

CAPITAL UNIVERSITY OF SCIENCE AND
TECHNOLOGY, ISLAMABAD



**Media Exposure and Psychological
Distress in Gen-Z: Mediating Role of
Eco-Anxiety; Moderating Roles of
Pro-Environmental Behaviour and
Spiritual Intelligence**

by

Amna Mahmood

A thesis submitted in partial fulfillment for the
degree of Master of Science

in the

Faculty of Management & Social Sciences

Department of Psychology

2025

Copyright © 2025 by Amna Mahmood

All rights reserved. No part of this thesis may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, by any information storage and retrieval system without the prior written permission of the author.



CERTIFICATE OF APPROVAL

**Media Exposure and Psychological Distress in Gen-Z:
Mediating Role of Eco-Anxiety; Moderating Roles of
Pro-Environmental Behaviour and Spiritual Intelligence**

by

Amna Mahmood

(MSP233006)

THESIS EXAMINING COMMITTEE

S. No.	Examiner	Name	Organization
(a)	External Examiner	Dr. Shazia Yusuf	Bahria Uni, Islamabad
(b)	Internal Examiner	Dr. Sabahat Haqqani	CUST, Islamabad
(c)	Supervisor	Ms. Asima Munawar	CUST, Islamabad

Ms. Asima Munawar

Thesis Supervisor

October, 2025

Dr. Sabahat Haqqani

Head

Department of Psychology

October, 2025

Dr. Arshad Hassan

Dean

Faculty of Management & Social Sci.

October, 2025

Author's Declaration

I, **Amna Mahmood** hereby state that my MS thesis titled “**Media Exposure and Psychological Distress in Gen-Z: Mediating Role of Eco-Anxiety; Moderating Roles of Pro-Environmental Behaviour and Spiritual Intelligence** ” is my own work and has not been submitted previously by me for taking any degree from Capital University of Science and Technology, Islamabad or anywhere else in the country/abroad.

At any time if my statement is found to be incorrect even after my graduation, the University has the right to withdraw my MS Degree.



(**Amna Mahmood**)

Registration No: MSP233006

Plagiarism Undertaking

I solemnly declare that research work presented in this thesis titled “**Media Exposure and Psychological Distress in Gen-Z: Mediating Role of Eco-Anxiety; Moderating Roles of Pro-Environmental Behaviour and Spiritual Intelligence** ” is solely my research work with no significant contribution from any other person. Small contribution/help wherever taken has been duly acknowledged and that complete thesis has been written by me.

I understand the zero-tolerance policy of the HEC and Capital University of Science and Technology regarding plagiarism. Therefore, I as an author of the above titled thesis, declare that no portion of my thesis has been plagiarized, and any material used as a reference is properly referred/cited.

I undertake that if I am found guilty of any formal plagiarism in the above titled thesis, even after award of MS Degree, the University reserves the right to withdraw/revoke my MS degree, and that HEC and the University have the right to publish my name on the HEC/University website, on which names of students are placed who submitted plagiarized work.



(Amna Mahmood)

Registration No: MSP233006

Acknowledgement

First and foremost, I am deeply grateful to Allah Subhanahu wa ta'ala for granting me the strength, patience, and guidance to complete this thesis. His countless blessings and mercy sustained me throughout this journey.

I would like to express my sincere gratitude to my supervisor, Ms. Asima Munawar, for her continuous support, valuable guidance, and thoughtful feedback. Her encouragement and expertise helped me stay focused and motivated at every stage of this research.

I am also thankful to Ms. Maryam Khan, my teacher and mentor, whose inspiration and academic support have played a significant role in shaping my understanding and growth during this journey.

My heartfelt thanks go to my family for their endless prayers, love, and emotional support. Their belief in me has been my greatest strength.

I would also like to acknowledge my friends, Laiba, Zaira, Fizza, and Abubakar, for their constant encouragement, kind words, and support during challenging times. Your presence made this process easier and more meaningful.

I am also grateful to all the participants and institutions that contributed to this research. Your cooperation and input were invaluable.

This thesis is not only a reflection of my efforts but also of the support and kindness of all those who stood beside me throughout this academic journey

(Amna Mahmood)

Abstract

The present study investigated the relationship between media exposure and psychological distress, with the mediating role of eco-anxiety and the moderating roles of spiritual intelligence and pro-environmental behavior among Generation Z in Pakistan. Given Pakistan's heightened vulnerability to climate change and the rising psychological burden associated with environmental concerns, this research aimed to provide insights into the psychological and behavioral responses of Pakistani youth. A sample of 300 participants, aged 13 to 26 years, was selected using a purposive sampling technique. The study employed a quantitative, correlational design, and data were collected through standardized instruments, including the Hogg Eco-Anxiety Scale, Media and Information Exposure Scale, Kessler Psychological Distress Scale (K10), Pro-Environmental Behavior Scale (PEB), and the Spiritual Intelligence Self-Report Inventory (SISRI-24).

Data analyses were conducted using IBM SPSS version 27, incorporating Hayes' PROCESS macro, Models 1 and 58 to test for moderation and moderated mediation effects. The results indicated that media exposure significantly predicted psychological distress, and this relationship was moderated by spiritual intelligence. Specifically, higher levels of spiritual intelligence were associated with reduced psychological distress in the context of high media exposure. Furthermore, eco-anxiety mediated the relationship between media exposure and psychological distress. However, pro-environmental behavior did not moderate this indirect pathway, suggesting that behavioral engagement alone may be insufficient to buffer the emotional impact of climate-related threat.

These findings highlight the protective role of spiritual intelligence in mitigating psychological distress and underscore the limitations of behavioral responses in the absence of emotional and cognitive coping resources. The findings contribute to the emerging body of research on the psychological impacts of climate change in low- and middle-income countries by underscoring the importance of contextually relevant strategies and policy initiatives that incorporate spiritual development to

enhance emotional resilience and promote pro-environmental engagement among youth.

Keywords: Eco-Anxiety, Media Exposure, Pro-environmental Behaviors, Psychological Distress, Spiritual Intelligence, Gen-Z.

Contents

Author’s Declaration	iii
Plagiarism Undertaking	iv
Acknowledgement	v
Abstract	vi
List of Figures	x
List of Tables	xi
Abbreviations	xii
1 Introduction	1
1.1 Background of the Study	1
1.2 Problem Statement	8
1.3 Research Objectives for this Study	9
2 Literature Review	11
2.1 Theoretical Framework	28
2.2 Rationale	30
2.3 Proposed Hypotheses of the Study	32
3 Research Methodology	33
3.1 Research Design	33
3.2 Population and Sample	33
3.2.1 Inclusion Criteria	33
3.2.2 Exclusion Criteria	34
3.3 Sampling Technique	34
3.4 Measures	34
3.4.1 Spiritual Intelligence Self-Report Inventory	34
3.4.2 Kessler Psychological Distress Scale	34
3.4.3 Hogg Eco-Anxiety Scale	35
3.4.4 Pro-environmental Behavior Scale	35
3.4.5 Media and Information Exposure Scale	35

3.5	Procedure	35
3.6	Ethical Consideration	36
3.7	Data Analyses	36
4	Results	37
4.1	Frequencies and Percentages of Demographic variables	38
4.2	Descriptives and Reliability analysis	39
4.3	Spearman's rho Correlation analysis	41
4.4	Mann-Whitney U test for Gender Differences	43
4.5	Moderation analysis	44
4.5.1	Conditional Effect	46
4.6	Moderated Mediation Analysis	47
4.6.1	Conditional Indirect Effect	48
4.6.2	Pairwise Contrast Between Conditional Indirect Effects	49
5	Discussion and Conclusion	54
5.1	Limitations of the Study	58
5.2	Implications	59
5.3	Conclusion	60
	Bibliography	61
	Appendices	70
A	Appendix	70
B	Appendix	73
B.1	Measures	73
C	Appendix	80
C.1	Email Correspondence for Research Instrument Permissions	80

List of Figures

1.1	Conceptual framework	9
4.1	EA	51
4.2	PEB	51
4.3	ME	52
4.4	SI	52
4.5	PD	53
1	Informed Consent	70
2	Demographic Information form	71
3	Demographic Information form	72
4	Hogg Eco-Anxiety Scale	73
5	Hogg Eco-Anxiety Scale	74
6	Pro-Environmental Behavior Scale	75
7	Media Exposure Scale	76
8	Media Exposure Scale	77
9	Spiritual Intelligence Scale	78
10	Psychological Distress Scale	79
11	Author's permission for Eco-Anxiety Scale usage	80
12	Author's permission for Pro-environmental Behavior Scale usage	80
13	Author's permission for Media Exposure Scale usage	81
14	Author's permission for Spiritual Intelligence Scale usage	81
15	Author's permission for Psychological Distress Scale usage	82

List of Tables

4.1	<i>Frequencies and Percentages of Demographic variables (N=300</i> . . .	38
4.2	Descriptives, Reliability, and Psychometric Properties of Study Scales (N = 300)	40
4.3	Spearman’s rho Correlations Among Study Variables (N = 300) . .	42
4.4	Mann–Whitney U Test for Gender Differences (N = 300)	43
4.5	Moderation Analysis (Model 1)	45
4.6	Conditional Effect of ME on PD at Selected Values of SI (N=300) .	46
4.7	Moderated Mediation Analysis (Model 58) (N = 300)	47
4.8	Conditional Indirect Effect of ME on PD via EA at Different Levels of PEB	49
4.9	Pairwise Contrast Between Conditional Indirect Effects of ME on PD via EA at Different Levels of PEB	50

Abbreviations

EA	Eco-Anxiety
ME	Media Exposure
PEB	Pro-environmental Behavior
PD	Psychological Distress
SI	Spiritual Intelligence

Chapter 1

Introduction

1.1 Background of the Study

21st century has experienced very fast technology development and growing environmental concerns as the global climate change occurs rapidly, creating a complex reality for Gen Z, those individuals born between 1997 to 2012 ([Dimock, 2019](#)) & ([Tyson et al., 2021](#)). This is the first generation that is fully immersed in the digital age, the global use of the internet, social networks, and online news ([Schmitt, 2023](#)). Alongside this digital immersion, the events of global climate change, frequent extreme weather conditions, and biodiversity loss are other kinds of challenge faced by Gen-Z ([Tsevreni et al., 2023](#)). These global challenges are particularly persistent in Pakistan, which ranks among the most vulnerable nations to climate change, as [Notre Dame Global Adaptation Initiative \(2023\)](#) ranked Pakistan 152 in terms of climate degradation. In recent years, Pakistan has faced devastating events, such as excessive heatwaves, floods, heavy rainfalls, hailstorms, drought, where the flood of 2022 brought extensive destructions, displaced millions, and caused financial loss of around 14.9 billion \$ ([World Bank and Asian Development Bank, 2021](#)).

The ([World Economic Forum, 2024](#)) demonstrated that these environmental degradations are taking a toll not only on infrastructure but also on the psychological well-being of the individuals in Pakistan. Persistent news or direct impact of eco-

logical crises has brought severe psychological consequences, contributing to the rise of eco-anxiety cases. Urban areas in Pakistan, in particular, are struggling with frequent heat waves, extreme temperatures, bad air quality, and recurrent flooding, making the situation worse and more challenging.

Climate change has emerged as one of the concerns of the global community, with cities across the globe facing increasingly severe environmental consequences (Santos et al., 2021). Air pollution in big cities is often high to dangerous in Pakistan, and the quality of air exceeds the level in several cities in terms of pollution in the world (Iqbal, 2024). In some areas, the Air Quality Index (AQI) has exceeded 400, a level considered extremely hazardous for the general population (IQAir, 2024). The continuous presence of these environmental threats, combined with limited and inadequate policies and government responses, has sparked growing concerns and created more distress, particularly in the young generation (Iqbal, 2024). A combination of deteriorating environmental concerns, political instability, and economic pressure causes more mental health issues, with eco-anxiety becoming an increasingly recognized psychological challenge in the country (World Economic Forum, 2024) & (Tanveer et al., 2024).

The urgency of addressing climate change was also declared in the framework of the United Nations Sustainability Development Goals, including Goal 13, which demands an urgent action to combat climate change and its consequences (United Nations, 2015). Most of the young individuals, especially Gen-Z, are becoming more knowledgeable and conscious of climate change and its crisis, and are also showing more interest in sustainable environmental actions Hickman et al. (2021) & Tsevreni et al. (2023). Across schools and universities, many young people are taking direct actions to advocate environmental policies and activities such as towards renewable energy, reduction in waste, and sustainable development Amin et al. (2022) & Naeem (2023). In accordance with this, SDG Goal 13 is also intended to increase environmentally conscious actions on an individual level, increasing public awareness (United Nations, 2015).

Studies found that in recent years, numerous numbers of students in Pakistan have been involved in movements and academic activities related to climate change, and also universities and youth organizations are taking a stand on raising awareness

regarding climate change and ensuring to influence students to adopt sustainable practices and participate in discussions about changing the climate policy in the country [Naeem \(2023\)](#) & [Baber \(2024\)](#). These efforts are seen as crucial in shaping a generation who are not only aware of the necessity of climate change but also feels empowered to act, especially when the environmental conditions are continuously deteriorating ([Amin et al., 2022](#)). Simultaneously, it is important to determine the mental costs or psychological consequences of the current environmental crisis on the young generation, as these youth-driven activism and research campaigns are essential towards questioning why climate change is underrepresented. As students become more engaged in environmental activism, the emotional toll of witnessing environmental degradation may lead to heightened stress and mental health concerns. Particularly, in Pakistan, where the consequences of climate change are becoming more visible and lack of governmental-level policies, these emotional responses often lead to eco-anxiety, the concern that demands more attention from mental health professionals ([Naeem, 2023](#)). Researchers should need to explore how students' emotional responses are influencing their mental health and behaviors, as their more participation with climate issues has caused increased levels of eco-anxiety ([Clayton, 2020](#)).

Pakistan is among the countries most vulnerable to the effects of climate change. Over the past few years, the country has faced major environmental degradations like the 2022 floods, which left over 33 million people displaced and have made climate change a more profound and harsh reality. From severe droughts to deadly heatwaves, earthquakes, and recent hailstorms, people across the country are not only facing the physical destruction, but they are also suffering from emotional and psychological challenges. It is crucial to discuss the emotional and psychological toll that particularly affects the youth ([Tiwana, 2025](#)). Youth in Pakistan are more prone to eco-anxiety due to direct exposure to media and news related to climate change and more distressing content. Over time, this constant stream of negative information has led many to develop eco-anxiety ([Fazal et al., 2025](#)). Eco-Anxiety is the persistent fear of environmental degradation, and it can result in high stress, depression, and PTSD. The American Psychological Association describes eco-anxiety as the emotional response to ecological crisis. For the youth

in Pakistan, eco anxiety is not just a distant concern; but it is the daily emotional distress shaped by both media exposure and the heartfelt reality of living in one of the world's most climate-vulnerable nations. [Hickman et al. \(2021\)](#) study explored that approximately 50% of young people worldwide report experiencing moderate to severe climate anxiety. This distress increased as many young individuals turn to social media during the climate distress situations, and instead of finding support there, they are more prone to shocking and disturbing content. This kind of doomscrolling makes situations more anxious and helpless, and might cause eco-anxiety ([Tiwana, 2025](#))

According to ([Ogunbode et al., 2022](#)), psychological distress is highly increased by the frequency and severity of media exposure to climate disaster news, particularly when individuals feel helpless. The extent to which individuals are exposed to information about ecological and climate issues through a variety of media platforms can have a substantial impact on their emotional responses and perceptions ([Ogunbode et al., 2022](#)). Young individuals in Pakistan find it challenging to manage the psychological distress caused by the ecological crisis due to increasing mental health exhaustion and socioeconomic instability. According to research, climate change in Pakistan is not just a distant specific concern, but it is an emotional experience, especially for the young individuals ([Tanveer et al., 2024](#)). Through the media, young individuals are bombarded with distressing news about ecological disasters like earthquakes, heatwaves, floods, droughts, rains, and hailstorms, etc. The media not only informs about the climate issues, but it also shapes perception and induces fear and anxiety. When climate change is repeatedly presented as a hopeless crisis, it leads young individuals to feel constant pressure and helplessness, which may cause psychological distress ([Obaidat et al., 2025](#))

The American Psychological Association defines psychological distress as a broad category of mental, emotional, and physical symptoms that are often associated with mood swings and have a profound impact on a person's overall health. According to a study by ([Hamdani et al., 2021](#)) explored that nearly 25.5% of adolescents in rural areas of Pakistan exhibit major symptoms of psychological distress, indicating the increasing concern of existential worry, because climate disasters often result in school closure and economic instability, which may leave young

generation feeling uncertain about the future. The psychological toll is further exacerbated by disruption to education and employment opportunities. The young generation in Pakistan observes such challenges and feels emotionally exhausted as climate-related disasters like heatwaves, hazardous air quality, earthquakes, floods, unexpected rains, etc, are becoming more common. These experiences have a psychological impact, whether due to the disruption of routines caused by extreme weather conditions, fear of an uncertain future, or a profound sense of helplessness from visualizing the distressing content about the environmental crisis online.

Many young individuals experience psychological distress, anxiety, overwhelm, or even guilt when they feel they can't be able to do anything. The emotional burden is only increased by ongoing exposure to distressing climate news. This eventually causes long-term stress and mental fatigue, which makes it more difficult to concentrate on education and careers or even imagine a secure future ([Hamdani et al., 2021](#)).

Furthermore, the stigma associated with mental health in Pakistani society makes it harder for those who are impacted to get help, also, there is limited access to mental health resources in Pakistan, with only 0.4% of the country's overall healthcare budget ([Alvi et al., 2023](#)). It is crucial to investigate potential protective factors that can reduce the detrimental psychological effects of eco-anxiety because of the limited access to mental resources ([Maran, 2021](#)).

As climate change increases and conditions get worse over time, researchers suggest that it is essential to explore not only technology- and policy-based solutions but also psychological and behavioral protective factors that mitigate the eco-anxiety and psychological distress among the young generation ([Tiwana, 2025](#)). One of the most important protective factors that enables individuals to deal with environmental stressors and psychological distress with more emotional stability and foster resilience and purpose is spiritual intelligence. Research has demonstrated that spiritual intelligence can help people manage stress by encouraging inner peace and resilience in the face of struggle ([Tian and Liu, 2022](#)). [Emmons \(2000\)](#) defined spiritual intelligence as the capacity for transcendence and resilience, and the ability to find meaning and purpose in difficult situations. People with higher

levels of spiritual intelligence are often better at handling stressful situations, psychological distress, and anxiety. This ability may help individuals to deal with environmental stressors more effectively (Romanello et al., 2021). This suggests that spiritual intelligence may play a key role in helping young people in Pakistan manage eco-anxiety, especially when coupled with the growing pressures of climate change.

But although spiritual intelligence measures interpersonal spiritual resources that individuals use to derive meaning and respond to ecological distress, it would also be helpful to examine how those internal dispositions can be manifested more collectively in behavioral actions. Pro-environmental behavior an outward, action-oriented response, is defined as the action of the individual with regard to the reduction of environmental degradation in the pursuit of sustainability (Tian and Liu, 2022). This does not mean that PEB only relevant on the levels of environmental outcomes; this can also act as a moderator, potentially mitigating the levels of psychological distress experienced by individuals who are exposed to, ecological disasters. In LMIC, as Pakistan it is important to understand the role of pro-environmental behavior, as the growing concern of environmental issues youth face in a daily basis. So, awareness related to PEB not only enhances environmental knowledge but also helps Gen-Z to cope with their psychological distress and anxiety. Environmental actions may create a sense of accomplishment and enhance the sense of responsibility in the young generation and encourage them to take mindful actions for the betterment of their environment.

This current study, thus, not only looks into the direct and mediating effects of media exposure, eco-anxiety, and psychological distress, but it also considers Spiritual intelligence and Pro-environmental behavior as moderators to develop a better understanding of these variables. Because it is important to create an understanding of protective factors, such as spiritual intelligence, in environmental studies, it will help reduce the psychological impact caused by ecological issues in the young generation.

However, this research aims to explore how the abundance of disturbing climate change information through media influences the psychological well-being of Gen-Z individuals. With exposure to information on media becoming a frequent instance

of alarming pictures of forest fires, flooding, and climate degradation, it is necessary to know not only what the youth are exposed to but also how this information is impacting the emotional and psychological well-being of young individuals (Maran, 2021). The conceptual model of the study draws upon recent psychological research and theories to identify the emotional pathways where eco-anxiety can be viewed as a mediator and spiritual intelligence and pro-environmental behavior as moderators that can either buffer or intensify the psychological outcomes.

With the digital revolution, there is more exposure of disturbing content to the youth on news, social forums, and online discussions over issues related to the climate crisis (Maran, 2021). Although it is essential to increase awareness through such exposure, it is also connected to emotional overload, confusion, and feelings of helplessness (Padhy et al., 2015). A growing psychological response that is gaining more attention is eco-anxiety, a chronic worry about environmental degradation. Eco-anxiety is hypothesized in this study as a mediating variable that provides the indirect route of media exposure influencing psychological distress. At the core, the conceptual model of the study implies that eco-anxiety is experienced due to the frequent exposure to environment-related distressing news, which ultimately exacerbates the psychological distress symptoms, including emotional exhaustion, anxiety, and depressive mood.

The effect of media exposure does not occur in all individuals in the same way, as psychological resilience and adaptive coping strategies vary depending on personal and behavioral responses. However, the strength and direction of these variables vary depending on individual differences. To explain this, two moderating variables have been included in the study. Spiritual intelligence explained the moderating role of the relationship between media exposure and psychological distress. Individuals with high Spiritual intelligence may cognitively reframe the disturbing environmental news, thus reducing the emotional impact and eco-anxiety. Therefore, Spiritual intelligence is expected to weaken the association between media exposure and psychological distress and act as a protective factor that moderates the emotional reactivity towards alarming climate-related news. Also, pro-environmental behavior is hypothesized as a moderating variable between media exposure, eco-anxiety, and psychological distress. Eco-anxiety is a

distressing phenomenon that, however, may also serve as a motivating factor, inducing sustainable action.

So, the proposed conceptual framework of the study not only explained the psychological processes but also introduced practical actions by emphasizing both internal (spiritual intelligence) and external (environmental actions) resources that may help youth to deal with climate-related distress and anxiety.

1.2 Problem Statement

Although global awareness of the psychological consequences of ecological change has increased in recent years, a considerable gap in empirical studies exists regarding the impact of climate change on mental health in low- and middle-income countries LMIC, especially in Pakistan, ranked 152 by [Notre Dame Global Adaptation Initiative \(2023\)](#), a highly vulnerable nation to climate related disasters. Most of the researches on climate change and eco-anxiety were conducted in Western countries, where researchers mainly focused on eco-anxiety and its association with psychological distress and pro-environmental behaviors. However, there is a significant gap in the literature regarding coping strategies that may mitigate the adverse psychological consequences of climate disasters. Also, there is a need to study these variables across diverse populations to better understand the cultural, socio-economic, and spiritual differences among nations.

Moreover, although spiritual intelligence is studied as a resilience and coping factor that helps individuals deal with stress, enhanced emotional regulation, resilience, and psychological wellbeing in previous researches ([Anwar and Rana, 2024](#)); ([Irene and Wisesa, 2020](#)); ([Yadollahpour et al., 2023](#)) & ([Karimi and Nikmanesh, 2023](#)), its role in buffering the impact of climate-related distress and anxiety have not been thoroughly tested empirically in Pakistan. Also, the role of media exposure in inducing eco-anxiety and psychological distress is limited within this generation. This knowledge gap enhances the relevance of culture-based exploration of the psychological implications of climate change, particularly in Gen-Z, which is most at risk of psychological distress and exposed to disturbing climate-related news

through media. This present study filled the gaps in the literature and studied the relationship between media exposure, eco-anxiety, psychological distress, and pro-environmental behavior, as well as the moderating role of Spiritual intelligence among Gen-Z in Pakistan.

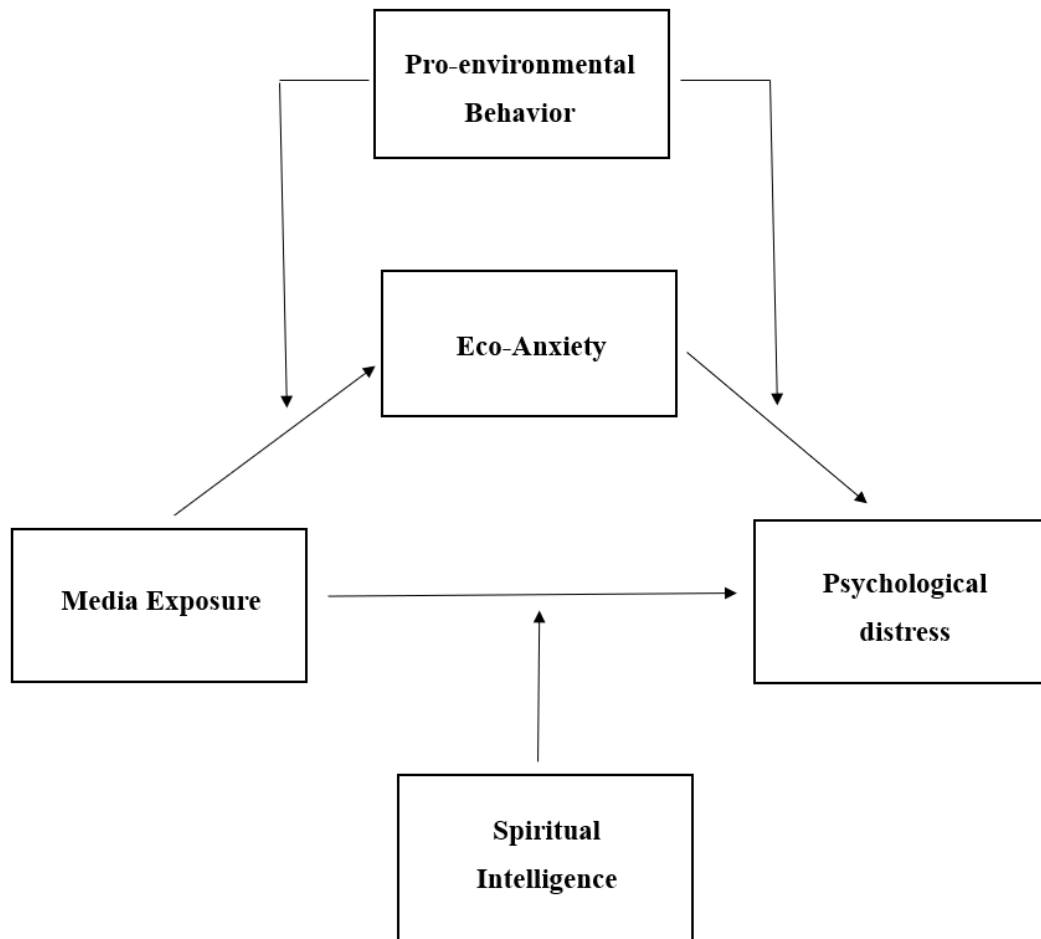


FIGURE 1.1: Conceptual framework

1.3 Research Objectives for this Study

Objectives of the study are as follows:

- **Research Objective 1**

To examine the relationship between media exposure and psychological distress among Gen-Z individuals.

- **Research Objective 2**

To explore the mediating role of eco-anxiety in the relationship between media exposure and psychological distress.

- **Research Objective 3**

To examine the moderating effect of spiritual intelligence on the relationship between media exposure, eco-anxiety, and psychological distress.

- **Research Objective 4**

To examine the moderating role of pro-environmental behavior on the association between media exposure, eco-anxiety, and psychological distress.

- **Research Objective 5**

To study gender differences in the relationships between media exposure, eco-anxiety, pro-environmental behavior, and psychological distress.

Chapter 2

Literature Review

Eco-anxiety, a psychological response to environmental changes and climate-related crises, has gained increasing attention in recent years, particularly among younger generations. In the context of Generation Z, studies have begun to explore how this phenomenon impacts youth ([Hickman et al., 2021](#)).

[Tsevreni et al. \(2023\)](#) explained how eco-anxiety impacts the youth emotionally and existentially, mainly noting the differences between the Global North and Global South. The study shed light that youth in the Global North are more engaged in activism and awareness campaigns, whereas young individuals from the Global South are more exposed to climate disasters such as floods and displacement. The study determined the need to recognize these regional differences to develop targeted interventions. However, the research had a gap that guides future studies on the psychological and social impacts of ecoanxiety in vulnerable populations within the Global South, where the population is more deeply impacted by environmental disasters.

The study conducted by ([Pihkala, 2018](#)) focused on the eco-anxiety that is gradually affecting youth, and also the psychological consequences of climate change that youth face daily. According to the study, eco-anxiety was more than a fear of environmental collapse, but a reaction to existential uncertainty about the future. The results implied that the youth were struggling with feelings of helplessness or frustration, and a sense of betrayal due to inadequate government responses to cli-

-mate change. However, the identified critical gap based on the research is the absence of the potential coping mechanisms or interventions, especially in low and middle-income countries (LMICs), where the impact of climate change was increasingly apparent yet less investigated in psychological terms.

[Maran \(2021\)](#) studied the association between media exposure and climate anxiety among university students in Italy. In this study, the results have shown that media coverage focused on climate change was positively correlated with both climate anxiety and an increased sense of self-efficacy. This implies that the media may potentially increase anxiety levels, but at the same time, it could encourage individuals to engage in pro-environmental behaviors, nurturing a sense of personal responsibility and collective action. Moreover, a gap existed in understanding how media content, such as solutions-focused versus problem-focused media, is linked to emotional responses of individuals, especially in non-Western contexts like Pakistan.

[Alshebami et al. \(2023\)](#) examined how spiritual intelligence determines green entrepreneurial intentions among university students in Saudi Arabia. The study aimed to examine the contribution of psychological and environmental factors that promote sustainable entrepreneurial behaviors. Results demonstrated that spiritual intelligence significantly impacted the development of environmental self-identity, which, in turn, influenced green entrepreneurial intentions. Though the study suggested a gap in understanding how cultural and contextual considerations may influence such relationships, it suggested the need for future research to investigate these elements in different contexts ([Alshebami et al., 2023](#)).

[Ogunbode et al. \(2022\)](#) examined climate change's emotional impact across 28 countries, focusing on media exposure, personal experiences, and social norms. They found that negative emotional responses were associated with private pro-environmental actions, such as recycling, but did not lead to activism. Additionally, media exposure to climate solutions positively influenced well-being. However, the study highlighted the need for further research into how socioeconomic and cultural contexts, particularly in low-income countries like Pakistan, affect the association between climate anxiety and pro-environmental behaviors, as climate change-related disasters increasingly affect youth ([Ogunbode et al., 2022](#)).

In recent literature, there has been a growing focus on understanding the psychological impacts of climate change, moving beyond the concept of eco-anxiety to introduce more contextually grounded terms, such as environmental moral distress and climate trauma (Niedzwiedz et al., 2025). This study highlights how people may experience distress not only from direct climate events. It also discusses how coping responses vary widely, from adaptive strategies like climate activism and emotional support to maladaptive ones like denial and disengagement. While community and organizational efforts can foster resilience, the researcher pays attention to burnout and stresses the need for stronger support systems. A gap found in the study is the lack of longitudinal and culturally diverse research, particularly from climate-vulnerable regions in the Global South, pointing to an urgent need for interdisciplinary studies that reflect diverse lived experiences and social realities (Niedzwiedz et al., 2025).

Doyle (2024) conducted a study which explored how age influence eco-anxiety, eco-guilt, and pro-environmental behaviour. The findings of the study indicated that older people are more engaged in pro-environmental behaviors because of their more life experience whereas, the younger individuals are more susceptible to emotional reactions like eco-anxiety, eco guilt etc., and this would encourage them to take environmental actions. Another important finding of the study found that older people have more sense of responsibility, associated which inclined them towards PEB, and the study also highlighted that eco-anxiety is significantly associate to PEB, particularly among younger individuals, while eco-guilt and eco-grief had a less noticeable effect. In addition, (Doyle, 2024) identifies a gap in research which reveals the need to conduct more researches on emotional dynamics of PEB in diverse cultures and different ages.

Bdier et al. (2024) conducted their study to examine the psychological effects of environmental degradation and eco-anxiety, with a focus on the mediating role of coping strategies in the development of post-traumatic stress symptoms (PTSSs). As climate-related stressors highly affect mental health, the study addresses a critical gap in understanding the underlying mechanisms linking eco-anxiety to psychological outcomes. Results showed that avoidant coping significantly mediated and amplified PTSSs, and the problem-focused and emotion-focused coping

served as protective factors. Although the study provides a meaningful contribution in terms of adaptive and maladaptive coping mechanisms, it indicates the necessity of future studies of high-risk groups or marginalized populations and the potential factors of sociocultural influence on coping behaviors (Bdier et al., 2024).

The psychological effects of climate change are becoming an increasingly alarming issue, especially in low and middle-income countries like Pakistan. Daraz et al. (2024) indicated the significant psychological toll of stressors that induced climate change. The results of this study have shown that extreme weather conditions, such as floods and droughts, along with rising temperatures, have a direct impact on the mental health of rural women, contributing to higher levels of anxiety, depression, and stress. The findings are in accordance with global concerns about the vulnerability of rural populations to environmental changes, with particular attention to how gender dynamics further intensify the mental health impact in these communities Daraz et al. (2024). One of the gaps that arise in this study is that in futures, similar studies should involve both genders, as majority of the previous study involved women as there are more emotionally vulnerable, Also the study focused on the rural regions, however the urban residents of Pakistan experience different effects of the climate change, including air pollution and heat-waves. Future studies need to cover both regions, urban and rural, and should consider both genders, male and female.

Climate change and environmental degradation are pressing global issues that require careful communication to shape public understanding and responses. The study conducted by (Qureshi and Abdulaziz, 2025) explores how Pakistani news media shows these issues with emotionally triggered language, distinct from the more measured tone in NDMA environmental reports, revealing the influence of language on societal awareness of ecological challenges. The study finds that Pakistani news media often use negative, sensationalized language, increasing fear and anxiety. Meanwhile, NDMA reports adopt a more positive tone, highlighting recovery, resilience, and public involvement in disaster management. The study highlights a gap in media coverage of ecological damage, leading to a focus on human suffering without acknowledging the connection between human and environmental well-being. It emphasizes the need for more eco-conscious reporting

and positive language to shift the narrative toward environmental awareness and sustainability.

In a recent study, (Fazal et al., 2025) examined the psychological effects of climate change news on the mental well-being of youth in Pakistan; the main focus of the study was on the emergence of eco-anxiety. The study aimed to explore how often negative media exposure influences emotional responses like hopelessness, fear, anxiety, and distress among youth, and to evaluate the coping mechanisms the youth adopt in response to distress and anxiety. The findings suggested that youth who were exposed to solution-focused reporting and news were less likely to have eco-anxiety; on the other hand, those who engaged in visualizing more disturbing content related to climate change reported higher levels of eco-anxiety. The study also showed a variety of coping mechanisms, including avoidant behaviors, social support, and engaging in climate activism, reflecting both distress and resilience among the young generation. A significant gap was highlighted by (Fazal et al., 2025), there is a lack of research that specifically addresses the impact of climate communication on mental health in the South Asian population, particularly in Pakistan.

In response to increasing mental health concerns associated with the climate crisis, the present study by Obaidat et al. (2025) adopts a systematic literature review approach to examine climate anxiety, a term that is becoming more and more common in scientific and public discourse, in terms of the growing mental health issues. this review aimed to address the state of knowledge about climate anxiety, identify common patterns and discrepancies across the literature, and also highlight gaps that require further academic attention towards this issue. 14 peer-reviewed articles published between 2020 to 2025 were included in the review, which was guided by the PRISMA-27 checklist. The articles were sourced mainly from Google Scholar and Taylor & Francis and were selected based on the predetermined inclusion criteria, such as the use of keywords, climate anxiety, eco-anxiety, climate stress, and depression. A key finding of this review was the variation in the operationalization of climate anxiety, with some studies adopting a clinical framework and viewing it as a diagnosable condition characterized by persistent fear and emotional distress Ogunbode et al. (2022) & Cosh et al. (2024), and other researchers

interpreted it symbolically as a more comprehensive emotional existential response to ecological degradation Pihkala (2018) & Orrù et al. (2024). The analysis reveals conceptual ambiguity within the literature, as commonly used terms like solastalgia, climate grief, and climate stress are used without clear or consistent definitions across disciplines Tran et al. (2023) & Hajek and König (2022). Another significant dimension of this review was the geographical variation in climate anxiety levels, influenced by factors such as direct exposure to climate change or visualizing climate-related disturbing content on media Ogunbode et al. (2022), & Seddon et al. (2020). For instance, those who are directly exposed to climate disasters and news are more likely to exacerbate climate anxiety and distress.

Obaidat et al. (2025) suggested a critical gap through this review, all included studies used a quantitative method, which leaves a gap to evaluate the subjective experience of climate anxiety. To gain a deeper understanding, particularly in a vulnerable region like Pakistan, future research needs to focus on qualitative methods or mixed-methods approach. Additionally, the study highlights the urgent need for media training and mental health policy reforms to mitigate the psychological distress of climate-related information. The study suggested that there is an urgent need to take action on this particular concern, and especially, mental health professionals need to address the psychological impact of this emerging issue.

Ab Razak et al. (2021) conducted a study and explored how spiritual intelligence mitigates the psychological challenges of the COVID-19 pandemic. The study aims to examine the role of spiritual intelligence as a coping mechanism that helps to navigate stressful situations. The findings of the study revealed that spiritual intelligence facilitated deeper connection with oneself, higher power, nature, and life purpose, and fosters resilience in individuals. Significantly, many participants (60.7 %) reported a close relationship with God, which provided inner peace and made it easier to cope with uncertainty and disasters. However, the study's generalizability is limited by its small sample size and reliance on self-report. Despite these limitations, the research underscores the potential of spiritual intelligence as a protective factor and acts as a buffer in times of crisis.

A study conducted by (Dewi, 2024) examined the influence of ecological knowledge, locus of control, and spiritual intelligence on environmental altruistic behaviors.

The researcher explained in the study that individuals with higher levels of spiritual intelligence and ecological knowledge or understanding are more likely to engage in altruistic behaviors. An important consideration of this study was that people who have a higher locus of control think more about the betterment of the environment and feel personal accountability to take pro-environmental actions. According to Dewi (2024), these factors together showed 23% of variance in altruistic environmental behaviors. Although past studies showed the importance of ecological awareness in shaping sustainable behavior (Xu et al., 2021). The study recommended that future research explore the potential mediation and moderation variables and also suggested the use of longitudinal and intervention-based designs to develop a better understanding of the ecological pathways along with protective factors.

Prasetyo et al. (2024) researched to investigate the factors that influence an individual's adherence to environmental laws, which aimed to reduce vehicle pollution in Lahore, Pakistan. The research integrated different behavioral theories to examine the relationship between compliance, perceived benefits, environmental awareness, and institutional trust. The findings of data from 251 participants suggested that individuals are more likely to follow environmental rules when they are more aware of environmental issues, perceive financial and personal benefits, and have trust in government institutions. Also, it indicates that rewards and other benefits promote eco-friendly behaviors. However, the study had some limitations, small sample size, and only focused on Lahore. Researchers suggested that future research needs to be conducted on the diverse and large population to enhance generalizability. Overall, the study addresses the valuable gap to identify the social and psychological factors that might enhance pro-environmental behavior and make people adhere to laws and regulations.

Shahid et al. (2021) conducted a review focusing on the intersection of climate change, global warming, and mental health, particularly highlighting the rising concern of eco-anxiety. Their work emphasized that Pakistan's climate is highly vulnerable to extreme weather events such as heatwaves, floods, and droughts,

which significantly increase the risk of psychological and neurological complications. The authors outlined that elevated greenhouse gas emissions and anthropogenic activities have intensified global warming, which in turn contributes to a wide range of mental health issues including depression, anxiety, mood swings, dementia, post-traumatic stress, and schizophrenia. Vulnerable groups, particularly in developing countries like Pakistan, were reported to be at heightened risk due to socioeconomic disadvantages, poverty, and insufficient emergency preparedness. The study also noted the recent surge in media attention towards eco-anxiety since 2017, particularly among young individuals, and discussed how different eco-emotions such as eco-anxiety, eco-depression, and eco-anger influence human health and collective action differently. Although eco-anxiety often manifests in non-clinical forms, the authors acknowledged that pathological levels are also evident in certain populations. [Shahid et al. \(2021\)](#) further stressed the importance of introducing eco-frameworks, public awareness initiatives, and sustainable practices such as reducing fossil-fuel dependency to mitigate both environmental degradation and its associated mental health impacts. Despite these valuable contributions, the study highlighted a lack of systematic and empirical research in Pakistan regarding the direct link between climate change and psychological outcomes. Particularly, there is insufficient data documenting the prevalence and manifestations of eco-anxiety and related disorders in Pakistani populations. This gap underscores the need for more region-specific investigations to provide culturally relevant insights and inform national policies and interventions.

A recent study by [Shujaat et al. \(2024\)](#) explored the psychological associations between eco-anxiety, eco-grief, and environmental attitudes among young adults in the Malakand district of Pakistan. Using a correlational design with a sample of 200 participants, the study reported strong positive correlations between eco-anxiety and environmental attitudes, and between eco-grief and environmental attitudes. Importantly, gender differences were observed, with females scoring significantly higher on eco-grief, indicating a stronger affective engagement with environmental loss. These findings highlight that climate-related emotions, often perceived as distressing, can also foster positive environmental attitudes by

deepening individuals' emotional connection with nature. In line with earlier conceptualizations by [Clayton \(2020\)](#) and [Pihkala \(2018\)](#), the results suggest that eco-anxiety and eco-grief are not merely pathological responses but can function adaptively, motivating pro-environmental behavior and commitment to sustainability. This empirical evidence from Pakistan further contributes to the global discourse by situating climate emotions in a South Asian cultural context, underscoring the role of socio-demographic factors such as gender and socioeconomic status. However, the reliance on convenience sampling and a limited geographic focus also suggests the need for broader, nationally representative research to generalize findings.

The research is conducted to examine the role of social media use, psychological distress, and knowledge, attitudes, and practices related to COVID-19 among the general population of Pakistan during the early phase of the pandemic. Conducted in Multan between April and May 2020, the study employed a cross-sectional design with a sample of 800 respondents, focusing on gender differences in knowledge, mental health, and preventive behaviors. Findings revealed that while men scored higher in COVID-19-related knowledge, women demonstrated more positive attitudes and precautionary practices, though they also reported significantly higher levels of anxiety, depression, and stress. The regression analysis showed that knowledge, attitudes, and practices were strong predictors of psychological distress, with female gender associated with greater vulnerability to anxiety and depression, and social media use emerging as a predictor of stress. These findings highlight the dual role of social media as both an essential source of information and a potential contributor to psychological distress during health crises. The study emphasized that gender remains a key determinant of psychological outcomes and health-related behaviors in Pakistan, reflecting broader cultural and social dynamics. The authors concluded that strengthening health education, countering misinformation on social media, and designing gender-sensitive interventions are essential for reducing the psychological burden of pandemics [Rizwan et al. \(2021\)](#).

[Abbas et al. \(2025\)](#) conducted a research to explore the psychological consequences

of climate change by examining the relationship between climate anxiety and solastalgia among university students in Pakistan. The authors aimed to investigate how persistent worry about global ecological decline (climate anxiety) and the distress experienced due to the degradation of one's familiar environment (solastalgia) intersect to influence mental health outcomes. The study was carried out on a sample of 300 university students aged 18–26 years, using a quantitative, cross-sectional design. Standardized measures were employed, including the Climate Anxiety Scale (CAS), the Scale of Solastalgia (SOS), and the Environmental Perceived Threat Scale (EPTS), to assess the extent to which climate-related worry and environmental degradation contribute to psychological distress. By situating the research within the Pakistani context, the authors addressed a significant gap, as most prior studies have been concentrated in Western countries.

The findings revealed significant positive associations between climate anxiety and solastalgia, and between climate anxiety and perceived environmental threat. However, the relationship between solastalgia and environmental threat was weak and statistically non-significant ($r = .075$, $p = .098$). Regression analysis further indicated that climate anxiety was a significant predictor of solastalgia, whereas perceived environmental threat did not contribute meaningfully to the model, with the predictors jointly accounting for 4.7% of the variance. These results highlight that emotional responses to climate change, such as anxiety, may play a stronger role than cognitive perceptions of environmental threat in shaping solastalgia. The study underscores the importance of recognizing climate-related psychological distress within the Pakistani higher education context, emphasizing the need for culturally sensitive interventions, resilience-building strategies, and the integration of eco-psychological perspectives into mental health services. In doing so, it contributes to the emerging literature on environmental psychology in the Global South and reinforces the urgency of addressing climate change not only as an ecological crisis but also as a pressing mental health concern [Abbas et al. \(2025\)](#).

The study conducted by [Sohail et al. \(2025\)](#) to explore the wide-ranging effects of climate change on children and youth in urban areas of Pakistan, with a particular emphasis on their physical health, psychological wellbeing, and academic

performance. The authors aimed to identify both the direct and indirect pathways through which environmental degradation and extreme weather events affect younger populations, as well as to examine potential adaptation and mitigation strategies that could enhance resilience among this vulnerable group. The study revealed that children and youth are disproportionately impacted by climate change because of their developmental stage, physiological vulnerability, and dependence on social and environmental conditions [Sohail et al. \(2025\)](#). Findings indicated a noticeable rise in respiratory illnesses linked to worsening air quality and pollution, while extreme heat waves contributed to dehydration, fatigue, and reduced opportunities for outdoor play and exercise. Psychologically, young people were found to experience significant distress in the form of anxiety, restlessness, sleep disturbances, and worry about the future, reflecting a growing phenomenon of climate-related mental health concerns. These observations are consistent with global evidence suggesting that climate change not only threatens physical health but also fosters eco-anxiety, depression, and trauma in children and adolescents [Clayton \(2020\)](#).

Importantly, the study also demonstrated that disruptions in educational routines are becoming a serious consequence of climate change in Pakistan. Frequent absenteeism caused by smog, flooding, and high temperatures was reported to negatively affect academic engagement, concentration, and overall performance among youth [Sohail et al. \(2025\)](#). Such academic setbacks, when combined with health-related challenges, create a compounded burden that limits developmental opportunities and long-term wellbeing. The authors further stressed that the unequal socioeconomic conditions in urban Pakistan exacerbate these challenges, as children from low-income households face greater exposure to climate-induced risks while having fewer coping resources. The findings highlight climate change as not only an environmental or ecological threat but also as a major public health and educational issue that disproportionately impacts the younger generation. The authors concluded that urgent policy-level responses are required, including the implementation of school-based awareness programs, youth-centered mental health interventions, and improved urban planning to mitigate the impact of environmental stressors. By drawing attention to the interplay of health, education, and

psychological resilience, this study provides a strong foundation for understanding eco-anxiety and related psychological phenomena among Pakistani youth, and it underscores the need for future research that investigates the long-term psychological impacts of climate change on developing populations.

[Azam \(2022\)](#) examined the relationship between spiritual intelligence and psychological distress, including anxiety, depression, and stress, among adults living in Pakistan during the COVID-19 pandemic. The primary aim was to explore whether spiritual intelligence could serve as a protective factor or coping mechanism during an unprecedented crisis that disrupted nearly all aspects of daily life, from health and education to employment and financial stability. Using a correlational cross-sectional design, the researchers collected data from 200 participants aged 18 to 55 years ($M = 25.15$, $SD = 5.56$) through an online survey distributed via social media platforms. Standardized measures were employed, including the Depression, Anxiety, and Stress Scale and the Spiritual Intelligence Self-Inventory, which assesses domains such as critical thinking, discovery of personal meaning, spiritual awareness, and conscious development. Results revealed that participants reported significantly high levels of psychological distress, with strong positive correlations found between depression, anxiety, and stress. However, contrary to the researchers' expectations, no significant association was found between spiritual intelligence and psychological distress, suggesting that higher levels of spiritual intelligence did not buffer against mental health difficulties in this sample [Azam \(2022\)](#).

The findings further highlighted gender differences, with men reporting significantly higher levels of depression and anxiety compared to women, although no gender-based differences were observed in stress or spiritual intelligence. These results add nuance to the broader literature that often emphasizes the protective role of spirituality in times of crisis by suggesting that spiritual intelligence alone may not always translate into reduced psychological distress, especially in the context of a global pandemic marked by uncertainty and limited resources. The study underscores the widespread impact of COVID-19 on mental health in Pakistan and points to the necessity of incorporating psychological interventions and community-based supports as part of pandemic response strategies. At the

same time, it opens avenues for further research on how contextual factors such as cultural practices, socioeconomic status, and religious coping styles interact with spiritual intelligence in shaping psychological outcomes during crises. By documenting the prevalence of distress and examining its association with spiritual intelligence, this study contributes important empirical evidence to understanding the complex role of spirituality in mental health within the Pakistani context [Azam \(2022\)](#).

[Hussain et al. \(2023\)](#) conducted a comparative study to examine spiritual intelligence, resilience, and mental health among Pakistani university students with different academic majors, specifically contrasting those pursuing Islamic studies with those from non-religion-focused disciplines. The study employed a purposive sampling method with a total of 200 participants (137 women, 63 men) aged 20–25 years ($M = 22.59$, $SD = 2.56$), equally divided between Islamic studies majors and non-majors. Standardized tools including the Spiritual Intelligence Self-Report Inventory, Brief Resilience Scale, and Depression Anxiety Stress Scale, were administered in Urdu translations. Statistical analyses (t-tests) revealed that students majoring in Islamic studies scored significantly higher on overall spiritual intelligence as well as on its subdomains—critical existential thinking, personal meaning production, transcendental awareness, and conscious state expansion. Conversely, students from non-religious disciplines reported significantly higher levels of depression, anxiety, and stress. No significant group differences were observed in resilience, suggesting that resilience may be shaped by factors beyond academic specialization, such as cultural, social, or personal experiences.

The findings highlight the role of academic exposure to religious teachings in nurturing spiritual intelligence and fostering mental well-being. Students majoring in Islamic studies demonstrated stronger existential reflection and transcendental awareness, which the authors attributed to curriculum content centered around philosophy, mysticism, and scriptural interpretation. This is consistent with previous research suggesting that religious or spiritual frameworks offer individuals meaning-making strategies that reduce psychological distress and strengthen coping [Anwar and Rana \(2024\)](#). The absence of group differences in resilience aligns with arguments that resilience is a multidimensional construct, often shaped by

diverse life experiences and contextual factors, rather than solely by academic or religious orientation. Importantly, the observed gender distribution and the predominance of middle socioeconomic status in the sample may have influenced resilience outcomes, given evidence that social support and cultural resources contribute to adaptive coping.

Overall, this study contributes to the understanding of how spirituality, as shaped by religious education, impacts mental health in the Pakistani context. By showing that students immersed in Islamic studies reported lower depression, anxiety, and stress, the research underscores the potential role of spiritual intelligence as a buffer against psychological distress, though not necessarily as a determinant of resilience. The findings hold practical implications for curriculum design and mental health promotion, suggesting that integrating spiritual or meaning-oriented education could enhance students' well-being. For the present thesis, these results are particularly relevant as they situate spiritual intelligence as an important psychosocial factor that interacts with mental health outcomes in young adults, thereby offering parallels to the role of spirituality in moderating the effects of stressors such as eco-anxiety on psychological distress [Hussain et al. \(2023\)](#).

The study conducted by [Meo et al. \(2025\)](#) is to investigate the psychological costs of climate change, with a specific focus on its association with anxiety among adolescents and young adults in Pakistan, representing the Global South. Employing a cross-sectional survey design, the authors collected data from 760 participants drawn from schools, colleges, and universities in Rawalpindi, using the Hogg Eco-Anxiety Scale (HEAS) as the primary measure of affective responses to climate change. The study revealed that climate change generates a tangible psychological burden on young populations, with eco-anxiety presenting as a measurable outcome of environmental uncertainty. Findings demonstrated a moderate, positive, and statistically significant association between age and affective anxiety, with older students experiencing higher levels of eco-anxiety than younger ones. Socioeconomic disparities further shaped responses, as participants from higher-income groups reported elevated levels of affective anxiety, suggesting that greater access to information and resources may heighten awareness of climate risks and,

consequently, distress. Similarly, graduate students were found to have the highest mean levels of affective anxiety, followed by those at college and university levels, indicating that greater educational attainment and exposure to climate discourse may amplify feelings of vulnerability. By contrast, gender differences were nonsignificant, implying that climate change anxiety transcends male and female categories within this context. Importantly, the authors underscored that although moderate levels of eco-anxiety were observed, the disparities based on age, education, and income highlight the uneven psychological impacts of climate change across demographic groups.

Notably, in their discussion, [Meo et al. \(2025\)](#) emphasizes the absence of highly visible youth climate leaders in Pakistan and the Global South, drawing attention to the symbolic role of figures like Greta Thunberg. They argue that the presence of such activists in Western contexts has amplified eco-anxiety into organized advocacy, while in countries like Pakistan, the lack of similar figures leaves much of this psychological burden internalized. This recognition underscores the need not only for psychological interventions but also for structural and social mechanisms that transform climate-related anxiety into collective resilience and action. These findings hold particular significance for the present study, as they situate eco-anxiety within the broader landscape of social and informational exposure, illustrating how media narratives and the visibility of climate leadership can intensify or mitigate psychological distress in youth [Meo et al. \(2025\)](#).

[Carasso Romano et al. \(2025\)](#) aims to investigate how ecological anxiety is related to both individual-level and collective-level pro-environmental behaviors. Unlike earlier studies that primarily focused on the pathological consequences of climate-related distress, this study sought to determine whether ecological anxiety can also act as a motivating factor for adaptive environmental engagement. Drawing on a sample of 224 participants, most of whom were actively affiliated with environmental groups, the authors employed a cross-sectional design and administered validated questionnaires assessing ecological anxiety, personal pro-environmental practices such as recycling, waste reduction, and sustainable consumption, as well as collective actions including climate advocacy, participation in environmental

movements, and policy-oriented initiatives. The findings revealed significant positive correlations between ecological anxiety and both personal and collective behaviors, but the association was more robust for collective environmental actions, highlighting the potential of eco-anxiety to serve as a driving force for activism rather than remaining solely a source of psychological burden. Regression analyses further demonstrated that ecological anxiety independently predicted collective environmental engagement, even after controlling for personal behavioral factors, suggesting that individuals who experience heightened distress about climate change are more likely to translate this concern into collective action aimed at systemic change [Carasso Romano et al. \(2025\)](#).

These findings resonate with Environmental Identity Theory, which asserts that when individuals integrate environmental issues into their sense of self, they become both more sensitive to climate threats and more motivated to act in ways that protect the environment [Clayton \(2020\)](#). Moreover, the study builds on prior work emphasizing the role of eco-anxiety as a “functional” emotion, capable of mobilizing individuals toward positive change when accompanied by coping resources and perceived collective efficacy. For instance, personal behaviors may help reduce anxiety by creating a sense of individual control, while collective actions provide social validation, solidarity, and the perception that one’s efforts contribute to broader systemic outcomes. The authors argue that ecological anxiety, therefore, should not be understood solely through a deficit model that frames it as a form of psychological dysfunction; rather, it can be reconceptualized as a motivational resource that bridges individual concern with collective activism. This insight carries important implications not only for policy-makers and climate educators but also for psychologists, who may view eco-anxiety as an entry point for therapeutic interventions that channel distress into constructive engagement. In sum, the study highlights the dual nature of ecological anxiety, demonstrating that while it reflects genuine psychological vulnerability, it also has the potential to energize pro-environmental behaviors, particularly at the collective level where systemic change is most needed [Carasso Romano et al. \(2025\)](#).

The research is conducted by [Shrestha \(2025\)](#) with the central aim of analyzing

global warming from a dual perspective, combining scientific evidence with spiritual philosophy, in order to propose a more comprehensive response to the climate crisis. The study set out to explore not only the physical and environmental causes of climate change such as deforestation, industrialization, fossil fuel combustion, and unsustainable consumer practices—but also the failure of development strategies that prioritize economic growth at the expense of ecological balance. In terms of findings, the author underscores that global warming is intensifying natural disasters, disrupting weather patterns, and threatening biodiversity, with severe implications for human survival. Scientific reports, such as those of the Intergovernmental Panel on Climate Change (IPCC), are highlighted to stress the urgency of limiting temperature rise to 1.5°C above pre-industrial levels, as failure to do so may result in irreversible ecological damage. At the same time, the study emphasizes that while technological solutions—such as renewable energy, green infrastructure, and innovations like quantum batteries—are necessary, they are not sufficient on their own, since climate change is also rooted in human values, behaviors, and attitudes toward consumption and the environment.

A particularly distinctive contribution of this study is its integration of spirituality and meditation as tools for climate action. Shrestha argues that meditation, when understood through Vedic philosophy, can shift human consciousness by aligning individual behavior with universal ecological principles, thereby reducing destructive practices and promoting collective responsibility. By framing climate change as not only a scientific and political challenge but also a moral and psychological one, the study expands the discourse on climate change beyond technological and policy solutions, emphasizing the role of human transformation. Furthermore, the author [Shrestha \(2025\)](#) draws attention to issues of global justice, noting that developed countries, due to their historical responsibility for emissions, must provide financial and technological support to developing countries that bear the brunt of climate change despite contributing the least to the problem.

Despite these valuable insights, the study leaves an important research gap. While it convincingly argues for the integration of scientific and spiritual approaches, it does not empirically examine the psychological consequences of climate change, such as eco-anxiety, climate distress, or their impact on younger generations. The

role of media exposure, for example, is not investigated in shaping climate-related emotions, nor does the study provide data-driven evidence on how meditation tangibly reduces eco-anxiety or fosters pro-environmental behavior. This gap underscores the need for empirical research that moves beyond philosophical arguments to measurable outcomes. The present study addresses this limitation by focusing directly on the psychological impact of climate change in Pakistan's youth population, examining how media exposure contributes to eco-anxiety and psychological distress, and how protective factors such as spiritual intelligence and pro-environmental behaviors may buffer these effects [Shrestha \(2025\)](#).

These studies collectively highlight the increasing recognition of eco-anxiety as a significant issue, particularly among younger generations, and emphasize the complex relationship between environmental stressors, media exposure, and individual responses.

However, they also reveal several gaps in the literature, particularly the lack of research on the specific impacts of eco-anxiety in low- and middle-income countries such as Pakistan, where youth experience both direct and indirect consequences of climate change [Hickman et al. \(2021\)](#) & [Ogunbode et al. \(2022\)](#). Additionally, further investigation is needed into the role of spiritual intelligence in managing eco-anxiety and promoting pro-environmental behaviors, a topic that remains underexplored in existing research. Addressing these gaps would provide a more comprehensive understanding of eco-anxiety and its psychological, social, and behavioral dimensions across diverse contexts.

2.1 Theoretical Framework

According to [Brehm \(2012\)](#), Behavioral Constraint Theory, first introduced by Brehm in 1966, posits that people feel psychological reactance and distress when they sense a loss of control over their surroundings.. The study was grounded in Behavior constraint theory, which provided the theoretical framework as it is linked to all the variables of the current study. Within this framework, the media exposure to climate change acts as an environmental constraint, potentially causing

frustration, helplessness, distress, and provoking anxious thoughts in Gen Z individuals in Pakistan. This perspective aligned with previous implementations of BCT, indicating that exposure to disturbing content through media caused psychological distress in young individuals. While not all external influences automatically act as constraints, repeated exposure to events perceived as uncontrollable can create a sense of restricted agency. In the context of climate change, media exposure to crisis-related news may serve as such a constraint. Alarming and persistent coverage of floods, heatwaves, and air pollution can heighten awareness but simultaneously reinforce perceptions that these challenges lie beyond individual control (Kong & Zeng, 2023). When exposure repeatedly emphasizes uncontrollability, individuals may begin to experience emotional strain consistent with psychological reactance (Wortman & Brehm, 1975). This reactance may manifest as eco-anxiety, defined as heightened worry and apprehension about environmental decline. It also indicates that when individuals continuously encounter the same situations without a perceived opportunity to regain control, they may eventually stop trying to change the situation, which can cause heightened emotional responses, such as eco-anxiety. This despairing feeling enhances eco-anxiety and can lead to behavioral disengagement. Individuals emotionally detached themselves from the environmental problems and stopped doing things for the betterment of their environment.

Consequently, this may cause psychological distress when prolonged eco-anxiety goes untreated, which then leads to psychological distress in young individuals (Cosh et al., 2024). BCT explained psychological distress as an emotional toll as a result of continuous reactance and loss of control. However, BCT also acknowledged that not every person remains passive; some individuals attempt to regain that control by engaging in active coping strategies. In this research, pro-environmental behavior has been considered one of such reactions, a possibility for individuals to regain the sense of agency and act meaningfully in the time of ecological crisis. Through sustainable actions, individuals may mitigate psychological distress by taking part in environmental actions for the betterment of their environment.

This study also examined the moderating role of Spiritual intelligence in the relationship between media exposure and psychological distress. Taking into consideration the model of control proposed by [Averill \(1973\)](#), including behavioral, cognitive, and decision control, Spiritual intelligence was considered as a cognitive factor that helps individuals to reinterpret the environmental constraints, find meaning, and help to cope with emotional strain. Individuals with higher spiritual intelligence have characteristics like hope, purpose, and environmental interconnectedness. [Cai et al. \(2023\)](#) explained such characteristics in research and indicated they may promote psychological stability, reduce distress, and encourage sustained engagement in PEB. Spiritual Intelligence also fits the way BCT is concerned about perceived control through adaptive responses.

Altogether, this framework conceptualized media exposure as a constraint that decrease the perceived control and triggered psychological reactance and emotional strain, which are linked with eco-anxiety and psychological distress. Pro-environmental behavior acted as a sense of regaining control, and Spiritual intelligence as a protective variable, which enhanced resilience and acted as a perceived control. This theoretical framework helps to understand the psychological dynamics of climate-related distress and coping mechanisms among Gen-Z individuals.

2.2 Rationale

This study examined the association between media exposure, eco-anxiety, psychological distress, pro-environmental behavior, and spiritual intelligence among Gen-Z in Pakistan. Several climate changes as observed in Pakistan have occurred repeatedly and involve the extreme weather conditions of the heatwaves, heavy rains, unpredictable monsoon patterns, hailstorms, floods, and melting glaciers, causing damage to infrastructure, agriculture, and human lives ([Hussain et al., 2025](#)). In these aspects, understanding the emotional and behavioral responses of Gen-Z who are not only the future potential stakeholders but are also immensely involved in and alert about the news about climate change via media, is becoming increasingly significant. According to previous research studies, young individuals who are exposed to disturbing ecological news online can become more eco-anxious

and express this anxiety either through pro-environmental behaviors or emotional exhaustion and distress (Tsevreni et al., 2023). However, most researches were being done in high-income countries, in LMIC like Pakistan, where institutional support is limited mental health issues are increasing, and cultural, socioeconomic, and political factors are different, which shape perceptions of environmental issues and mental health (Coffey et al., 2021). So, there is a crucial need to address these issues in developing country like Pakistan as well.

Although the existing literature studied the eco-anxiety, but most of them examined its relationship with pro-environmental behaviors, mental problems, but this relationship had not been fully explored within Pakistani context (Cosh et al., 2024). Also, one of the existing studies showed the weakened relationship between climate anxiety and pro-environmental behaviors in Pakistan (Ogunbode et al., 2022), this highlighted a remarkable question that how emotional responses to environmental fear turns into sustainable actions. This study is designed to fill those gaps by exploring the mediating role of eco-anxiety in the relationship between media exposure and psychological distress, and also investigating the moderating role of pro-environmental behavior in the relationship between media exposure, eco-anxiety, and psychological distress.

Importantly, this study introduced Spiritual intelligence as a moderating variable that helps to explain whether SI will mitigate or buffer the relationship between media exposure and psychological distress. Previous literature primarily focused on the climate-anxiety and its psychological impact. Introducing a protective variable will help individuals to understand how to cope with these anxiety-provoking situations and reduce the psychological distress induced by the media.

Overall, this study provided a culturally relevant and psychologically significant insight how young individuals in Pakistan are emotionally affected by climate-related challenges and how they attempt to manage them. By exploring these variables, the findings of this study contribute to a deeper understanding of eco-anxiety and support the development of more focused, resilience-based coping strategies that may help individuals to cope with environmental burdens and its psychological impact.

2.3 Proposed Hypotheses of the Study

H1: There will be a significant positive relationship between media exposure and psychological distress.

H2: Media exposure will be positively related to psychological distress through the mediating effect of eco-anxiety.

H3: Spiritual intelligence will moderate the association between media exposure and psychological distress.

H4: Pro-environmental behaviors will moderate the relationship between media exposure, eco-anxiety, and psychological distress.

H5: There will be gender differences in the relationships between media exposure, eco-anxiety, pro-environmental behavior, and psychological distress.

Chapter 3

Research Methodology

3.1 Research Design

This study employed a quantitative, correlational research design to examine the relationships between media exposure, eco-anxiety, psychological distress, and pro-environmental behaviors among Gen Z, with spiritual intelligence as a moderating variable.

3.2 Population and Sample

The population for this study consists of Gen Z individuals (individuals born between 1997 and 2012). The sample was drawn from university, college, and school students and young adults within the twin cities of Islamabad and Rawalpindi. The sample size consisted of 300 participants.

3.2.1 Inclusion Criteria

Participants must meet the following criteria to be included in the study:

- Active social media users.

3.2.2 Exclusion Criteria

The following individuals were excluded from the study:

- Individuals with any physical disabilities.

3.3 Sampling Technique

Participants were recruited using a purposive sampling technique through educational institutions.

3.4 Measures

3.4.1 Spiritual Intelligence Self-Report Inventory

The Spiritual Intelligence Self-Report Inventory (SISRI-24), developed by [King \(2008\)](#), measures spiritual intelligence across four subscales: Critical Existential Thinking (CET), Personal Meaning Production (PMP), Transcendental Awareness (TA), and Conscious State Expansion (CSE). It consists of 24 items, with total scores ranging from 0 to 96, where higher scores indicate greater spiritual intelligence. The scale has a strong Cronbach's alpha reliability, which is 0.95. The scale is suitable for participants age range of 17 to 59.

3.4.2 Kessler Psychological Distress Scale

The Kessler-10 (K10) was created by ([Kessler et al., 1992](#)). It is a 10-item self-report questionnaire that measures psychological distress based on anxiety and depressive symptoms over the past 30 days. It uses a 5-point Likert scale, with scores ranging from 0 to 50, where higher scores indicate greater distress. The scale shows strong Cronbach's alpha reliability, which is 0.895. The scale can be used for individuals over 18 years.

3.4.3 Hogg Eco-Anxiety Scale

The Hogg Eco-Anxiety Scale (Hogg et al., 2021) is a 13-item scale measuring eco-anxiety across four dimensions: emotional symptoms, rumination, behavior, and anxiety about environmental impact. Items are rated on a 4-point scale from 0 (not at all) to 3 (nearly every day). The scale shows strong reliability, which is 0.82.

3.4.4 Pro-environmental Behavior Scale

The Pro-environmental Behavior Scale (PEB Scale) was developed by Larson et al. (2015). The scale measures pro-environmental behaviors in four domains, such as conservation lifestyle, land stewardship, social environmentalism, and environmental citizenship. It represents a 5-point Likert scale of responses between "Never" to "Very often." It also indicates good internal consistency, with Cronbach's alpha at 0.839. The scale is designed for adults.

3.4.5 Media and Information Exposure Scale

Ogunbode et al. (2022) uses Media and Information exposure scale to determine the responses to the climate change information via four sections: (1) Attention to Climate Change Information, ranging from "None" to "A lot"; (2) Information Source, measuring frequency of exposure via TV, social media, and personal contacts; (3) Information Content, focusing on topics like causes, impacts, and solutions; and (4) Information Valence, evaluating reactions from "Negative" to "Positive" or "Pessimistic" to "Optimistic." The scale demonstrates strong reliability (Cronbach's alpha = 0.87) and targets adult populations.

3.5 Procedure

In this study, permission was obtained from university authorities to recruit participants from universities, colleges, and schools in Islamabad and Rawalpindi. Participants will be informed about the study's purpose. They were assured that

their data would be used solely for research purposes and kept confidential. A sample of 300 university, college, and school students was invited to participate. Informed consent was collected from each participant, highlighting their right to withdraw from the study at any time without any consequences. Participants completed a survey that included the Spiritual Intelligence Self-Report Inventory (SISRI-24), Kessler Psychological Distress Scale (K10), Hogg Eco-Anxiety Scale, media exposure scale, and the Pro-environmental Behavior Scale (PEB Scale). The data collected was anonymized, and participants were assured of the confidentiality of their responses. The data was analyzed using IBM SPSS-27 to assess the relationships and the moderating role of spiritual intelligence.

3.6 Ethical Consideration

Participants were provided informed consent, with a full explanation of the study's purpose, potential risks, and the confidentiality of their data. Participation was entirely voluntary, and participants were made aware of their right to withdraw from the study at any time without consequences. Data was anonymized and securely stored, with access limited to the researcher.

3.7 Data Analyses

The data was analyzed using the Statistical Package of Social Sciences (SPSS) 27. Descriptive statistics were used to summarize demographic information and key variables. To examine the relationships between variables, Pearson's correlation was employed. The Hayes Process Macro was testing the mediating effect of eco-anxiety and also assessing the moderating effect of spiritual intelligence on the variables. Gender differences were tested using Mann-Whitney U test to explore variations in the study variables between male and female participants.

Chapter 4

Results

This chapter presents the results of the present study, including demographic statistics for the demographic variables, descriptives, psychometric properties of the scales in terms of Cronbach's alpha reliabilities, and inferential statistics in terms of Spearman's rho correlation, Mann-Whitney U test for gender differences, Moderation analysis, and moderated mediation analysis.

Table 4.1 explains the demographics of the participants. The sample size consisted of 300 participants with approximately equal gender distribution. Of these, 154 (51.3%) males and 146 (48.7%) females. The percentage of participants presented a younger population, as the majority are young adults with age ranges 19 to 21 (n=110, 36.7%) and 22 to 26 (n=151, 50.3%). The smaller portion of participants lies between the age ranges of 13 to 15 (n=3, 1.0%) and 16 to 18 (n=36, 12.0%). These percentages showed that most participants are in the age range of late adolescents and young adults. The study mainly focused on those who actively used social media. Previous studies also indicated that individuals in late adolescence and young adulthood are more actively engaged in social media and more aware of environmental concerns. In terms of educational level, a large number of participants were undergraduate students (n=187, 62.3%), a significant portion were postgraduates (n=72, 24.0%), and a small portion of participants were intermediate (n=38, 12.7%), and only a few of the participants were in matriculation (n=2, 0.7%), and middle school (n=1, 0.3%).

4.1 Frequencies and Percentages of Demographic variables

TABLE 4.1: *Frequencies and Percentages of Demographic variables (N=300)*

Variable	Category	F	%
Gender	Male	154	51.3
	Female	146	48.7
Age	13–15	3	1.0
	16–18	36	12.0
	19–21	110	36.7
	22–26	151	50.3
Education	Middle School	1	0.3
	Matriculation	2	0.7
	Intermediate	38	12.7
	Undergraduate	187	62.3
	Postgraduate	72	24.0
Socioeconomic Status	Lower Class	2	0.7
	Middle Class	226	75.3
	Upper Class	72	24.0
Exposure to Media	Yes	300	100.0
	No	–	–
Media Engagement Frequency	Rarely (<1 hour)	10	3.3
	Occasionally (1–2 hours/day)	21	7.0
	Frequently (3–5 hours/day)	151	50.3
	Very Frequently (>5 hours/day)	118	39.3
Most Used Media Platform	Social Media (Instagram, Facebook, TikTok)	269	89.7
	Online News Website	16	5.3
	Television	1	0.3
	YouTube	14	4.7

Note. F = Frequencies; % = Percentages. N = 300.

The data suggested that the majority of the participants were educated and mature enough to understand the questionnaire and provided relevant data.

Regarding the socioeconomic status, the data showed that the majority of the participants belonged to the middle class (n=226, 75.3%), a smaller portion of the participants came from the upper class (n=72, 24.0%), and very few of them came from the lower class (n=2, 0.7%). This distribution indicated that mainly most of the participants have sufficient resources and have greater access to educational and informational resources.

All participants (n=300, 100%) reported exposure to some form of media, not only limited to social media but including television, online websites, articles, news, YouTube etc. participants were asked to in which media platform they spend most of their time, majority of them reported social media (n=269, 89.7%), smaller number of participants spend time on online news websites (n=16, 5.3%), television (n=1, .3%), and YouTube (n=14, 4.7%). When asked about the frequency of their media engagement, more than half of the participants reported frequently (n=151, 50.3%), a significant number of participants stated very frequently (n=118, 39.3%), and few of them engaged in media occasionally (n=21, 7.0%) or rarely (n=10, 3.3%). The study shows that participants who spend more time on social media tend to stay better informed about current events.

4.2 Descriptives and Reliability analysis

Table 4.2 explains the descriptives and reliabilities of the variables. The Eco-Anxiety scale demonstrated the mean score of 17.9 (SD=7.09) and the Cronbach alpha reliability was found 0.88, indicating a high internal consistency. The actual range of EA is similar to the potential range, showed the full utilization of the scale. The skewness (.01) and kurtosis (.02) values lie under the range of normal distribution but KS value (0.7, p=0.001) is significant and indicates non normal distribution of the data. This might be due to the large sample size (N=300).

The Pro-environmental behaviour scale indicated the Cronbach's alpha reliability, which is 0.79, slightly less from the other measures.

TABLE 4.2: Descriptives, Reliability, and Psychometric Properties of Study Scales (N = 300)

Scales	Items	M	SD	α	Potential Range	Actual Range	Skewness	Kurtosis	KS	p
EA	13	17.9	7.09	.88	0–39	0–39	.01	.02	.07	.001
PEB	13	34.9	7.50	.79	13–65	13–55	-.29	.31	.89	.000
SI	24	66.9	15.1	.94	24–120	11–96	-.70	1.08	.08	.000
PD	10	27.0	6.13	.84	10–50	10–45	-.26	.11	.09	.000
ME	19	76.9	17.9	.84	19–157	25–154	-.15	1.13	.09	.000

Note. EA = Eco-Anxiety Scale; PEB = Pro-environmental Behaviour Scale; SI = Spiritual Intelligence Scale; PD = Psychological Distress Scale; ME = Media Exposure Scale; α = Cronbach's alpha; KS = Kolmogorov–Smirnov test for normality.

This could be due to the scale items not being considered good measure in this particular population, majority of the participants scored low on some items. The mean score of PEB was 34.5, and the standard deviation was 7.50. The actual range of the PEB (13-55) also did not reach the potential theoretical maximum range (13-65) of the scale, representing the likely ceiling effect was not present in the data. The skewness value (-.29) showed slightly negative skewed, and the kurtosis value (.31) was suggested an approximately normal distribution. But the KS value (0.89, $p < .001$) was significant, meaning less than 0.05 indicated the non-normal distribution of the data.

For the Spiritual Intelligence scale SI, the mean score was (66.9) and the standard deviation was (15.1). The SI scale presented the excellent Cronbach's alpha reliability 0.94, indicating a high internal consistency. The actual range of the scale was (11-96), and the maximum potential range was (120) suggesting the less representation of highly spiritual intelligence.

The Psychological distress scale (PD) presented the strong reliability (0.84), showed the greater internal consistency. The mean score of psychological distress scale was (27.0) and the standard deviation was 6.13. The actual range of the scale was within the expected limits, which is (10-45).

The Media exposure scale demonstrated the mean score of (76.9) and the standard deviation of (17.9). The Cronbach's alpha reliability of the scale was (0.84), represented the high internal consistency. The actual score range (25-154) exceeded the potential theoretical maximum range (19-157), which reflected either the extended response format or the compound scoring method used in the scale. The skewness value (-.15) was slightly skewed, and the kurtosis value was (1.13), both suggested the normal distribution of the data. Again, the KS value (.09) of this scale was significant, and less than 0.001 indicated the non-normal distribution of the data.

4.3 Spearman's rho Correlation analysis

Table 4.3 explains the Spearman's rho correlation conducted to examine the relationship between Media Exposure, Eco-Anxiety, Psychological distress, Spiritual

TABLE 4.3: Spearman's rho Correlations Among Study Variables (N = 300)

Variable	1	2	3	4	5
1. EA	–				
2. PEB	.17**	–			
3. ME	.25**	.33**	–		
4. SI	.02	.01	.15**	–	
5. PD	.16**	.13*	-.02	-.13*	–

Note. * $p < .05$, ** $p < .01$; EA = Eco-Anxiety; PEB = Pro-environmental Behaviour; ME = Media Exposure; SI = Spiritual Intelligence; PD = Psychological Distress.

Intelligence, and Pro-environmental behavior in a sample of 300 participants.

The results indicated various significant relationships among the variables. Eco-Anxiety was found to have a moderate positive relationship with media exposure ($r=.25^{**}$, $p < .01$), suggesting that individuals with high media exposure, mainly with environmentally disturbing content, experience a greater level of eco-anxiety. Eco-anxiety was also positively associated with Pro-environmental behaviors ($r=.17^{**}$, $p < .01$), indicating that individuals who experience greater anxiety and are more concerned about environmental issues feel more obliged to work for the betterment of the environment and engaged in more sustainable actions. Similarly, eco-anxiety was positively associated with psychological distress ($r=.16$, $p < .01$). This indicated that individuals who exhibited a higher level of eco-anxiety are more prone to psychological distress.

Pro-environmental behavior showed a positive relationship with media exposure ($r=.33^{**}$, $p > .01$). This indicated that the more individuals are exposed to environment-related news through media, the more they are concerned about the ecological problems and encouraged to adopt environmentally sustainable actions. PEB demonstrated a weaker but significant correlation with psychological distress ($r=.13$, $p < .05$), suggesting that when people feel pressure or anxiety about environmental issues and practices, they might feel more emotional toll and psychological strain.

Interestingly, Spiritual Intelligence tends to have a non-significant relationship with eco-anxiety ($r=.02$, $p > .05$) and pro-environmental behaviour ($r=.01$, $p > .05$). This might be due to individuals with higher spiritual intelligence being more resilient, open-minded, and having other coping strategies while experiencing distress and anxious situations. Spiritual intelligence was also negatively associated with psychological distress ($-.13$, $p < .05$). This suggests that spiritually intelligent individuals may know how to regulate their emotions, and have a better sense of meaning and acceptance towards life.

Media Exposure did not present a significant association with psychological distress ($r = -.02$, $p > .05$), indicating that exposure to media alone is not sufficient to predict the level of psychological distress. Other mediating factors may play a role.

4.4 Mann-Whitney U test for Gender Differences

TABLE 4.4: Mann-Whitney U Test for Gender Differences (N = 300)

Variables	Gender	n	Mean Rank	U	Z	p
EA	Male	154	144.7	10509.5	-0.977	.329
	Female	146	155.5	–	–	–
PEB	Male	154	152.0	11003.0	-0.319	.750
	Female	146	148.8	–	–	–
ME	Male	154	147.1	10718.0	-0.698	.485
	Female	146	154.0	–	–	–
SI	Male	154	145.9	10546.0	-0.927	.354
	Female	146	155.2	–	–	–
PD	Male	154	156.6	10294.5	-1.26	.206
	Female	146	144.0	–	–	–

Note. EA = Eco-Anxiety; PEB = Pro-environmental Behaviour; ME = Media Exposure; SI = Spiritual Intelligence; PD = Psychological Distress.

Table 4.4 presents the results of the Mann-Whitney U test. This test was used to examine the gender-based differences in Eco-Anxiety, Pro-environmental Behavior, Psychological distress, Media Exposure, and Spiritual Intelligence. The non

parametric test was conducted as it does not assume normality and appropriate for comparing two independent groups (male and female).

The results revealed no statistically significant difference among the genders (male and female). For the eco anxiety, females (mean rank=155.5, n=146) and males (mean rank=144.7, n=154) did not differ significantly, and the U value was (10509.5), the Z value was (-.977), and the significance value was greater than 0.05, which is (.329) shows no gender difference.

Similarly, for Pro-environmental behaviour, the males (mean rank, 152.0, n=154) and females (mean rank=148.8, n=146), U value was (11003.0), Z value (-.319), and again the p value was more than 0.05 (.750), indicating no gender difference.

In terms of Spiritual Intelligence, no significant gender difference was found, as the male (mean rank=145.9, n=154) and female (mean rank=155.2, n=146). The U value was (10546.0), the Z value (-.927), and the p significance value was > 0.05. Likewise, no statistically significant gender difference was measured in media exposure, as the demonstrated U value was (10718.0), Z value (-.698), and the significance p value was (.485), which is again more than 0.05. the males (mean rank=147.1, n=154) and the females (mean rank=154.0, n=146).

Lastly, for the psychological distress, the p significance value was > 0.05, as the results show the p value was (.206). The U value was (10294.5), and the Z value was (-1.26). The significance value represents that there is no gender difference. The males (mean rank=156.6, n=154) and the females (mean rank=144.0, n=146), although the male mean rank is higher than the female mean rank, still, there is no significant gender difference.

4.5 Moderation analysis

Table 4.5 explains the moderation analysis conducted using Hayes' Process Macro Model 1 to examine the moderating role of spiritual intelligence between media exposure and psychological distress. Results showed a significant main effect of media exposure on psychological distress (B=.15, SE=.07, t=2.02, p=.04). The p significance value was less than 0.05, which is significant; the results indicated

TABLE 4.5: Moderation Analysis (Model 1)

Variables	B	SE	t	p
Constant	21.15	5.39	3.92	0.000
ME	0.15	0.07	2.02	0.04
SI	0.09	0.08	1.23	0.21
ME * SI	-0.002	0.001	-2.18	0.02

Note. ME = Media Exposure; SI = Spiritual Intelligence; B = Coefficient; SE = Standard Error; t = Test Statistic; p = Significance Level.

that individuals with high media exposure experience more psychological distress. This explains that media exposure is a positive predictor of psychological distress. These results are consistent with prior studies that highlighted the association between media exposure and psychological distress (Keles et al., 2019).

Results suggested that the main effect of spiritual intelligence was not statistically significant ($B=.09$, $SE=.08$, $t=1.23$, $p=.21$). The significance p value is $> .05$, indicating that spiritual intelligence does not directly predict psychological distress. The main results revealed that the interaction is significant ($B=-.002$, $SE=.001$, $t=-2.18$, $p=.02$), which means that spiritual intelligence significantly moderates the relationship between ME and PD (outcome variable). This analysis suggested that individuals with higher spiritual intelligence tend to experience a lower level of psychological distress even when they are exposed to negative and distressing content through media.

The negative sign of the interaction coefficient indicates that spiritual intelligence acts as a protective and buffering role, which means the higher the spiritual intelligence, the more it will effect the relationship between media exposure and psychological distress. If the relationship between media exposure and psychological distress is positive, spiritual intelligence will weaken this relationship.

TABLE 4.6: Conditional Effect of ME on PD at Selected Values of SI (N=300)

SI	B	SE	t	p	LLUI	ULCI
11.00	0.12	0.06	1.90	0.05	0.000	0.250
12.17	0.12	0.06	1.90	0.04	0.000	0.245
54.00	0.02	0.02	0.96	0.33	-0.024	0.070
68.00	-0.01	0.01	-0.50	0.61	-0.049	0.029
82.00	-0.04	0.02	-1.60	0.09	-0.094	0.007
96.00	-0.07	0.03	-2.00	0.04	-0.150	-0.002

Note. SI = Spiritual Intelligence; B = unstandardized effect; SE = standard error; t = test statistic; p = significance level; LLUI = lower limit of the 95% confidence interval; ULCI = upper limit of the 95% confidence interval.

4.5.1 Conditional Effect

Table 4.5.1 explains the conditional effect analysis, which was conducted to develop a better understanding of the moderating variable at different levels. This helps to understand the strength and direction of media exposure on psychological distress at various levels of spiritual intelligence. At a very low level of spiritual intelligence, media exposure had a positive, significant relationship with psychological distress (B=.12, SE=.06, t=1.9, p=.05, LLUI=.000, ULCI=.250). This indicated that individuals with low spiritual intelligence tend to experience more psychological distress when they are exposed to disturbing content via media. This effect persisted significantly at SI= 12.17 (B=.12, p=.04), which directed the lower-bound of the Johnson-Neyman significance region, the main point where the effect of media exposure changes from statistically significant to non-significant. As the level of Spiritual Intelligence increases, the effect of ME on PD is reduced and becomes non-significant. At the level of 54, SI = (B = .02, SE = .02, t=.96, .33), and at 68, SI = (B = -.01, SE = .01, t = -.50, p = .61), indicating that at the moderate and average levels of spiritual intelligence, the ME does not strongly associate with PD.

At the high level of Spiritual Intelligence, the relationship started to shift towards the opposite direction; the effect was negative at 82, SI = (B = -.04, p = .09), but

still showed a non-significant. But at the very high level of Spiritual Intelligence, that was 96, the media exposure had a statistically significant negative effect on psychological distress ($B=-.07$, $SE=.03$, $t=-2.0$, $p=.04$), suggesting that individuals with a higher level of SI may feel low psychological distress even when the negative media exposure increased. Overall, the findings revealed the buffering effect of Spiritual intelligence.

4.6 Moderated Mediation Analysis

TABLE 4.7: Moderated Mediation Analysis (Model 58) (N = 300)

Outcome	Predictors	B	SE	t	p
EA	Constant	-0.08	0.41	-0.21	0.83
	ME	0.08	0.02	3.57	0.00
	PEB	0.10	0.06	1.85	0.06
	ME * PEB	0.00	0.002	0.99	0.32
PD	Constant	27.00	0.34	78.30	0.00
	EA	0.22	0.04	4.50	0.00
	PEB	0.09	0.04	1.80	0.05
	EA * PEB	0.005	0.005	0.97	0.33
	ME	-0.05	0.02	-2.50	0.01

Note. EA = Eco-Anxiety; PD = Psychological Distress; PEB = Pro-environmental Behaviors; ME = Media Exposure; B = Unstandardized Coefficient; SE = Standard Error; t = Test Statistic; p = Significance Level.

Table 4.6 presents the analysis of moderated mediation, which was conducted by using Hayes' Process Macro model 58. In this model, eco-anxiety was entered as the mediator between media exposure (independent variable) and psychological distress (dependent variable). Pro-environmental behavior (PEB) was specified as the moderator on both the a path (media exposure to eco-anxiety) and the b path (eco-anxiety to psychological distress). The initial part of the analysis examined predictors of Eco-anxiety, Media exposure, and Pro-environmental behavior. Results suggested that the ME was significantly positively associated with EA

($B=.08$, $p=.00$). These results indicated that individuals who spend more time on media and consume anxiety-provoking content related to the environment tend to experience more eco-anxiety. These findings are supported by previous studies which indicated that higher media exposure leads to greater eco-anxiety (Ogunbode et al., 2022).

However, the results PEB*ME revealed the non-significant interaction ($B=.00$, $SE=.002$, $t=.99$, $p=.32$), which indicated that PEB does not moderate the relationship between media exposure and eco-anxiety. These results reject the null hypothesis.

The second part of the analysis, given in the table, tested the predictors of the outcome variable psychological distress with eco-anxiety, media exposure, and pro-environmental behavior. The results indicated that eco-anxiety significant positive predictor of psychological distress ($B=.22$, $p=.00$), suggesting that the mediating effect is present. Individuals who have higher eco-anxiety are more likely to experience psychological distress. These findings are supported by previous studies and support the hypothesis. Again, the interaction EA*PEB was not statistically significant ($B=.005$, $SE=.005$, $t=.97$, $p=.33$) and indicated no moderation effect on the association between eco-anxiety and psychological distress. The direct effect of ME on PD was significant $p < .05$.

Overall, the mediation path showed significant results and approved the hypothesis, whereas both moderation paths a and b was non-significant and rejected the hypothesis. These results are not aligned with the study conducted by Doyle, K. (2024), which suggested that individual with high eco-anxiety are more engage in PEB.

4.6.1 Conditional Indirect Effect

Table 4.6.1 explains the conditional indirect effect of media exposure on psychological distress through eco-anxiety at different levels of PEB. At every level of PEB, the indirect effect was statistically significant as the 95% confidence interval did not contain zero. And, also the values of indirect effect were .01 at the low level of PEB, .02 at the mean level of PEB, and .02 at the high level of PEB.

TABLE 4.8: Conditional Indirect Effect of ME on PD via EA at Different Levels of PEB

PEB Level	Indirect Effect	BootSE	BootLLCI	BootULCI
Low (-1 SD = -7.50)	0.01	0.009	0.001	0.03
Mean (0.00)	0.02	0.008	0.006	0.03
High (+1 SD = 7.50)	0.02	0.013	0.004	0.05

Note. PEB = Pro-environmental Behavior; BootSE = Bootstrapped Standard Error; BootLLCI = Bootstrapped Lower Limit Confidence Interval; BootULCI = Bootstrapped Upper Limit Confidence Interval.

The results highlight that the media exposure significantly predicted a higher level of psychological distress through the mediating effect of eco-anxiety, regardless of one's level of pro-environmental behavior.

However, it is important to interpret these findings carefully, as the moderation was not statistically significant in the previous analysis (Table 2). And these indirect effects, although meaningful, do not show a significant interaction effect. Also, the conditional effect changes slightly by moderation level, but they are not strong enough to confirm the presence of a moderated mediation effect.

4.6.2 Pairwise Contrast Between Conditional Indirect Effects

Table 4.6.2 presents the pairwise contrast between the conditional indirect effect at different levels of PEB. These comparison tests described whether the differences in indirect effect among low, mean, and high levels of PEB are statistically significant. The results showed the non-significance, as the bootstrapped confidence interval contains zero. The difference between high and low levels of PEB was .015 (BootCI [-.019-.004]), which is not statistically significant.

These results are aligned with the previous results mentioned in Table 2, that PED does not significantly moderate the indirect path of media exposure to psychological distress through eco-anxiety. Therefore, Table 3 also explained that the hypothesized moderation mediation effect was not supported.

TABLE 4.9: Pairwise Contrast Between Conditional Indirect Effects of ME on PD via EA at Different Levels of PEB

Comparison	Contrast (Effect1 – Effect2)	BootSE	BootLLCI	BootULCI
Mean (0.00) – Low PEB (-7.50)	0.007	0.007	-0.010	0.018
High PEB (7.50) – Low PEB (-7.50)	0.015	0.016	-0.019	0.044
High PEB (7.50) – Mean (0.00)	0.008	0.009	-0.010	0.026

Note. PEB = Pro-environmental Behavior; BootSE = Bootstrapped Standard Error; BootLLCI = Bootstrapped Lower Limit Confidence Interval; BootULCI = Bootstrapped Upper Limit Confidence Interval.

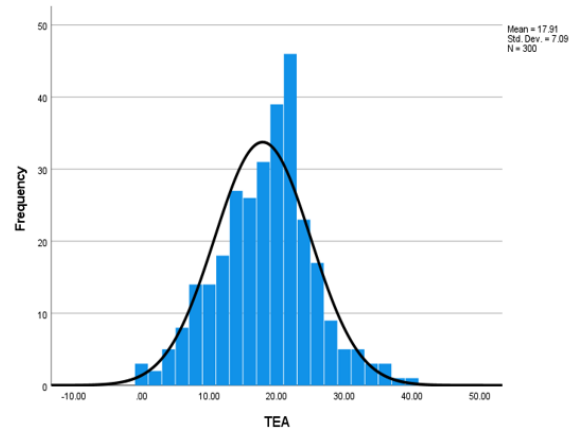


FIGURE 4.1: EA

Figure 4.1 shows the distribution of EA scores. The bell curve shows the normal distribution of the data

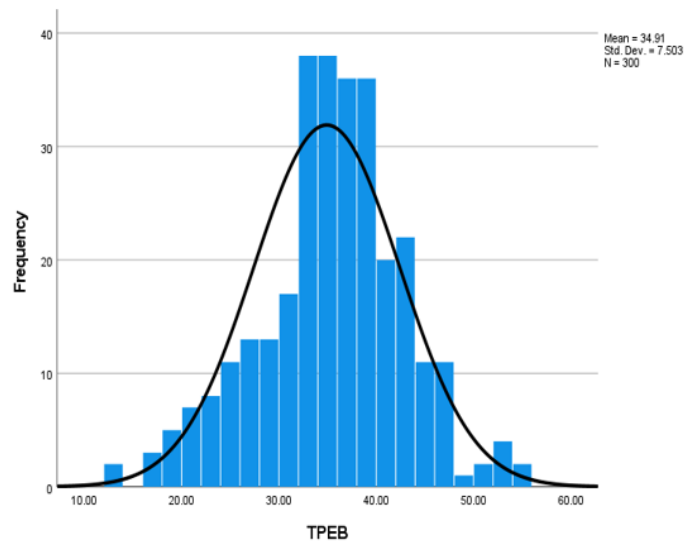


FIGURE 4.2: PEB

Figure 4.2 shows the distribution of PEB scores. The data is slightly skewed, but reveals the normal distribution of the data.

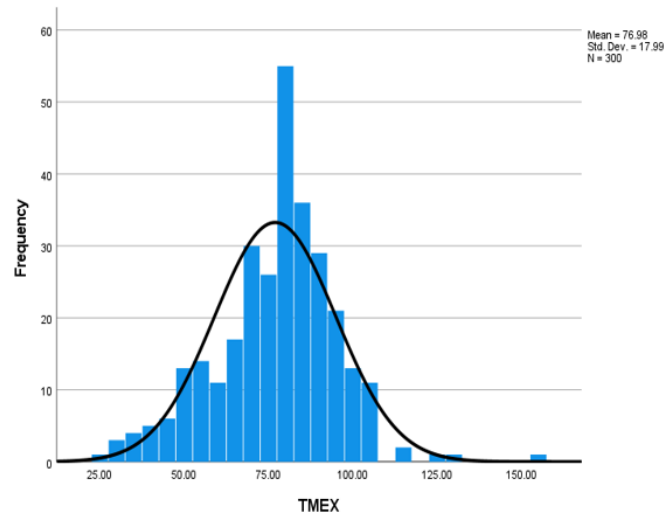


FIGURE 4.3: ME

Figure 4.3 presents the distribution of scores. The histogram suggests a slightly negatively skewed distribution, but the bell curve shows the normal distribution of the data.

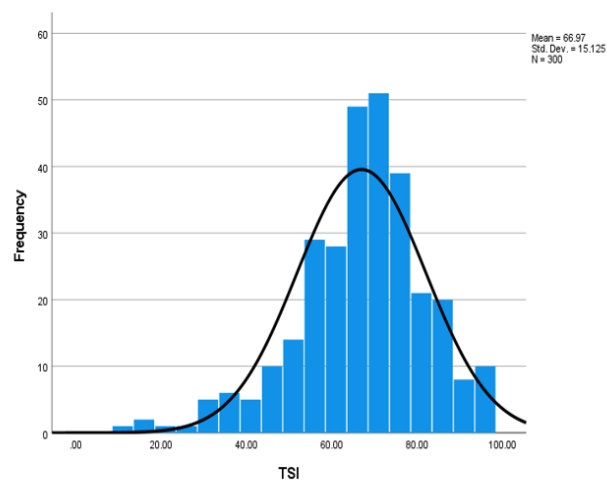


FIGURE 4.4: SI

Figure 4.4 presents the distribution of SI scores seems to follow a nearly non-normal distribution of the data.

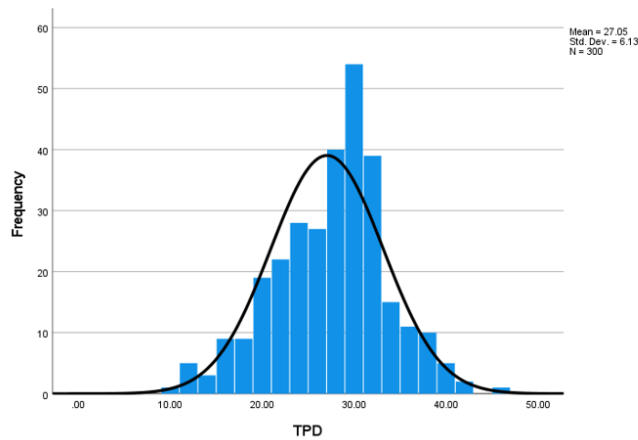


FIGURE 4.5: PD

Figure 4.5 shows the distribution of PD scores. The shape of the histogram shows the normal distribution of the data.

As indicated by the histograms of EA, PEB, SI, ME, and PD, the variables seem to have a normal distribution of the data. The ME and SI histograms show a slightly skewed and near non-normal distribution of the data. Overall, the bell curves show the normal distribution of the data. However, while the visual impression showed the normal distribution of the data, the results of the Kolmogorov–Smirnov (KS) test indicated the non-normal distribution of the data, as results of all variables yielded a p-value less than .05. This indicated that there is statistically significant deviation from the normal in all measures. Hence, the assumptions of normal distribution were not met in this data (N=300).

Chapter 5

Discussion and Conclusion

This research on the growing concerns of ecological change examined the complex relationship between media exposure, eco-anxiety, psychological distress, and pro-environmental behavior among Gen-Z. The study investigated the moderating role of Spiritual Intelligence, based on Behavioral Constraint theory, the study explored how perceived loss of control in response to disturbing information about climate change leads to psychological distress, and whether internal protective factors like Spiritual Intelligence can buffer these effects. Based on the sample of 300 participants, the results provide the crucial insight related to the psychological and behavioral impact of media exposure within the context of a developing country like Pakistan, which is highly vulnerable to climate change.

These findings can be interpreted within the framework of Behavioral Constraint Theory [Brehm \(2012\)](#). Consistent with BCT, repeated exposure to uncontrollable climate-related events through media may operate as a perceived constraint, intensifying eco-anxiety and consequently psychological distress. While spiritual intelligence demonstrated a buffering role, the hypothesized moderating effect of pro-environmental behavior was not supported, suggesting that external coping actions did not significantly alter the indirect relationship between media exposure and psychological distress.

The findings of the study confirmed the significant association between media exposure and eco-anxiety, highlighting that people with higher media exposure or

who spend more time watching content related to environmental issues online have a higher level of eco-anxiety. These findings supported the hypothesis of the research and are aligned with a previous study, which explained the positive correlation between media exposure and eco-anxiety (Fazal et al., 2025); (Nayab et al., 2025). In Pakistan, where economic and political instability already existed, Gen-Z seems more vulnerable to climate-related distress, and when exposed to such news, they feel more anxious and distressed. The results also revealed a significant relationship between media exposure and psychological distress. This indicated an alarming situation and suggested the need to focus on the psychological well-being of the young generation, especially at the time of such environmental issues.

Moreover, eco-anxiety is positively associated with psychological distress and further emphasizes the severe impact of this issue. Individuals who experience a higher level of eco-anxiety are more vulnerable to experiencing psychological distress as well. Eco-anxiety also significantly mediated the relationship between media exposure and psychological distress. This implies that the individuals who are more exposed to disturbing climate news feel more threatened, which induces anxiety-provoking thoughts that may lead to eco-anxiety. And then, due to this heightened eco-anxiety, individuals experience frustration and hopelessness, which exacerbates the psychological distress. These results also supported the hypothesis and, linked with the prior studies, supported these findings and indicated individuals who watched more news related to climate issues are more prone to have eco-anxiety and mental health issues ((Clayton and Karazsia, 2020); (Pihkala, 2018); & (Ogunbode et al., 2022)).

The study found a positive correlation between media exposure, eco-anxiety, and pro-environmental behavior and explained that for some individuals, distress and anxiousness may act as a catalyst to take action and bring change. Individuals may feel obliged to do work for the betterment of their environment. These results are consistent with a prior study conducted by Mathers-Jones and Todd (2023) explained that the more eco-anxiety individuals experience, are more likely they are to engage in pro-environmental behavior.

Although, the correlation existed between media exposure, eco-anxiety, and pro-environmental behaviors, Hypothesis 3 was rejected as the moderated mediation

analysis indicated that there is no moderation effect that explained the relationship between variables. The absence of significant moderating effect of PEB in this study could be explained by structural and contextual factors that are present in the lower-middle-income country (LMIC) like Pakistan.

In such countries, due to limited resources and without institutional support such as accessible recycling infrastructure and consistent ecological policies restricted these individuals who have potential feel that their efforts are inadequate, which inhibits them from taking environmental actions. This made the individual helpless and caused distress and emotional toll, which then led to mental health issues. [Ogunbode et al. \(2022\)](#) study found that eco-anxiety is relatively high in those countries where ecological governance is weak, and despite significant pro-environmental intentions showed by individuals, these feelings and behaviors seemed useless due to perceived distance between their actions and overall environmental impact. These helpless feelings can also highlighted what ([Wang et al., 2023](#)) described as eco-fatigue, wherein constant engagement in PEB without any observable systematic change leads to emotional exhaustion rather than relief.

Furthermore, many individuals who engage in ecological friendly behaviors, like preserving water, and electricity and avoiding the use of plastic, often feel too little, as they think their efforts are too small and do not bring about change on a larger level. These feelings, referred to as perceived inefficacy, are explained by [Kotzya et al. \(2024\)](#) -discussed perceived behavioral control and its influence on pro-environmental behavior and directed the psychological benefits of PEB. When personal efforts seem less likely to bring change, people may struggle to see their actions as meaningful, and the distress persists.

Another possible explanation of the non-significant moderation effect is the measure used in the study. The PEB scale by [Larson et al. \(2015\)](#) was used in this research, which was developed for the western population that may not align with the socio-economic realities of Pakistani youth. [Clayton \(2020\)](#) described that pro-environmental behavior vary across culture, so it is essential to highlight the importance of use the culturally validate environmental behavior measures to collect the accurate data. If a scale doesn't measure culturally appropriate or context-specific behaviors, the results appear statistically weak and non-significant.

Moreover, the participants' awareness towards environmental actions and the lasting impact they may bring with consistent efforts is limited. [Yildirim et al. \(2025\)](#) explained that environmental literacy is essential and plays a mediating role in behavioral and emotional outcomes, implying that without the awareness of the cognitive factors and emotional relevance, the behavioral actions are unlikely to lead to psychological relief. In many LMIC countries, the agenda behind environmental actions is saving money or other beneficial purposes rather than out of concern for the environment.

The fourth hypothesis was supported, indicating that spiritual intelligence significantly moderates the relationship between media exposure and psychological distress. This moderation effect can be explained by various cultural and contextual factors. Individuals with high spiritual intelligence are more focused and tend to explore the meaning of life. High spiritual intelligence helps individuals to interpret distressing ecological information more effectively through a spiritual lens, which makes them less emotionally vulnerable and mitigates psychological distress. The study investigated that individuals with high SI are more resilient and manage stressors effectively ([Anwar and Rana, 2024](#)).

In Pakistan, the majority of the population is Muslim and follows religious and spiritual practices, and the internal abilities incorporated in Spiritual intelligence are emotional control, existential significance, and transcendental awareness; all of these are deeply rooted in religious and spiritual traditions dominant in Pakistan. SI acts as a coping mechanism, and it's a protective factor that helps individuals deal with crises and difficult situations ([Qureshi and Abdulaziz, 2025](#)). This current study demonstrated that Spiritual Intelligence acts as a buffer and reduces media-induced psychological distress. Whereas, the pro-environmental behavior is more behavior-focused and may not provide the same cognitive and emotional coping mechanism when individuals experience eco-anxiety and psychological distress. individuals who are more active in the media and exposed to more disturbing environmental content may feel heightened distress and anxiety due to more awareness, perceived helplessness, frustration, or guilt when societal change seems inadequate ([Hickman et al., 2021](#)).

However, unlike the past studies focusing on gender-based differences in the psychological responses to ecological stress, no significant gender differences were found in this current study. These findings indicate that there may be a convergence of gender in terms of psychological and behavioral responses to the distressing ecological news. One possible explanation could be that both males and females are exposed to similar content through media, which provokes similar emotional responses and anxiety in youth. Another reason is changing gender norms because the young generation, especially Gen-Z in LMIC, may be changing their traditional gender roles. With equal access to educational opportunities, especially in cities, young women and men are equally engaged and informed about climate-related news and issues (Murtaza et al., 2025). Moreover, spiritual intelligence, as a moderator employed in the present study, did not vary significantly across genders; both males and females may have the same ability to create meaning in their lives, and remain emotionally strong enough to cope with environmental issues. The results are consistent with the previous studies, which found a slight or no gender difference (Clayton, 2020) & (Salguero et al., 2024).

5.1 Limitations of the Study

Although the current study provides valuable insights into the psychological and behavioral responses to environmental concerns among Gen-Z in Pakistan, it is mandatory to acknowledge several limitations. This study was correlational and examined the mediating and moderating effects of variables, whereas it cannot determine the causal inference of the relationship between variables and limit whether one variable causes a change in another. Longitudinal and experimental studies should be employed in future studies to determine temporal order and causal relationships.

Self-report measures were used in this study; the possibility of response bias or social desirability is high in such cases. Also, the study was quantitative in nature; future research should be qualitative to give a better understanding of variables like eco-anxiety and spiritual intelligence. Culturally relevant measures are required for future research. Currently, the measures used in this study were developed

by Western countries, although these measures demonstrated strong psychometric properties, but these measures may not fully reflect or measure culturally specific expressions of spiritual intelligence and environmental behaviors practiced in Pakistan.

The sample of the study was relatively homogeneous, as it involved only educated youth from the twin cities. This can cause hindrance to the generalizability of the research to the larger Pakistani population, particularly those in rural areas and uneducated youth. The findings might be different if future research considered these factors and conducted studies in a more diverse population.

Overall, the study makes a valuable contribution to the new and emerging phenomenon of eco-anxiety in LMIC. Future research needs to be conducted on a more diverse population, including culturally relevant adaptive measures and a longitudinal research design to better understand how youth psychologically respond to environmental issues.

5.2 Implications

The results of the study have numerous theoretical and practical implications. First, the study found and highlighted the potential protective factors, and the results demonstrated the buffering effect of SI in the association between media exposure and psychological distress. This implies that fostering Spiritual intelligence through educational, therapeutic, or community-based programs helps youth in dealing with distress and enhances emotional reliance and strengthens their capability to deal with crisis and distressing situations.

Second, the non-significant effect of PEB in the relationship between media exposure, eco-anxiety, and psychological distress revealed the potential disconnect of behavioral engagement and emotional outcomes, particularly in LMIC like Pakistan. This highlights the importance of creating awareness about the psychological aspects of environmental behaviors and encourages them to take environmental actions, and helps them to understand the broader impact of their actions.

Results indicated the need for a policy-level support, which is required to increase the psychological efficacy of individual behaviors. In LMIC, like Pakistan, where governmental and institutional responses about climate change are weak, individual efforts seem more useless and cause emotional exhaustion. National and local policies that give visible, institutional support to environmental initiatives, including sustainability in infrastructure, green incentives, and public awareness campaigns, encourage individuals and make them feel that their efforts are valued and supported.

Lastly, the results of this study provide a foundation for future intervention design. Emotional regulation strategies, combined with spiritually based coping mechanisms, may be helpful in youth mental health programs in the climate context.

5.3 Conclusion

In summary, the research focused on measuring how media exposure is associated with eco-anxiety, psychological distress, pro-environmental behavior, and spiritual intelligence among Gen-Z in Pakistan. The findings demonstrated a significant relationship between media exposure and psychological distress through the mediating effect of eco-anxiety. Spiritual intelligence emerged as a significant moderating protective factor, buffering the psychological distress induced by negative media exposure. In contrast, pro-environmental behavior did not show a moderating effect in the association among media exposure, eco-anxiety, and psychological distress. Also, the gender difference was not found in the study, which implies that the psychosocial reaction of the participants (males and females) to climate-related distress was common. The findings support the need to develop interventions that are context-specific and informed psychologically, incorporating coping strategies at both spiritual and emotional levels.

Bibliography

- Ab Razak, R. R., Mohd Yusoff, H., Mohd Isa, N., Embong, R., and Maslan, A. (2021). "spiritual intelligence during catastrophe: the covid-19 pandemic case". *International Journal of Academic Research in Business and Social Sciences*, 11(8).
- Abbas, S., Ghaffar, R., and Abid, A. (2025). "exploring the relationship between climate anxiety and solastalgia among university students in pakistan: A study of environmental distress and psychological well-being". *Journal of Asian Development Studies*, 14(2):440–452.
- Alshebami, A. S., Alholiby, M. S., Elshaer, I. A., Sobaih, A. E. E., and Marri, S. H. A. (2023). "examining the relationship between green mindfulness, spiritual intelligence, and environmental self identity: Unveiling the path to green entrepreneurial intention". *Administrative Sciences*, 13(10):226.
- Alvi, M. H., Ashraf, T., Kiran, T., Iqbal, N., Gumber, A., Patel, A., and Husain, N. (2023). "economic burden of mental illness in pakistan: an estimation for the year 2020 from existing evidence". *BJPsych international*, 20(3):54–56.
- Amin, M., Shah, H. H., Fareed, A. G., Khan, W. U., Chung, E., Zia, A., Farooqi, Z. U. R., and Lee, C. (2022). "hydrogen production through renewable and non-renewable energy processes and their impact on climate change". *International journal of hydrogen energy*, 47(77):33112–33134.
- Anwar, S. and Rana, H. (2024). "spiritual intelligence and psychological wellbeing of pakistani university students". *Current Psychology*, 43(6):5388–5395.
- Averill, J. R. (1973). "personal control over aversive stimuli and its relationship to stress". *Psychological bulletin*, 80(4):286.

- Azam, Seemab & Majeed, S. (2022). "spiritual intelligence and psychological distress during covid-19 pandemic in adults of pakistan". *Pakistan Social Sciences Review*, 6(2):1070–1077.
- Baber, H. (2024). "gender differences among university students towards sustainable entrepreneurship". *Small Enterprise Research*, 31(1):39–55.
- Bdier, D., Veronese, G., and Mahamid, F. (2024). "environmental degradation, eco-anxiety, and posttraumatic stress symptoms among palestinian adults: The mediating role of coping strategies". *Cambridge Prisms Global Mental Health*, 11.
- Brehm, Jack W & Brehm, J. W. (2012). "psychological reactance". *Control Motivation and Social Cognition*, page 1.
- Cai, B., Chen, Y., and Ayub, A. (2023). "quiet the mind, and the soul will speak"! exploring the boundary effects of green mindfulness and spiritual intelligence on university students' green entrepreneurial intention–behavior link. *Sustainability*, 15(5):3895.
- Carasso Romano, G. H., Sippori, R., and Soroker, S. (2025). "examining the relationship between ecological anxiety and pro-environmental behavior: personal and collective actions". *Frontiers in Psychology*, 16:1505564.
- Clayton, S. (2020). Climate anxiety: Psychological responses to climate change. *Journal of Anxiety Disorders*, 74:102263.
- Clayton, S. and Karazsia, B. T. (2020). "development and validation of a measure of climate change anxiety". *Journal of environmental psychology*, 69:101434.
- Coffey, Y., Bhullar, N., Durkin, J., Islam, M. S., and Usher, K. (2021). "understanding eco-anxiety: A systematic scoping review of current literature and identified knowledge gaps". *The Journal of Climate Change and Health*, 3:100047.
- Cosh, S. M., Williams, S. E., Lykins, A. D., Bartik, W., and Tully, P. J. (2024). "detecting and classifying eco-anxiety: development of clinical cut-off scores for the climate change anxiety scale". *BMC psychology*, 12(1):738.

- Daraz, U., Khan, Y., Alsawalqa, R. O., Alrawashdeh, M. N., and Alnajdawi, A. M. (2024). "impact of climate change on women mental health in rural hinterland of pakistan". *Frontiers in Psychiatry*, 15.
- Dewi, Y. S. (2024). "relationship of knowledge about ecological concepts, spiritual intelligence and locus of control with environmental altruistic behavior in students". *Pakistan Journal of Life and Social Sciences (PJLSS)*, 22(2).
- Dimock, M. (2019). "defining generations: Where millennials end and generation z begins".
- Doyle, K. (2024). "understanding the role of eco-anxiety, eco-grief, and eco-guilt in age-related pro-environmental behaviour: A detailed analysis in germany and the netherlands". B.S. thesis, University of Twente.
- Emmons, R. A. (2000). "is spirituality an intelligence? motivation, cognition, and the psychology of ultimate concern". *International Journal for the Psychology of Religion*, 10(1):3–26.
- Fazal, I., Nasir, T., and Mahmood, S. (2025). "the impact of climate change news on mental health of youth: The rise of eco-anxiety in pakistan". *Annual Methodological Archive Research Review*, 3(5):269–283.
- Hajek, A. and König, H. (2022). "climate anxiety in germany". *Public Health*, 212:89–94.
- Hamdani, S. U., Huma, Z., Javed, H., et al. (2021). "prevalence of psychosocial distress in school going adolescents in rural pakistan: findings from a cross-sectional epidemiological survey". *BJPsych Open*, 7(S1):S56–S57.
- Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., and Van Susteren, L. (2021). "climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. *The Lancet Planetary Health*", 5(12):e863–e873.
- Hogg, T. L., Stanley, S. K., O'Brien, L. V., Wilson, M. S., and Watsford, C. R. (2021). "the hogg eco-anxiety scale: Development and validation of a multidimensional scale". *Global Environmental Change*, 71:102391.

- Hussain, S., Khan, Z. H., Amin, R., and Kanwal, U. (2023). "spiritual intelligence, resilience, and mental health: A comparative study among university students with different academic degrees". *Clinical and Counselling Psychology Review*, 5(1):17–34.
- Hussain, S. A., Tan, L., Kathayat, G., Hussain, A., and Widory, D. (2025). "climate change during the holocene in south asia: A review study of pakistan". *Quaternary Science Reviews*, 352:109203.
- IQAir (2024). "2024 world air quality report: Interactive global map of 2024 pm_{2.5} concentrations by city". Online interactive map. Data from over 8,954 cities, sourced from 40,000 monitoring stations; see IQAir interactive visualization.
- Iqbal, M. P. (2024). "air pollution: challenges to human health in pakistan". *Journal of College of Physicians and Surgeons Pakistan*, 34(05):507–508.
- Irene, I. and Wisesa, A. (2020). "analyzing how spiritual intelligence affecting stress coping in stress management". *Jurnal Ilmu Sosial Politik dan Humaniora*, 3(2):1–12.
- Karimi, F. and Nikmanesh, Z. (2023). "the role of spiritual intelligence and emotion regulation in student's resiliency". *Journal of Educational Psychology Studies*, 20(51):117–105.
- Kessler, R., Mroczek, D., et al. (1992). "an update of the development of mental health screening scales for the us national health interview study". *Ann Arbor: University of Michigan, Survey Research Center of the Institute for Social Research*, pages 31118–5.
- King, D. B. (2008). "rethinking claims of spiritual intelligence: A definition, model, and measure". *Unpublished Master's Thesis, Trent University, Peterborough, Ontario, Canada*.
- Kotyza, P., Cabelkova, I., Pierański, B., Malec, K., Borusiak, B., Smutka, L., Nagy, S., Gawel, A., Bernardo López Lluch, D., Kis, K., et al. (2024). "the predictive power of environmental concern, perceived behavioral control and

- social norms in shaping pro-environmental intentions: a multicountry study". *Frontiers in ecology and evolution*, 12:1289139.
- Larson, L. R., Stedman, R. C., Cooper, C. B., and Decker, D. J. (2015). "understanding the multi-dimensional structure of pro-environmental behavior". *Journal of environmental psychology*, 43:112–124.
- Maran, Daniela Acquadro & Begotti, T. (2021). "media exposure to climate change, anxiety, and efficacy beliefs in a sample of italian university students". *International journal of environmental research and public health*, 18(17):9358.
- Mathers-Jones, J. and Todd, J. (2023). "ecological anxiety and pro-environmental behaviour: the role of attention". *Journal of anxiety disorders*, 98:102745.
- Meo, S. A., Shafi, K. M., and Hussain, A. (2025). "the psychological cost of climate change: anxiety among adolescents and young adults-a cross-sectional study". *Frontiers in Psychiatry*, 16:1422338.
- Murtaza, T., Ashraf, R., Ashfaq, M. U., and Ahmad, A. (2025). "gender disparities and climate change: A grounded study from okara". *Social Sciences Spectrum*, 4(2):547–558.
- Naeem, O. (2023). "empowering pakistan's youth to address climate change risks".
- Nayab, G. I., Shaikh, A. M., Ashraf, H. M., and Fatima, R. (2025). The impact of climate change news on mental health: The rise of eco-anxiety in pakistan. *Annual Methodological Archive Research Review*, 3(5):150–167.
- Niedzwiedz, C. L., Olsen, J. R., Rizeq, J., Afework, T., Hill-Harding, C. K., Shaw, R. J., Thomas, R., Kariuki, S. M., Katikireddi, S. V., Weaver, A. J., et al. (2025). "coming to terms with climate change: a glossary for climate change impacts on mental health and well-being". *J Epidemiol Community Health*, 79(4):295–301.
- Notre Dame Global Adaptation Initiative (2023). "pakistan — nd-gain country index". Online country profile. Ranked 152nd globally with a composite score of 37.9 (vulnerability0.515, readiness0.273); GDP (PPP) per capitaUSD6,036.65, population247.5million, HDI0.54.

- Obaidat, M. Z., Malal, J., Qamar, A., and Habes, M. (2025). "exploring climate anxiety: Influence of new media and mental health". *Journal of Xi'an Shiyou University, Natural Sciences Edition*, 68(4):49. E-Publication: Online Open Access.
- Ogunbode, C. A. et al. (2022). "climate anxiety, wellbeing, and pro-environmental action: correlates of negative emotional responses to climate change in 32 countries". *Journal of Environmental Psychology*, 84:101887.
- Orrù, L., Taccini, F., and Mannarini, S. (2024). "worry about the future in the climate change emergency: a mediation analysis of the role of eco-anxiety and emotion regulation". *Behavioral Sciences*, 14(3):255.
- Padhy, S. K., Sarkar, S., Panigrahi, M., and Paul, S. (2015). "mental health effects of climate change". *Indian Journal of Occupational and Environmental Medicine*, 19(1):3–7.
- Pihkala, P. (2018). "eco-anxiety, tragedy, and hope: Psychological and spiritual dimensions of climate change". *Zygon*, 53(2):545–569.
- Prasetyo, Y. T., Kurata, Y. B., Zahra, K., Cahigas, M. M. L., Nadlifatin, R., and Gumasing, M. J. J. (2024). "factors affecting compliance with vehicular environmental laws and pro-environmental behavior in lahore, pakistan". *Acta Psychologica*, 251:104614.
- Qureshi, G. E. R. and Abdulaziz, M. (2025). "pakistani print media's depiction of natural disasters relative to ndma reports: An eco-critical analysis". *Qlantic Journal of Social Sciences and Humanities*, 6(1):209–218.
- Rizwan, M., Ahmad, T., Qi, X., Murad, M. A., Baig, M., Sagga, A. K., Tariq, S., Baig, F., Naz, R., and Hui, J. (2021). "social media use, psychological distress and knowledge, attitude, and practices regarding the covid-19 among a sample of the population of pakistan". *Frontiers in Medicine*, 8:754121.
- Romanello, M., McGushin, A., Di Napoli, C., Drummond, P., Hughes, N., Jamart, L., Kennard, H., Lampard, P., Rodriguez, B. S., Arnell, N., et al. (2021). "the

- 2021 report of the lancet countdown on health and climate change: code red for a healthy future". *The Lancet*, 398(10311):1619–1662.
- Salguero, R. B., Bogueva, D., and Marinova, D. (2024). "australia's university generation z and its concerns about climate change". *Sustainable Earth Reviews*, 7(1):8.
- Santos, J. M., Queirós, A., Ferreira, J. J., and Mendes, L. (2021). "climate change/global warming/climate emergency versus general climate research: Comparative bibliometric trends of publications". *Heliyon*, 7(11):e08219.
- Schmitt, M. D. (2023). "igen why today's super-connected kids are growing up less rebellious, more tolerant, less happy—and completely unprepared for adulthood: and what that means for the rest of us. by jean m. twenge: A book review". *TAFCS Research Journal*, 10(1):41–54.
- Seddon, N., Chausson, A., Berry, P., Girardin, C. A., Smith, A., and Turner, B. (2020). "understanding the value and limits of nature-based solutions to climate change and other global challenges". *Philosophical Transactions of the Royal Society B*, 375(1794):20190120.
- Shahid, S., Chaudary, M. A., Majeed, A., and Siddique, R. A. (2021). "mental disorders emerging from the climate change: A need to mitigate the eco-anxieties.". *FUUAST Journal of Biology*, 11(1).
- Shrestha, M. M. (2025). "global warming and its strategy to reduce effect of climate change in our planet".
- Shujaat, M., Shan, Z., Shah, I., Zia, K., and Khan, N. (2024). "exploring climate change's psychological association, between eco-anxiety, eco-grief and attitude towards environment". *CARC Research in Social Sciences*, 3(3):323–330.
- Sohail, U., Meraj, M., and Khan, A. A. (2025). "climate change and the wellbeing of children and youth: An evidence from urban areas of pakistan". *Journal of Business and Management Research*, 4(2):1033–1052.

- Tanveer, H., Tariq, Z., Nisar, K., Khan, A. U., et al. (2024). "investigate the mental health implications of eco-anxiety and its impact on behavior and coping strategies". *Bulletin of Business and Economics (BBE)*, 13(3):566–574.
- Tian, H. and Liu, X. (2022). "pro-environmental behavior research: theoretical progress and future directions. *International Journal of Environmental Research and Public Health*", 19(11):6721.
- Tiwana, Z. (2025). "rise of eco-anxiety in pakistan: Impacts of climate change".
- Tran, T.-N.-D., Nguyen, B. Q., Grodzka-Lukaszewska, M., Sinicyn, G., and Lakshmi, V. (2023). "the role of reservoirs under the impacts of climate change on the sreпок river basin, central highlands of vietnam". *Frontiers in Environmental Science*, 11:1304845.
- Tsevreni, I., Proutsos, N., Tsevreni, M., and Tigkas, D. (2023). "generation z worries, suffers and acts against climate crisis—the potential of sensing children’s and young people’s eco-anxiety: A critical analysis based on an integrative review". *Climate*, 11(8):171.
- Tyson, A., Kennedy, B., and Funk, C. (2021). "gen z, millennials stand out for climate change activism, social media engagement with issue".
- United Nations (2015). "transforming our world: The 2030 agenda for sustainable development". Resolution Adopted by the General Assembly on 25 September 2015, 42809, 1–13. A/RES/70/1.
- Wang, F., Harindintwali, J. D., Wei, K., Shan, Y., Mi, Z., Costello, M. J., Grunwald, S., Feng, Z., Wang, F., Guo, Y., et al. (2023). "climate change: Strategies for mitigation and adaptation". *The Innovation Geoscience*, 1(1):100015–1.
- World Bank and Asian Development Bank (2021). "climate risk country profile: Pakistan".
- World Economic Forum (2024). "climate change in pakistan: How the country’s mental health is being affected by eco-anxiety".

- Xu, Y., Li, W., and Chi, S. (2021). "altruism, environmental concerns, and pro-environmental behaviors of urban residents: a case study in a typical chinese city". *Frontiers in Psychology*, 12:643759.
- Yadollahpour, M. H., Nouriani, M., Faramarzi, M., Yaminfirooz, M., Shams, M. A., and Gholinia, H. (2023). "role of spiritual intelligence and demographic factors as predictors of occupational stress, quality of life and coronavirus anxiety among nurses during the covid-19 pandemic. *Nursing open*, 10(3):1449–1460.
- Yildirim, M. S., Elkoca, A., Gökçay, G., Yilmaz, D. A., and Yıldız, M. (2025). "the relationship between environmental literacy, ecological footprint awareness, and environmental behavior in adults". *BMC Public Health*, 25(1):551.

Appendices

A Appendix

Informed Consent Form

I, Amna Mahmood, a student of MS Clinical Psychology at Capital University of Science and Technology, invite you to participate in my research study. The title of my research is:

"The Relationship Between Media Exposure, Eco-Anxiety, Psychological Distress, and Pro-Environmental Behavior Among Gen Z: The Moderating Role of Spiritual Intelligence."

To participate in this research, you will be asked to complete a self-report questionnaire related to media exposure, eco-anxiety, psychological distress, spiritual intelligence, and pro-environmental behaviors. The estimated time to complete the questionnaire is 15-20 minutes. Your responses will be kept confidential, and your identity will not be disclosed in any reports or publications.

Participation in this study is entirely voluntary, and you have the right to withdraw at any time without any consequences.

All responses will be kept strictly confidential and used for research purposes only. The data will be stored securely and accessed only by the researcher and supervisor. If you withdraw before submitting the questionnaire, your responses will not be recorded. If you withdraw after submission, your data will be discarded by the researcher and will not be included in the final analysis. All collected data will be securely stored for 3 years after the completion of the study and will then be permanently discarded to ensure confidentiality.

If you have any questions or concerns about this study, feel free to contact me at **amnaam Mahmood489@gmail.com**.

By signing below, you confirm that you have read and understood the study details and voluntarily agree to participate.

Participant's Signature: _____

Date: _____

FIGURE 1: Informed Consent

Demographic Information Form

Please provide the following information. Your responses will be kept confidential and used for research purposes only.

1. Personal Information

Age: _____

Gender: Male Female

Education Level

Middle School

Matriculation

Intermediate

Undergraduate

Postgraduate

Socioeconomic status

Lower class

Middle class

Upper class

FIGURE 2: Demographic Information form

2. Media Usage

Are you exposed to any type of media? (social media, news, TV, etc.)?

Yes No

How often do you engage with media (social media, news, TV, etc.)?

Rarely (Less than 1 hour/day)

Occasionally (1-2 hours/day)

Frequently (3-5 hours/day)

Very Frequently (More than 5 hours/day)

Which media platform do you use most?

Social Media (Instagram, Facebook, Twitter, TikTok)

Online News Websites

Television

YouTube

Other: _____

FIGURE 3: Demographic Information form

B Appendix

B.1 Measures

Hogg Eco-Anxiety Scale

The Hogg Eco-Anxiety Scale (HEAS-13) instructions:

“Over the last 2 weeks, how often have you been bothered by the following problems when thinking about climate change and other global environmental conditions (e.g., global warming, ecological degradation, resource depletion, species extinction, ozone hole, pollution of the oceans, deforestation)?

Items	Not at all (0)	Several days (1)	Over half the days (2)	Nearly every day (3)
Feeling nervous, anxious, or on edge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not being able to stop or control worrying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worrying too much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling afraid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unable to stop thinking about future climate change and other global environmental problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unable to stop thinking about past events related to climate change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unable to stop thinking about losses to the environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficulty sleeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficulty enjoying social situations with family and friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FIGURE 4: Hogg Eco-Anxiety Scale

Difficulty working and/or studying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling anxious about the impact of your personal behaviour on the earth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling anxious about your personal responsibility to help address environmental problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling anxious that your personal behaviors will do little to help fix the problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FIGURE 5: Hogg Eco-Anxiety Scale

Pro-environmental behaviors scale

How often have you engaged in the following activities to improve the quality of your local area?

(Circle ONE number for each item.)

	Never	Rarely	Sometimes	Often	Very often
Worked with others to address an environmental problem or issue	1	2	3	4	5
Participated as an active member in a local environmental group	1	2	3	4	5
Signed a petition about an environmental issue	1	2	3	4	5
Wrote a letter in a response to an environmental issue	1	2	3	4	5
Voted to support a policy or regulation that affects the local environment	1	2	3	4	5
Donated money to support local environmental protection	1	2	3	4	5
Talked to others in my community about environmental issues	1	2	3	4	5
Made my yard or my land more desirable for wildlife	1	2	3	4	5
Volunteered to improve wildlife habitat in my community	1	2	3	4	5
Participated (provided data) in a wildlife study	1	2	3	4	5
Recycled paper, plastic, and metal	1	2	3	4	5
Conserved water or energy in my home	1	2	3	4	5
Bought environmentally friendly and/or energy-efficient products	1	2	3	4	5

FIGURE 6: Pro-Environmental Behavior Scale

Media Exposure Scale

Attention to climate change information

Responses	None (1)	A little (2)	Some (3)	A lot (4)
-----------	-------------	-----------------	-------------	--------------

How much attention do you pay to information about climate change?	
--	--

Information Source

On average, how often do you read or hear about climate change from the following sources?

Responses	More than 10 times per day (9)	6 to 10 times per day (8)	2 to 5 times per day (7)	Once a day (6)	4 to 6 days per week (5)	2 to 3 days per week (4)	Once a week (3)	Less often than once a week (2)	Never (1)
-----------	-----------------------------------	------------------------------	-----------------------------	-------------------	-----------------------------	-----------------------------	--------------------	------------------------------------	--------------

TV news and other TV programmes	
Printed and online newspapers	
Radio news and other radio programmes	
Facebook	
Twitter	
YouTube	
Books and magazines	
Scientific articles/journals/blogs	
Family, friends and colleagues	

FIGURE 7: Media Exposure Scale

Information Content (Theme & Geographic coverage)

Across all sources available to you, how often do you read or hear about the following categories of climate change information?

Responses	More than 10 times per day (9)	6 to 10 times per day (8)	2 to 5 times per day (7)	Once a day (6)	4 to 6 days per week (5)	2 to 3 days per week (4)	Once a week (3)	Less often than once a week (2)	Never (1)
-----------	-----------------------------------	------------------------------	-----------------------------	-------------------	-----------------------------	-----------------------------	--------------------	------------------------------------	--------------

Information about causes and drivers of climate change (e.g., estimates of greenhouse gas emissions or atmospheric carbon concentration).	
Information about climate change impacts (e.g., extreme weather or melting polar ice)	
Information about climate change actions and solutions (e.g., climate protests or advances in renewable energy technology)	
Information about climate issues affecting your city, county or local area	
Information about climate issues affecting your country	
Information about international or global climate issues	

Information Valence							
Please imagine a situation in which you encounter information about climate change. How do you generally feel about <u>the type of information</u> you typically read or hear about the topic?							
Negative	1	2	3	4	5	6	Positive
Encouraged	1	2	3	4	5	6	Discouraged
Pessimistic	1	2	3	4	5	6	Optimistic

FIGURE 8: Media Exposure Scale

Spiritual Intelligence Self-Report Inventory (SISRI-24)

The following statements are designed to measure various behaviours, thought processes, and mental characteristics. Read each statement carefully and choose which **one** of the five possible responses best reflects you by circling the corresponding number. If you are not sure, or if a statement does not seem to apply to you, choose the answer that seems the best. Please answer honestly and make responses based on how you actually are rather than how you would like to be. The five possible responses are:

0 – Not at all true of me | 1 – Not very true of me | 2 – Somewhat true of me | 3 – Very true of me | 4 – Completely true of me

For each item, circle the **one** response that most accurately describes **you**.

1. I have often questioned or pondered the nature of reality.	0	1	2	3	4
2. I recognize aspects of myself that are deeper than my physical body.	0	1	2	3	4
3. I have spent time contemplating the purpose or reason for my existence.	0	1	2	3	4
4. I am able to enter higher states of consciousness or awareness.	0	1	2	3	4
5. I am able to deeply contemplate what happens after death.	0	1	2	3	4
6. It is <i>difficult</i> for me to sense anything other than the physical and material.	0	1	2	3	4
7. My ability to find meaning and purpose in life helps me adapt to stressful situations.	0	1	2	3	4
8. I can control when I enter higher states of consciousness or awareness.	0	1	2	3	4
9. I have developed my own theories about such things as life, death, reality, and existence.	0	1	2	3	4
10. I am aware of a deeper connection between myself and other people.	0	1	2	3	4
11. I am able to define a purpose or reason for my life.	0	1	2	3	4
12. I am able to move freely between levels of consciousness or awareness.	0	1	2	3	4
13. I frequently contemplate the meaning of events in my life.	0	1	2	3	4
14. I define myself by my deeper, non-physical self.	0	1	2	3	4
15. When I experience a failure, I am still able to find meaning in it.	0	1	2	3	4
16. I often see issues and choices more clearly while in higher states of consciousness/awareness.	0	1	2	3	4
17. I have often contemplated the relationship between human beings and the rest of the universe.	0	1	2	3	4
18. I am highly aware of the nonmaterial aspects of life.	0	1	2	3	4
19. I am able to make decisions according to my purpose in life.	0	1	2	3	4
20. I recognize qualities in people which are more meaningful than their body, personality, or emotions.	0	1	2	3	4
21. I have deeply contemplated whether or not there is some greater power or force (e.g., god, goddess, divine being, higher energy, etc.).	0	1	2	3	4
22. Recognizing the nonmaterial aspects of life helps me feel centered.	0	1	2	3	4
23. I am able to find meaning and purpose in my everyday experiences.	0	1	2	3	4
24. I have developed my own techniques for entering higher states of consciousness or awareness.	0	1	2	3	4

FIGURE 9: Spiritual Intelligence Scale

Kessler Psychological Distress Scale (K10)

Please tick the answer that is correct for you:	All of the time (score 5)	Most of the time (score 4)	Some of the time (score 3)	A little of the time (score 2)	None of the time (score 1)
1. In the past 4 weeks, about how often did you feel tired out for no good reason?					
2. In the past 4 weeks, about how often did you feel nervous?					
3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?					
4. In the past 4 weeks, about how often did you feel hopeless?					
5. In the past 4 weeks, about how often did you feel restless or fidgety?					
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?					
7. In the past 4 weeks, about how often did you feel depressed?					
8. In the past 4 weeks, about how often did you feel that everything was an effort?					
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?					
10. In the past 4 weeks, about how often did you feel worthless?					

FIGURE 10: Psychological Distress Scale

C Appendix

C.1 Email Correspondence for Research Instrument Permissions

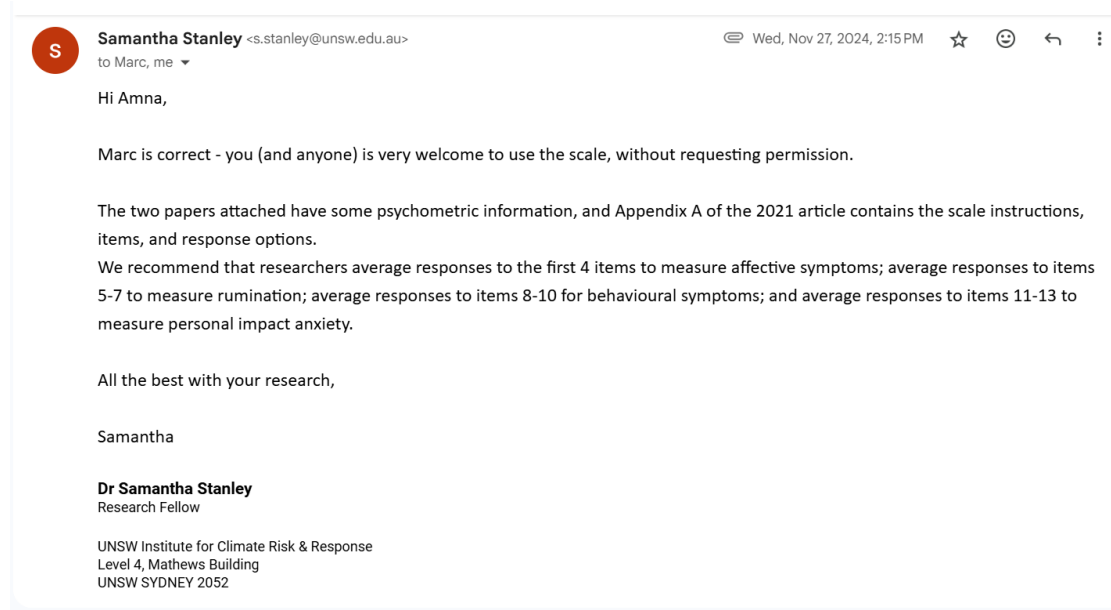


FIGURE 11: Author's permission for Eco-Anxiety Scale usage

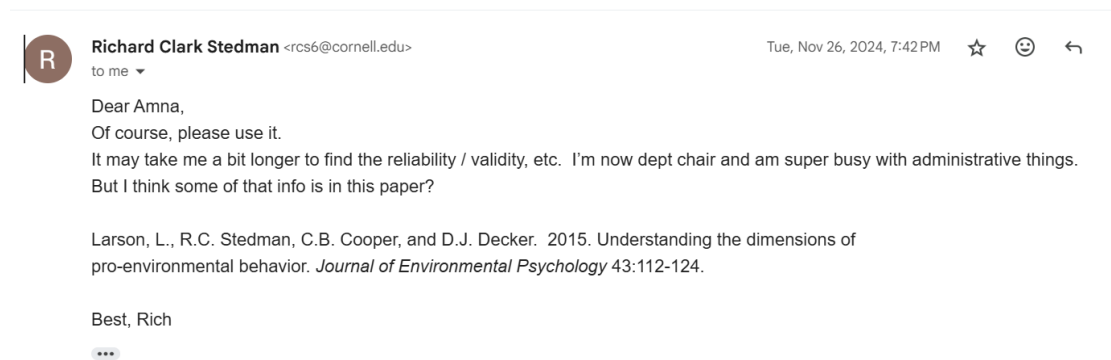


FIGURE 12: Author's permission for Pro-environmental Behavior Scale usage

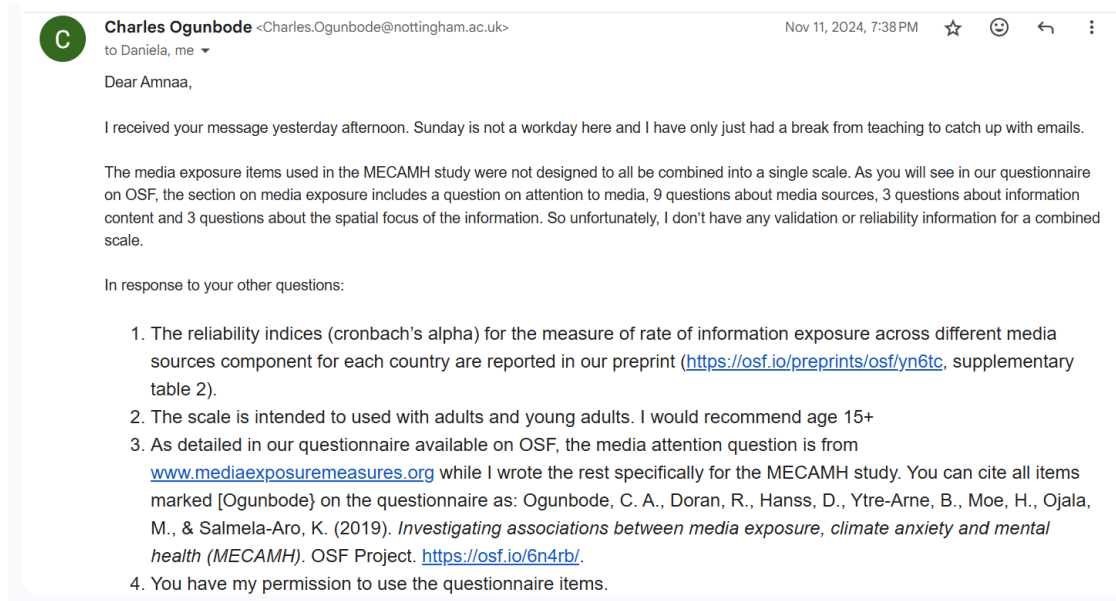


FIGURE 13: Author's permission for Media Exposure Scale usage

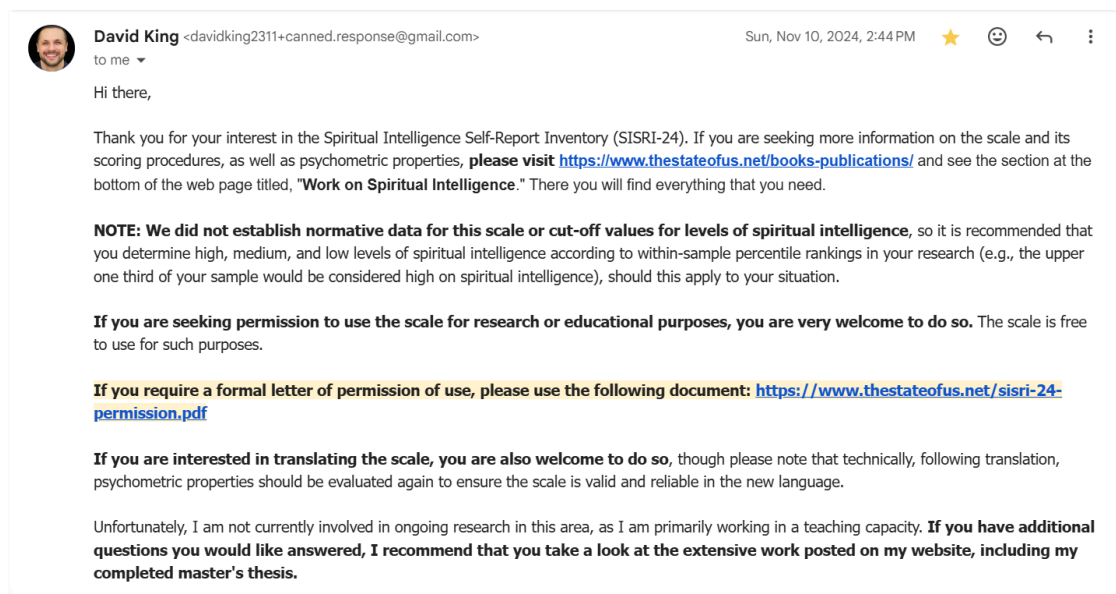


FIGURE 14: Author's permission for Spiritual Intelligence Scale usage

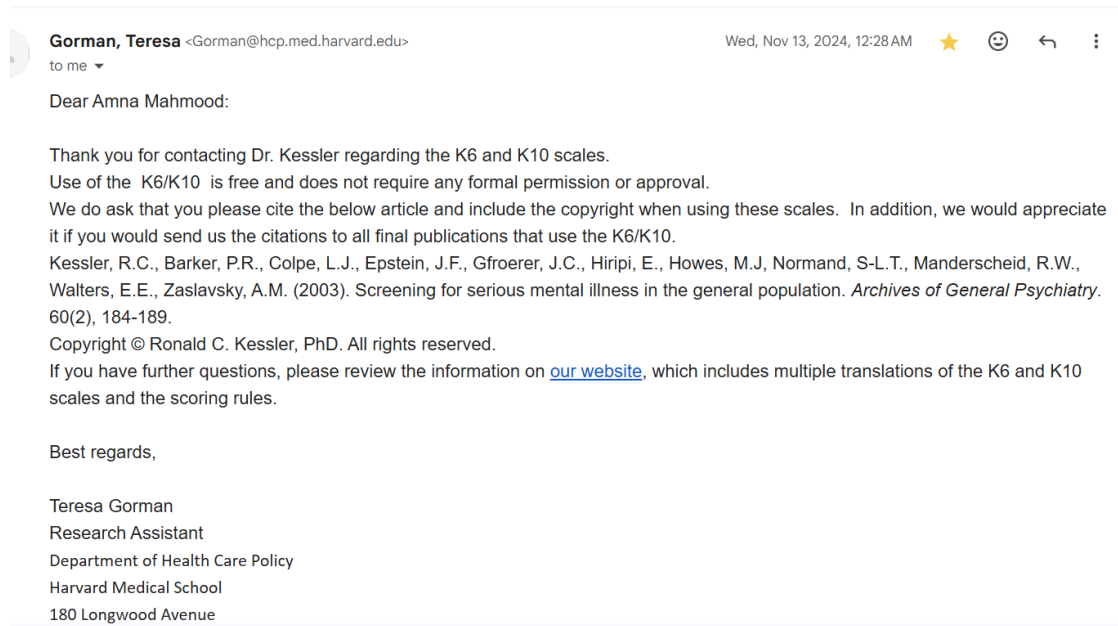


FIGURE 15: Author's permission for Psychological Distress Scale usage