a smaller proportion faced direct health impacts, possibly due to varying levels of vulnerability or access to preventive measures during heatwaves.

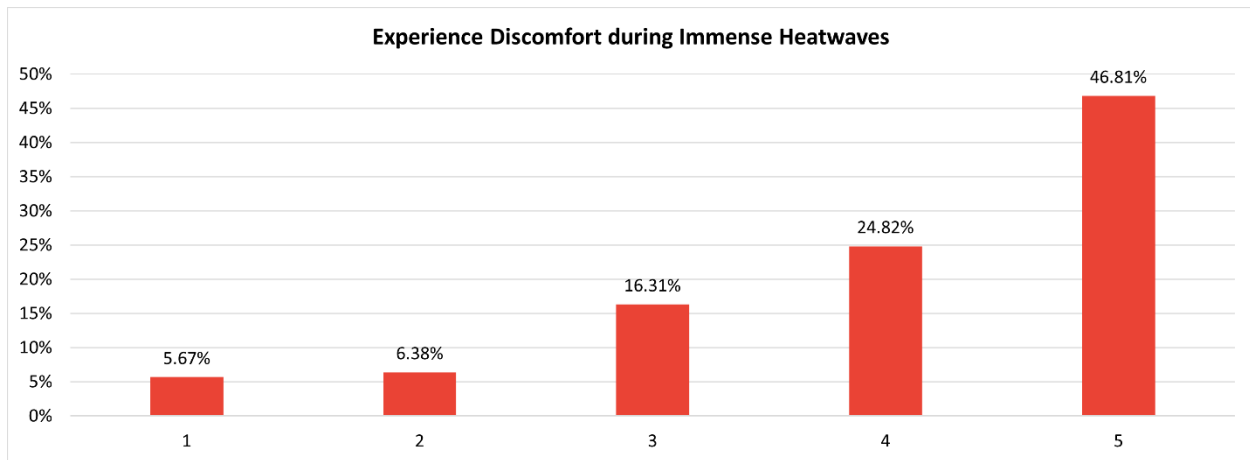


Figure 11: Discomfort Experience during Immense Heatwaves

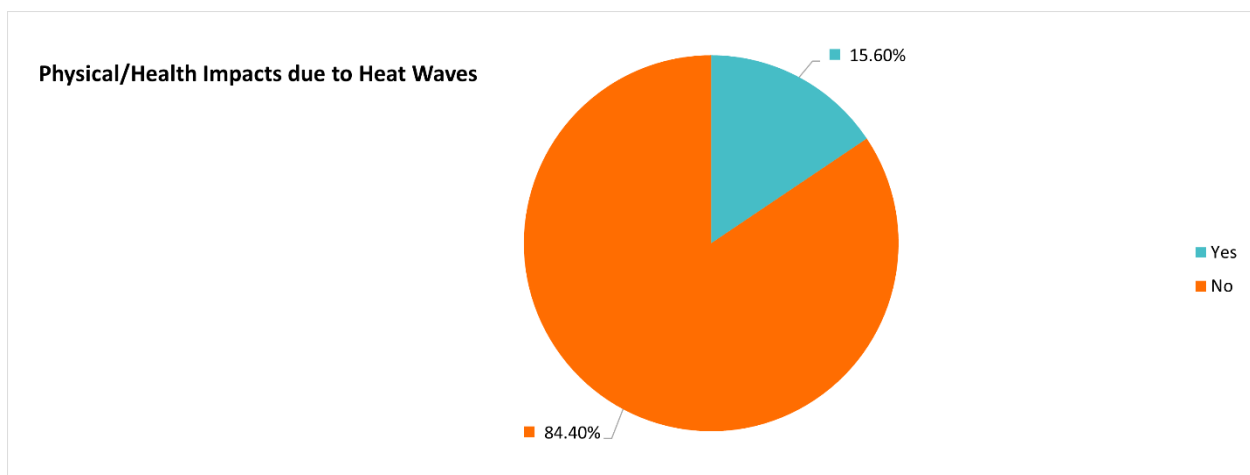


Figure 12: Physical/Health Impacts due to Heatwaves

The data on whether heat negatively affected work performance revealed that 22.70% of respondents strongly agreed that extreme heat impaired their productivity, while 24.82% agreed to a moderate extent. Additionally, 29.08% expressed a neutral stance, indicating that their work performance was not significantly influenced. On the contrary, 13.48% and 9.93% of respondents reported minimal or no negative impact, respectively (Figure 13). These findings highlight that though a considerable portion of the population experienced reduced work efficiency due to heat, perceptions varied based on individual circumstances or coping mechanisms.

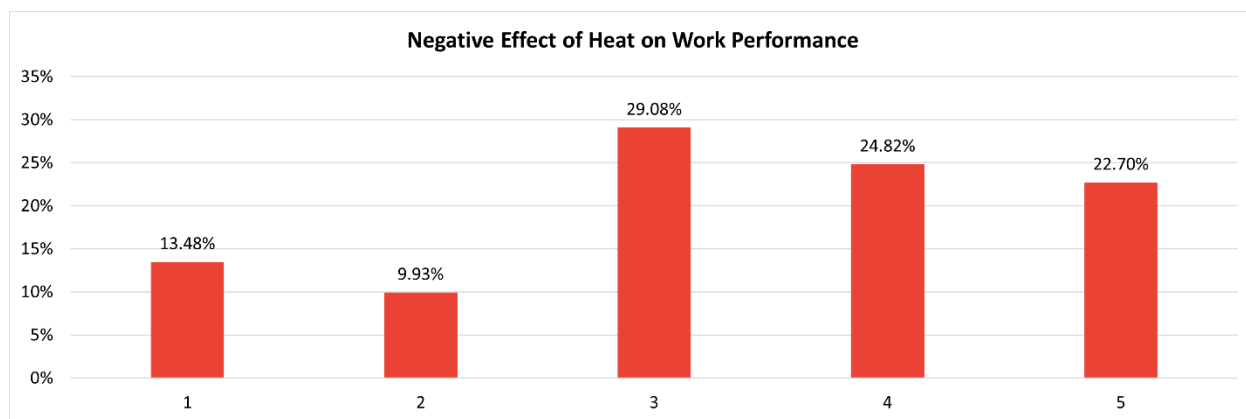


Figure 13: Negative Effect of Heat on Work Performance

The survey revealed that only 13.48% of respondents had personally been affected by floods or their resulting damage, while a significant majority (86.52%) reported no direct impact. When asked (if people they knew had been displaced by floods?), 43.97% responded affirmatively, which highlights indirect exposure to the devastating effects of flooding whereas 56.03% indicated no such displacement among their acquaintances (Figure 14). This data underscores the broader social and communal impact of floods, even for those not directly affected.

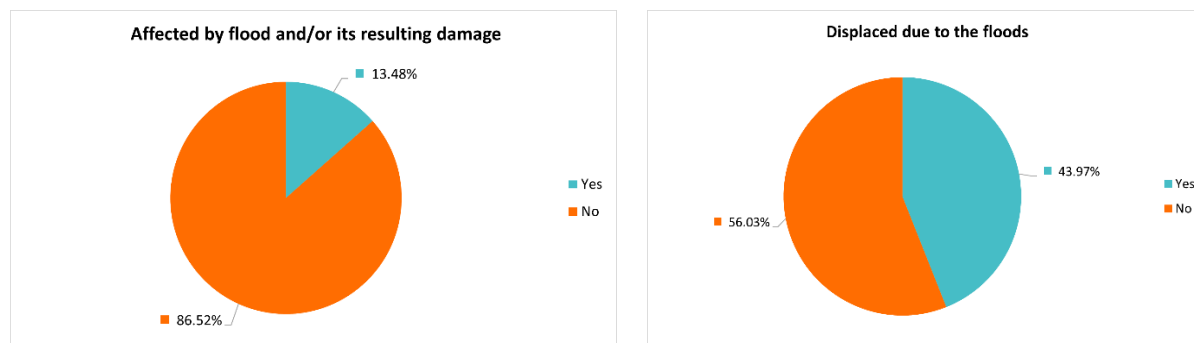


Figure 14: Affect/displacement due to flood

4.3 General Climate Anxiety

According to the survey, a majority of respondents expressed high levels of concern about climate change, i.e. 66.67% selecting the highest ranking (5) and 18.44% choosing level 4. A smaller proportion, i.e. 10.64%, had shown moderate concern by selecting level 3, while only 2.13% of respondents had marked levels 1 and 2, which indicates the minimal concern (Figure 15). These findings suggest most participants were deeply aware of climate change issues and their potential consequences, while only a very small percentage exhibited little to no concern.

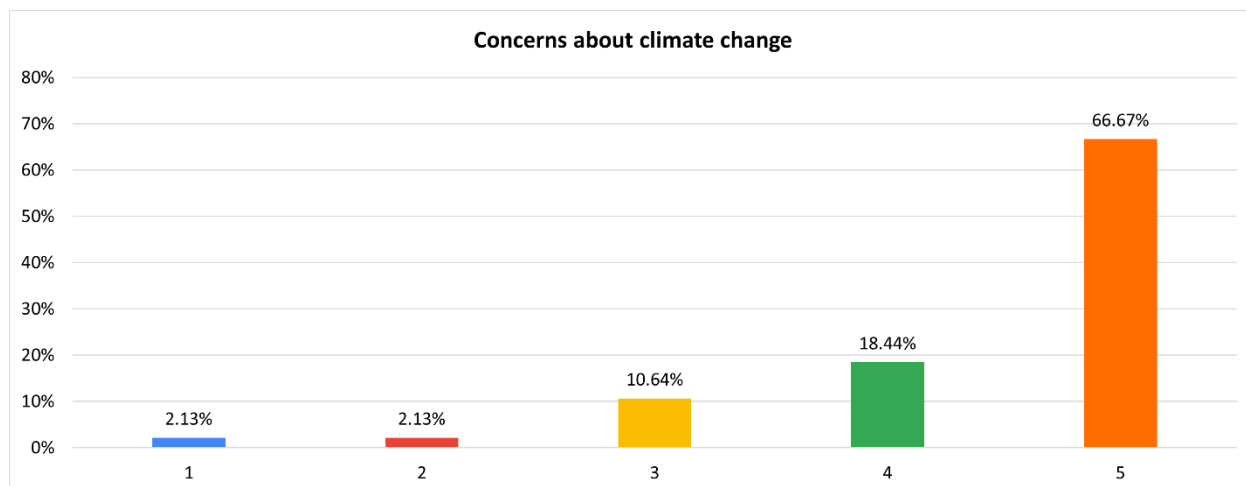


Figure 15: Awareness of Climate Change in Survey Respondents

The survey results indicated that an overwhelming majority of respondents, i.e. 90.78%, perceived climate change a significant threat to their personal well-being. The survey showed that 9.22% of participants did not consider climate change to threaten their safety (Figure 16). The data indicators confirmed that most respondents noticed direct or indirect influence of climate change on their daily existence, which stemmed possibly from temperature increases, weather anomalies and scarce resources. A small percentage of respondents, who did not view climate change as dangerous possibly relied on their physical distance from issues or insufficient awareness or alternative risk evaluation methods.

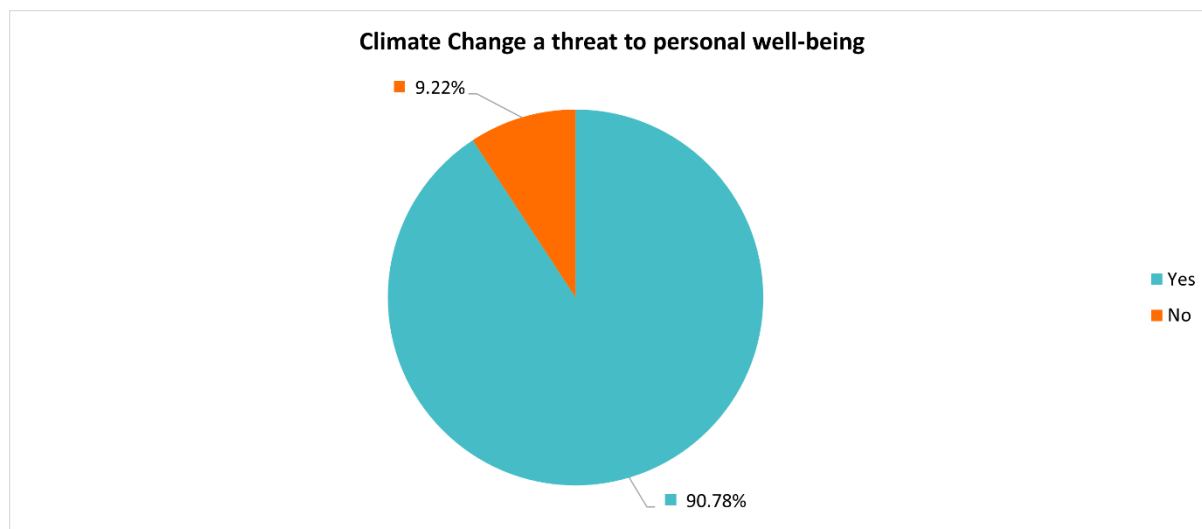


Figure 16: Climate Change Threat

The survey data revealed that numerous individuals maintained different levels of contact with climate change news reports. Response patterns indicated moderate engagement with 38.30% of participants at level 3 yet 26.24% of respondents reported frequent climate news

consumption at level 4 and level 5 activity was reported by 18.44% of participants (Figure 17). A group of 8.51% respondents engaged with climate change news only occasionally (level 2) while another same-sized group (8.51%) seldom came across it (level 1). Most participants demonstrated a minimum level of engagement towards climate news although some respondents showed minimal or no commitment to following this content.

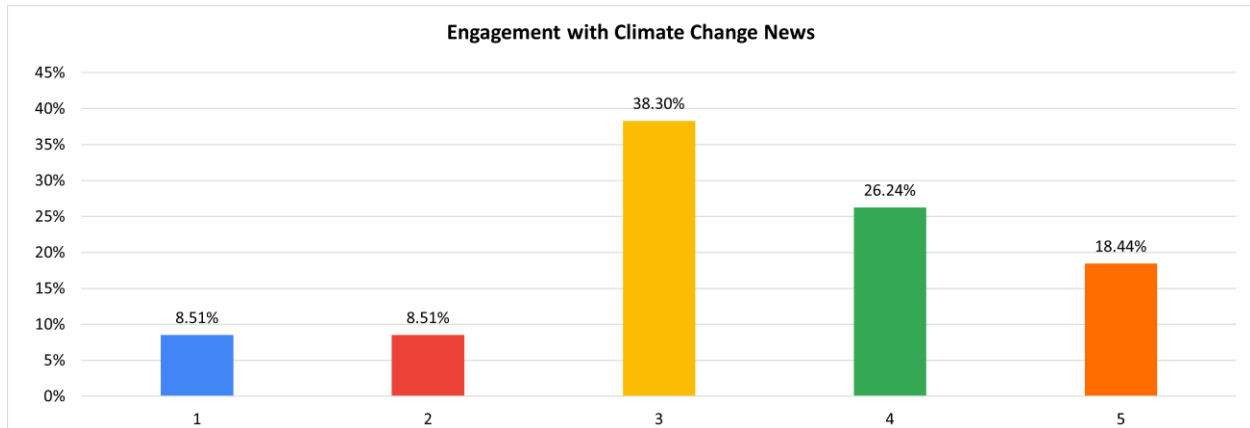


Figure 17: Engagement with Climate Change News

Most participants in the survey expressed strong confidence about their ability to create a positive change with respect to environment. The survey revealed combined scores of 30.50% level 4 confidence together with 27.66% at Level 5 highest confidence, as shown in Figure 18. Meanwhile, the results showed that 26.24% of respondents kept their belief at a moderate level (level 3). Only 12.06% of participants showed signs of doubt about their positive environmental impact ability (level 2) while 3.55% had low confidence (level 1). Most respondents displayed confidence in their ability to help environmental causes but few individuals-maintained doubts about their positive impact potential.

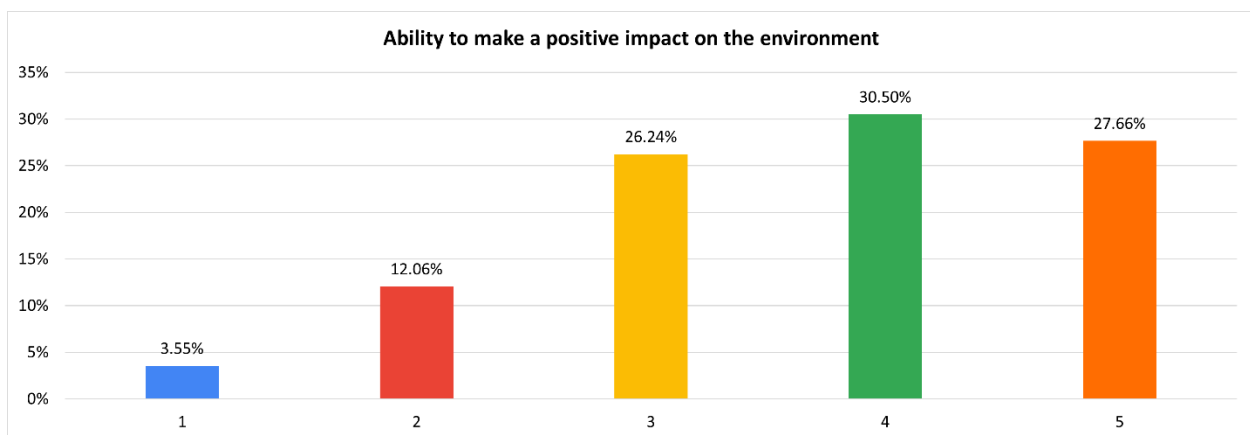


Figure 18: Positive Impact towards Environment

A large proportion among survey participants, i.e. 87.94%, believed that individual actions have significant power to address climate change challenges. A large number of participants showed through their answers that they deeply understand their duty to protect environment. Out of the total participants, only 12.06% did not hold this belief because they doubted that individual efforts could yield any results (Figure 19). Most participants took part in the trend, which showed their awareness about how collective action through sustainable lifestyle choices can help fight climate change.

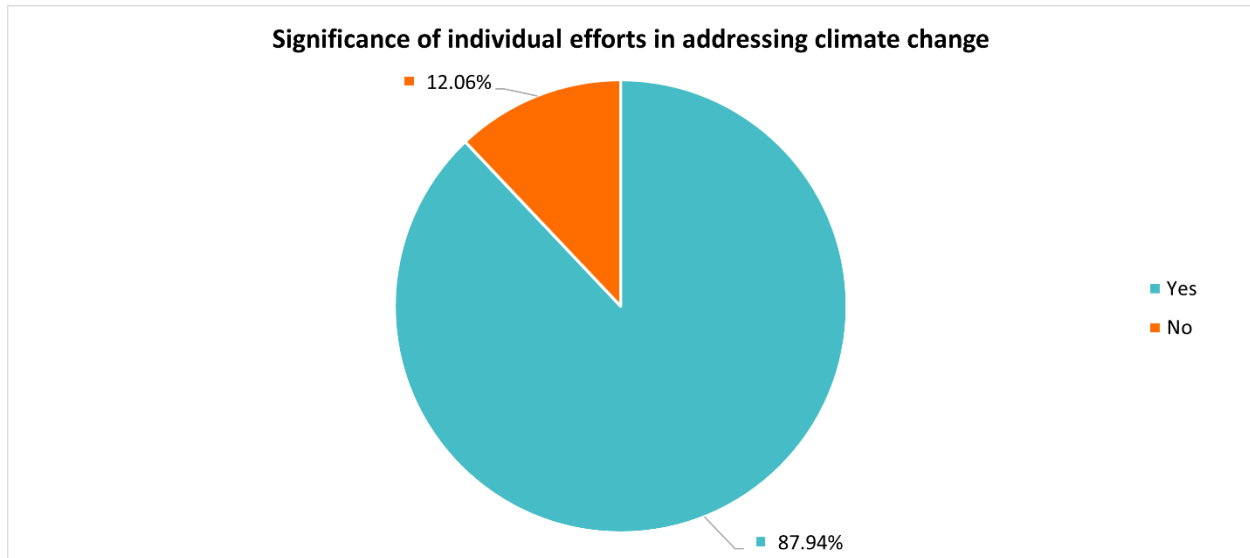


Figure 19: Significance of individual efforts for addressing climate change

A simple majority, according to survey results, started doing things to manage their climate anxiety through meditation practices and local initiative work and activism efforts. As given in Figure 20, a large percentage of 54.61% among respondents participated in activities to manage their climate-related stress yet 45.39% of respondents had not engaged in such actions. The data implied that although people understood the need to act proactively about climate anxiety most individuals avoided using coping mechanisms because they lacked information or resources or motivation.

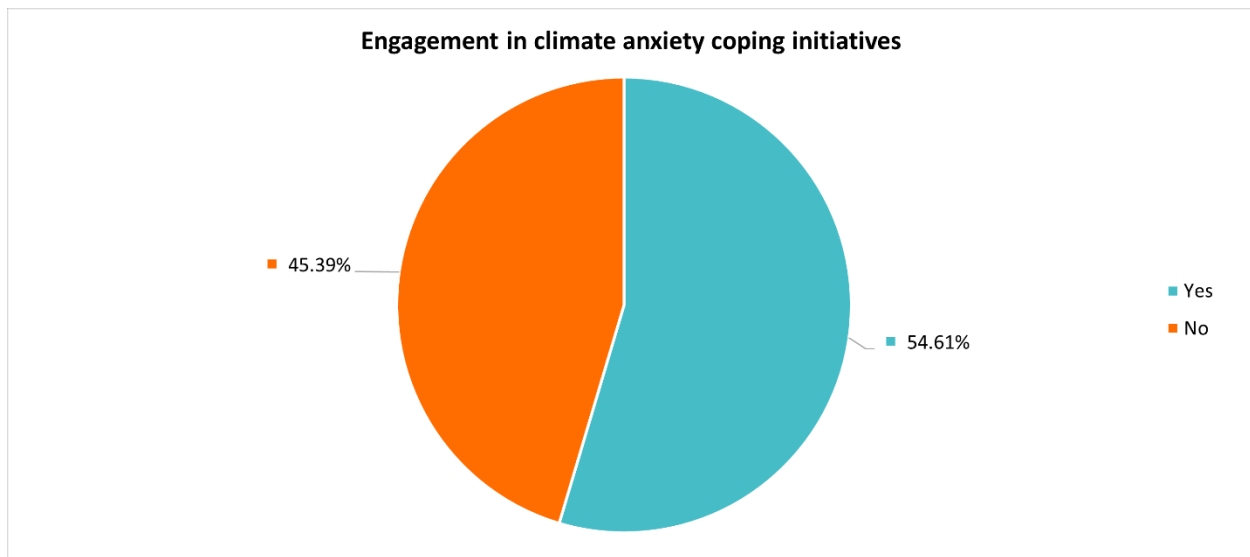


Figure 20: Respondents engagement with activities to tackle climate anxiety

Multiple coping strategies emerged from the survey data that individuals used to deal with their climate anxiety. Most respondents used sustainability practices to lower their carbon footprints whereas 46 individuals took this approach. Physical exercise and other forms of active behaviour emerged as a popular coping technique among survey participants since 27 people chose these methods. The survey demonstrated that climate action groups helped a total of 23 participants to deal with their climate anxiety concerns by connecting them to support networks. Among the survey respondents, 13 people limited their intake of climate news to manage anxiety while 15 practiced mindfulness and meditation. Only 4 respondents consulted for professional help or talked to friends and family for emotional support (Figure 21). Measures showed two participants were free from climate anxiety, but all the other survey participants experienced some form of it. People employed the collection of rainwater and tree plantation and environmental control efforts less frequently than other coping methods. Most survey participants engaged themselves in tension management practices for climate anxiety through environmental activism and self-care methods.

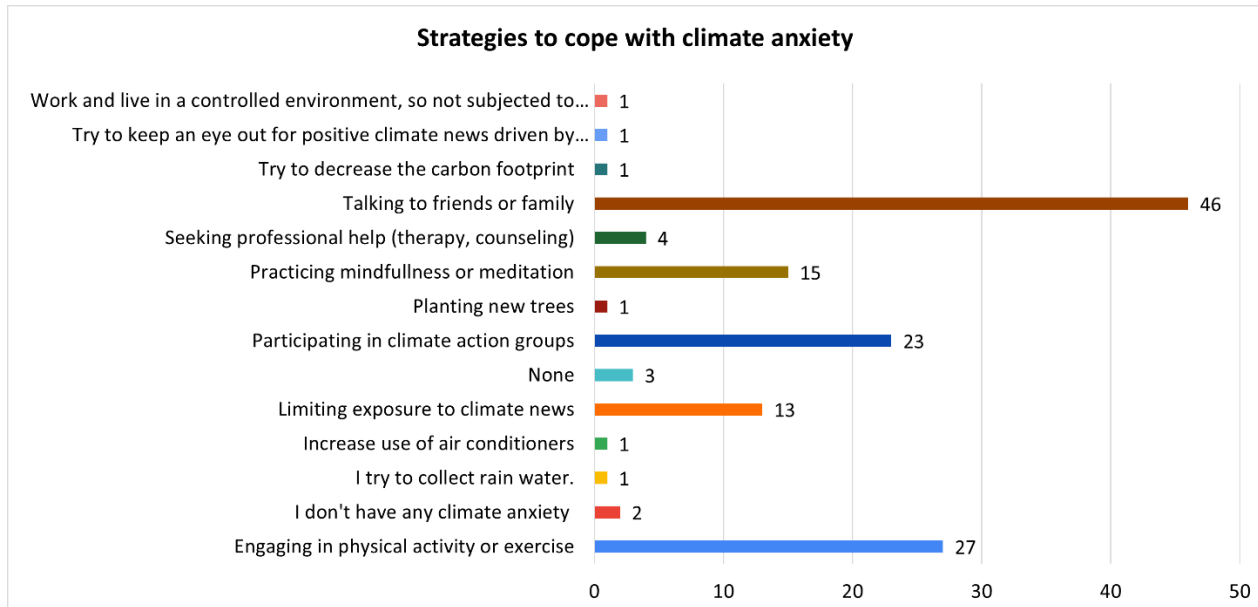


Figure 21: Strategies to Cope with Climate Anxiety

Different ranges of hope emerged throughout the research assessment about planetary sustainability. A moderate degree of hope existed within the population as 38.30% of the respondents showed mixed feelings about future environmental results. Out of the survey participants, 23.40% exhibited a pessimistic attitude towards planetary prospects along with 9.22% who showed strong pessimism about the planet's future. Survey results showed that 14.89% of people experienced moderate environmental optimism while 14.18% demonstrated strong positive expectations about such changes (Figure 22). The research showed that overall people stayed unsure about future predictions, yet some participants believed progress would occur in environmental sustainability.

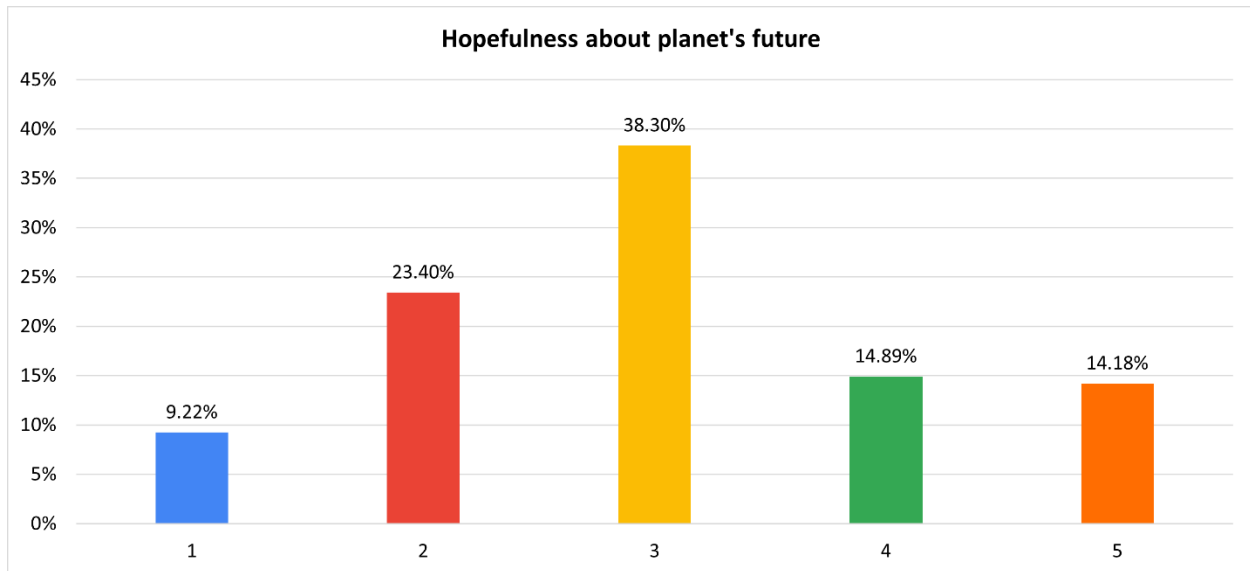


Figure 22: Hopefulness about the future of the planet

Many survey participants identified climate change as a regular topic of concern in their daily routines. Among the respondents, 32.62% responded frequently considering climate change while 19.15% typically had it as a running obsession in their schedule. Almost a quarter of respondents (24.82%) expressed medium-level climate change concerns indicating occasional thoughts about it (Figure 23). People who scanned climate change due to its rarity occupied 14.89% of the sample while those with minimal consideration about it reached 8.51% of the total respondents. The study revealed that although climate change received considerable attention from numerous people, many others showed infrequent engagement with this issue.

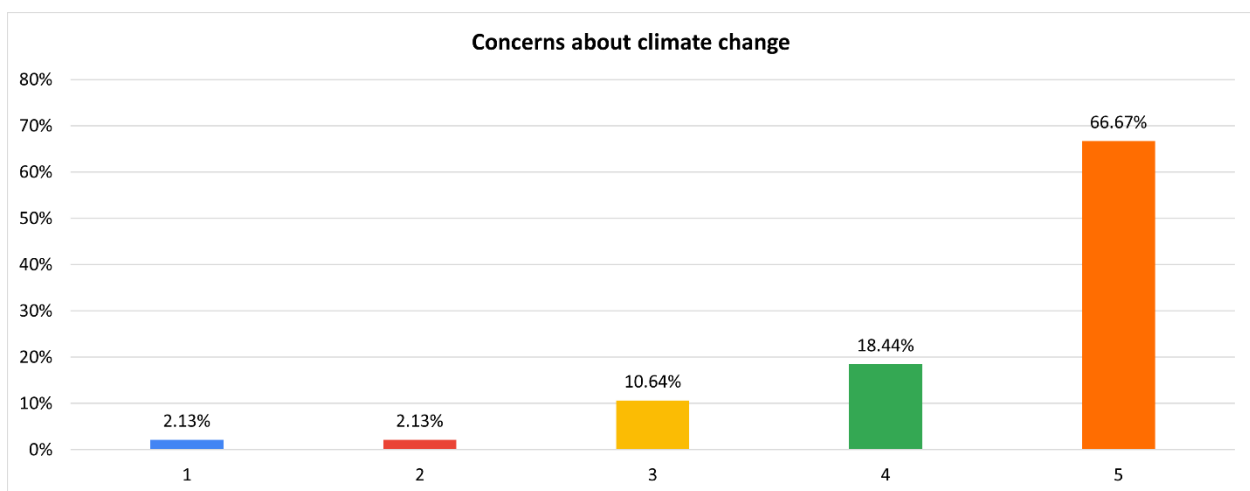


Figure 23: Thinking about Climate Change

The survey revealed that personal environmental sustainability stood first among the list of goals and decisions for 84.40% of respondents. Sustainability played no role in selecting choices for 15.60% of respondents according to their survey responses (Figure 24). Most participants showed both awareness and commitment to use environmentally responsible behaviours according to the survey results. One segment of minority participants, who did not place sustainability at the forefront implied that obstacles linking to convenience together with costs and knowledge deficiencies possibly shape their selection choices.

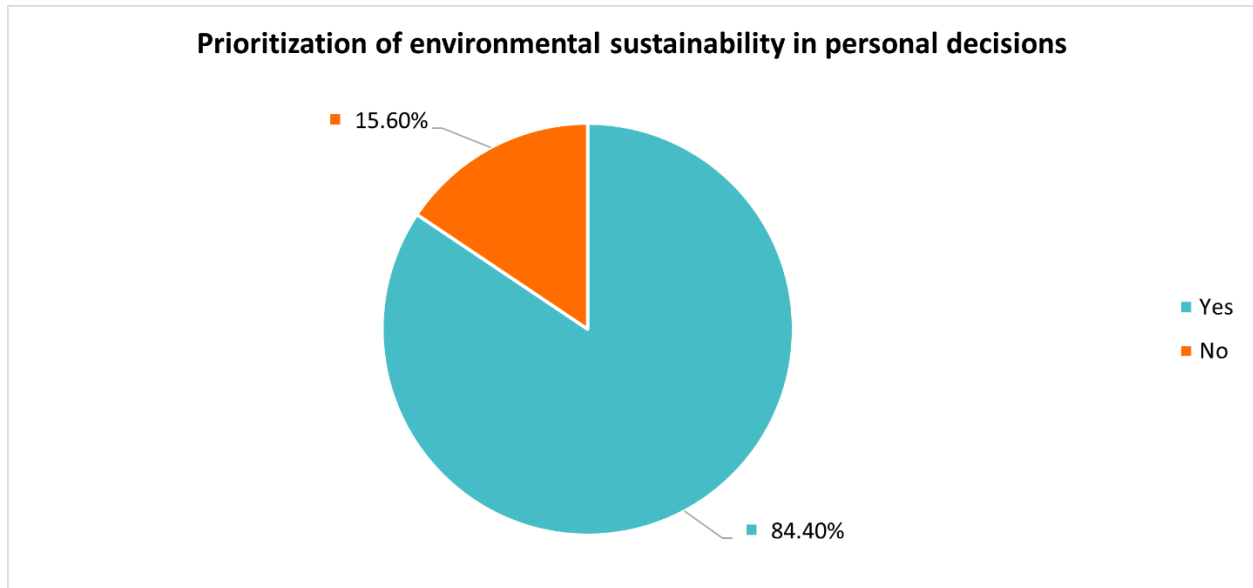


Figure 24: Prioritization of Environmental Sustainability in personal Goals

The survey data revealed that addressing climate change received significant personal importance from most participants because 44.68% selected 5 as their rating and 32.62% chose 4 (Figure 25). Survey data showed 16.31% of respondents stood in a neutral stance (3) about personal importance towards climate change with 4.26% and 2.13% assigning it low levels based on their responses of 2 and 1, respectively. Survey participants identified climate change as a major issue, but a limited number appeared to disregard it because they either lacked awareness or inadequate belief in their ability to help address the problem.

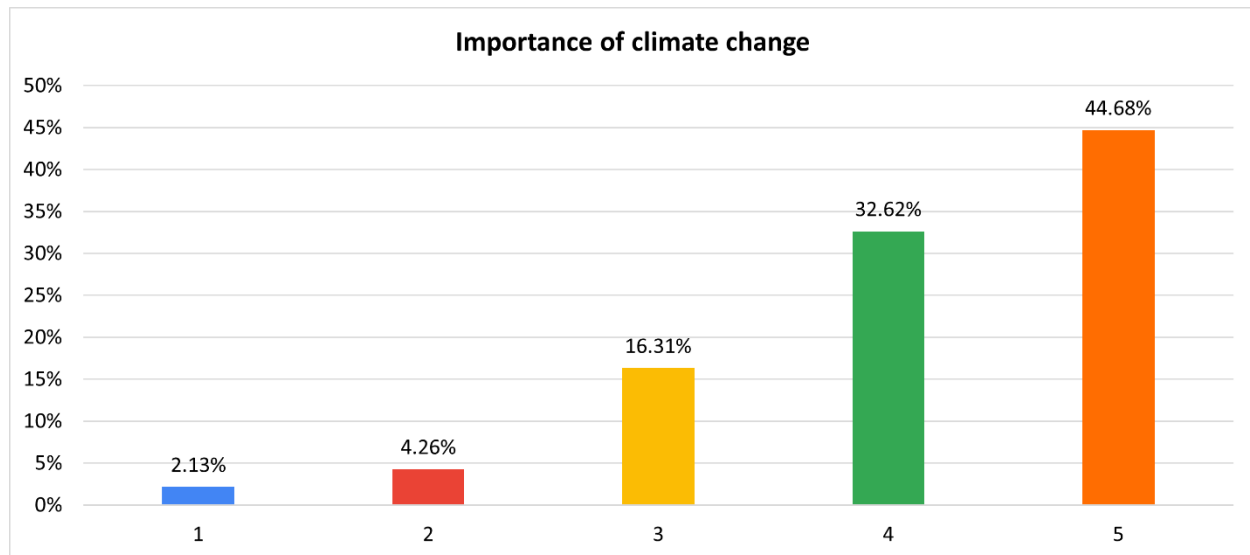


Figure 25: Importance of Climate Change

4.4 Critical Analysis

The survey findings highlight the complex and multifaceted nature of climate anxiety in Pakistan. They also shed light on how demographic factors, socio-economic conditions, and lived experiences shape individuals' perceptions of climate change. While the data reveals many patterns, more work is needed to learn about the overall impact, any structural issues and how effective the coping techniques really are. It carefully assesses critical achievements and suggests places where actions are needed to support a society better able to handle climate change issues. This research shows that climate anxiety among urban Pakistani women is increasing due to various environmental, economic and daily issues.

4.4.1 Climate Anxiety and Demographic Disparities

Among the survey participation 60.3% identified as male and 39.7% as female highlighting a notable gender disparity in participation that raises important considerations for inclusive climate engagement. Having fewer women involved in climate issues is causing worries about how women can engage in climate dialogues. In Pakistan and elsewhere, climate change impacts women more, as they suffer from weak economic situations, bear much of the family burden and lack a voice in key matters. A few people in this category might show a reluctance to contribute to climate talk in formal situations. This points out that efforts to communicate climate risks and outreach should be designed for women in order to thoroughly record and resolve their related concerns.

Popular belief that climate anxiety affects mostly the young isn't supported by our data. Most respondents fell between 18 and 30 (43.3%), while another 16.3% were of 60 years or above. Because of this, climate anxiety reaches all ages, often caused by people experiencing climate-related events or anxious about relatives they care about. Since many elderly respondents

understand climate dangers, policymakers should make sure their adaption strategies include everyone.

4.4.2 Educational Attainment and Climate Awareness

A higher-than-average proportion of respondents (47.5%) with Master's or MPhil degrees suggests climate anxiety may be seen more in people who understand more about climate science and the spells it can cast on the society. Our results match those of worldwide research, which proves that those with a higher level of education are more concerned about climate change. At the same time, the low level of participation among people with only a high school education shows that there may be gaps in climate education within uneducated communities.

It is a serious worry that some people have trouble in getting and understanding climate information because of their socioeconomic status. Since many people with education lead climate anxiety, it means that awareness campaigns might miss their target with those with fewer qualifications. To encourage greater climate involvement, climate message must be simplified, local languages used, and climate education integrated into mainstream curriculum at all levels.

4.4.3 Occupational Factors and the Psychological Toll of Climate Change

The respondents' employment status gives useful insights into how climate fear emerges in various professional settings. A majority responders (51.77%) were full-time employees, which indicates that working professionals face substantial climate-related stress. The concern may come from anxiety about economic stability, job safety during extreme weather events, and the long-term viability of companies impacted by climate change.

At least 17.73% students were also a substantial group affected by climate anxiety, most likely due to the concerns about future employment opportunities. However, the low participation rate of homemakers (0.71%) shows possible data collecting biases, since homemakers, who frequently play an important role in household-level climate adaptation, may not have been effectively represented. This emphasises the need for more inclusive research approaches that consider the viewpoints of many socioeconomic groups.

4.4.4 Climate Stress and Transportation Challenges

The survey findings on transport patterns support the structural elements that exacerbate climate anxiety. The respondents' high reliance on private automobiles (68.80%) indicates a strong car-dependent culture, which not only adds to urban pollution but also increases susceptibility to adverse weather conditions. The low usage of public transport (15.60%) and carpooling (1.42%) indicates that structural and behavioural impediments impede the shift to more sustainable transportation choices.

Heat stress surfaced as a key concern for commuters, with 38.30% experiencing severe discomfort caused by high temperatures. The claimed consequences, which include weariness (100 respondents), stress (61 respondents), and poor attention (56 respondents), demonstrate

climate change's major influence on daily routines and job productivity. These findings highlight the critical need for policies that promote sustainable travel, urban cooling techniques, and workplace adaption measures like flexible working hours during intense heatwaves.

4.4.5 Perceived Threats and Psychological Burden of Climate Change

The study finds a high degree of climate anxiety, with 66.67% of respondents evaluating their concern as the most serious and 90.78% viewing climate change as a direct danger to their well-being. According to these findings, people now see climate change not only a problem for human health but also the quality of life.

So far so, the responses from the 9.22% of participants, who chose climate change as unimportant, give us another valuable perspective. People here could be unaffected by the climate, may think differently about climate change or give up because they feel like they cannot do anything. It is important to understand what this group thinks to create better methods for talking about climate change.

4.4.6 Coping Mechanisms and Behavioural Responses

Many people are concerned about climate change, but this concern sometimes doesn't guide for some useful action. While 87.94% of people said their actions could help address climate change, just 54.61% took actions to ease their worry about the climate. This suggests that individuals are aware of the problem, but do not have the tools to make a real difference.

More people mentioned choosing sustainable ways to live (46 respondents), next was physical fitness (27 respondents) and joining organisations that focus on the climate (23 respondents). Just 15 respondents used mindfulness, 13 tried to read less climate news and only 04 consulted professionals for help. It exposes a serious lack in Pakistan's services for treating climate anxiety. The low level of interaction with mental health resources indicates that climate anxiety is still not commonly seen as a serious psychological illness, needing more knowledge and access to climate-informed therapy services.

4.4.7 Structural and Policy Implications

The survey results confirm that climate anxiety is a systemic issue. The impact of excessive heat on job performance, as stated by 47.52% of respondents, emphasises the need of workplace regulations that manage climate stress. Employers must acknowledge climate anxiety as a real workplace concern and implement adaptation strategies such as heatwave readiness plans and staff well-being initiatives.

Furthermore, while just 13.48% of respondents had been personally impacted by floods, 43.97% knew someone who had been relocated. This indirect exposure to climatic disasters underscores the greater social and psychological toll of climate change, emphasising the importance of community-based resilience strategies that address both immediate and long-term consequences.

A key takeaway from this research is that climate anxiety is deeply intertwined with structural and systemic challenges. Urban women, particularly working professionals and students, experience heightened stress due to inadequate public transport systems, workplace environments that do not account for climate impacts, and a general lack of institutional support for mental well-being in the context of climate change. The reliance on private automobiles, along with a lack of sustainable commuting options, heightens the feeling of vulnerability to excessive heat and pollution.

Also, while individual climate-conscious behaviours are evident, such as adopting sustainable living practices and participating in advocacy efforts, the limited engagement with mental health resources suggests that climate anxiety is not yet widely recognized or considered as a critical psychological issue. The limited use of professional counselling or organised coping techniques emphasises the need for increased knowledge and institutional assistance, such as workplace well-being programmes and community-based mental health treatments adapted to climate stress.

5. POLICY RECOMMENDATIONS

In Pakistan, climate anxiety among urban women is a non-economic loss and damage (NELD). However, it is an important but frequently underestimated effect of climate change. Though much emphasis is given on economic costs such as infrastructure damage and productivity reduction, the psychological discomfort, mental health burdens, and social well-being effects of climate change are also substantial. Recognising this in national strategies is critical for achieving an overall climate resilience.

Pakistan's existing policy framework, which includes Climate Change Gender Action Plan (ccGAP), serves as a basis for gender-responsive climate action. However, tackling climate anxiety necessitates focused interventions that include mental health, urban planning, economic empowerment, and legal frameworks into Pakistan's climate adaptation and resilience plans.

1. Recognizing Climate Anxiety as a Non-Economic Loss & Damage (NELD)

Climate anxiety is a less visible and intangible yet profound impact of climate change. It affects productivity, quality of life, and social stability, particularly among urban women. To address this, following measures should be taken.

- **Integrate NELD into Climate Policy:** Pakistan's climate adaptation framework should explicitly recognize climate-induced mental health impacts as a form of non-economic loss and damage, ensuring they are factored into climate action planning.
- **Include NELD in Climate Finance Mechanisms:** The Loss & Damage Fund under UNFCCC, Green Climate Fund (GCF), and other international financing mechanisms should be tapped to support mental health resilience programmes for urban communities.

- **Mainstream NELD in ccGAP Implementation:** The ccGAP should expand its scope to include mental health adaptation strategies, addressing urban women's vulnerability to climate anxiety.

2. Institutionalizing Climate-induced Mental Health Policies

- **National Health Vision (NHV) Update:** Revise NHV to explicitly address climate-induced mental health concerns and direct resources towards urban mental health services.
- **NDMA & Psychosocial Resilience:** The National Disaster Management Authority (NDMA) should integrate psychosocial resilience training into disaster preparedness, ensuring mental health support in climate crisis response.
- **Climate-Anxiety Screening in Healthcare:** Routine mental health assessments in primary healthcare facilities should include climate anxiety indicators, ensuring early detection and support.

3. Urban Planning & Infrastructure for Psychological Well-Being

- **Green Spaces & Cooling Centres:** Expansion of urban greenery and heat-resistant public spaces can significantly reduce climate-related stress, particularly for women who spend time in public and semi-public areas.
- **Climate-Adaptive Workplaces:** Employers should implement cooling strategies, flexible work hours, and mental health support to mitigate workplace climate stress.

4. Gender-Sensitive Transport & Mobility

- **Safe & Climate-Adaptive Public Transport:** Availability of air-conditioned public transport, shaded bus stops, and last-mile connectivity for women can reduce climate-induced stress during commutes.
- **Walkability & Cycling Infrastructure:** Urban planning should enhance pedestrian-friendly pathways with gender-sensitive safety measures, allowing climate-friendly and stress-reducing mobility.

5. Expanding Climate & Mental Health Education

- **Climate Anxiety & Resilience Training in Universities:** Universities should introduce courses on climate anxiety, preparing future professionals to address psychological climate impacts.
- **School Counsellor Training:** Provincial education ministries should equip school counsellors to support students in managing climate-related stress and mental health issues.

6. Public Awareness & Digital Engagement

- **Climate-Mental Health Media Campaigns:** Nationwide campaigns should destigmatize climate anxiety and promote coping strategies through electronic and social media as well as community networks.
- **Online Support Platforms:** Develop government-backed digital mental health services offering free counselling and climate resilience training for urban women.

7. Economic & Community-Based Interventions

- **Green Skills & Economic Empowerment:** Climate finance should prioritize upskilling urban women in green jobs, including renewable energy, sustainable business models, and circular economy roles.
- **Microfinance for Women's Climate Enterprises:** Financial incentives should be introduced for climate-friendly startups led by women, promoting economic security and psychological resilience.

8. Community-Based Women Climate Resilience Hubs

- **Climate Resilience Centres:** Community-based support hubs should be set up that may offer mental health resources, climate education, networking opportunities and sustainable livelihood training for urban women.
- **Public-Private Partnerships:** There is a need to encourage corporate investment in community-led climate resilience programmes, aligning CSR initiatives with mental health and climate adaptation.

9. Strengthening Legal & Policy Accountability

- **Climate Justice & Gender Mainstreaming in Climate Change Act:** The Climate Change Act should formally recognize climate-induced mental health impacts, making them a priority in national climate action plans.
- **Gender-Inclusive Decision Making:** Women-led organizations and climate experts should play a central role in developing policies addressing climate-induced mental health.

10. Global Advocacy & Climate Finance for Mental Health Resilience

- **Leveraging Climate Finance for Mental Health:** Advocate for climate funds to include mental health projects, ensuring that non-economic losses such as climate anxiety are funded through Loss & Damage mechanisms.
- **International Partnerships:** Collaborate with development partner organizations to integrate climate-induced mental health support into global climate resilience frameworks.

11. Gender Climate Budget Tagging (GCBT) & Financial Accountability

- **Gender-Responsive Budgeting:** Pakistan's Gender Climate Budget Tagging (GCBT) should track expenditures related to climate anxiety, mental health adaptation, and urban resilience initiatives.
- **Transparency in Funds Allocation:** Climate finance reports should explicitly categorize mental health resilience programmes under loss and damage financing, ensuring accountability and effectiveness.

6. CONCLUSION

The analysis from survey findings highlights the multifaceted nature of climate anxiety nexus with gender in urban areas of Pakistan, particularly among urban women who face compounded challenges due to socio-economic vulnerabilities, inadequate urban infrastructure, and insufficient institutional support. Climate anxiety is a systemic issue caused by structural gaps, governance flaws, and socioeconomic injustices.

While respondents are aware of climate change, the gap between concern and action highlights hurdles such as a lack of resources, inadequate mental health care, and insufficient forums for collective climate activism. The under-representation of particular demographic groups, such as homemakers and the less educated, stresses the need for more inclusive research and engagement approaches. Furthermore, the psychological toll of climate stress—which manifests as exhaustion, decreased productivity, and increased mental distress—requires immediate governmental attention.

Addressing climate anxiety requires a comprehensive strategy that incorporates mental health into climate adaptation plans, encourages gender-sensitive initiatives, and boosts community resilience. Recognising climate-induced mental health consequences as a type of non-economic loss and harm is critical to creating a fairer and climate-resilient society. Through targeted initiatives, sustainable infrastructure, and inclusive communication, Pakistan may better prepare its urban population, particularly women, to deal with the psychological impact of climate change.

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