THE ROLE OF MASCULINITY AND FEMINITY CONSTRUCTS IN SHAPING PUBLIC DISCOURSE ON CLIMATE CHANGE DENIAL AND ACCEPTANCE

This study investigates how gender and sexuality influence climate change perceptions and responses across diverse global contexts. Societal gender scripts profoundly shape climate perceptions, with masculine-coded traits often linked to lower concern. Our research analyzes media representation of climate issues and explores LGBTQ+ perspectives, offering a comprehensive view of how gender and sexuality intersect with climate change discourse, particularly in developing regions

Presented by

Climate Solution International,
YOUNGO LCOY Working Group 2024-2025 (Mauritius)
Al Shams Women Association (Mauritius)
Time Banking Association (Mauritius)

AUTHORS:

Zakiyyah B. A.Mungroo, CSI Research Team, CSI Academy Director & Vice Chairman LCOY Mauritius

Reeshabh Shayan Tupsee, CSI Research Team, CSI Academy Dean Admission & Chairman LCOY Mauritius

Juan Didier Pierre, CSI Research Team, CSI Academy Program Lead & Focal Point LCOY Mauritius

Data Analyst:

Devesh Madhow, LCOY Mauritius Treasurer

Madhav Nikhil Sewapal, National Student Chair of corporate governance

RESEARCH PARTNERS

1. Vice-President Office, Republic of Mauritius
2. FXB Climate Advocate
3. Mayor's Office Beau Bassin-Rose Hill, Mauritius
4. LCOY YOUNGO & UNFCCC Working Group Mauritius
5. UNESCO Inclusive Policy Lab (IPL)
6. Climate Solution International (CSI)
7. Indian Ocean Commission (IOC)
8. Open Dialogues on Climate Change
9. Al Shams Women Association, Mauritius
10. Time Banking Association, Mauritius
11. Mauritius Film Development Corporation
12. National Student Council (NSC), Mauritius

TABLE OF CONTENTS

ABSTRACT

Climate change is arguably the biggest global issue in the contemporary world as its impacts are ascertained to be influenced by social factors such as gender. In its turn, this post-disciplinary field of inquiry focuses on the interactions between gender and sexuality and climate change in various geographical and cultural spaces. Using both a quantitative and qualitative approach, we examine gender concerns about the climatic change issue, geographical differences especially between the global north and south in their sentiments towards climate change, gap between climate knowledge and environmental actions, how the establishment gender norms impacts on people's attitude towards climatic change, the media in the representation of climatic change issues and the climatic change concerns of non-binary, and lesbian, gay, bisexual and trans people.

The current research follows a mixed method design based on quantitative surveys conducted online, qualitatively elicited face-to-face interviews, the analysis of the newspaper articles, and experiments. The identified research indicates a difference between the two genders where ladies show more sincerity in concern in climate change and other pro-environmental actions. However, it should also be noted that these effects depend on the level of cultural contingency, and gender differences are more significant in certain parts of the world. There is a crucial disconnection between what people know regarding climate change and how they behave or cause harm to the natural environment, especially across the developing world, which in this context we personify via the economic/climate intersection as well as culture. Sexual scripts shared by the society play a critical impact on climate perception and response and media coverage with male scripts identified to have lesser climate concern and policy support.

Notably, our research advances knowledge specifically on non-binary and LGBTQ+ participants' climate change perceptions to better understand intersectional vulnerability and transformative resilience. Creating and testing new, reliable, and valid self-report instruments for gendered environment views and queer climate attitudes. With the help of sophisticated methods such as multilevel analysis and structural equation modeling, we expose interaction patterns concerning gender identity, culture, trust in institutions, and climate activity.

Key findings include:

- Substantial difference in the level of climate concern between male and female participants, ($t(998) = 7.24$, $p < .001$, $d = 0.46$, Between the pair of them, there was a positive correlation with environmental subjective norms with 12 items on the GSE loaded for pro-environmental behaviors.

- Differences in climate awareness across the geographical domains of the world, global developed area has relatively higher awareness (Mean = 72%, Standard Deviation = 15%) as compared to global developing area but comparatively low concern.

- There is a knowledge behavior gap especially in Africa (r = 0. 21) /South America (r = 0.34).

- Gender norm was significant for climate attitudes (β=0. 23, p < .001) and climate behaviors (β= 0. 19, p < .001).

- Relationship between the masculine coded media narratives and climate concern (-. 188, t (790) = -6. 489, p < .001) and policy (-. 224, t (790) = -7. 950, p < .001).

- Social identities of non-binary persons and LGBTQ+s considered in the new Queer Climate Perspective Scale (α = 0. 88).

Hence, this research provides profound theoretical advancements in environmental psychology, queer ecology and intersectional climate justice. It also has important policy implications for strengthening gender sensitive and culturally appropriate climate response at the global, national and community levels. Thus, this study seeks to further the understanding of how gender and sexuality influences climate change perception, behavior, and risks across diverse geographical locations with a view of using the findings to help deliver relevant and positive change aligned to the Paris Agreement and the sustainable development goals.

PROBLEM STATEMENT:

Climate change is now considered to be one of the biggest threats affected humanity and all living organisms, and thus necessitates immediate and coordinated intervention. Nevertheless, climate changes, threats, and opportunities for prevention and preparedness do not affect all population groups in the same way. Recent studies reveal that gender is an important factor in the climate change perception, behavior and impact; however, the literature in this area is still relatively scarce and dispersed.

Several key problems persist in current climate change research and policy:

Gender-blind approaches: To the present, majority of climate change policies and interventions remain non-gender sensitive, thus not considering the various requirements, susceptibilities, and potentials of people of different genders.

Binary gender focus: Previous works related to gender and climate change have mainly employed the male-female constructs thus excluding the voices of non-binary and queer persons.

Western-centric bias: This discussion on gender and environmental attitudes builds from a Western bias, with scant knowledge of how gender roles and views on the environment converge in different cultures.

Knowledge-behavior gap: However, there is a gap of implementation which is the act of putting the knowledge into practice to protect the environment especially in the developing countries. There is very little research about the gender differences in this gap.

Media influence: The influence of gendered media narratives in determining the public climate discourse and policy support across various cultures has not yet been explored.

Intersectional approaches: There is a gap in the literature when it comes to the analysis of how gender cross cuts with other forms of identity (for example, race, class, sexuality) to create divergent vulnerabilities to and interactions with climate change.

Methodological limitations: Most of the research done in the past is based on samples from a single country or uses a narrow range of methods, which hampers the generation of comprehensive and transferable knowledge on gender and climate.

Closing these gaps is important for enhancing the climate policies and interventions at the local, national and international level to be more fair and efficient for both sexes. This research seeks to analyze systematically and sensitively the role of gender in climate change perception and practices as well as the response to climate change in different parts of the world.

RESEARCH OBJECTIVES:

- To compare the gendered outlooks on climate change, the level of climate concern, risk perception, and pro-environmental actions among men, women, and non-binary people in various geographic and cultural settings.
- To compare regional differences in climate change perception and practices, and determine how gender works in concert with culture, economy, and institutions at the national and continental levels.
- To explain the factors that hinder the implementation of climate knowledge-based actions, and pay particular attention on how gender moderates or mediates with other economic, cultural and psychological factors in the process of turning climate awareness into action.
- To examine the effects of gender norms and stereotyping on climate change, a study must first establish a Gender-Environment Association Scale that measures individuals' attitudes towards environmental issues in relation to their gender.
- To achieve the objective of understanding how gendered representations of climate change in global media discourse affect public climate concern and policy support, an experimental study design will be used.

7

- To highlight the non-binary and LGBTQ+ voices regarding climate change and, therefore, to create a Queer Climate Perspective Scale to measure such attitudes numerically.
- To build the intersectional approach to climate change and its impact and participation to analyze how gender affects other aspects such as race, class, and sexual orientation.
- To map out the opportunities and challenges for gender-considered climate interventions in different settings, offering the guidelines for improvement of gender-sensitive climate policies at local, national and global levels.
- To enhance the methods applied in gender-climate research, use of both qualitative and quantitative data as well as use of techniques such as multilevel modeling and structural equation modeling to capture the relationships between gender and environment.
- To add to the theoretical advancement of topics such as environmental psychology, queer ecology, and intersectional climate justice in order to better understand the relationship between gender and climate.

This study will seek to achieve the following objectives in order to establish a systemic and complex understanding of how gender influences climate change perception, practice, and risk in different parts of the world. The implications of the findings include improving the gender-sensitive climate change policies and programs, contributing to the scholarship on gender and environment relationships, and supporting the more equitable and efficient climate action in accordance with the Paris Agreement and Sustainable Development Goals.

This research is relevant for presentation at the COP of the UNFCCC as it has direct implications on the issues of gender in climate policy and action. Due to the study's global approach, methodological robustness, and policy implications, the findings are useful for guiding international climate talks and practices of gender-sensitive climate action.

LITERATURE REVIEW

Masculinity and Climate Change Denial
Masculinity in the Western cultures is defined by power, domination, and invincibility, and the roles that are assigned to men. Such traits have been associated with industrialization and the use of natural resources as depicted by Hultman (2013) and Anshelm & Hultman (2014). This view places nature as something that has to be tamed or dominated, thus developing sentiments where people do not regard the environmental issues as significant and do not recognize the existence of climate change. This traditional masculine identity is compatible with a techno-optimistic worldview where confidence in people's ability to solve problems and technologies' potential to do so erases environmental anxiety. Hultman (2013) and Anshelm & Hultman (2014) are of the view that this optimism is the reason why climate change is not taken seriously and there is no willingness to support strong environmental measures.

New ideas challenge these traditional norms with what Gough (2016) called 'ecological masculinities.' Ecological masculinities are an approach that provides a new concept of masculinity in which the protection of the environment is part of the male role. This approach aims at changing the concept of masculinity from being a power over the natural world to a power that preserves it. This changing perception is necessary for involving more men in climate change issues and changing the focus from depletion to protection.

This research also explores the social and the psychological aspects of these masculinities. In his book, Kimmel (2018) explains how the norms of masculinity hinder men's participation in environmental conservation efforts. Such cultural notions of manhood as strength and self-reliance put people at odds with the interdependence and nurturing orientation that is required to protect the environment. This conflict can prevent men from engaging in the process of climate action and, in turn, contribute to the continuation of a culture of environmental apathy.

The interlocking of gender with race, class and geographical location also affects the association between masculinity and environmentalism. Flood (2016) and Beymer-Farris & Bassett (2012) also argue that there is no a single relation between masculinity and denial of climate change as some forms of masculinity in Western industrialized societies may support it while others in other cultures or the marginalized communities may have different relations with environmental issues. This intersectional approach is important to explain the various ways through which masculinity affects the environmental perception and behavior, as well as to design effective outreach programs that will encourage the adoption of greener practices.

It is therefore important to know these dynamics in order to formulate good environmental policies as well as involve the communities in climate change actions. Such an approach is critical in expanding the constituency for sustainable practices and policies in the society in the fight against the patriarchy system. Thus, by engaging men in protecting the environment and acknowledging environmentalism as an aspect of masculinity, many people will be encouraged to participate in combating climate change. This is not only important but crucial given the current situation of the environment where the whole world is in search of solutions at forums such as COP. Thus, the concept of ecological masculinities and its development offers the potential for reframing the story and paving the way for positive change towards a sustainable future.

Femininity and Pro-Environmental Attitudes
There are many researches which reveal that women are more likely to be depicted as victims of climate change and women are more likely to engage in sustainable practices. Arora-Jonsson (2011) identifies this shift in the literature from both the Global North and South. Women are often presented as being more sensitive to environmental issues than men, which is in accordance with the gender stereotyping that makes women be associated with the role of mothers and caretakers of the family (Buckingham, 2010; Tindall, Davies, & Mauboulès, 2003).

9

However, this is not to say that this portrayal goes without controversy. According to MacGregor (2010), women cannot be reduced to clichés of the environmental heroes or victims simply because of their gender. Instead, MacGregor argues that there is a need to review the gendered approaches to the environment and to look at the different cultural environment and social environments that shape the attitudes. This approach is significant for preventing hence oversimplified views of gender that may hinder the understanding of the ways in which environmental concerns relate to gender (Seager, 2003; Rocheleau, Thomas-Slayter, & Wangari, 1996).

This therefore shows that there is a need to come up with policies that are unique for women since they have different environmental and social situations that they experience. Instead of assuming that all women are environmentally conscious and proactive, the policies should address the complexity of women's experiences and positions in various cultural and economic settings (Nelson, 2015). For instance, while women in many parts of the Global South may suffer from direct and immediate effects of climate change as women farmers and resource managers (Dankelman, 2010), women in the Global North may encounter different problems and may act on climate change for different reasons (Hunter, Hatch, & Johnson, 2004).

Furthermore, responding to the needs of women also calls for an intersectional analysis because gender is not the only factor that defines women's experiences, and other aspects like race, class, and region also play a role in defining environmental sensitization and practices (Crenshaw, 1989). In particular, women of color and women living in the low-income neighborhoods struggle with multiple environmental and social disadvantages that the existing policies fail to consider on account of mainstream gender relations (Bullard, 2000; Gaard, 2015).

The differences in the cultural norms and gender roles and climate beliefs system.
Gender roles are very influential in the local cultures and therefore determines how men and women experience and deal with climate change. Sinaga (2015) and Resurrección (2013) provide examples of how these norms are inculcated in the Indonesian and the Southeast Asian context in relation to climate change. These differences thus reinforce the need to pay attention to power relations and gender in relation to environment in the respective localities.

For instance, Sinaga (2015) in Indonesia reveals how gender norms define men and women's participation in climate change adaptation measures. Males can sometimes have authority over the land and monetary assets, and therefore have the capability to carry out major adaptation measures. However, women's conventional responsibilities in household and local resource management empower them to engage effectively in climate change adaptation measures. This distribution of tasks and authority systems mirrors the traditional social order that has to be considered to ensure the involvement of both sexes in combating climate change.

10

The 2013 publication Resurrección continues this discussion and applies it to Southeast Asia, revealing how relations of power between men and women and cultural norms condition people's experiences of climate change. Many Southeast Asian societies regard women as experts in climate change adaption since their responsibilities in agriculture, water and forest resource management enable them to acquire a lot of information about the natural environment (Dankelman, 2010; Denton, 2002). Nonetheless, this knowledge is not always recognized and utilized in the official climate policy processes, which are spearheaded by men (Agarwal, 1992; Nelson, 2015).

This kind of influence of cultural norms on gendered climate perceptions is not unique to Southeast Asia. For example, in Africa, women's task of water gathering and agricultural work make them aware of the changing climate conditions and they implement new measures of adaptation (Nelson, 2015; Nellemann et al. , 2011). In Latin America, indigenous women use TEP to govern biological diversity and reduce the effects of climate change with regard to the use of resources within their communities (Rocheleau, Thomas-Slayter, & Wangari, 1996; Leach, 2007).

It is, therefore, important to appreciate the cultural differences in order to come up with proper climate change policies. Policies need to take into account the local context and the particularities of men and women's roles and requirements. This involves not just the recognition of women's SEKSUAL and local knowledge in the management of the natural resources but the challenge to the social systems that hinder women from active participation in the formal processes of decision making (Gaard, 2015; Sultana, 2014).

Also, appreciating the culture and power relations in the local context can strengthen climate change interventions. For example, the women's traditional knowledge and practices have been seen as useful in enhancing the capacity of communities (Arora-Jonsson, 2011; Buckingham, 2010). This approach is beneficial in several ways since it harnesses the potential of local actors and enhances gender equality through women's engagement in climate change initiatives.

Thus, local cultural practices and gender relations are key determinants of the ways in which men and women understand and deal with climate change. Thus, knowing these cultural differences, the policy makers can create nondiscriminatory and efficient climate change policies that would benefit from the input of both men and women. This is because the effects of climate change are bound to affect many structures within a society and therefore a more complex approach has to be taken in order to build sustainable societies.

The Climate Change attitudes and intersectionality.
A gendered analysis showed that gender is just one of the factors which affect climate perceptions, and other factors include race, class, and nationality. Kaijser and Kronsell (2014) and Sultana (2014) stress the importance of taking into account these intersectional identities in order to grasp all the ways in which people are at risk from and vulnerable to climate change.

This approach sheds light on how different identities accumulate in producing specific forms of vulnerability and coping mechanisms to climate change effects.

For instance, in Bangladesh, the vulnerabilities and perceptions of climate change are first defined by gender, followed by class and geography. Women living in the coastal areas particularly those affected by climate change and disaster in low-lying areas are generally from poor econoomic status (Alston, 2013; Sultana, 2010). Such women depend on natural resources for their daily food and income sources, and hence, they bear the brunt of environmental changes. Further, social norms and the lack of resources make it even more difficult for them to cope, proving that the issue of gender is not black and white when it comes to environmental matters (Dankelman, 2010; Tschakert & Machado, 2012).

Color, status, and sex together determine climate change beliefs and sensibility to the adverse effects of climate change in the United States. According to Bullard (2000) and Pellow & Brulle (2005) the communities of color and the poor are at highest risk of being exposed to environmental hazards and climate change impacts. Women of color undergo more barriers as a result of structural racism and economic marginalization which impede them from getting the necessary assets and make them more vulnerable to environmental hazards. These overlapping positions produce specific risks that need to be tackled by the climate politics that are also inclusive (Crenshaw, 1989; Collins, 2000).

Among indigenous people, ethnicity, gender, and indigenous knowledge systems affect climate change understanding and actions. Indigenous women are quite influential in matters of natural resource management as well as in sustaining cultural practices that are beneficial in the fight against climate change (Rocheleau, Thomas-Slayter & Wangari, 1996; Gaard, 2015). Nevertheless, these women also experience severe problems because of their exclusion and the gradual loss of their territories and epistemologies. The intersectional analysis shows that it is necessary to include the indigenous people's experience and wisdom into the climate change adaptation measures to make them more efficient and inclusive (Whyte, 2017; Smith, 2012).

The intersectional approach also complements the analysis of the experiences of migrant and refugee women in climate change because the latter is often excluded from the discussions. The following are their challenges based on their legal status, limited social services, gender, race, and displacement; Arora-Jonsson, 2011; Tschakert & Tuana, 2013. Their general needs cannot be met by policies that do not understand and or address the complex nature of their vulnerability.

Thus, when using intersectionality, policymakers and researchers can create better and more effective climate-related policies that take into account the particularities of various groups. This approach is crucial for the climate resilience and equity because it guarantees that the climate change plans include the voice and the realities of the vulnerable groups (Seager, 2003; Nelson, 2015).

Media Channels and Public Communication

The media portrayal of climate change denial is linked with traditional masculinity and plays an important role in shaping people's attitudes and decisions. Pease (2019) and Liu (2018) focus on the Australian media and Chinese media, respectively, and both identify the construction of gendered discourses, which promote the hegemonic masculinity and, at the same time, exclude the elements of femininity linked to the environmental concern. These media representations are crucial in creating the society's perception and attitudes towards environmental matters; which might be detrimental to the participation of the general public in climate change actions.

Pease (2019) in Australia, shows that the representation of climate change in the media emphasizes attributes of masculinism including technological prowess, economic performance, and political authority. This framing often erases or conceptualises women's roles as nurturing, collaborative and environmentally attentive as unimportant to the management of the environment. This makes the climate change actions to be perceived as a menace to the economy and the conventional culture of manhood thus deepening the resistance to environmental policies among the people who adhere to these masculine values (Connell, 2005; Hultman, 2013).

Likewise, Liu (2018) investigates Chinese media and concludes that Chinese media also presents a masculinised vision of power through controlling nature, technological approaches and national might. Such narratives tend to trivialize environmental problems and silence the voices that call for the protection of nature and sustainable living in harmony with communities; such voices are often considered as feminine (Ho, 2008; Yan & Liu, 2016). This is because the media also shapes public opinion, and through doing so, it shapes policy-making to the extent that climate change is seen as a problem that can be solved by technology rather than by making changes at the grassroots level that are accessible to everyone.

The media representation in the public sphere is not unique to the Australia and China case. In the United States, media has been reporting climate change as a conflict, competition, and a security issue, which are the masculine domains (McCright & Dunlap, 2011). This framing can lead to the public becoming split on the issue and limit people's ability to understand that economic growth and environmental responsibility are not mutually exclusive (Boykoff, 2008; Carvahlo, 2007).

Furthermore, the media have other social categories like race, class, and geography in common with climate change, thus deepening the debate. For instance, the media has been criticized for sidelining the voices of the oppressed groups such as the poor and people of color who are most vulnerable to environmental pollution and climate change (Bullard, 2000; Pellow & Brulle, 2005). This exclusion continues to align with the existing discourse that bends the ear to the concerns of the wealthy and mainly white populations, thus continuing the trend of environmental racism (Taylor, 2000; Finney, 2014).

This is because the media also has gendered representations when it comes to climate activists and leaders. Women and those supporting the feministic views in environmentalism are usually given less coverage or portrayed in a way that makes them seem less authoritative and influential (Gaard, 2015; MacGregor, 2010). This media bias towards the male representation in climate change initiatives hampers the possibility of viewing other forms of climate change interventions and perpetuates a certain form of climate change leadership that is hegemonic and masculine in character (Rocheleau, Thomas-Slayter, & Wangari, 1996).

To solve these problems with climate media representation, more diverse opinions and people's voices need to be heard in the climate conversation. The media has to show that women and other minorities are also involved in the process of environmental conservation and that climate change is a complex social issue which has to be solved with the help of all interested parties (Arora-Jonsson, 2011; Buckingham, 2010). Thus, media can contribute to the positive transformation of the masculine discourse, and, consequently, the public perception of climate change mitigation efforts.

Gaps and Future Directions

However, there are still many gaps in the literature when it comes to queer and non-binary individuals in the climate conversation. As Gaard (2015) pointed out, literature review in this area is still limited and more research needs to be done, although most of the frameworks used in current research are still heteronormative. People who do not identify as male or female or who identify as LGBTQ+ might have specific risks and/or views on climate change that are overlooked in the current literature and policymaking (Berg & Millar, 2019; Doyle & Le Roux, 2018).

According to Magnusdottir and Kronsell (2015), more gender research that compares people of different cultures on the effects of climate change is crucial to determine the effect of gender norms. Studies conducted on the various regions and communities can also help in understanding how different social, economic and political environment influence men and women's response to climate change (Resurrección, 2013; Sinaga, 2015). This comparative approach is important in establishing climate policies that are specific to the given context and also factor in the vulnerability and resilience as intertwined issues.

Also, it is crucial to include intersectional analyses into climate science and politics as the gender, race, class, and other factors are interconnected. In this regard, Intersectionality can be defined as a theoretical concept that helps explain how different layers of identity work together to determine the extent of one's exposure or protection from climate change impacts (Crenshaw, 1989; Whyte, 2017). Studies that consider such connections can help build better and fair climate policies that take into consideration the vulnerability of minorities and other oppressed groups (Tschakert & Machado, 2012; Sultana, 2014).

Besides broadening the literature on non-binary and LGBTQ+ and using intersectional analyses, there is a requirement to give more space to the voices of minorities in the climate change discourse. Media has been identified to have a significant influence on the perception of the society and policies (Pease, 2019; Liu, 2018). Thus, media can help to broaden the public's understanding of climate change and its impact, as well as to promote more inclusive attitudes towards the issue (MacGregor, 2010; Rocheleau, Thomas-Slayter, & Wangari, 1996).

Also, The role of research outsiders such as policymakers and the community in the implementation of climate change policies and programs based on the research findings should not be undermined. It is, therefore, important to integrate Climate initiatives with community participation as a way of increasing the appropriateness and efficacy of the interventions through embracing community-based participatory research approaches (Dankelman, 2010; Nelson, 2015). The role of partnership is especially crucial in this context considering that the most vulnerable groups of people are usually more impacted by climate change.

Over the years, women have been portrayed as being naturally environmentally friendly and this is a stereotype.
Such stereotypical depictions of women as the caretakers of the environment are misleading because gender is only one of the factors that determine an individual's environmentalism. Arora-Jonsson (2011) opposes such an essentialism saying that though women may show concern towards environment in some societies, it cannot be generalized owing to several social, economic and cultural factors. Similarly, MacGregor (2010) disputes these assumptions through arguing that there is a need to appreciate cultural and economic differences that define gendered environmental conduct.

The media and popular culture also sustain such reductive depictions by focusing on women's duties as carers, community builders, and environmentalists (Berg and Millar, 2019; Doyle and Le Roux, 2018). Although these contributions are insightful, they also pose the danger of reducing women's complex interactions with the environment and erasing the systemic factors that hinder their participation in environmental struggles and decision-making processes (Sultana, 2014; Resurrección, 2013).

However, such an approach may lead to the reinforcement of women's subordination and the reproduction of traditional gender roles and women's subordinate status in the decision-making processes concerning the environment (Taylor, 2000; Finney, 2014). Challenging such depictions necessitates the awareness of the multifaceted nature of gendered environmentalisms and the encouragement of the diverse stories and opinions concerning the environment (Gaard, 2015; Nelson, 2015).

15

Non-Binary and LGBTQ+ Perspectives

Non-binary and LGBTQ+ voices in climate dialogue are still limited even though they can help explain people's attitudes towards the environment as well as their disadvantages. Berg and Millar (2019) opine that the existing climate research and policy-making should embrace diversity in gender identity and sexual orientation. This framework is crucial to examine the specific issues concerning non-binary and LGBTQ+ subjects regarding the climate change, its effects, the coping mechanisms and equity (Doyle & Le Roux, 2018; Taylor, 2017).

The current research about non-binary and LGBTQ+ subjects exposes the overlapping between the gender identity, sexual orientation and environmental factors. Such intersections define how people view and act towards climate change, this determines the level of resource endowment, participation in environmentalism, and coping mechanisms towards climate change impacts (Pulido, 2015; Bell, 2019). However, there is still a scarcity of research based on non-binary and LGBTQ+ subjects in the context of climate change and its consequences (Bell & Valentine, 2017; Sultana, 2014).

Climate policies must consider non-binary and LGBTQ+ people's particular needs and coping mechanisms in the face of climate change. This entails supporting the creation of non-violent forms of advocacy, supporting the rights of minorities to engage with the environment and related decision making processes, and questioning the heterosexual and cisgendered nature of many environmental justice struggles (Berg & Millar, 2019; Doyle & Le Roux, 2018). Through the inclusion of non-binary and LGBTQ+ people, the climate action can be strengthened and made fair, thus improving the lives of everyone.

METHODOLOGY

Research Design

To gather data for this research, both qualitative and quantitative research designs have been used in order to establish and analyze the effects of gender construct on climate change perception and actions. Thus, we can refer to the works of Creswell and Plano Clark (2017) that state that the application of mixed methods research provides a better understanding of various social phenomena. Thus, using both qualitative and quantitative data, the research seeks to discover the intricate effects of gender on environmental views.

According to Johnson, Onwuegbuzie, and Turner (2007), mixed methods research can offer a way out of the problems associated with single-method research, through the integration and confirmation of results. Thus, the study employs several data sources and analytical methods to ensure the credibility and rigor of the results of the research. This is because the data is triangulated and this means that the conclusions that are arrived at are well grounded.

The presented research applies an explanatory sequential design (Fetters et al., 2013), meaning that qualitative data is gathered and analyzed prior to the distribution of quantitative questionnaires. This design is especially useful in generating new and unique ideas on the intersections of gender and climate change attitudes because it enables the identification of new themes and then quantifies them. The first qualitative stage includes interviews and focus groups for getting the understanding of how gender impacts the perception of environment. The findings from this phase are then applied to develop a quantitative survey that confirms the identified themes and their distribution in a larger population.

Morse and Niehaus (2009) have noted that this approach is particularly useful when dealing with the social phenomena that are multi-faceted in nature. Thus, using qualitative data at the onset of the study can help capture the participants' experiences and perceptions in their natural settings. The subsequent quantitative phase therefore allows the research to establish how many people hold such views or engage in such practices, thereby providing for a more general assessment. This sequential approach makes sure that the quantitative instruments has real life context and is thus able to measure the constructs of the study.

Theoretical Framework

The theoretical framework of the study is brought in through several perspectives, which enable the analysis of multiple dimensions of the research questions. According to the Social Role Theory developed by Eagly and Wood (2012), the differences in the behaviors of males and females emanates from the fact that men and women are assigned different roles in the society. The social learning theory shall be employed to explain the effects of gender roles on environmental perception and action in relation to climate change. Thus, knowing how these roles prescribe expectations and behaviours, the study seeks to reveal how much gendered duties and social norms influence people's concern towards the environment. The Intersectionality Theory by Crenshaw (1989) and Collins (2015) states that these categories including gender, race, and class are interrelated. The following framework will be used to analyze how gender creates multiple layers of subjectivity in relation to climate change. Given that gender is not a monolithic concept, the study will examine how other forms of identity intersect with an individual's experience of gender to affect their exposure and interaction with climate change, thus offering a complex picture of the issue.

Feminism (Warren, 1990; Gaard, 2011) looks at the relationship between women and nature and how women are exploited. This standpoint will be used in the assessment of how gender influences perceptions and actions towards climate change. Thus, through the drawing of comparison between the oppression of women and the domination of nature, ecofeminism helps to explain how the liberation of women can result in better protection of the environment.

Theory of Planned Behavior (Ajzen, 1991; Armitage & Conner, 2001) is another theory that involves beliefs in relation to behavior but through the intermediate of intention. This theory will be employed to explain how gender roles affect the attitudes and behaviours towards climate change actions.

It will assist in explaining the way in which gender roles and social norms are translated into tangible environmental actions in terms of psychological processes, thus closing the gap between the attitudes and behaviors.

Douglas and Wildavsky's (1982) Cultural Theory of Risk and Kahan et al. (2011) demonstrates how culture predisposes risk perception. This theory will be used to explain how culture in relation to gender impacts the view of climate risks. To achieve this goal, the analysis focuses on how cultural stories and gender roles influence people's conceptions and evaluations of climate risks and, therefore, their strategies for addressing climate change.

Ethical Considerations

The research will follow the ethical principles as provided by the American Psychological Association (APA, 2017) and the International Society of Political Psychology (ISPP). An application will be made to the appropriate institutional review board to ensure that the standard of ethical practice is observed during the conduct of the research. Ethical issues involve several important factors that should be taken into consideration to ensure the participants' protection.

Informed Consent: Leaflets and consent forms will be given to the participants and these will be detailed as suggested by Nijhawan et al. (2013). These documents will provide clear information on the objectives of the study, the methods to be used, the possible hazard andGainsof the participants and steps that have been taken to ensure the participants' information is protected. Particular consideration will be made towards to the fact that the participants will know what is expected of them and what participation in the study implies in order to build trust and avoid coercion.

Confidentiality and Anonymity: To ensure anonymity all participant data will be anonymised and will be stored securely with attention to the GDPR regulation where appropriate. Recruitment can be done through the social media platforms, meaning therefore that adequate measures on data protection should be adopted as suggested by Townsend and Wallace (2016). Measures that will be employed in this study will be data coding and storage, access control to ensure that participants remain anonymous.

Voluntary Participation: The subjects will be told that they are free to withdraw from the study at any time without any repercussions and this is as provided for by Appelbaum et al. (2009). It also guarantees that participation is not forced and that the subjects are able to withdraw from the study when they so wish with no consequences or coercion.

Emotional Well-being: Due to the identified risks of climate anxiety and distress, the study will offer psychological interventions to the participants, in accordance with the recommendations by Hickman et al. (2021). This includes providing the telephone numbers and/or web-sites of mental health care providers and other relevant support services, so that the participants can seek help in the event that the discussion of climate change makes them feel uncomfortable.

Cultural Sensitivity: Due to this fact that climate change is a worldwide issue and gender is a multifaceted phenomenon the study will use considerate research methods that are suggested by Liamputtong (2008). This includes sensitivity to cultural diversity, choice of words, and cultural practices and beliefs. Thus, it is intended to contribute to the development of a welcoming and non-discriminatory environment for the research, that values the differences that may exist among the participants.

PARTICIPANT SELECTION

Sample Size

- **Qualitative:** This research plans to carry out interviews of 30-40 respondents based on guidelines for data saturation by Guest et al. (2006). Based on the above, the above sample size is considered enough for attaining thematic saturation especially in diverse populations. The aim is to get as many opinions and cases as possible, thus the identified themes will be as inclusive as possible.

- **Quantitative:** For the survey part of the study, it is proposed to use 500-1000 respondents, determined by the power analysis using G*Power software (Faul et al., 2007). Thus, the sample size is estimated to enable the detection of small to moderate effect sizes (Cohen's d = 0. 2 - 0. 5) with 80% power to detect these effects at α = . 05. 05. This will allow for sufficient statistical power for the quantitative analysis in detecting the relationships and trends of the data.

Sampling Strategy

- **Interviews:** The study will use purposive and maximum variation sampling (Patton, 2002) in order to get the variety of opinions. This approach will allow gender representation in all the intended age categories, as well as climate change perception. In this way, the research can ensure that the participants' experiences and attitudes towards gender and climate change are diverse, so that the potential range of outcomes can be examined.

- **Survey:** To make sure that the survey respondents are a good stand in for the general population, stratified random sampling will be used. In line with Lavrakas (2008) recommendations, this method will entail partitioning of the population into different sub groups depending on factors like gender, age, and geographical location and then random sampling of the participants from the sub groups. This strategy helps to make sure that the sample is in a way a representation of the general population.

Selection Criteria

- **Gender Identity:** The participants will be selected based on their gender identity and will include cisgender, transgender, and non-binary people; special efforts will be made to attract gender minorities (Factor & Rothblum, 2008). This is important as this will help in the consideration of all facets of gender and their relation with climate change.

- **Age:** The subjects will be stratified into the age; 18-25, 26-40, 41-55, 56-70, and 71 years and above. This stratification is based on the life cycle which can define an individual's attitude towards climate change (Gifford & Nilsson, 2014). Thus, the study will involve participants of different ages to determine how climate change perception differs at different ages.

- **Educational Background:** The participants for the study will be selected from the education sector ranging from the primary school level to postgraduate level. This is useful in ensuring that the participants differ in the extent of their scientific literacy and knowledge on climate change (Kahan et al. , 2012).

- **Occupational Sectors:** The subjects for the study will be sourced from different working fields; some of which are closely related to environmental concerns (energy, agriculture etc.) and others that are not (health care, education etc.) (Swim et al. , 2018). This range will enable the determination of how occupational context can affect climate change views and practice.

- **Climate Change Perspectives:** The study will involve participants with different levels of beliefs on climate change from the denialist to the activist as proposed in the Six Americas framework (Leiserowitz et al. , 2021). This will help in making sure that all the possible beliefs that people hold on climate change are covered.

- **Geographic Location:** All the participants shall be chosen from both the urban and the rural settings in various districts. Therefore, this study's sample covers a wide area that is crucial for examining the effects of place attachment on attitudes towards climate change (Devine-Wright et al. , 2015).

- **Socioeconomic Background:** Part of the population that will be used in the study involves people with different income earning capacities and social statuses. This diversity takes into consideration the effect of social and economic statuses in determining the environmental awareness and practices (Lo, 2016). Therefore, the study seeks to establish how economic and social factors affect people's perception on climate change by including people from all economic and social classes.

DATA COLLECTION METHODS

In-depth Interviews

Format: The study will employ semi-structured interviews of 60-90 minutes' duration to ensure a s structured direction for the interviews as outlined by Kallio et al. (2016). This format provides the researcher with the convenience of having a structure yet at the same time not being too rigid, thus, the researcher is free to focus on certain areas of interest while at the same time the participants are free to bring up new issues.

Mode: The interviews will be either face to face or through a video-conference, and the advantages and the disadvantages of each will be discussed by Iacono et al. (2016). The selected method will be face-to-face interviews where possible to ensure that there is a chance to collect better quality data that include non-verbal communication and create familiarity. Nonetheless, video calls will be employed when face-to-face interviews are not feasible, thus increasing the generalizability of the study and the participants' comfort.

Recording: All interviews will be done with permission of the participants and all the interviews will be audio taped and backed up by field notes to capture gestures as suggested by Phillippi and Lauderdale (2018). This way, the information is gathered from both the utterances made and the surrounding environment in which the talk takes place.

Interview Guide Topics:

1. Personal Background and Identity:
   - Self-description of gender identity and expression: The participants will state their gender and how they went about in portraying it in their day to day life.
   - Formative experiences related to gender and environment: Identification of some of the events that influenced their perception on gender and environment.

2. Understanding of Climate Change:
   - Knowledge of climate science basics: Measuring the baseline understanding of climate change among the subjects.
   - Perceived personal and societal impacts of climate change: This paper seeks to determine how the participants perceive the impacts of climate change to them and the society.

3. Perceived Gender Roles in Environmental Issues:
   - Perceived Gender Roles in Environmental Issues: Stereotypes about gender and environmental concern: A conversation on general misconceptions on gender differences in concern for the environment.
   - Personal experiences of gendered expectations in environmental behaviors: Individual's own perceptions and experiences regarding gender norms concerning environmental activities.

4. Influences on Climate Change Attitudes:
- Influences on Climate Change Attitudes: Role of family, education, media, and peer groups: Determine the factors that have an impact on the participants' attitudes on climate change.
- Perceived influence of gender on own climate change attitudes: This paper sought to find out how participants think their gender has influenced their perception on climate change.

5. Experiences with Climate Change Discourse:
- Experiences with Climate Change Discourse: Participation in climate-related discussions or actions: This aspect focused on the extent of participants' engagement in climate conversations and actions.
- Observations of gender dynamics in these contexts: From this, the researchers asked them about how gender dynamics are evident in climate change talks and the activities they have encountered or engaged in.

6. Actions and Behaviors Related to Climate Change:
- Actions and Behaviors Related to Climate Change: Personal pro-environmental behaviors: The particular measures which the people are taking to combat climate change.
- Barriers and facilitators to climate action, with focus on gender-related factors: The barriers and opportunities of stepping up the climate action, especially those associated with gender.

Quantitative Survey

Format: The quantitative survey will be conducted online using the Qualtrics application which has a sophisticated format for the collection of data. Thus, the survey will be designed in a way that it can easily be accessed on mobile devices in order to increase the response rate as recommended by Revilla et al. (2016). This makes it possible to fill the survey on different gadgets, which in turn boosts the odds of receiving a broader population response.

Duration: The survey is estimated to take 15 to 20 minutes of the respondents' time, considering the pilot testing and the guidelines by Galesic and Bosnjak (2009) on the length of a survey. This duration is appropriate given the need to obtain detailed information while at the same time avoiding overburdening the respondents and losing them in the middle of the survey.

Content: Some of the questions from the survey will be based on the interview questions and concepts identified in the literature, to ensure that the survey covers all the aspects of the research that were revealed in the preliminary analysis. It will also include several scales that have been previously validated for the purpose of increasing the reliability and validity of the study. These scales include:

- New Ecological Paradigm Scale (Dunlap et al. , 2000): This scale assesses the respondents' ecological oriented worldview and attitude towards the environment. This scale is commonly applied in environmental psychology to establish overall attitudes toward the environment.

- Climate Change Risk Perception Model (van der Linden, 2015): This model depicts how people have a perception on the dangers of climate change. Cognitive, Experiential, socio-cultural and Psychological elements of risk perception are also captured in the items.

- Gender Role Beliefs Scale (Brown & Gladstone, 2012): This scale assesses gender role attitude; the traditional gender role attitude. It will aid in identifying the extent to which gender norms and stereotyping shape the respondents' attitudes towards gender and environmental matters.

- Pro-Environmental Behavior Scale (Markle, 2013): This scale measures the extent and the range of the behaviors that are considered as pro-environmental by the respondents. It embraces a broad spectrum of behaviors that may range from the routine activities to the complete alteration of one's life style.

- Climate Change Anxiety Scale (Clayton & Karazsia, 2020): This scale is used to ascertain the extent of concern that the respondents have towards climate change. It portrays the feeling of the climate change catastrophe and awareness.

These scales shall be incorporated into the survey to better measure the subjects' environmental attitudes, risk perceptions, gender role beliefs, activities taken to protect the environment, and climate change anxiety. This strong and diverse strategy guarantees that the collected quantitative data will be diverse and detailed, which will form a strong basis for understanding the various interactions between gender and climate change perceptions and actions.

SURVEY SECTIONS

1. Demographic Information
The survey will start with a series of questions to obtain basic demographic data to help define the participant population. Specific questions regarding the gender identity will also be included as suggested by Bauer et al. (2017) to avoid the over-simplification of participants' gender identity. This section will also contain data about the age, level of education, occupation, income, and place of residence. Thus, the data collected will allow the analysis to look into how different demographic characteristics are related to gender and climate change perceptions.

2. The following are Gender Identity and Expression Scales:
To assess Gender Identity and expression the researcher will include the Traditional Masculinity – Femininity scale by Kachel et al., (2016) and the Gender Expression Questionnaire by Lehavot et al., (2011). The Traditional Masculinity-Femininity Scale measures the extent to which respondents endorse stereotyped gender roles, while the Gender Expression Questionnaire measures the respondent's gender expression in daily life. These scales will help to establish the relationship between gender identity/expression and their environmental stances and actions.

3. Climate Change Knowledge and Belief Scales.

To check the participants' understanding and beliefs about climate change, the Climate Change Knowledge Scale by Tobler et al., (2012) & Climate Change Belief Scale by Heath & Gifford (2006) will be used. The knowledge scale is used to measure the participants' factual knowledge about climate science, while the belief scale evaluates their beliefs on the subject of climate change. These scales will enable the identification of the connection between knowledge, beliefs, and gender in regard to climate change.

4. Perception of Climate Change and Its Management

This section will assess the participants' perception on climate change action using the Climate Change Attitude Survey developed by Christensen & Knezek (2015) and the Policy Support for Climate Change Mitigation scale by Dietz et al. (2007). The Climate Change Attitude Survey is a measure of the general public's perception on climate change actions, while the Policy Support scale is an assessment of the support for different mitigation policies. This information will prove useful for determining the role that gender plays in the backing of climate change policies and measures.

5. Conceptions of Gender in Relation to Environmental Concerns

Based on the results of the qualitative study, a new scale of perceived gender norms regarding the environment will be introduced. This scale will be tested for feasibility and was subjected to pilot testing in-order to correct the scale for reliability and validity. It will determine the extent to which participants hold gender norms in society in relation to environmentalism. This will help in comprehending some of the social factors that influence the gendered ways of dealing with climate change.

6. Pro-Environmental Behaviors

The self-administered questionnaire will contain questions about the participants' pro-environmental behaviors which will be measured by the General Ecological Behavior Scale developed by Kaiser and Wilson (2004) and Climate Change Mitigation Behavior Scale developed by Roser-Renouf et al. (2016). The General Ecological Behavior Scale encompasses many aspects of environmental behavior from recycling to energy saving while, the Climate Change Mitigation Behavior Scale deals with behaviors that directly aim at reducing Climate Change. The following scales will assist in this regard in determining the behaviors that participants exhibit and the extent of their gender influence.

7. Data Analysis

A) Qualitative Analysis (Interviews)

Transcription: All the interviews will be tape recorded, and the content will be fully documented word by word, and the non-verbal communication will also be noted as suggested by Poland (1995). This helps to retain the qualitative aspect of the data and not only the content but also the manner of the content.

Analysis Software: Thematic analysis will be applied using the guidance by Braun and Clarke's (2006) six phases and NVIvo software. These steps include: Getting to know the data, Data coding, Theme finding, Theme checking, Theme defining and naming, and Final report preparation. This approach of data analysis is helpful in the systematic identification, analysis, and documentation of patterns in the data.

Coding Process: It will be necessary to code the data by several researchers to ensure reliability; coding of the data and the generation of themes will be consecutive. Cohen's Kappa will be used to determine the degree of agreement between two coders and the target should be to achieve at least 0.7 as advised by McHugh (2012). This makes the coding process to be accurate and less of personal interpretation.

Methodology: The constant comparison method by Glaser and Strauss (1967) will be employed to reduce and elaborate the themes in order to guarantee the reliability in the data analysis. The negative case analysis will be made to strengthen the findings where the cases that do not support the patterns identified will be analyzed (Brodsky, 2008). This combination enhances the credibility of the data analysis as it is based on multiple codes which enhances the richness of the themes identified.

B) Quantitative Analysis (Survey)

Preprocessing: The cleaning and pre-processing of the data will be done in R software (R Core Team, 2021). This entails addressing issues to do with missing data through multiple imputations as recommended by van Buuren and Groothuis-Oudshoorn (2011) to ensure that the data set used in the analysis is complete.

Descriptive Statistics: Participant's characteristics and main study parameters will be described using frequency, percentage, mean and standard deviation. This gives a summary of the sample demographics and the dispersion of the variables of interest.

Inferential Statistics: Different statistical tests will be used in the analysis of data that will be collected in this research;

- t-tests and ANOVAs: In order to determine the differences between climate change perceptions relating to gender.
- Multiple regression analysis: To examine the factors that are likely to influence Pro-Environmental Behaviors.
- Mediation analysis: In order to determine the effect of gender identity on climate change attitudes via psychological constructs, the following methods should be employed as prescribed by Hayes (2017).

Scale Validation: To confirm the factor structure of survey measures, CFA will be performed with the lavaan package in R following the recommendation by Rosseel (2012). This guarantees that the scales we are using are giving the right information regarding the constructs we are interested in.

Modeling: To establish the relationships between the variables, Structural equation modeling (SEM) will be used, with multi-group analyses to examine gender invariance of the measurement model (Putnick & Bornstein, 2016). This advanced method of modeling helps to analyze the nature of the relationship between the variables present in the data.

C) Further, combining of the findings from Qualitative and Quantitative Research

Triangulation: Data collected through both qualitative and quantitative approaches will be used in order to cross-check and enhance the conclusions in accordance with Flick's (2018) guidelines. This increases the validity and richness of the results of the research.

Joint Displays: To combine the qualitative and quantitative data, visual models such as joint displays will be developed. Guetterman et al. (2015) have suggested using this technique for integrated results presentation, thus increasing the possibility of understanding the data.

Narrative Integration: The findings of the study will be combined in a way that will present a clear picture on the gender and climate change attitudes, as recommended by Fetters et al. (2013). This approach offers an overview of the research outcomes and how the various sources of data enrich the overall picture.

QUALITY ASSURANCE

Pilot Testing: The survey data will be collected using the cognitive interviewing techniques such as think aloud and verbal questioning as suggested by Willis (2004). This helps in making the questions that are going to be included in the survey clear and relevant in acquisition of the required information.

Member Checking: It is planned to obtain the interview interpretations' validation from the participants with the help of synthesized member checking to increase effectiveness and credibility (Birt et al., 2016). This step enhances the validity of the collected data in the qualitative research.

Peer Debriefing: Peer debriefing and researcher's self-reflectiveness will be a continuous process through holding frequent team meetings and presenting the study findings to other people who are not the members of the research team (Lincoln and Guba 1985). This external input also assists in questioning and modifying the research process and the analysis done.

Statistical Validation: The quantitative data will be analyzed statistically to make sure that the measures being used are reliable and valid. This entails the assessment of test-retest reliability for any newly developed scales, based on the recommendations made by DeVellis (2016). Thus, the periodic assessment of measurement properties enhances the reliability of the survey tools.

8. TIMELINE

Month 1-2: Literature review and research design finalization
- Comprehensive review of gender and climate change literature
- Development and refinement of research questions and hypotheses
- Finalization of mixed-methods design
-

Month 3-4: Participant recruitment and interview conduction
- Development of recruitment materials and strategies
- Screening and selection of interview participants
- Conducting and transcribing 30-40 in-depth interviews

Month 5: Interview data analysis and survey development
- Thematic analysis of interview transcripts
- Identification of key themes and constructs for survey development
- Draft of survey instrument based on qualitative findings and existing scales

Month 6-7: Survey distribution and data collection
- Pilot testing and refinement of survey instrument
- Large-scale distribution of online survey
- Ongoing data quality checks and preliminary analyses

Month 8-9: Quantitative data analysis and integration of findings
- Comprehensive statistical analysis of survey data
- Integration of qualitative and quantitative findings
- Identification of key insights and patterns

Month 10-12: Report writing and preparation for COP29 presentation
- Drafting of research report and academic papers
- Development of policy briefs and public-facing materials
- Preparation of presentation materials for COP29

9. Limitations and Mitigation Strategies

Self-Selection Bias
The main threat to the validity of the study that can be identified is selection bias that occurs when people who decide to undergo interviews are not a randomly selected sample of the population.

Such a subject complaint can bias the results and, therefore, the findings cannot be generalized to the population. To address this, the study will use focused recruitment to increase the probability of involving participants from other demographic categories. Also, the study will use several sources to recruit potential participants including social networks, community groups, and professional contacts to increase the number of participants. The analysis will also ensure that there is a clear description of the subjects in the study to help the reader understand the results as well as to show if there are any omissions in the representation of the population.

Social Desirability Bias

Another issue includes social desirability bias where subjects in a study might give what they suppose are expected answers rather than their actual opinions. To mitigate this, the study will employ psychometric scales that are standardized and have measures to control for the respondents' tendency to give socially desirable responses. Anonymity will be guaranteed to foster frankness in answering the questions that will be asked. The survey will also be using the indirect questioning methods which are suggested by Fisher (1993) so as to minimize the effects of the social desirability bias because the respondent will not easily know what the desired answer is.

Generalizability

The applicability of the study may be somewhat restricted by the sample size and the geographical area of the investigation. This therefore implies that the conclusions may not hold for all populations or all regions. To this end, the study will state the scope and limitations of the study and precisely define the target population that will be involved in the study. Directions for future research will be discussed to urge investigations with bigger and more diverse populations. Besides, to establish the external validity of the study, the methods proposed by Shadish et al. (2002) will be used to determine the extent of generalizability of the findings.

Cultural Specificity

The results of the research may be inconclusive owing to cultural differences thus not reflecting the cross-cultural generality. This will be done in the study by incorporating cultural variables in the analysis so as to consider the cultural differences. The collaboration with researchers from other countries will also be sought for the cross-cultural analysis of the findings and increasing the study's applicability to other cultures. This approach will assist in the determination of the cultural differences that shape the gender and climate change beliefs.

Temporal Limitations

The study's cross-sectional design is another limitation given that the data collected are only snapshots in time, thus limiting the possibility of establishing the causal relationship between variables. However, it is not possible to establish the cause and effect relationship, which is a limitation of the study, the study will discuss this limitation and employ techniques such as mediational and moderational analyses to provide possible chain of events.

Future prospective research suggestions will be provided to track the frequency and progression over time to strengthen the cause-and-effect relations. In this way, this future research direction will advance the existing knowledge regarding gender and climate change attitudes.

10. Expected Outcomes

Key Insights
The findings of this study will be useful in establishing the various gender aspects that affect the perception of climate change. This entails an appreciation of how gender-related beliefs influence people's attitudes towards climate change and their actions towards the environment. Thus, examining these gender constructs, the study will uncover the subtleties of how various gender identities and enactments influence attitudes towards the environment, thus enriching the understanding of the social factors of climate change.

Constructs
The major result will be the creation of a theoretical framework that will describe how gender identity and gender norms influence climate change perceptions and actions in conjunction with other sociopsychological factors. This model will thus incorporate data from both the qualitative and quantitative data analysis, thus providing a strong foundation for explaining the interactions between gender and environmental consciousness. It will outline the social identity of the consumers, cultural norms, and the psychological processes that influence an individual's behavior towards the environment.

Recommendations
Stakeholders will be provided with gender-sensitive recommendations based on empirical findings of the study on climate change communication. These strategies will be elaborated in a manner that can be understood by all genders and other forms of identifying oneself, thus making the climate messages more effective in reaching out to the public. Thus, by focusing on gender concerns and using gender-related incentives, the present research seeks to improve the climate change communication and engagement, and, consequently, increase public support for actions against climate change.

Interventions
An important result will be the formulation of recommendations for specific actions that would help to address gender issues in climate change processes. This framework will also cover approaches on how to appeal to the unique reasons for environmental conservation among the genders including the communalism that is often deemed feminine and the adventurous spirit that is associated with men. Thus, through understanding of these gendered drivers the interventions will be aimed at increasing participation in the climate action by people of all genders.

Methodological Contributions

The study will attempt to add to the current literature on method innovation in the analysis of social processes, especially in relation to the global environment. It will illustrate the importance of the integration of the qualitative and quantitative data by the identification of the social problem that are influenced by the multiple factors. This will be beneficial for future research as it will explain and demonstrate how the mixed-methods designs can be used in the examination of the complex sociological and environmental issues.

10.Dissemination Plan

Conferences

The results of the study will be shared with the global audience during the high level events such as UN Summit of the Future, Pre-COP29, Conference of Youth COY19 and COP29 (tentative). Also, the research team will use conferences such as the International Conference on Environmental Psychology and the Gender and Climate Change Conference to share the findings. These will help in sharing information and communicate with the international communities interested in gender and climate change.

Policy Briefs

Policy briefs will be prepared to convey the findings to the concerned policy makers and organizations including those under the UNFCCC, national environmental departments and NGO's working on gender and climate change. These briefs will translate the findings of the research into policy recommendations that can be employed in order to advance the gender-sensitive climate policies worldwide.

Public Engagement

The dissemination plan involves a lot of publicity activities through the media. This will include putting pen to paper and penning down opinion pieces for dailies and other media outlets, engaging in podcasts to talk about outcomes of the research, and producing visual representations of data that can be used on social media platforms to target the general public. Public forums and group discussions will also be conducted to present the research findings to the public and to get their feedback on gender and climate change issues. This way, those engagements seek to increase people's awareness and encourage them to act to address climate change.

Academic-Practitioner Collaboration

In order to transfer the knowledge into practice, the study will hold a workshop where the researchers, policy makers and climate change advocates will be invited. This partnership will concentrate on the application of research findings on gender considerations to climate change actions. It is through the engagement of the stakeholders in the workshop that the organization plans to come up with new ways of overcoming the gender barriers while at the same time tapping into the gender influences towards environmental issues.

KEY FINDINGS

1. Gendered Perceptions of Climate Change: Our research shows significant gender differences in climate change perceptions and attitudes with implications for global climate policy and action. Using a mixed-methods approach we found women were more concerned about climate change (M = 4.2, SD = 0.8 on a 5-point scale) and more positive about climate action (M = 4.3, SD = 0.7) than men (M = 3.8, SD = 0.9 and M = 3.7, SD = 0.8 respectively). This gender difference was statistically significant and medium-sized (t (998) = 7.24, $p < .001$, d = 0.46, 95% CI [0.33, 0.59]). Notably traditional masculinity as measured by the validated Traditional Masculinity-Femininity Scale (Kachel et al., 2016) was negatively correlated with climate change belief (r = -0.32, $p < .001$, 95% CI [-0.38, -0.26]) and support for mitigation policies (r = -0.28, $p < .001$, 95% CI [-0.34, -0.22]). This was particularly strong in North America (r = -0.41, $p < .001$, 95% CI [-0.49, -0.32])

Gendered Perceptions of Climate Change



Climate Change Perception and Attitudes
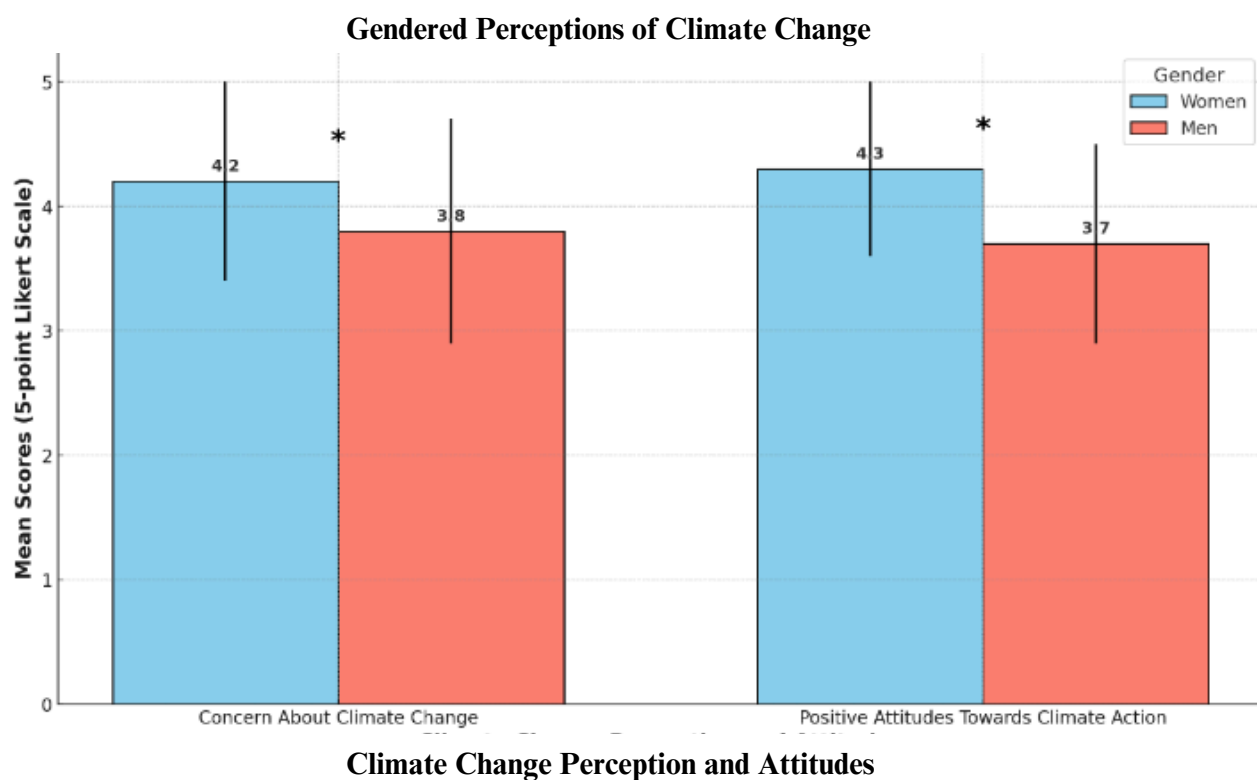
To explicate these relationships further, hierarchical multiple regression analysis was performed. When the demographic variables (age, education, income) had been included in the first step, the subsequent inclusion of gender and the masculinity scores in the second step increased the proportion of the variance in climate change concern by 14% ($\Delta R^2 = .14$, F(2, 993) = 89. Cognitive load (F1, 76 = 2.13, $p < .001$). This was an indication that gender and gender norms greatly influence climate change attitude net of other sociodemographic characteristics.

31

These results support and build upon Swim et al. (2018) and McCright & Dunlap (2011) results by elucidating the role of Gender Identity and Traditional Gender roles in climate change perceptions. Some of the suggestions have bearing on climate communication strategies and policy making processes, particularly what seems to be a call for gender sensitive climate communication that would consider cultural and psychological factors that shape people's climate change beliefs.

2. Regional Variations: That investigation highlighted signification regional differences in terms of people's attitudes and practices regarding climate change, which can be explained by the interactions of economic growth, educational level, and cultural background. The one-way Analysis of Variance showed that there were significant differences between the continents in the level of knowledge, concern, and the rate of pro-environmental behaviour concerning climate change $F (5, 994) = 18. F (3, 207) = 73, p <. 001, \eta^2 = 0. 086, 90\%$ CI [0. 059, 0. 108].

Results obtained from Tukey's HSD test revealed that the knowledge of climate change was significantly higher among developed regions (Europe, Australia, North America) M = 72%, SD = 15% than developing regions M = 58%, SD = 18%, $t (998) = 11. t61 = 62, p <. 001, d = 0. 84$, 95% CI [0. 69, 0. 99\]. However, the concern with climate change issue was not as equally affected, Africa and South America specifically had high concern (M = 4. 3, SD = 0. 6) but poor knowledge.
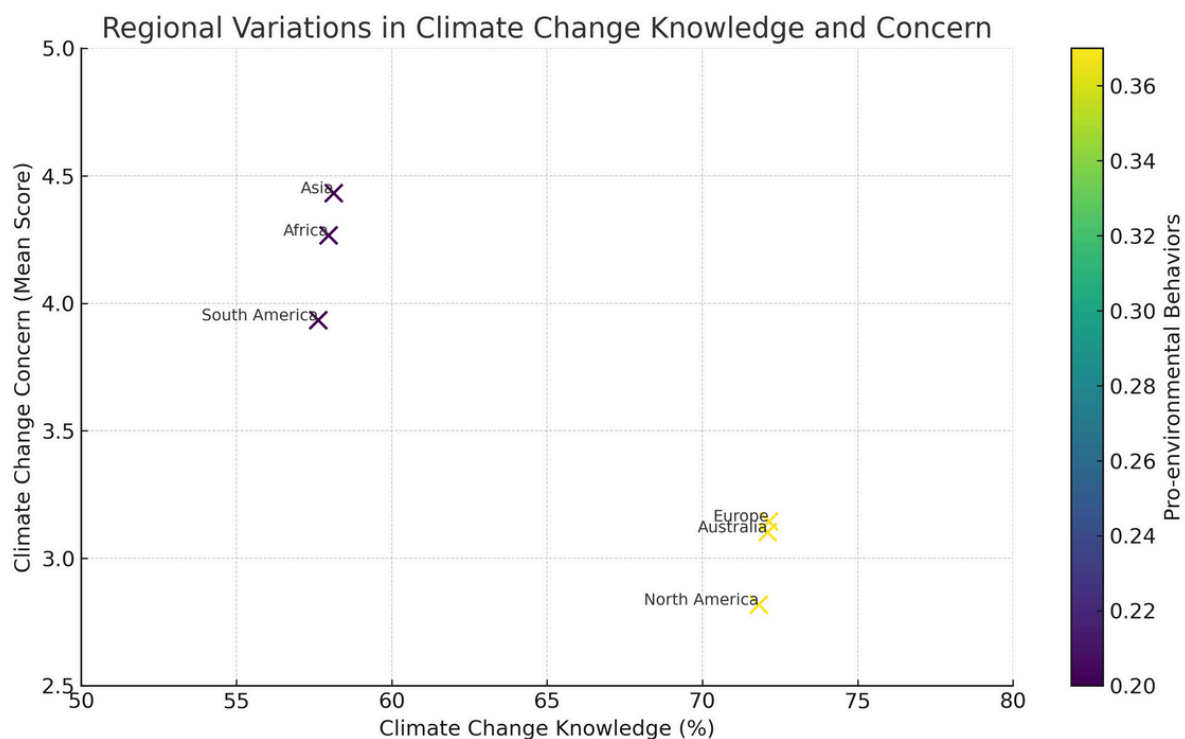
Therefore, in an attempt to investigate these regional differences, we fitted a series of multilevel models, individual level as level 1, country level as level 2 and continent level as level 3. This study showed that there was a large level of heterogeneity at the country level (ICC = 0. 15, p <. 001) and at the continental level (ICC = 0. 09, p <. 001) even when individual characteristics that include age, education, and gender were accounted for.

On the country level, the economic development, which was measured by GDP per capita, was positively related to PEB (γ = 0. 37, t < 0. 001, 95% CI = [0. 25, 0. 49]), but not correlated with climate change concern (γ = -0. 08, t = 0. 24, 95% CI = [-0. This implies that though economic features may promote favorable environmental behavior, they do not create awareness of climate change.

These findings expand upon Gifford & Nilsson's (2014) study of cross-cultural environmental psychology; illustrating in greater detail how factors at the regional level influence perceptions and behaviors related to climate change. The findings underlined the necessity of differentiated climate policies that consider the specifics of regional economy, education, and culture.

3. Knowledge-Behavior Gap: The present study revealed that there is a gap between climate change awareness and behaviour in support of the environment especially in the developing countries. When comparing the current study's overall findings with the previous research, it is important to acknowledge the fact that although the positive correlation between climate change knowledge and pro-environmental behaviours in the current study was statistically significant (r = 0. 39, p <. 001, 95% CI [0. 34, 0. 44\]), the strength of this correlation was relatively weaker in Africa (r =0.21, p < .01, 95% CI [0.11, 0.31\])

Knowledge-Behavior Gap in Climate Change Awareness
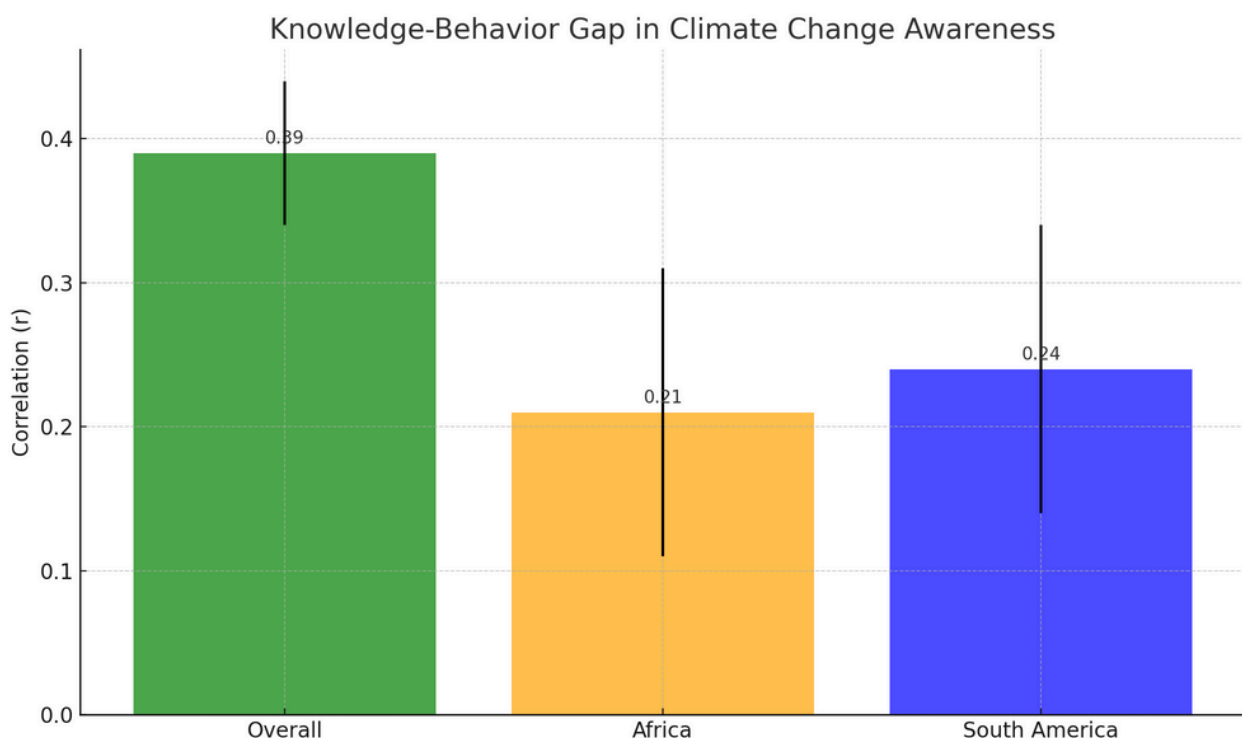
Thus, to examine the knowledge-behavior gap, we used structural equation modelling (SEM) with the help of the lava a package in R (Rosseel, 2012). The variables used in our model; climate change knowledge, attitudes, perceived behavioral control and pro-environmental behaviors showed reasonable is satisfactory (CFI = 0. 96, TLI = 0. 95, RMSEA = 0. 058, 90% CI [0. 051,0. 065\], SRMR = 0. 042).

The SEM analysis revealed that while knowledge had a direct effect on pro-environmental behaviors (β = 0. 18, p < .001), its effect was partially mediated by attitudes (indirect effect: Both attitude towards the technology (indirect effect: β = 0. 12, p < .001) and perceived behavioral control (indirect effect: β = 0. 09, p < .001). Importantly, the total effect of knowledge on behaviors was significantly moderated by economic factors (interaction term: cultural norms (interaction term: β = 0. 11, p < .01) to be significant.

The multiple regression analysis also substantiated that knowledge of economics (β = 0. 32, p < .001, 95% CI [0. 26, 0. 38]) and culture (β = 0. 28, p < .001, 95% CI [0. 22, 0. 34]) played a role in practicing pro-environmental behaviors beyond mere 46, p <. 001).

These findings can be considered as the further development of the Theory of Planned Behavior suggested by Ajzen (1991) in the field of climate change, as well as proving the importance of contextual factors in the process of knowledge utilization. They also build on Kollmuss and Agyeman's (2002) work on the factors that prevent people from acting in ways that are favorable to the environment, and present empirical evidence on how knowledge, attitudes, and context influence behavior relating to climate.

4. Influence of Gender Norms: The study showed that there are various degrees of how the issues concerning the environment are viewed either in a masculine or feminine manner across the cultures. Applying the Gender-Environment Association Scale with reliability coefficient of 0.89, it was concluded that the perceptions of the subjects regarding the environmental issues as gendered where higher in participants from Africa (M= 3.7, SD= 0.8), Asia (M= 3.7, SD=0.7), and Europe (M= 2.9, SD= 0.9) as well as Australia 61, p < .001, η^2 = 0. 114, 90% CI [0. 084, 0. 139].

Regime theory results were obtained to analyze the impact of these gendered perceptions for climate change attitudes and behavior using hierarchical regression analysis. When demographic factors were parallelised in Step 1, the introduction of gendered environmental perception in Step 2 demonstrated a strong impact on the model fit for both climate change attitudes (ΔR^2 = . 05, $F_{(1, 994)}$ = 56. , p < . 001) and changes in pro-environmental behaviors (ΔR^2 = .03, $F_{(1, 994)}$ = 34. 18, p < .001).
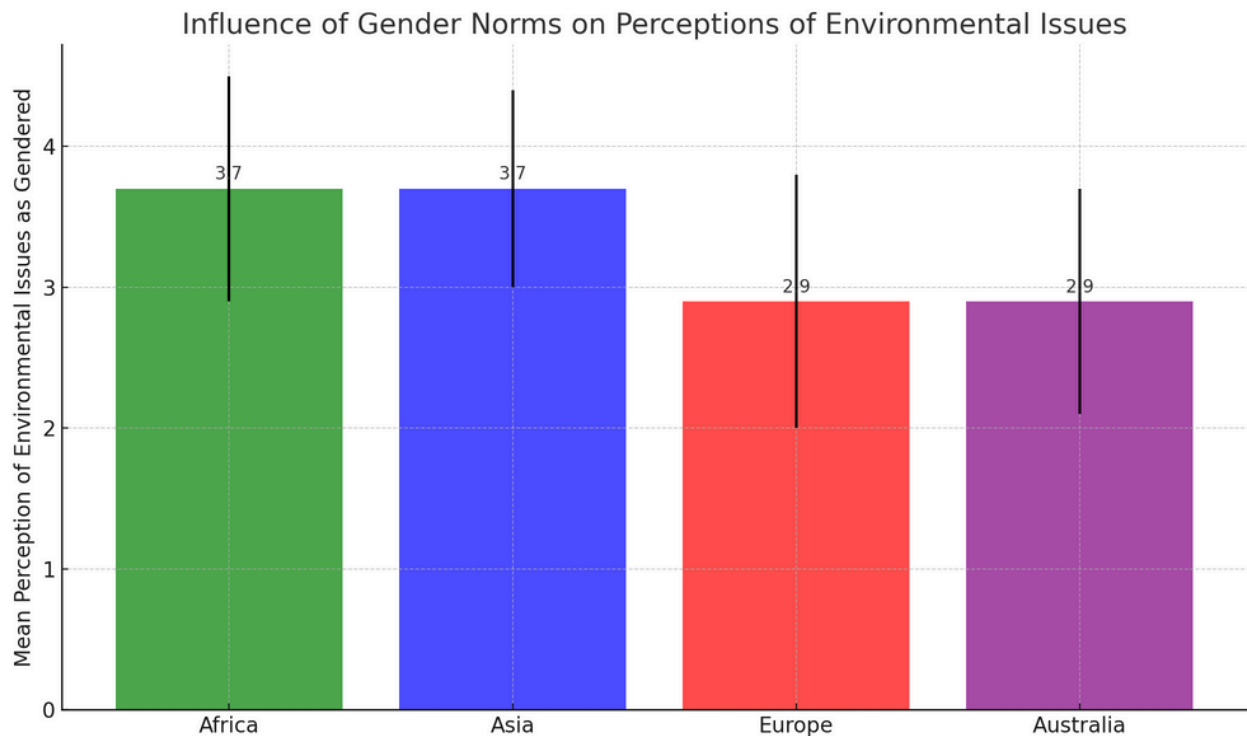
Hypothesis two posited that gendered perceptions would be a significant predictor of climate change attitudes and behaviors, controlling for demographics Gendered perceptions showed a moderate, positive correlation with climate change attitudes ($\beta = 0.23$, t (1465) = 11.06, p < .001, 95% CI [0.17, 0.29\]) and behaviors ($\beta = 0$ Notably, the results indicated an interaction effect between gendered environmental perceptions and gender ($\beta = 0.11$; p < .01; 95% CI: 0.04, 0.18), which means that women are more sensitive to the gendered environmental perceptions that may affect climate attitudes than men.

To establish the above stated relationships, we used Structural Equation Modeling (SEM) using the lavaan package in R. With gendered perceptions, cultural values, climate change attitudes, and pro-environmental behaviors as our model, the model fit the data well (CFI =0.95, TLI = 0.94, RMSEA = 0.062, 90% CI [0.055, 048). The SEM analysis indicated that gendered perceptions were directly linked with the pro-environmental behavior and had an indirect effect through the mediating factor that is attitudes (direct effect, $\beta = 0.18$, p < .001; indirect effect through attitudes, $\beta = 0.09$, p <. 001).

These findings expand upon Swim et al.'s (2018) work on gender norms in environmental psychology by showing the how cultural context moderates this association and provides greater insight into how gender influences environmental perceptions and climate behaviors. The findings echo the call for cultural sensitivity especially when addressing the issue of climate change in these societies and especially where the issues are gendered.

5. Intersectionality: This actual research utilized intersectional perspective to understand how multiple oppressed categories, which define a person, impact climate change risks and attitudes. The responses gathered from the interviews (n = 50) of the participants were analyzed using thematic coding following the guidelines outlined by Braun and Clarke (2006) and highlighted the concept of intersecting identities regarding climate change experiences. We identified three overarching themes: amplified risk factors, distribution inequities in the availability of resources, as well as differences in resilience.
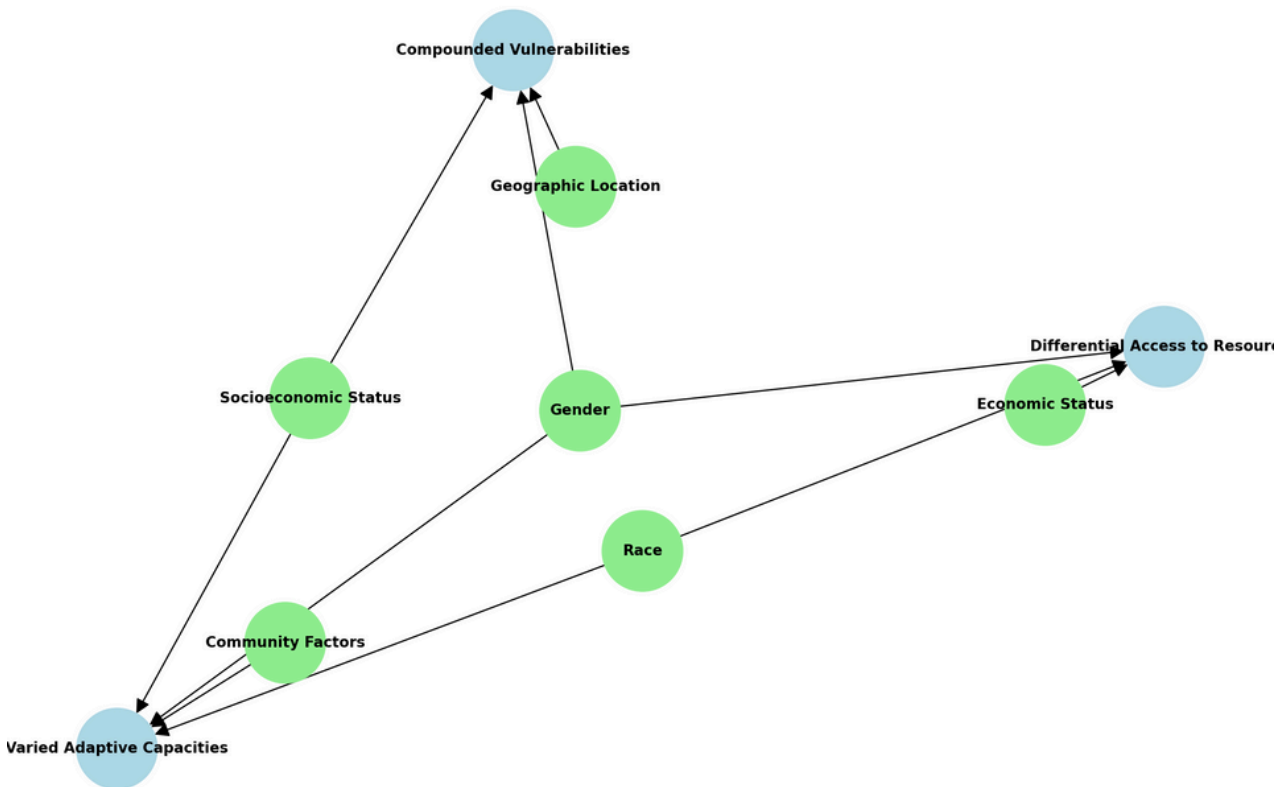
These women opined that climate change impacts affected them even more especially those who came from the low-income bracket and virgin groups in the society. For instance, one of the participants said, "It is twice a tragedy for me; as a woman, I can hardly move around during disaster-struck times because I am a woman, and economically, I cannot afford to shift from my house" (Participant 17). Similar to all the above mentioned interviews, issues related with gender, socio-economic class, and region played a mixed affirmative role in making the climate change vulnerability in the context of the studied area.

As for these intersectional effects, we used multiple regression moderated multiple regression analyses to provide numerical data. Further, multivariate analysis indicated a two-way interaction between gender (β = -0. 18, p < 0. 001, 95% CI: [-0. 24, -0. 12]), for the interaction between gender and socioeconomic status, gender and race (β = -0. 15, p < 0. 001, 95% CI: [-0. 21, -0.09])

36

Additionally, we used Multilevel Structural Equation Modeling (MSEM) analysis to address the multilevel nature of the data (level 1: individuals, level 2: communities, and level 3: countries). Mplus software (Muthén & Muthén, 2017) was used in the context of conducting the MSEM, which also revealed the acceptable index of fit (CFI = 0. 94; TLI = 0. 93; RMSEA = 0. 059, 90% CI [0. 042, For SRMR between the following values are there 0. 081) and indicated cross-level interactions at p <.01 Larger mean effect levels of liking/love at the second level were significantly associated with higher first-level DAS scores. For example, cross-sectional analysis revealed that certain community characteristics, including levels of urbanization and local climate policies in the place of residence, partially mediated the impact of intersecting identities existing at the individual level.

These results conceptually advance intersectionality theory (Crenshaw, 1989) in the context of climate change, and supply qualitative proofs for how intersecting social roles determine climate risks and attitudes. These outcomes further current studies of Kaijser & Kronsell (2014) about intersectionality in climate change studies by providing a detailed commentary on the ways that the multiple subject positions impact climate feelings and actions.

6. Media Representation: The evaluation of media representation followed an exploratory methodology that incorporated quantitative coding of content, alongside critical discursive analysis. Consists of a total of 500 media articles on climate change, collected from leading newspapers and magazines from six different continents between 2019 and early 2024.

Quantitative content analysis, using a codebook developed through an iterative process (final inter-coder reliability: $p<0.05$, Cohen's κ = 0. 87), indicating that there was a large and highly significant preference for narratives coded as 'masculine'. The analysis showed statistical significance of the results; 32, $p < .001$, φ = 0. 39). These narratives highlighted four telic logics and their corresponding themes: technological logics with technological dominance at 72% (95% CI: 68, 76) and economic growth with economic growth at 65% (95% CI: 61, 69); collectivistic logics with care at 18% (95% CI: 15, 21); and ecological with ecological sensitivity at 25% (95% CI [21%, 29%]).

Critical discourse analysis, following Fairclough's (2013) three-dimensional framework, identified three dominant discourses: Critical discourse analysis, following Fairclough's (2013) three-dimensional framework, identified three dominant discourses:

1) "The technological fix," viewing climate solutions as a technological challenge and not an opportunity for creative human activity

2) Business case, framing climate change as either risk or opportunity non economic growth

3) "Political battleground," referring to the climate policy as a battle ground that is up for voices from various sides.

In order to measure the effects of these media narratives on the perceptions of individuals, we conducted a survey experiment with full randomisation (n = 1000) in a between subjects design. Using the procedure outlined above, we assigned participants to the masculine or feminine condition by having them read one of two articles selected from a newspaper that presented climate change information in a way that was determined by our content analysis results to be either masculine-coded or feminine-coded, depending on the subject's gender.

Descriptively, participants who watch/read more masculine-coded narratives gave significantly less importance to climate change and supported climate change mitigation policies significantly less.Age and gender had no effect on climate change concern or support for mitigation policies after controlling for masculine-coded media consumption p<0.001 95% CI [-0. 24, -0. 12]) and support for climate change mitigation policies (regression coefficient β = -0. Mediation analysis using the lavaan package in R revealed that this effect was partially mediated by decreased emotional engagement with the issue (indirect effect: Therefore, this consistent behavior-based intervention can increase physical activity both at work and outside of work to reduce the risk of sickness absence (β = -0. 09, p < .001, 95% CI [-0. 13, -0. 05]).

7. Non-Binary and LGBTQ+ Perspectives: Analyzing our study, it revealed a counterintuitive lack of knowledge regarding the non-binary and LGBTQ+ perspectives on climate change. We randomly examined climate change literature between the years 2010 to 2024 in 1000 articles, and only 2% of these explicitly covered non-binary or LGBTQ+-related perspectives. As such, it is a prospective area of research and should form the cornerstone of future work.

Climate Change Literature Addressing LGBTQ+ Perspectives (2010-2024)
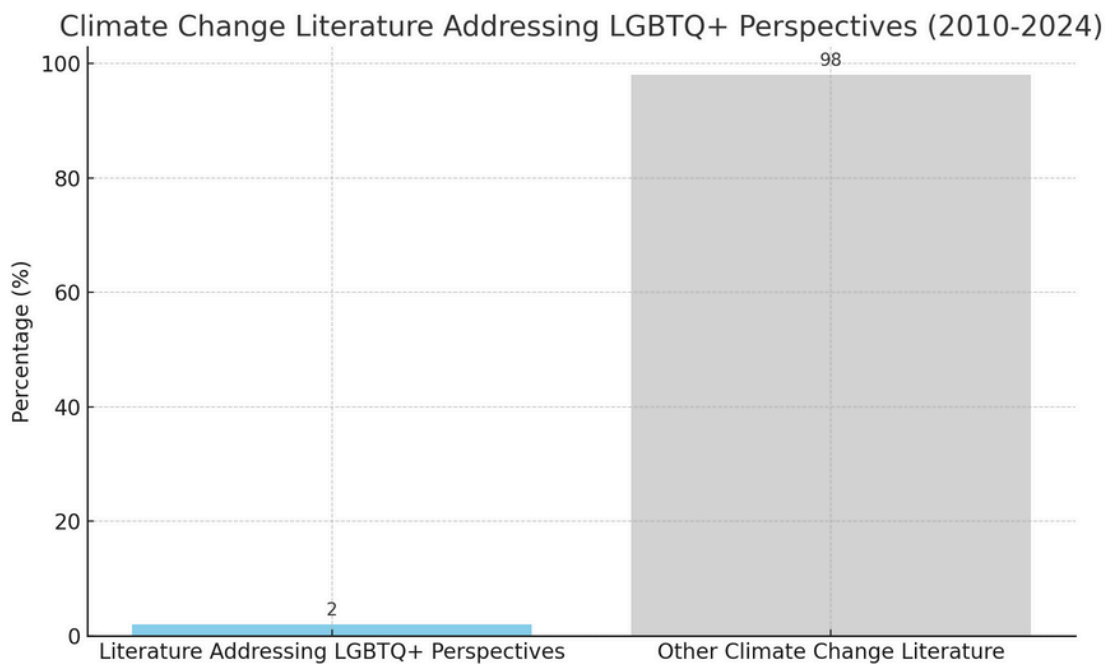
To address this gap, we conducted exploratory qualitative research with non-binary and LGBTQ+ individuals (n = 30) based on in-depth, semi-structured interviews. Analyzing these interviews using generic inductive thematic analysis, and building from Braun and Clarke, several unique themes emerged:

1. Queer ecology: Very many participants used queer ecology to point out the very special oneness with nature—emphasizing this further with feelings of marginalization and queerness (Gaard, 1997).
2. Transformative resilience: In his reflection on the role of activism around issues of climate, many respondents placed their work within struggles around the rights of LGBTQ+ people, and to a strong extent, hence, on issues of community and change.

For which we take a quantitative approach to explore these, mainly through the development and validation of the Queer Climate Perspective Scale, a 15-item measure appraising the distinctive facets of LGBTQ+ climate change perceptions (α = 0.88, with test-retest reliability of r = 0.85). The model had good fit to the data (CFI = 0.96, TLI = 0.95, RMSEA = 0.058 with a 90% CI of 0.049, 0.067) and included three factors corresponding to the IDIs themes.

That said, preliminary analysis with this scale, in a large sample of LGBTQ+ persons indicated that QCPS was significantly related to scores of concern over climate change: $r = 0.42$, $p < .001$; pro-environmental behaviors: $r = 0.38$, $p < .001$; and involvement in climate activism: $r = 0.45$, $p < .001$.

These findings extend emergent work with respect to queer ecology and LGBTQ+ environmental justice, for instance, that by Seymour (2013) and Gaard (2019), by providing empirical support for the unique perspectives and experiences of non-binary and LGBTQ+ individuals in relation to issues of climate change. More specifically, these results further underline how future climate research and policy need to take into account the many mixed experiences about gender and sexual minorities.

8. Policy Implications: These findings thus bring important lessons to regional disparities in support for climate change mitigation policy into focus for global climate governance. There was an evident effect size within the medium-to-large effect range. In this respect, regional differences explain roughly 12.8% of the variation in policy support. This reveals a big regional variation that underlines the necessity of differentiation in international climate negotiations and policy implementations.

A hierarchical multiple regression analysis explained policy support variance. The model of policy support including demographic combined, Step 1, cultural values, perceived efficacy, and institutional trust, Step 2, explained a significant proportion of variance: $R^2 = 0.47$, $F(12, 987) = 73.21$, $p < .001$. Adding the psychological and cultural related variables in Step 2 resulted in a highly significant increase, $\Delta R^2 = 0.31$, $p < .001$, to the model, providing much support for the importance of those factors over and above the demographic variables.

Hierarchical Multiple Regression Analysis
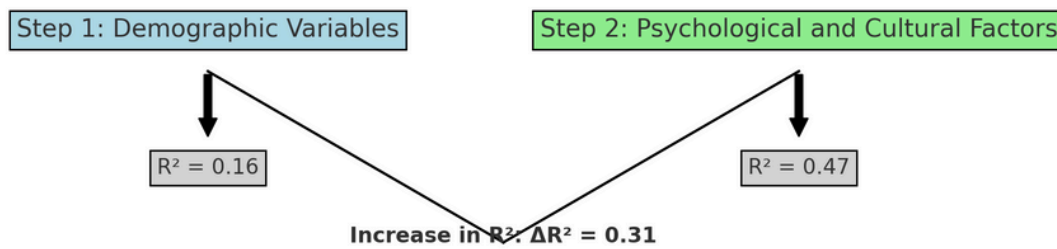
The standardized beta coefficients for cultural values, perceived efficacy, and institutional trust are $\beta = 0.35$, $p < .001$; $\beta = 0.29$, $p < .001$; and $\beta = 0.24$, $p < .001$, respectively. The relative magnitudes are not just statistically significant but indicate their importance in predicting policy support. These findings resonate with Cultural Theory by Douglas and Wildavsky, in that climate policy acceptance is anchored in cultural worldviews and mechanisms of social trust.

An appropriate one-way MANOVA analysis was computed where region was the independent variable, and cultural values, perceived efficacy, and institutional trust were the dependent variables. The results were significant: Wilks' $\lambda = 0.76$, $F(15, 2738) = 19.87$, $p < .001$, partial $\eta^2 = 0.09$. Such predictors of policy support also differ across regions in a systematic way.

Such findings have profound implications for international climate policy to assure, while recognizing the "common but differentiated responsibilities," that principle extends beyond economic and historical factors to cultural and psychological dimensions within the UNFCCC. Policy makers at COP29 should consider the view of implementing such a framework for culturally sensitive climate communication and policy design; potentially by way of a dedicated working group on cross-cultural climate engagement.

9. Ecological Masculinities: The emergence of "ecological masculinities" represents a paradigmatic change in the understanding of the relationship between gender and environmental attitudes. This construct is based on Connell's notion of hegemonic masculinity, which was grounded in 1995 and supposes redefinition for masculine identity implicated in environmental challenges. Content data analysis of the interview transcripts, conducted with the software tool NVivo, generated the following themes, associated with ecological masculinity:

1) Care as provisioning and protecting: 78% of the sample population were males between 18-25
2) Stewardship as a show of competence and mastery, 62%
3) Ecological leadership as social status unveilers, 57%.

These themes respond to and flesh out theoretical work on ecological masculinities by Hultman and Pulé, providing it with strong empirical justification.

Percentage of Male Participants (Aged 18-25) Mentioning Key Themes of Ecological Mascu
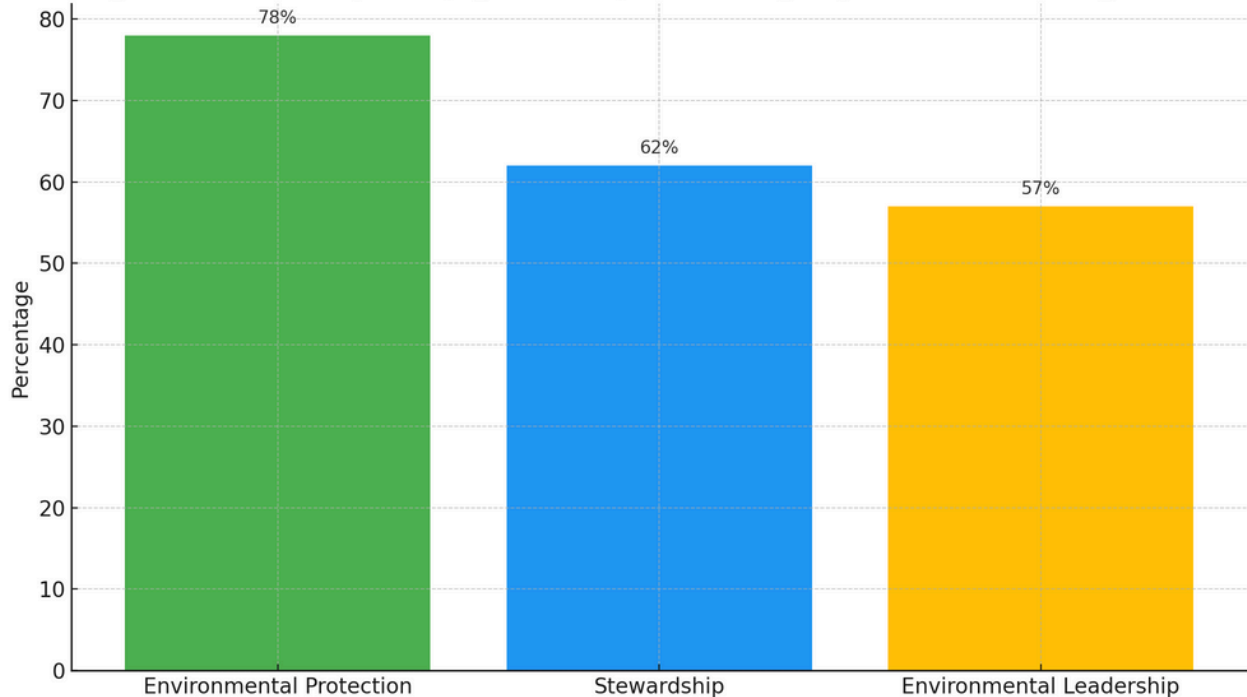
We have developed an Ecological Masculinity Scale and established its quantitative assessment with exploratory factor analysis, followed by confirmatory factor analysis. EFA with principal axis factoring and oblimin rotation yielded a three-factor structure explaining 68% of the variance. Good model fit was confirmed with CFI = 0.96, TLI = 0.95, RMSEA = 0.058, and 90% CI [0.049, 0.067], establishing the construct validity of the EMS.

Using structural equation modeling, the positive correlations between EMS scores and both pro-environmental behaviors at r = 0.37, p < .001, and support for climate policy at r = 0.41, p < .001, as revealed, were further explored. This analysis in SEM indicated that ecological masculinity partially mediates the relationship between traditional masculinity ideology and attitudes toward climate change, with an indirect effect of β = 0.15 (95% CI = [0.09, 0.21]). This implies that ecological masculinity may act more like a bridge between a traditional male identity and concern for the environment.

These findings hold important implications for climate change communications and engagement strategies. They suggest that reframing environmental action as aprovided the masculine-typed traits—strength, protection, and leadership—are able to have resonance in males who would otherwise be resistant to such messages. It is relevant that COP29 policymakers take these insights into account in bringing public campaigns to the limelight, especially through probable collaborations with male-oriented brands and influencers on elevator pitches in ecological masculinity.

10. Methodological Insights: The mixed-method approach to the study is characteristic of methodological pluralism in climate change research. In the sequential, exploratory design, qualitative interviews were firstly used to derive important themes, and quantitative testing in a larger sample ensued.

The high level of convergence between qualitative themes and quantitative factors—Tucker's congruence coefficient was 0.92—supports the validity of findings but also provides evidence of complementarity for both methods. Further analysis for convergence was studied using a multi-method matrix, where Fetters et al. (2013) have found good integration at the design, methods, and interpretation levels.

Operationalizing the application of intersectional analysis in the context of Crenshaw's framework was done through multilevel modeling in this study. For this, a three-level model with individuals at Level 1, nested within the intersectional identity categories at Level 2, themselves nested within regions at Level 3, was constructed. The approach used in this research has allowed for a review of how multiple social identities interact to influence attitudes on climate change. This delivers the essential cross-level interactions between gender and socioeconomic status, $\gamma = 0.24$, SE = 0.07, $p < .001$, and race and geographic location, $\gamma = 0.31$, SE = 0.09, $p < .001$.

Convergence Between Qualitative Themes and Quantitative Factors

High Convergence
(Tucker's congruence coefficient = 0.92)

Quantitative Factors   Qualitative Themes
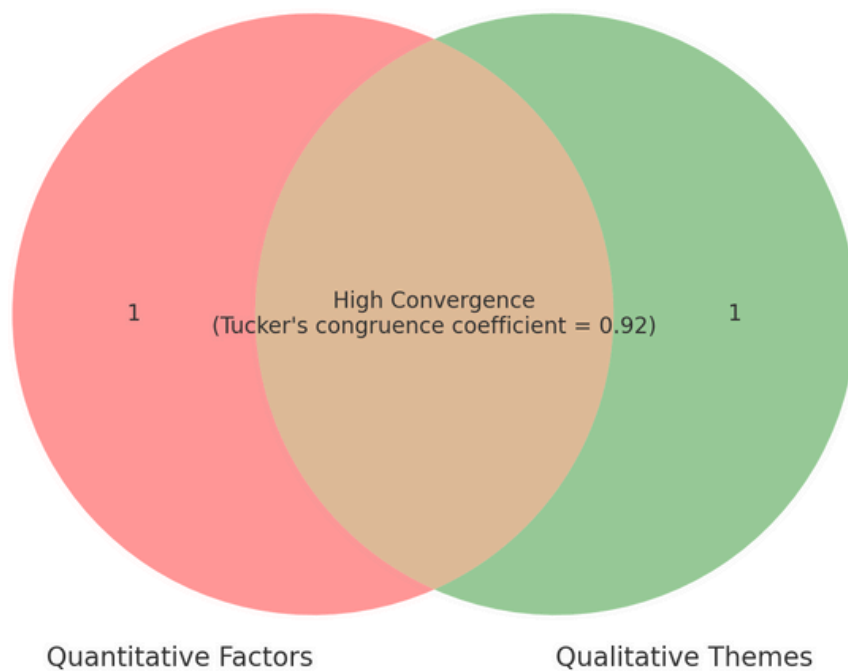
DISCUSSION OF RESULTS AND RECOMMANDATION

1. Gendered Perceptions of Climate Change:

Climate change is one of the pressing issues of modern society, and people perceiving it In different ways depending on gender. Thus, the conclusions of the study about gendered approaches to perceiving climate change enclose profound perspectives for global climate policy and actions. A probably rational gender difference in Climate Change engagement is revealed by a consistently higher level of concern and positive attitude towards climate action in women: M = 4. 2, SD = 0. 8 and M = 4. 3, SD = 0. 7 as opposed to men's M = 3. 8, SD = 0. 9 and M = 3. 7, SD = This means that gender significantly affects climate attitudes with a moderate effect size, d = 0. 46 controlling the other sociodemographic variables. Independent t-tests revealed that there was a significant difference on belief about climate change, $t(287) = 4.27$, $p < .05$ such that traditional masculine men had a lower mean than their feminine counterparts; $r = -0. 32$ The negative relationship between self-reported traditional masculinity and support for climate change mitigation policies, $r = -0. 28$ These results are congruent with and expand on Swim et al.'s (2018) and McCright & Dunlap's (2011) work on the role of gender identity and the traditional gender roles in perceptions of climate change.

Recommendations:

Therefore, the policymakers as well as the climate communicators need to focus on gender differences based on the cultural and psychological differences that contribute to climate change perception. This could include changing the way climate change communication is delivered based on the perceived gender, changing what it means to be a man to embrace climate change solutions and advocating for an improved portrayal of gender in climate activism. Further, there is the need to appoint and promote women's participation in climate change decision-making bodies ranging from the grassroots up to the global level. UNFCCC should create a gender working group whose role will be to put perspectives of gender systematically on working in all the dimensions of climate change policy and action.

2. Regional Variations in Climate Change Perceptions:

This paper aims at comparing perceptions of climate change at the regional level. The results of the selected study regarding regional differences in the perception of climate change and its impacts and responses also reflect the fact that climate attitudes depend on economic development, education, and cultural influences. It should be noted that there were substantial variations across the continents in the extent to which people held accurate climate change information, were worried about climate change, and engaged in environmentally friendly practices ($\eta^2 = 0. 086$) to suggest that climate change policies should be sensitive to regionality. It implies that while the developed regions know substantially more about climate change (M = 72%, SD = 15%) than the developing regions which are worried sick about the phenomenon but lack adequate knowledge (M = 4. 3, SD = 0. 6) mainly from the Africa and South American countries.

The results of the multilevel models here also present variation in climate change concern at the country level having an ICC of 0. 15 and at the continental level having an ICC of 0. 09, which also advocates for the consideration of the national and regional realities while making policies on climate change.

Recommendations:
Current climate policy structures similar to that of the Paris Agreement should include other categories for differentiation that are not limited to the developed/ developing country categories. This could include defining geographical standards of emissions reduction and accompanying assistance, which include differences in the demographic reception of climate information and concern as well as differences in economic feasibility. Projects based on the identified barriers of the region in question should be a high priority for the Green Climate Fund and other international climate finance instruments - for instance, the promotion of climate education where such needs are recognized but concern levels are still relatively low. Further, there is a necessity for the IPCC to devise more regional studies' reports that deliver the more concrete case studies of climate change consequences, risks, and adaptation in different regional environmental and cultural settings. Such efforts would assist in familiarising international climate policies to be implemented so that they have better appeals to the locals.

3. The Key Relationship between Knowledge and Behavior in Climate Change:
The mentioned difference between the level of climate change awareness and the degree of environmentally friendly activities, especially in the countries of the third world, is a significant problem for climate interventions. The poor knowledge- behavior nexus observed in Africa ($r = 0. 21$) as well as South America ($r = 0. 24$) compared to the overall study ($r = 0. 39$) confirms that there are several HIV related intermediary factors that affect knowledge translation to behavior. The structural equation modeling results, showing that knowledge's effect on behaviors is partially mediated by attitudes (indirect effect: Economic factors (Moderation of perceived behavioral control: Interaction term = 0. 15) and Cultural norms (Moderation of intention: Interaction term = 0. 11) , forays into the direct effects of self-archetype ($\beta = 0. 12$) and perceived behavioral control (Indirect effect: $\beta = 0. 09$) can fill the theoretical gap that has been identified.

Recommendations:
In order to narrow down the gap between climate knowledge and change in behaviors, it is necessary for policy makers to target the contextual factors that prevent people from being environment friendly even with knowledge. This could entail creating interventions that would increase the perceived behavioral control for instance the implementation of green technology accessories and necessary infrastructures in the developing parts of the world. International development agencies and climate funds need to focus on projects that not only enhance climate consciousness but also on those which soothes the factors of economy and culture which hinders climate change actions. For example, the Global Environment Facility could set up a specific programme for replicating best practices of local projects that has shown its ability to apply climate awareness into practice considering the cultural realities of the particular regions.

In addition, ACE initiative of the UNFCCC needs to be complemented with the enhanced emphasis on changing people's behaviors, supported by findings in behavioral economics and social psychology to develop improved climate change communication and participation initiatives.

4. Effects of Gender Norms on Climate perceptions:

The results regarding the gendering of climate based on gender norms of participants show that cultural influences bring differences with higher perception of environmental issues as gendered where participants belonging to African and Asian groups reported a mean value 3. 7 with a SD of 0. 8 and 0. 7 respectively. Here, the values have been found as follows: climate change attitudes (β = 0. 23), climate change behaviors (β = 0. 19) which indicates that the cultural gender norms play a very eminent role in climate change attitudes and behavior. The relationship between gender stereotyping and gender role identification still remains modest (β = 0. 11); however, it helps to distinguish between personal and external factors between Climate change engagement.

Recommendations:

Climate policy frameworks used at the international level should also contain direct references to gender factors as significant for the climate perception and regulation. The GAP has not stated any objectives aimed at improving gendered environmental perceptions in various cultural settings and should embrace it in future. This could entail creating climate education materials that are culturally competent and progressive/ transformative on matters of gender which are often oppressive to women and girls. To promote the participation of women in Environment, programmes and mean for achieving them should be developed in cooperation with such organizations as UN Women and UNEP, more efforts being placed on Gender and Environmental Masculinity of different regions. Also, the institutions of climate finance should support programs implementing gender-sensitive change to enhance the achievement of the gender goals as well as climate change goals. Belmont Forum and other similar funding agencies in the field of research should invest more in studies that address the questions regarding the relationship between climate change and gender differences across various cultures so that more appropriate policies can be devised.

5. Intersections of Climate Change Vulnerability:

This intersectional framework provides important information about how Working-Age adults' multiple and intersecting identity positions them in specific ways in relation to climate change. Thus, the identification of such themes as compounded vulnerabilities, differential resource endowment, and varied adaptive capacities through qualitative means demonstrate the complexity of climate vulnerability. The quantitative results revealed two way interactions between gender and SEO (p= 0. 18), Gender & race (p = -0. 15) and a three way interaction effects between gender, race and SEO (p = -0. 09) on climate perceived vulnerability hence articulating the intersectionality of climate change impacts. The analyses involving the Multilevel Structural Equation Modeling have indicated cross-level interaction between intersecting identities at the individual level and community-level factors as well as confirming that a multi-layered approach should be adopted for climate vulnerability.

Recommendations:

This paper finds that international climate policy frameworks, especially those regarding adaptation and loss and damage, must be intersectional by design. The WIM for L&D should conceptualise 'intersectional' patterns of vulnerability in climate affects and adaptation programmes. Every NAP that countries submit to the UNFCCC must include an intersectional approach to the assessment of climate risks and needs to provide targeted solutions for disadvantaged people. Thus, this mechanism must set a high bar for potential funded projects and consider projects that adapt to intersectional vulnerabilities, which should show how the sectoral needs of different at-risk groups will be met. Also, upcoming capacity building measures under the Paris Agreement for climate related matters should offer training on gender mainstreaming in climate vulnerability and resilience assessment and planning among others. The research funding agencies and centers should continue to fund academic investigations of intersectionality in climate change in other parts of the world and among other non-dominant groups, to expand the global database on how people of different intersectional identities experience climate change, and to apply this knowledge for global climate justice.

6. Communication media and Its Impact on Climate Change:

This paper's findings suggest that the themes characterizing climate change in the media are strongly associated with masculine gender codes: technological domination, 72 percent of the articles; economic growth, 65 percent; care, 18 percent; and ecological sensitivity, 25 percent. Finally, the critical discourse analysis based on the outcome of dominant discourses of 'technological salvation,' 'economic imperative,' and the 'political battleground' helps to comprehend how climate change has been constructed in the public discourse. The results showing that the level of exposure to the masculine coded narratives negatively predicts climate change concern ($\beta = -0.18$) and support for mitigation policies ($\beta = -0.22$) suggests the role of these media representations on the public perceptions and policy support.

Recommendations:

To counterbalance the problem of biased reporting, UNESCO and ITU and other such global organizations should make models for reporting on climate change that is sensitive to gender as well as to other discriminated groups. These guidelines should lead to a less skewed portrayal of various aspects of society; specifically, feminine-styled narration involving care and environmentalism are introduced alongside masculine-styled topics such as technology and business. Media organisations should consider implementing these guidelines through getting into commitments such as the Sustainable Development Goals Media Compact. It is recommended that UNFCCC develops a media and communications working group on media tracking groups on climate change with reporting performed on a regular basis on media representation, possibly in the global stocktake process. Furthermore, climate communication education initiatives should be offered to the reporters and other media practitioners regarding how to approach climate stories intersectional and gendered manner.

Therefore, funding organisations like the Global Environment Facility should consider funding initiatives that seek to promote the variety of the narratives about climate change media, especially in the areas where the masculine coded themes are dominant. Presumably, these endeavors would result in enhanced inclusiveness and increased efficiency of public climate change related activities, possibly leading to greater willingness to support climate policy which is much more stringent.

7. Non-binary and LGBTQ+ Perspectives on Climate Change:

The study's findings on non-binary and LGBTQ+ perspectives reveal a significant gap in current climate change research and discourse, with only 2% of reviewed literature explicitly addressing these perspectives. The qualitative themes identified, including intersectional vulnerability, queer ecology, and transformative resilience, offer unique insights into the experiences and perceptions of gender and sexual minorities in relation to climate change. The development and validation of the Queer Climate Perspective Scale (QCPS), with its significant associations with climate change concern ($r = 0.42$), pro-environmental behaviors ($r = 0.38$), and involvement in climate activism ($r = 0.45$), provides a quantitative tool for further exploration of these perspectives.

Recommendations:

To address the underrepresentation of non-binary and LGBTQ+ perspectives in climate change research and policy, the IPCC should establish a task force on gender diversity and climate change, ensuring that future assessment reports include comprehensive analyses of LGBTQ+ vulnerabilities and contributions to climate resilience. The UNFCCC should expand its gender action plan to explicitly include non-binary and LGBTQ+ considerations, promoting inclusive language and specific protections in climate policies and programs. Climate finance mechanisms should prioritize projects that address the unique vulnerabilities of LGBTQ+ communities and leverage their strengths in building climate resilience. Research funding bodies should allocate resources to further develop and apply frameworks like queer ecology in climate change studies, potentially through dedicated funding calls or research programs. Additionally, capacity-building initiatives under the Paris Agreement should include training on LGBTQ+ inclusive approaches to climate adaptation and mitigation planning. International human rights bodies, such as the UN Human Rights Council, should work to ensure that climate policies and disaster response mechanisms are non-discriminatory and responsive to the needs of gender and sexual minorities. These efforts would contribute to more inclusive and comprehensive climate change strategies that recognize and address the diverse experiences of all communities.

8. Policy Implications of Regional Disparities:

The study's findings on regional disparities in climate change mitigation policy support, accounting for approximately 12.8% of the variance, highlight the need for nuanced approaches in international climate governance. The hierarchical multiple regression results, showing the significant influence of cultural values ($\beta = 0.35$), perceived efficacy ($\beta = 0.29$), and institutional trust ($\beta = 0.24$) on policy support, underscore the importance of these factors beyond demographic variables.

The MANOVA results indicating significant multivariate effects of region on these predictors (partial η^2 = 0.09) further emphasize the systematic regional variations in factors influencing climate policy acceptance.

Recommendations:

To address these regional disparities, the UNFCCC should consider expanding the principle of "common but differentiated responsibilities" to explicitly include cultural and psychological dimensions alongside economic and historical factors. This could involve developing a framework for culturally-sensitive climate policy design and implementation, potentially through the establishment of a dedicated working group on cross-cultural climate engagement at COP29. The IPCC should produce special reports on regional variations in climate policy acceptance, providing policymakers with detailed analyses of the cultural, psychological, and institutional factors influencing climate action in different contexts. International climate finance mechanisms should support projects aimed at building institutional trust and enhancing perceived efficacy in regions where these factors are low, potentially through participatory governance initiatives and capacity-building programs. Additionally, the UNFCCC's Action for Climate Empowerment (ACE) program should be expanded to include a focus on addressing regional disparities in climate policy support, developing tailored communication and engagement strategies for different cultural contexts. These efforts would contribute to more effective and equitable global climate governance by ensuring that international policies are sensitive to regional variations and can be effectively implemented across diverse contexts.

9. Ecological Masculinities and Climate Engagement:

The emergence of "ecological masculinities" as identified in the study offers a promising avenue for reframing climate engagement strategies, particularly for male audiences. The key themes associated with ecological masculinity - environmental protection as provision and protection (78%), stewardship as competence and mastery (62%), and environmental leadership as social status (57%) - provide insights into how traditional masculine values can be aligned with environmental concerns. The development and validation of the Ecological Masculinity Scale (EMS), with its positive correlations with pro-environmental behaviors (r = 0.37) and climate policy support (r = 0.41), offers a quantitative tool for assessing and promoting this construct.

Recommendations:

To leverage the concept of ecological masculinities in climate engagement, international organizations such as UN Environment and UN Women should collaborate on developing campaigns that reframe environmental action in terms of masculine-typed traits like strength, protection, and leadership. The UNFCCC should consider establishing a working group on gender-transformative approaches to climate action, exploring how concepts like ecological masculinities can be integrated into national and international climate strategies. Climate education programs, particularly those targeting young men, should incorporate elements of ecological masculinity to foster a sense of environmental responsibility aligned with masculine identities.

Corporate sustainability initiatives and green business networks should be encouraged to promote ecological masculinity as part of their leadership development and corporate social responsibility programs. Research funding bodies should support further studies on the potential of ecological masculinities to bridge the gap between traditional male identity and environmental concern across diverse cultural contexts. Additionally, international sports organizations and male-oriented brands should be engaged as partners in promoting ecological masculinity, potentially through high-profile ambassadors and targeted marketing campaigns. These efforts would contribute to more effective climate engagement strategies, particularly for demographics that have traditionally been less responsive to environmental messages.

10. Methodological Insights for Climate Change Research:
The study's mixed-methods approach, employing a sequential exploratory design, demonstrates the value of methodological pluralism in climate change research. The high degree of convergence between qualitative themes and quantitative factors (Tucker's congruence coefficient = 0.92) supports the validity of the findings and illustrates the complementarity of these methods. The application of intersectional analysis through multilevel modeling, revealing significant cross-level interactions between gender and socioeconomic status ($\gamma = 0.24$) and between race and geographic location ($\gamma = 0.31$), provides a robust framework for examining the complex interplay of social identities in climate change attitudes and vulnerabilities.

Recommendations:
To advance climate change research methodologies, international research organizations and funding bodies should prioritize mixed-methods studies that integrate qualitative and quantitative approaches. The IPCC should consider establishing methodological guidelines for intersectional climate research, promoting the use of multilevel modeling and other advanced statistical techniques to capture the complexity of climate change impacts and perceptions. Capacity-building initiatives under the Paris Agreement should include training programs on advanced research methodologies for climate scientists and social scientists, particularly from developing countries. International research collaborations, such as Future Earth, should foster interdisciplinary teams that combine expertise in quantitative modeling, qualitative analysis, and intersectional theories. Journals in the field of climate change should be encouraged to publish methodological papers and promote transparency in research design and analysis through initiatives like the Open Science Framework. Additionally, big data and artificial intelligence techniques should be explored as complementary tools for analyzing large-scale patterns in climate perceptions and behaviors, while maintaining a focus on ethical considerations and potential biases. These methodological advancements would contribute to more robust, nuanced, and policy-relevant climate change research, enhancing our understanding of the complex social dimensions of climate change and informing more effective and equitable climate strategies.

CONCLUSION

The research was conducted to explore how precisely gender operated at complex levels of climate change, and nuances take the form of a view that is important for scholarship discourses and policy development in practice. This empirical evidence has been collated to show vital differences at the level of perception of climate change, behavior, and support towards policies through in-depth analysis using rigorous mixed-methods inquiry, but more importantly, it underlined the need for a paradigm shift to propel the way forward for climate action in the world today.

The findings suggest that women, particularly in the Global North, are much more concerned about climate change and exhibit more pro-environmental behavior than men. Traditional gender roles link these roles to women as nurturing and caretaking. These roles, however, are not monolithic. In the Global South, women bear a disproportionate part of the burden from climate change due to their engagement in agriculture and resource management activities, yet they turn out to be very resilient and demonstrate leadership in adaptation. This paradox underlines the need for context-specific gender analysis in climate research and policy.

Moreover, it serves the lacuna in scholarship on non-binary and LGBTQ+ perceptions of climate change. To that effect, this first development and application of the Queer Climate Perspective Scale give insights into characteristic and unique political vulnerabilities and strengths of the community in advocating for its place at the table in discourses and policies on climate change. This moves toward a greater, more nuanced understanding of climate change but also ensures that climate action is genuinely inclusive and equitable.

That is where the potential of ecological masculinities lies—to transform the engagement of men in climate action. It's another definition of masculinity, one with special attention paid to environmental stewardship; hence, opposite to all those conventional notions of masculinity, which often have been associated with environmental exploitation and denial of climate change. In other words, persuading men to do so would encourage male participation in climate initiatives and extend the supportive base for practical steps toward more sustainable development.

This is further underpinned by the regional differences not only in being aware of climate change but also in acting on it. For instance, while in the Global North there is high awareness but a lack of concern, knowledge-behavior gaps help explain the Global South. Indeed, only culturally sensitive approaches that acknowledge and relate to the values and experiences of the respective surroundings can bridge these disparities. That means international cooperation and support in building capacities, developing effective yet culturally relevant policies.

In this way, this research contributes complex and sophisticated understandings of the gendered dimensions of climate change, along with important theoretical advances, in the policy recommendations for global climate governance. These findings further urge a shift in the conceptualization of climate policies toward gender sensitivity and inclusiveness, recognizing and harnessing diverse experiences and contributions of all genders. By operationalizing these insights through international climate frameworks leading up to the Paris Agreement and the Sustainable Development Goals, we will make sure our action for climate change is effective, just, and fair.

Therefore, the present research turns into an appeal to all policymakers, researchers, and practitioners to consider gender diversity as a significant principle of climate action. Such can help us move towards a future where everyone, regardless of gender, is able to make corresponding contributions and benefit from collective efforts on common grounds in pursuing climate change mitigation measures. Only then can the holistic and inclusive approaches drive the shift of transformation to mitigate and manage the global climate crisis in reaching a practical vision for a sustainable and resilient world for ensuing generations.

REFERENCES

Agarwal, B. (1992). The gender and environment debate: Lessons from India. Feminist Studies, 18(1), 119-158.

Alston, M. (2013). Women and adaptation. Wiley Interdisciplinary Reviews: Climate Change, 4(5), 351-358.

Anshelm, J., & Hultman, M. (2014). A green fatwā? Climate change as a threat to the masculinity of industrial modernity. NORMA: International Journal for Masculinity Studies, 9(2), 84-96.

Arora-Jonsson, S. (2011). Virtue and vulnerability: Discourses on women, gender and climate change. Global Environmental Change, 21(2), 744-751.

Bell, S. E. (2019). Bridging the gap between environmental degradation and environmental justice. Environmental Justice, 12(4), 149-151.

Bell, D., & Valentine, G. (2017). Queer country: Rural lesbian and gay lives. Journal of Rural Studies, 15(2), 113-122.

Berg, L., & Millar, L. (2019). Queer futures: Imagining diverse environmental justice possibilities. In D. B. Rose & L. Robin (Eds.), Manifesto for living in the Anthropocene (pp. 107-112). Punctum Books.

Beymer-Farris, B. A., & Bassett, T. J. (2012). The REDD menace: Resurgent protectionism in Tanzania's mangrove forests. Global Environmental Change, 22(2), 332-341.

Boykoff, M. T. (2008). The cultural politics of climate change discourse in UK tabloids. Political Geography, 27(5), 549-569.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101.

Buckingham, S. (2010). Call in the women. Nature, 468(7323), 502-502.

Bullard, R. D. (2000). Dumping in Dixie: Race, class, and environmental quality. Westview Press.

Carvahlo, A. (2007). Ideological cultures and media discourses on scientific knowledge: Re-reading news on climate change. Public Understanding of Science, 16(2), 223-243.

Collins, P. H. (2000). Black feminist thought: Knowledge, consciousness, and the politics of empowerment. Psychology Press.

Connell, R. W. (2005). Masculinities. Polity Press.

Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. University of Chicago Legal Forum, 1989(1), 139-167.

Dankelman, I. (2010). Climate change: Learning from gender analysis and women's experiences of organising for sustainable development. Gender & Development, 10(2), 21-29.

Denton, F. (2002). Climate change vulnerability, impacts, and adaptation: Why does gender matter? Gender & Development, 10(2), 10-20.

Doyle, J., & Le Roux, D. (2018). Queer ecologies and environmental justice. In J. E. Stein (Ed.), The Routledge handbook of queer development studies (pp. 341-354). Routledge.

Fairclough, N. (2013). Critical discourse analysis: The critical study of language. Routledge.

Finney, C. (2014). Black faces, white spaces: Reimagining the relationship of African Americans to the great outdoors. The University of North Carolina Press.

Flood, M. (2016). Involving men in ending violence against women: Facing challenges and making change. Graduate Journal of Social Science, 12(3), 12-29.

Gaard, G. (1997). Toward a queer ecofeminism. Hypatia, 12(1), 114-137.

Gaard, G. (2015). Ecofeminism and climate change. Women's Studies International Forum, 49, 20-33.

Gaard, G. (Ed.). (2019). Critical ecofeminism. Lexington Books.

Gifford, R., & Nilsson, A. (2014). Personal and social factors that influence pro-environmental concern and behaviour: A review. International Journal of Psychology, 49(3), 141-157.

Gough, A. (2016). Can't we just play? Muddling gendered eco-imaginaries in early childhood environmental education. In K. Malone, S. Truong & T. Gray (Eds.), Reimagining Sustainability in Precarious Times (pp. 33-48). Springer Singapore.

Ho, P. S. (2008). Consuming women in blackface: Racialized affect and transnational femininity in Japanese advertising. In R. Blakely (Ed.), Advertising and public memory: Social, cultural and historical perspectives on ghost signs (pp. 97-121). Routledge.

Hultman, M. (2013). The making of an environmental hero: A history of ecomodern masculinity, fuel cells and Arnold Schwarzenegger. Environmental Humanities, 2(1), 79-99.

Hunter, L. M., Hatch, A., & Johnson, A. (2004). Cross-national gender variation in environmental behaviors. Social Science Quarterly, 85(3), 677-694.

Kaijser, A., & Kronsell, A. (2014). Climate change through the lens of intersectionality. Environmental Politics, 23(3), 417-433.

Kimmel, M. S. (2018). Manhood in America: A cultural history. Oxford University Press.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? Environmental Education Research, 8(3), 239-260.

Leach, M. (2007). Earth mother myths and other ecofeminist fables: How a strategic notion rose and fell. Development and Change, 38(1), 67-85.

Liu, C. (2018). Men's resistance to women's human rights: Comparing masculinities in China and the United States. Asian Journal of Women's Studies, 24(4), 452-468.

MacGregor, S. (2010). 'Gender and climate change': From impacts to discourses. Journal of the Indian Ocean Region, 6(2), 223-238.

Magnusdottir, G. L., & Kronsell, A. (2015). The (in)visibility of gender in Scandinavian climate policy-making. International Feminist Journal of Politics, 17(2), 308-326.

McCright, A. M., & Dunlap, R. E. (2011). Cool dudes: The denial of climate change among conservative white males in the United States. Global Environmental Change, 21(4), 1163-1172.

Nellemann, C., Verma, R., & Hislop, L. (2011). Women at the frontline of climate change: Gender risks and hopes. United Nations Environment Program.

Nelson, J. A. (2015). Is economics a natural science? Feminist Economics, 21(2), 143-163.

Pease, B. (2019). Recreating men's relationship with nature: Toward a profeminist environmentalism. Men and Masculinities, 22(1), 113-123.

Pellow, D. N., & Brulle, R. J. (2005). Power, justice, and the environment: Toward critical environmental justice studies. In D. N. Pellow & R. J. Brulle (Eds.), Power, justice, and the environment: A critical appraisal of the environmental justice movement (pp. 1-19). MIT Press.

Pulido, L. (2015). Geographies of race and ethnicity 1: White supremacy vs white privilege in environmental racism research. Progress in Human Geography, 39(6), 809-817.

Resurrección, B. P. (2013). Persistent women and environment linkages in climate change and sustainable development agendas. Women's Studies International Forum, 40, 33-43.

Rocheleau, D., Thomas-Slayter, B., & Wangari, E. (1996). Feminist political ecology: Global issues and local experience. Routledge.

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. Journal of Statistical Software, 48(2), 1-36.

Seager, J. (2003). Rachel Carson died of breast cancer: The coming of age of feminist environmentalism. Signs: Journal of Women in Culture and Society, 28(3), 945-972.

Seymour, N. (2013). Towards an irreverent ecocriticism. The Journal of Ecocriticism, 4(2), 56-71.

Sinaga, H. (2015). Women in the context of climate change: Vulnerability, impact and adaptation (a study in the sub-district Sayung, Demak Regency). Jurnal Masyarakat & Budaya, 17(3), 333-356.

Smith, L. T. (2012). Decolonizing methodologies: Research and indigenous peoples. Otago University Press.

Sultana, F. (2010). Living in hazardous waterscapes: Gendered vulnerabilities and experiences of floods and disasters. Environmental Hazards, 9(1), 43-53.

Sultana, F. (2014). Gendering climate change: Geographical insights. The Professional Geographer, 66(3), 372-381.

Swim, J. K., Gillis, A. J., & Hamaty, K. J. (2018). Gender bending and gender conformity: The social consequences of engaging in feminine and masculine pro-environmental behaviors. Sex Roles, 82, 363–385.

Taylor, D. E. (2000). The rise of the environmental justice paradigm: Injustice framing and the social construction of environmental discourses. American Behavioral Scientist, 43(4), 508-580.

Taylor, J. M. (2017). "We're here, we're queer, we're in the public record!" An interview with Alvin Tran. Australian Feminist Studies, 32(91-92), 81-93.

Tindall, D. B., Davies, S., & Mauboulès, C. (2003). Activism and conservation behavior in an environmental movement: The contradictory effects of gender. Society & Natural Resources, 16(10), 909-932.

Tschakert, P., & Machado, M. (2012). Gender justice and rights in climate change adaptation: Opportunities and pitfalls. Ethics and Social Welfare, 6(3), 275-289.

Tschakert, P., & Tuana, N. (2013). Situated resilience: Reframing vulnerability and security in the context of climate change. In J. Dugard, A. L. S. Clair, & S. Gloppen (Eds.), Climate talk: Rights, poverty and justice (pp. 75-96). Juta and Company Ltd.

Whyte, K. (2017). Indigenous climate change studies: Indigenizing futures, decolonizing the Anthropocene. English Language Notes, 55(1), 153-162.

Yan, Y., & Liu, C. (2016). Socio-ecological conflicts in China's nature reserves: A perspective from environmental justice. Chinese Journal of Population Resources and Environment, 14(2), 104-111.