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Print ISSN: [3006-2497](#) Online ISSN: [3006-2500](#)Platform & Workflow by: [Open Journal Systems](#)<https://doi.org/10.5281/zenodo.22159094>**The Impact of Environmental Attitude & Knowledge Sharing Behavior on Climate Change Concern****Faseeha Saif**

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Email: muhammadabubakar704@gmail.com**Abstract**

This study aimed to explore the impact of Environmental Attitude and Knowledge Sharing Behavior on Climate Change Concerns. A sample of participants (N = 377) completed a questionnaire assessing their levels of Environmental Attitude and Knowledge Sharing Behavior, as well as their Climate Change Concern. The data were analyzed using regression analysis. The results revealed that both Environmental Attitude and Knowledge Sharing Behavior played a crucial role in influencing Climate Change Concerns. Specifically, higher levels of Environmental Attitude and active Knowledge Sharing Behavior were associated with a heightened concern for climate change. These findings emphasize the significance of individuals' commitment to environmental attitude and their active participation in knowledge sharing behavior in shaping concerns about climate change. The study highlights the need for promoting environmentally conscious values and fostering knowledge-sharing behaviors to enhance individuals' concern for climate change. These insights have implications for designing interventions and strategies to raise awareness and promote action in response to climate change.

Keywords: Environmental Attitude, Climate Change Concern, Knowledge Sharing Behavior, Global Warming

Introduction

In the realm of human activity, all living organisms continually engage with their environment to carry out various organic, social, cultural, and economic endeavors (Varoglu et al., 2017). The environment encompasses a complex interplay of biological, chemical, physical, and social elements that can exert direct or indirect influence on the well-being of organisms (Shepardson et al., 2017). Regrettably, the environment has been subject to degradation due to rapid industrial growth, the excessive utilization of natural resources for raw material production, the proliferation of industrial waste, and inconsiderate human practices (Peltonen-Sainio et al., 2010). In the face of the contemporary high standard of living facilitated by technological advancements, the dynamics of our environment are undergoing profound

shifts, and the consequences of these environmental challenges, if left unaddressed, could imperil life on Earth (Yilmaz et al., 2002).

The environmental landscape is fraught with multifaceted issues, encompassing agricultural concerns, energy resource depletion, desertification, deforestation, drought, as well as the pervasive issues of air, water, and land pollution. Additionally, there are threats such as ozone layer depletion, the greenhouse effect, global warming, species extinction, nuclear pollution, and acid rain, all of which loom over the environment (Zelezny & Schultz, 2000). In the wake of these challenges, both individuals and governments bear a shared responsibility for the causation and prevention of these environmental quandaries (Abdul-Wahab et al., 2003).

Climate change has emerged as a paramount environmental concern, with growing attention directed toward this issue (Hase et al., 2021). The repercussions of climate change are intensifying, posing severe threats to human health and life. Several studies have correlated anthropogenic climate change with unforeseen and previously unobserved consequences, particularly the proliferation of greenhouse gas emissions (Andrić et al., 2019; Dedinec et al., 2015; Tollefson, 2018). Furthermore, predictions from Melillo et al. (2014) underscore that climate change presents not only substantial challenges to human well-being, resources, and economies but also heightened security concerns. The advent of more extreme weather conditions, rising sea levels, and profound shifts in precipitation patterns puts stress on global energy production, endangers ecosystems, and necessitates shifts in agricultural practices (Palmucci & Ferraris, 2023; Vergunst & Berry, 2022). Mitigating a global climate crisis and ensuring the security of food and water supplies will require concerted efforts to adjust energy supply and demand and to manage ecosystems more sustainably (Bullock et al., 2022).

Research indicates that individuals are more likely to accept responsibility for their actions and engage in eco-friendly behavior when they possess awareness of climate change and its ecological consequences (Abdul-Wahab et al., 2003). Lack of information has been identified as the primary impediment to the adoption of environmentally friendly habits (Belaïd, 2022). In light of this, a new research initiative has been launched to assess the impact of environmental education on fostering environmentally responsible behavior among university students (Howarth & Viner, 2022).

In this context, individuals with a university education who possess environmental knowledge and problem-solving capabilities are poised to play a pivotal role in addressing these challenges (Abdul-Wahab et al., 2003; Andrić et al., 2019). A fundamental prerequisite for perceiving and responding to environmental risks is a comprehensive understanding of climate change and environmental issues (Kemp et al., 2022). Research in the field of climate change knowledge and beliefs has witnessed considerable activity, with studies examining perceptions of climate change among both adults and adolescents, revealing disparities in public understanding of climate change (Franks & Hoffmann, 2012). For instance, a study by Reinds et al. (2012) explored students' awareness, attitudes, and pro-environmental behavior in relation to changing weather patterns, finding that female students, younger students, and those with a higher level of scientific knowledge exhibited more environmentally

conscious attitudes. This highlights the increasing attention directed toward climate change, particularly from the perspective of students, as evidenced by recent studies (Malgwi & Joshua, 2021).

The escalating shifts in the climate system represent a dire threat to the long-term sustainability of life on Earth, and this transformation is unfolding at an accelerated pace. Notably, global warming stands as a principal contributor to environmental degradation. The combustion of fossil fuels releases greenhouse gases (GHGs) into the atmosphere, contributing to both rising global temperatures and environmental contamination (Simiyu et al., 2022). These disruptions to the Earth's climate systems have far-reaching effects on human life and the economy, resulting in an increase in natural disasters, such as hurricanes, droughts, cyclones, and famines (Sinatra et al., 2012). Pakistan, in particular, faces significant challenges from climate change, including decreased agricultural output, heightened variability in water supply, coastal erosion, and increased instances of extreme weather conditions. The adverse impacts of global climate change have become markedly evident in Pakistan over the past two decades (Zobeidi et al., 2020). Recognizing the need for climate change adaptation, the costs of such initiatives are projected to range from seven to fourteen billion dollars annually, according to an analysis conducted by the Asian Development Bank (ADB) on the socioeconomic implications of environmental deterioration. Consequently, the government is taking policy, administrative, and operational measures to mitigate the effects of climate change (Pakistan Economic Survey 2019-20).

Research Objectives

1. To ascertain the correlation between the ecological attitudes of university students and their levels of apprehension concerning climate change.
2. To delve into the association between students' proclivity for knowledge dissemination and the climate change concerns expressed by university students.

Hypotheses

H1: The interaction between university students' embrace of environmental attitude and their climate change concerns is statistically significant.

H2: The interrelationship between students' knowledge-sharing behavior and the climate change concerns of university students holds statistical significance.

Methodology

In line with the objectives of this study and under the context of the research article titled "Impact of Environmental Attitude and Knowledge Sharing Behavior on Climate Change Concerns," a quantitative research approach was employed (Ningi, 2022). This research design was chosen due to the presence of three variables, two of which are independent and one dependent, allowing for a comprehensive examination of the influence of independent variables on the dependent variable.

The study primarily focused on university students in Lahore, constituting the majority of the research population. Following the guidance of Saunders et al. (2015), a convenient sampling method was employed to select the sample, as it facilitates efficient data collection. Given the ready availability of university students, a straightforward sampling approach was utilized.

Data collection was executed through the administration of self-administered questionnaires, ensuring the confidentiality of all research participants was upheld. Participants were assured that their responses would be treated with utmost privacy and would remain confidential. To offer insight into the demographics of the respondents, the following is a summary of their profiles:

Table 1:Demographic Variables of Sample

	Variables	N	%
1	Gender		
	Male	196	52
	Female	181	48
2	Age		
	17-20	170	45.1
	21-24	168	44.6
	25-29	36	9.5
	30 – above	3	0.8
3	Degree		
	BS	325	86.2
	MS/M.Phill	44	11.7
	PHD	8	2.1
4	Permanent Residence		
	Rural	167	44.3
	Urban	204	54.1
5	Mother Tongue		
	Punjabi	310	82.2
	Balochi	17	4.5
	Pashto	16	4.2
	Sindhi	8	2.1
	Any other	26	6.9

Results and Findings

The reliability analysis for the questionnaires used to assess the influence of “Environmental Attitude” and “Knowledge Sharing Behavior” on “Climate Change Concerns” is presented in the table above. This analysis employed Cronbach’s alpha coefficient, a metric for assessing internal consistency and reliability.

For the variable “Climate Change Concerns,” the Cronbach’s alpha coefficient yielded a value of 0.76 (Table 2). This finding signifies a moderate level of internal consistency, affirming that the

questionnaire items measuring climate change concerns are reasonably reliable. This variable comprises five items.

The variable “Environmental Attitude” demonstrated a Cronbach’s alpha coefficient of 0.77. This outcome denotes a level of internal consistency similar to the aforementioned variable, indicating that the items assessing “Environmental Attitude” in the questionnaire are also reasonably reliable. This variable, too, consists of five items.

Lastly, the variable “Knowledge Sharing Behavior” was associated with a Cronbach’s alpha coefficient of 0.70. While this coefficient suggests a marginally lower level of internal consistency compared to the prior variables, it still attests to an acceptable degree of reliability. The variable encompasses five items.

In summary, the findings from this analysis suggest that the questionnaire employed in this study provides reasonably reliable measures for “Climate Change Concerns,” “Environmental Attitude,” and “Knowledge Sharing Behavior.” While the variable “Knowledge Sharing Behavior” exhibits slightly lower reliability, it still maintains an acceptable level of internal consistency.

Table 2

Reliability Analysis

Variables	No. of items	Cronbach’s Alpha
Climate Change Concern	5	.76
Environmental attitude	5	.77
Knowledge Sharing Behavior	5	.70

In the Table 3 , the second analysis, we explored the relationship between “Knowledge Sharing Behavior” and “Climate Change Concerns.” The results indicate a statistically significant positive association between “Knowledge Sharing Behavior” and “Climate Change Concerns” ($r = 0.38$, $p < 0.001$). This implies that those who engage more in “Knowledge Sharing Behavior” exhibit heightened “Climate Change Concerns.”

These findings align with the premise that “Environmental Attitude” and “Knowledge Sharing Behavior” contribute to shaping individuals’ concerns about climate change. The statistical significance underscores the relevance of these factors in the context of our study, emphasizing their impact on “Climate Change Concerns.”

These results contribute to a deeper understanding of how “Environmental Attitude” and “Knowledge Sharing Behavior” play a crucial role in influencing “Climate Change Concerns,” which is central to the broader discourse on our adopted title, “Impact of Environmental Attitude and Knowledge Sharing Behavior on Climate Change Concerns.”

Table 3

Correlation analysis between dependent and independent variables

	1	2	3	4	5	6	7	8
1.Gender	—	-.03	.09	.13**	-.08	-.01	-.01	-.01
2.Age		—	.45**	.07	.01	.04	.07	.06
3.Degree			—	-.03	-.05	-.09	-.04	.05
4.Permanent Residence				—	-.05	.11*	.01	-.03
5.Mother Tongue					—	.07	.13*	.05
6.CCC						—	.41**	.18**
7.EA							—	.41**
8.KSB								—

Note. * = $p < 0.05$, ** = $p < 0.01$, CCC = Climate Change Concern, EA = Environmental Attitude, KSB = Knowledge Sharing Behavior

Table 4 presents the results of a regression analysis. The predictors in the analysis include a Constant term and "Environmental Attitude." The Constant term in the regression has a beta coefficient of 11.40, indicating the expected change in the dependent variable when all other predictors are held constant. However, the p-value is not provided, making it unclear if the Constant term is statistically significant. The 95% confidence interval for the Constant term ranges from 9.69 to 13.73.

"Environmental Attitude," as a predictor, has a beta coefficient of 0.40, indicating that for every one-unit increase in "Environmental Attitude," the dependent variable is expected to increase by 0.40 units. This coefficient is statistically significant. The 95% confidence interval for "Environmental Attitude" ranges from 0.36 to 0.58. The Total R is reported as 0.41, indicating the correlation between the predicted values from the regression model and the actual values of the dependent variable. The R-squared value is 0.17, signifying that "Environmental Attitude" explains 17% of the variance in the dependent variable. The ΔR -squared value of 0.17 suggests that the inclusion of "Environmental Attitude" in the model has accounted for an additional 17% of the variance compared to a model without this predictor.

In summary, the regression analysis suggests that "Environmental Attitude" is a significant predictor of the dependent variable. The inclusion of "Environmental Attitude" in the model improves the prediction of the dependent variable, accounting for 17% of the variance.

Table 4

Linear Regression Analysis for Environmental Attitude

Predictors	SE	β	t	p	95% Confidence Interval	
					LL	UL
Constant	1.03		11.40	.00	9.69	13.73
Environmental Attitude	.05	.40	8.66	.00	.36	.58
Total R	.41**					
R ²	.17					
ΔR^2	.17					

Note: SE= Standardized Error, β = Standardized coefficient, t= significance value of prediction, p= value of significance, R² = Square of change in value of R, *= significant at p<0.05, **=Significant at p<0.01.

Table 5 presents the results of a regression analysis. The predictors in the analysis include a Constant term and "Knowledge Sharing Behavior." "Knowledge Sharing Behavior," as a predictor, has a beta coefficient of 0.18, indicating that for every one-unit increase in "Knowledge Sharing Behavior," the dependent variable is expected to increase by 0.18 units. This coefficient is statistically significant, as indicated by the p-value of 0.00. The 95% confidence interval for "Knowledge Sharing Behavior" ranges from 0.08 to 0.29. The R-squared value is 0.03, signifying that "Knowledge Sharing Behavior" explains 3% of the variance in the dependent variable. The ΔR -squared value of 0.03 suggests that the inclusion of "Knowledge Sharing Behavior" in the model has accounted for an additional 3% of the variance compared to a model without this predictor.

On the whole, the regression analysis suggests that "Knowledge Sharing Behavior" is a significant predictor of the dependent variable. The inclusion of "Knowledge Sharing Behavior" in the model improves the prediction of the dependent variable, accounting for 3% of the variance. The Constant term is also significant, indicating a baseline effect on the dependent variable.

Table 5

Linear Regression Analysis for Knowledge Sharing Behavior

Predictors	SE	β	t	p	95% Confidence Interval	
					LL	UL
Constant	1.0		17.01	.00	15.04	18.97
Knowledge sharing behavior	.05	.18	3.55	.00	.08	.29
Total R	.18*					
R ²	.03					
ΔR^2	.03					

Note: SE= Standardized Error, β = Standardized coefficient, t= significance value of prediction, p= value of significance, R² = Square of change in value of R, *= significant at p<0.05, **=Significant at p<0.01.

Discussion

The results of this study underscore the significant relationship between college students' "Knowledge Sharing Behavior" and their concerns about climate change. This finding aligns with prior

research, which has emphasized the influence of environmental attitudes on climate change concerns (Zobeidi et al., 2020; Ningi, 2022). These previous studies have highlighted the role of attitudes in generating concerns about climate change, as attitudes can evoke apprehensions regarding the environmental issues (Wachholz et al., 2014). In this context, our findings emphasize the importance of fostering a positive attitude toward the environment, as evidenced by the attitudes held by college students. This connection between global climate warming and the prevalence of such attitudes contributes to the growing awareness and unrest, both globally and particularly in Pakistan.

Recent studies have emphasized the potential for young people to engage in environmental activities, as such engagements can cultivate attitudes toward the environment and, subsequently, raise awareness about climate change-related issues (Mirza et al., 2020). Additionally, Bohlerengen and Wiium (2022) have argued that young people's environmental attitudes play a crucial role in addressing environmental challenges, and nurturing this mindset is essential to prepare young individuals to tackle environmental issues. Considering college students as part of the youth demographic, it becomes evident that their environmental attitudes significantly influence their concerns about climate change. This study confirms a substantial association between college students' "Environmental Attitude" and their concerns regarding climate change.

This connection between "Environmental Attitude" and climate change concerns aligns with the theory of planned action and the role of environmental attitudes among college students (Saunders et al., 2015). Moreover, Peltonen-Sainio et al. (2010) have expounded on how theories of planned behavior related to the environment predict intentions connected to eco-friendly behavior, thereby reinforcing environmental concerns. Our study echoes these insights by confirming that "Environmental Attitude" contributes significantly to college students' concerns about climate change.

The second hypothesis of this study explores the impact of "Knowledge Sharing Behavior" among university students on climate change concerns. The findings reveal a notable and positive relationship between "Knowledge Sharing Behavior" and climate change concerns. The literature has previously emphasized the significance of education in the context of climate change concerns among students (Hase et al., 2021).

The dissemination of knowledge holds profound importance for both public and private sectors, particularly in higher learning institutions like universities. Knowledge utilization is a strategic concern, and institutions of higher education not only provide students with information but also manage, amalgamate, and distribute it among students. Consequently, "Knowledge Sharing Behavior" is a vital and intricate concept in higher education institutions (Malgwi & Joshua, 2021). Education substantially impacts a nation's economic development (Emambuccus & Fauzel, 2015). Subjective standards, self-worth, interpersonal relationships, and extrinsic motivation are integral elements of knowledge sharing behavior. The feeling of self-worth positively influences both attitude and subjective norms of knowledge sharing behavior (Howarth & Viner, 2022).

"Knowledge Sharing" is the process of sharing information among an organization's members (Kemp et al., 2022). It serves as a means through which individuals contribute to knowledge innovation and application within an organization. "Knowledge Sharing Behavior" fosters cohesiveness among employees, encouraging them to develop and transmit environmental knowledge, from personal experiences to the organizational level (Tollefson, 2018).

Additionally, sharing environmental information enhances the diffusion of environmental knowledge among employees, promoting environmentally friendly behavior (Franks & Hoffmann, 2012). This, in turn, increases the value of shared information and encourages employees to develop new environmental knowledge. Such practices favorably influence employees' engagement in eco-friendly behavior (Charband & Jafari Navimipour, 2018). Moreover, Sinatra et al. (2012) have highlighted the significant influence of knowledge sharing behavior on sustainable development goals, which are closely tied to climate change concerns. Therefore, knowledge sharing has a substantial impact on climate-related concerns.

According to the environmental theory of planned behavior, climate change concern is a behavior that can be influenced by other behaviors, such as "Knowledge Sharing Behavior" (Yılmaz et al., 2002). This theory suggests that responsible behavior can be cultivated among individuals (Mirza et al., 2020). Similarly, "Knowledge Sharing Behavior" is a behavior, and the presence of one behavior can predict another. Hence, previous studies have posited that "Knowledge Sharing Behavior" can serve as a key to understanding concerns related to climate change. Overall, our findings align with the existing literature, confirming that "Knowledge Sharing Behavior" among university students can predict climate change concerns. Therefore, our second hypothesis is substantiated.

In conclusion, the findings from this study highlight the crucial roles played by "Environmental Attitude" and "Knowledge Sharing Behavior" in influencing "Climate Change Concerns" among college students. This emphasizes the need for promoting these behaviors and attitudes to effectively address concerns related to climate change. Our study contributes to the broader understanding of how the interplay between "Environmental Attitude" and "Knowledge Sharing Behavior" can have a substantial impact on climate change concerns.

Conclusion

The relationship between environmental attitude and climate change concern is related to the theory of planned behavior and the importance of environmental attitude for university students. Specifically, the environmental theory of planned behavior predicts behavioral intentions toward an environmentally friendly environment and that these intentions increase environmental concerns. Consistent with these findings, our study confirms that the environmental attitude of university students increases their concern about climate change. The theoretical model which is presented in this study had two hypotheses. Both hypotheses are accepted. Overall findings are consistent with previous studies

in which environmental attitude has significant positive association with climate change concerns and knowledge sharing behavior is positively related to climate change concern under the theoretical lens of environmental theory of planned behavior. Whereas, the knowledge sharing behavior has significant influence on sustainable development goals. These goals are related to climate change concerns. It can be argued that knowledge sharing has significant impact on climate related concerns. Findings of this study are also consistent with the literature in which knowledge sharing has significance association with climate change concern. In this way, the research study is helpful in adding value to the existing literature as well as the future researchers for bringing more and more exploration to the research area.

Limitations and Suggestions

This study has some limitations as well. Data has been collected from university students based in Lahore. In the future, researchers can collect data from other cities of Pakistan to enhance the generalizability of the findings. Data has been collected at one point of time so it is recommended to use longitudinal studies in the future. In this study, only two independent variables i.e. knowledge sharing behavior and environmental attitude are taken to see their impact on climate change concerns. In the future, mediating and moderating variables can be added to analyze the impact of this independent variable in more detail.

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