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Topic: Climate Change Knowledge, Attitudes, and Perceptions of university students in UAE

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1.0 Abstract

This article summarizes a study that looked at how university students in the United Arab Emirates (UAE) perceived and felt about climate change. The study intends to close the research gap by investigating the subtleties of climate change understanding among UAE university students, in recognition of the pressing need for climate action and the possible role of youth in bringing about change. In order to collect data, the study uses a mixed-methods strategy that combines quantitative questionnaires and qualitative focus group talks. Focus group discussions offer more in-depth insights into students' experiences and comprehension of climate change, while the questionnaires evaluate students' knowledge, attitudes, and views of the issue. To promote user comfort and efficient data entry, internet technologies are used to assist the data gathering procedure. Despite possessing a low internal coherence, preliminary results show that the general scale utilized in the study exhibits good dependability for individual items. This implies that the scale captures the desired construct accurately. The document does not, however, include particular statistical analysis results or comprehensive questionnaire and focus group discussion results. Given that university students in the United Arab Emirates have the potential to be future leaders and change agents, the study emphasizes the significance of tackling climate change among them. It highlights the necessity of situation-specific, culturally sensitive interventions that are in line with the goals and problems faced by the young population.. The next generation can be inspired to actively advocate for solutions to climate change by instilling in them a sense of environmental care and responsibility from an early age. This can be achieved through targeted education initiatives and community involvement programs. All things considered, this study advances our knowledge of how UAE university students perceive climate change and offers insightful information to instructors and policymakers. It emphasizes how important it is to create policies and educational programs that operate with the unique sociocultural characteristics and educational frameworks of the United Arab Emirates. The results are intended to guide focused activities that encourage sustainable lifestyle choices and support the country's efforts to combat climate change.

2.0 Introduction

2.1 context

The impact of climate change on the environment, businesses, and communities around the world makes it one of the most urgent global concerns of our time. Due to its location in the Middle East's dry region, the United Arab Emirates (UAE) is especially sensitive to the negative consequences of climate change, such as rising heat, water scarcity, and sea level rise. The UAE confronts particular difficulties in reducing and adjusting to the effects of climate change because of its reliance on fossil fuels for energy and rising population. Developing effective policies and educational activities requires an understanding of how various demographic groups view and react to climate change. The future of climate action could be

significantly influenced by the university student population, which is one of these segments. Their understanding, attitudes, and opinions of climate change can have a significant impact on both individual and society behaviors because they will be the next generation of decision-makers, influencers, and leaders. This study aims to look into the knowledge, attitudes, and views of university students in the UAE regarding climate change. We seek to understand how these factors affect students' attitudes, behaviors, and actions towards climate change by employing a deductive method. This project hopes to address climate change concerns in the UAE and develop sustainable behaviours among young people by providing valuable information that can direct focused educational and policy actions. Understanding of climate change, Understanding the origins, effects, and possible solutions of climate change is referred to as climate change knowledge. The consensus of scientists on climate change, the release of greenhouse gases, renewable energy options, and possible effects on environment and human society are all included in this knowledge. Visions of Climate Change, The sentiments, opinions, and assessments a person has about climate change and the problems it is related with are collectively referred to as their attitudes towards the topic. Interest for sustainability, support for climate laws, and a readiness to adopt sustainable behaviours are common manifestations of a positive attitude. Negative attitudes, on the other hand, can result in passivity or opposition to climate action. Attitudes towards Climate Change How people interpret and make sense of information and events related to climate change is a key factor in perceptions of it. The propensity of an individual to engage in climate-friendly behaviours or advocate for climate legislation can be greatly impacted by these beliefs, which can be influenced by cultural, social, and psychological variables. This study attempts to understand the complex interactions between knowledge, attitudes, and perceptions of climate change among university students in the United Arab Emirates. We hope to create the groundwork for developing tailored interventions that enable young adults to take initiative in tackling climate change by putting light on these interactions. These actions have the potential to help the UAE and, indirectly, the entire world live more sustainably in the future. We will examine the body of literature on university students' knowledge, attitudes, and perceptions of climate change in the parts that follow, both globally and within the particular context of the United Arab Emirates. We will get a better knowledge of how younger people in the UAE may play a crucial role in battling climate change as a result of this review of literature, which will offer important insights and lay the groundwork for the empirical study that comes.

2.2 Identification of Gap

Unquestionably, one of the most important global issues of our day is climate change, which has significant effects on the environment, society, and the economy. The significance of education and human attitudes and perspectives regarding climate change becomes ever more important as nations globally deal with the effects of shifting weather patterns, rising sea levels, and a rise in the frequency of extreme weather events.

By examining the effects of climate change knowledge, attitudes, and views across university students in the United Arab Emirates (UAE), this study aims to fill an important knowledge gap. Like many other countries, the United Arab Emirates is suffering from the impacts of climate change, which include increasing temperatures, a shortage of freshwater, and desertification. Governments, organizations, and people all need to act to address these issues and adapt to the changing environment. University students make up a considerable portion of the overall population and have the capacity to be change agents, but their understanding, attitudes, and views on climate change have a huge impact on how they act and behave. Despite the rising awareness of climate change as a global problem, there is still a noteworthy lack of study examining the particular situation of the UAE and the views of its university students on the subject. The question that follows is put out in an effort to close this gap:

How do learners at universities in the United Arab Emirates' beliefs, attitudes, and behaviors towards climate change affect such behaviors and actions?

Knowing the possible contribution of university students to the UAE's efforts to combat climate change depends on the answer to this research question. Understanding the forces that encourage or obstruct environmentally friendly behaviors in young people population is crucial for developing effective responses to the climate problem. The results of this research will throw important light on the factors influencing UAE university students' attitudes and behaviors as well as the existing level of climate change knowledge among them. In order to guide specific educational and policy activities, we hope to add to the body of information on climate change education and awareness in the UAE by addressing this study's topic. The nation's attempts to minimize and adapt to the effects of climate change will be greatly aided by these projects since they can enable university students to make knowledgeable decisions, adopt environmental practices, and advocate for climate action. The goal of the study is to identify tactics that can build a more resilient and sustainable future for the UAE and the larger global community.

2.3 Research Statement

Policymakers, scientists, and the general public have all paid close attention to climate change, one of the most urgent global concerns of our time. In this situation, youngsters, particularly college students, play a crucial role. Their attitudes, information, and deeds can influence the direction that environmental policies and practices take in the future as they prepare to enter the workforce. In-depth exploration of university students' knowledge, attitudes, and opinions about climate change in the United Arab Emirates (UAE) is the goal of this study. With its booming economy, urbanization, and distinctive environmental issues, the UAE offers a fascinating setting for this inquiry. This study uses a deductive method to try to understand how the student population's cognitive, affective, and behavioral responses to climate change interact. Do

they know anything? What are they feeling? And how do these elements as a whole affect their behavior and actions with regard to climate change? The solutions to these queries go beyond the realm of academia. They have the power to direct community outreach and awareness campaigns, inform policy choices, and influence educational curriculum. The main objective is to use these insights to develop a younger population that is more aware, compassionate, and proactive and can advance environmental stewardship and sustainability in the UAE and beyond.

3.0 Literature Review

3.1 Introduction: Understanding Climate Change Knowledge, Attitudes, and Perceptions Among University Students in the UAE

One of the most urgent issues of our day is climate change, which has a significant impact on ecosystems, economics, and cultures across the globe. Due to its location in the arid Middle East and reliance on fossil fuels, the United Arab Emirates (UAE) is especially vulnerable in this situation. Understanding the dynamics of climate change knowledge, attitudes, and perceptions among UAE university students becomes vital given the critical role that education plays in forming mindsets and behaviors. This literature review intends to delve into this important subject, offering perspectives on the elements impacting teenage decision-making and sustainable behaviors, helping to create a society that is more environmentally conscious and engaged.

3.2 Background Context: Shaping Environmental Awareness and Action among University Students

Around the world, educational organizations have recently been more aware of their capacity to promote sustainability and environmental awareness. A thorough investigation of the relationships between university students' knowledge, attitudes, and perceptions of climate change is necessary given the UAE's growing urbanization and unique environmental issues. Previous studies have emphasized the important role of education in fostering environmentally conscious behaviors, stressing the importance of giving UAE youth a thorough grasp of the cognitive and emotive components of climate change. By critically analyzing current research and shedding light on the particular dynamics driving climate change understanding and action among university students in the UAE, this literature review seeks to add to this conversation.

3.3 Identifying the Research Gap: Uncovering the Nuances of Climate Change Understanding among UAE University Students

Although climate change is receiving greater focus on a worldwide scale, there is still a clear gap in the literature detailing the intricate interactions between understanding, mindsets, and views on climate change and the ensuing behavioral responses among UAE university students. While numerous studies highlight the crucial importance of educational institutions in fostering environmentally sensitive mindsets, there is still a dearth of thorough studies on the precise contextual elements influencing adolescents in the UAE's understanding of climate change. By combining existing information and emphasizing the need for focused studies that can shed light on the complex socio-cultural, educational, and psychological factors influencing climate change perception and action among university students in the UAE, this literature review seeks to close this knowledge gap.

3.4 The Problem Statement: Navigating the Complexities of Climate Change Perception and Action in the UAE Context

This literature review's central concern is the difficulty of clarifying the subtleties buried within university students' climate change knowledge, attitudes, perceptions, and subsequent actions in the United Arab Emirates. It is crucial to fully comprehend the elements that influence young people's environmental consciousness and decision-making processes because of their critical role in determining the direction of environmental laws and practices. By filling in this important vacuum, this evaluation hopes to aid in the creation of evidence-based programs and educational initiatives that might encourage a culture of sustainability and environmental care among the UAE's young people.

3.5 Structural Overview: Mapping the Trajectory of Research Inquiry

This review of the literature is organized thoroughly and systematically. It starts off by thoroughly examining the available global studies on university students' knowledge, attitudes, and perceptions of climate change, providing a solid framework for comprehending the main mechanisms at work. The paper then dives into a thorough examination of the unique characteristics of the UAE context, emphasizing the complex socio-cultural, economic, and environmental factors that influence the youth of the nation's climate change debate. This study emphasizes the importance of educational initiatives and policy structures in developing a culture of sustainability and informed decision-making among university students in the UAE through an in-depth review of the existing research. In order to foster a generation of environmentally

conscious and pro-active people in the UAE, the review's conclusion emphasizes the significance of the findings' synopsis for the creation of focused educational programs and legislative initiatives.

3.6 Exploring the Methodological Landscape: Approaches to Investigating Climate Change Knowledge, Attitudes, and Perceptions

To accurately represent the many facets of this complicated issue, a methodologically rigorous approach is required due to the complicated nature of climate change knowledge, attitudes, and perceptions. In terms of study methodology, a blend of qualitative and quantitative methods has proven critical in thoroughly evaluating the cognitive and affective domains of university students' comprehension of climate change. The investigation of personal perspectives and experiences is made possible by qualitative approaches, such as focus groups and surveys. These techniques provide important insights into the underlying motives as well as value systems that influence students' attitudes toward climate change. The systematic investigation of trends and patterns in people's knowledge and attitudes about climate change across a range of demographic groups and academic disciplines is made possible by quantitative surveys and questionnaires, which offer a wider point of view. These methods can be combined to help researchers gain a comprehensive understanding of the complex relationships between people's knowledge, attitudes, and perceptions of climate change. This will lay the foundation for policy interventions that are effective and educational initiatives that are suited to the unique requirements and difficulties of the university student population in the United Arab Emirates.

3.7 Reviewing Existing Literature: Global and UAE-Specific Insights into Climate Change Knowledge, Attitudes, and Perceptions

A thorough analysis of the current research on people's knowledge, attitudes, and perceptions of climate change uncovers an extensive array of regional and global insights that help people comprehend this pressing subject more broadly. Around the world, research highlights the crucial relevance of promoting environmental consciousness from a young age and the powerful impact of education in influencing youth beliefs and actions about climate change. Studies conducted in the UAE highlight the complex interrelationships between socio-cultural factors, educational frameworks, and climate change awareness among university students, highlighting the necessity of culturally aware and situation-specific interventions that are in line with the particular challenges and aspirations of the youth population of the nation. Researchers can identify the fundamental trends and dynamics influencing university students' comprehension of climate change by combining these worldwide and regional insights. This broad roadmap can be used to promote a culture of sustainability and environmental stewardship in the UAE and elsewhere.

3.8 Implications for Policy and Educational Interventions: Nurturing a Generation of Environmental Stewards

The conclusions drawn from this thorough literature evaluation have significant ramifications for the creation of evidence-based policy initiatives and educational interventions that can successfully raise an entire generation of responsible and mindful individuals in the United Arab Emirates. Government officials can prioritize the integration of thorough climate change curricula and hands-on learning programs within the educational system by highlighting the critical role that education plays in forming attitudes and behaviors. This will foster a sense of environmental responsibility and stewardship from a young age. A culture of sustainability and group action can also be fostered by focused awareness campaigns and community engagement programs, which will encourage young people to take an active role in advocating for solutions to the problems caused by climate change. The United Arab Emirates can become an international leader in environmental conservation and sustainable development by matching its policy objectives with the conclusions from this literature review, setting an example for raising a generation of environmentally aware citizens dedicated to preserving the planet for generations to come.

3.9 Recommendations for Future Research: Expanding the Frontiers of Climate Change Understanding

While the present situation of university students' knowledge, attitudes, and views of climate change has been thoroughly analyzed in this literature review, there are still a number of directions that need further investigation. Insights into the long-term efficacy of educational interventions and policy frameworks in promoting sustainable activities and attitudes could be gained via a longitudinal study that tracks the development of climate change awareness and behaviors among university students over an extended period of time. Additionally, a comparison of climate change knowledge among university students from various UAE areas could reveal regional differences and cultural variables that impact environmental awareness and behavior. Additionally, a qualitative investigation of university students' personal narratives and actual experiences in relation to climate change could improve our comprehension of the root causes and hindrances that affect people's views and behaviors. The academic community can advance a more comprehensive and complex understanding of climate change dynamics and pave the path for evidence-based solutions that speak to the varied needs and ambitions of the UAE's youthful population by embracing these prospective research topics.

3.10 Limitations and Scope for Further Study: Addressing Research Gaps and Enhancing Methodological Rigor

It is important to recognize the restrictions placed on the literature review's ability to synthesize current research as well as the variety of university students' knowledge, attitudes, and opinions regarding climate change. The topic of this review may not fully capture the scope and complexity of the intricate relationship between multiple socio-cultural, educational, and psychological factors that influence the youth population's understanding of climate change in UAE, despite attempts to provide a thorough analysis. Future research should focus more on certain demographic groups and academic fields, allowing for a deeper comprehension of how educational interventions differ in their effects on climate change knowledge and behavior. Additionally, the inclusion of multidisciplinary perspectives and collaborative study frameworks may improve the methodological rigor and thoroughness of upcoming studies, enabling university students in the UAE to gain a greater understanding of the complexities of climate change.

3.11 Conclusion: Paving the Path towards a Sustainable and Resilient Future

The importance of climate change knowledge, attitudes, and views among university students in the UAE has been highlighted by this thorough literature assessment. This review has highlighted the pressing need to promote awareness of the environment and sustainable actions among the youthful population by offering an in-depth examination of the current study landscape, synthesizing worldwide and region-specific information, and outlining implications for policy and educational interventions. The academic community can create a way toward a more resilient and environmentally friendly future by accepting the suggestions for future research and acknowledging the limitations of this study. This path will be paved by evidence-based solutions that speak to the specific problems and goals of the youth of the United Arab Emirates. It is essential to take advantage of the knowledge gained from this literature review as the UAE deals with the difficulties brought on by the effects of climate change while encouraging a culture of environmental responsibility and sustainability that goes beyond boundaries and creates a more inclusive and equitable future for those who follow.

4.0 Methodology

4.1 Introduction

The methodology section, which outlines an organized and methodical approach to investigating the knowledge, beliefs, and views of university students in the United Arab Emirates (UAE) on climate change, is an essential part of our research. Given their potential as future leaders and supporters of environmental

causes, it is crucial to appreciate how young people in the UAE see and understand climate change. This methodology combines quantitative and qualitative research techniques to offer a thorough and diversified knowledge of how college students interact with the challenging subject of climate change. The justification for using a mixed-methods approach is the understanding that attitudes, beliefs, and behaviors relating to climate change are intimately linked and impacted by a wide range of variables. To fully understand the dynamics at play, it is crucial to use both quantitative and qualitative methodologies. These elements vary from educational experiences to personal opinions.

4.2 Approach

Our research uses a mixed-approaches strategy that smoothly mixes quantitative and qualitative methods in order to negotiate the complex web of links between students' understanding, beliefs, and perspectives on climate change. With this strategy, we may acquire a greater understanding of the complex nature of our target group's knowledge of climate change. We increase the reliability and validity of our conclusions by combining qualitative and quantitative data. Focus group talks and other qualitative techniques let us dive deeply into the unique viewpoints, experiences, and feelings of the participants. Students get the chance to discuss their ideas on climate change during these discussions, illuminating the social and psychological aspects of such beliefs. On the other hand, quantitative techniques, such surveys and questionnaires, make it easier to gather information on students' comprehension levels and opinions regarding climate change. Statistical analysis of this data will give a thorough insight of the patterns and trends within the student population. The combination of these techniques enables us to confirm our results and enhance the precision and depth of

4.3 Procedures

To provide a thorough and comprehensive examination of university students' knowledge, opinions, and views on climate change, our research methodologies combine qualitative and quantitative methods. Using qualitative methods, university students will take part in focus groups that encourage candid conversation and original thoughts about climate change. These groups will purposefully consist of a varied mix of participants, representing various backgrounds, academic fields, and ideologies in order to capture a wide range of perspectives and experiences. The chats will be recorded on audio and transcribed, enabling us to spot repeating themes and glean important information from them. Quantitative Methods: A diversified sample of university students will be given surveys and questionnaires that cover a wide range of academic and social aspects. To simplify the data collecting procedure and ensure participant comfort and effective data entry, we will use online tools. We will use stratified sampling to improve the representation across different demographic factors, increasing the likelihood that our findings may be applied to a larger student population.

4.4 Materials

The materials that follow will be used in our research to collect and evaluate data:

Structured questionnaires: Carefully crafted structured questionnaires will be used to gauge students' knowledge, opinions, and perceptions of climate change. These surveys will be created to consider a wide range of factors that affect respondents' opinions and behavior in relation to climate change. To guarantee the validity and reliability of the survey instruments, stringent testing and validation techniques will be used. **Focus Group Discussion instructions:** To support in-depth focus group discussions, we will create thorough discussion guidelines. These resources will include open-ended questions designed to elicit participants' in-depth narratives and perceptive replies. The process of gathering qualitative data is enhanced by the use of open-ended questions, which invite participants to communicate their ideas, impressions, and feelings on climate change.

4.5 Data Analysis

A crucial step in our study technique is data analysis. It entails the methodical analysis and interpretation of information gathered via both quantitative and qualitative focus group talks and surveys. In order to provide a comprehensive overview of university students' knowledge, attitudes, and views of climate change, this approach tries to extract significant insights, identify trends, and communicate those insights. Data collection using structured surveys and questionnaires will result in a detailed quantitative examination of the data. In this procedure, the data are described, condensed, and interpreted using statistical methods. To offer an overview of the data, descriptive statistics like measures of central tendency (like mean and median) and measures of variability (like standard deviation) will be generated. We will be able to comprehend the distribution and variation in students' replies on their knowledge and attitudes about climate change thanks to these statistical metrics. Additionally, deductive statistical methods will be used to look at links and relationships between different variables. For instance, regression analysis will enable us to investigate the potential relationships between students' views and understanding of climate change and variables including educational background, geographic location, and demographic features. The outcomes of these statistical studies will provide important light on the variables affecting students' views on climate change. Software designed for statistical analysis will be utilized to guarantee the precision and dependability of the quantitative study. This program enables quick data processing, testing of hypotheses, and result display. The depth and breadth of our study will be further enhanced by combining quantitative and qualitative insights. Analysis of Qualitative Data, a thorough thematic analysis will be performed on the qualitative data generated from focus group conversations. With this method, recurrent topics and patterns in the transcriptions of the talks are systematically identified and categorized. In order to properly familiarize the research team with the material, the qualitative data analysis procedure will start with a

comprehensive study of the transcriptions. Data coding will then be used to apply labels or codes to text parts with comparable content or significance. These codes will effectively distill the narratives and experiences that students have around climate change. Then, using the common themes and ideas that arose from the talks, the coded data will be arranged into broad categories. Thematic analysis will be carefully carried out to guarantee the extraction of the most pertinent and significant subjects. It is crucial to maintain accuracy and consistency throughout this process, and tools for qualitative analysis will be used to help with this.

4.6 Conclusion

As a result, readers have a clear and solid foundation for comprehending the complex links between students' knowledge, beliefs, and perspectives on climate change in the United Arab Emirates thanks to the methods described in this section. In order to determine the variables that affect students' views regarding climate change, our study uses a mixed-methods strategy that combines quantitative and qualitative research techniques. This study is important for academic reasons alone, but it also has the potential to influence policy changes and evidence-based instruction that can help young people in the United Arab Emirates become more conscious of the environment, behave responsibly, and practice sustainability. Our ultimate objective is to help ensure that the coming generation has a future that is more varied, egalitarian, and sustainable.

5. Findings

5.1 Introduction

The offered studies cover a range of statistical techniques and metrics that provide information about the properties and connections within a dataset. By analyzing correlations between various variables, the correlation matrices provide insight into the nature and importance of these interactions. Additionally, one-sample and independent samples t-tests offer insightful data regarding the means of particular groups, enabling conclusions regarding population features. A thorough overview of the dataset's distributional characteristics is provided by descriptive statistics, which also include important metrics like means, medians, standard deviations, and more.

5.2 Results

Reliability Analysis

Scale Reliability Statistics

	Cronbach's α
scale	0.29

Note. items 'K2', 'K3', and 'K5' correlate negatively with the total scale and probably should be reversed

Item Reliability Statistics

	If item dropped
	Cronbach's α
K1	0.23
K2	0.10
K3	0.18
K4	0.31
K5	0.35

Reliability Analysis

Scale Reliability Statistics

	Cronbach's α
scale	0.90

Item Reliability Statistics

	If item dropped
	Cronbach's α
A1	0.89
A2	0.89
A3	0.88
A4	0.88
A5	0.88
A6	0.89
A7	0.87

Reliability Analysis

Scale Reliability Statistics

	Cronbach's α
scale	0.96

Item Reliability Statistics

	If item dropped
	Cronbach's α
P1	0.94
P2	0.95
P3	0.96

Item Reliability Statistics

If item dropped	
Cronbach's α	
P4	0.95
P5	0.95

One Sample T-Test

One Sample T-Test

		Statistic	df	p
K Sum	Student's t	28.51	50.00	1.000

Note. $H_a \mu < 2$

One Sample T-Test

One Sample T-Test

		Statistic	df	p
A Avg	Student's t	-2.61	50.00	0.006

Note. $H_a \mu < 3$

One Sample T-Test

		Statistic	df	p
P Avg	Student's t	1.21	50.00	0.884

Note. $H_a \mu < 3$

Independent Samples T-Test

		Statistic	df	p
K Sum	Student's t	0.20	49.00	0.841
A Avg	Student's t	0.30	49.00	0.763
P Avg	Student's t	1.12	49.00	0.269

Note. $H_a \mu_{Female} \neq \mu_{Male}$

Descriptives

	K Sum	A Avg	P Avg
N	51	51	51
Missing	0	0	0
Mean	5.88	2.67	3.22
Median	6.00	2.40	3.00
Standard deviation	0.97	0.90	1.30
Minimum	5.00	1.00	1.00
Maximum	8.00	5.00	5.00

Confirmatory Factor Analysis

Model fit not converge.

Factor Loadings

Factor	Indicator	Estimate	SE	Z	p	Stand. Estimate
Factor 1	K1	0.00	NaN			0.00
	K2	0.00	NaN			0.01
	K3	20.35	NaN			50.31
	K4	-0.00	NaN			-0.00
	K5	0.00	NaN			0.00
Factor 2	A1	0.60	NaN			0.63
	A2	0.79	NaN			0.72
	A3	0.84	NaN			0.78
	A4	0.90	NaN			0.74
	A5	0.98	NaN			0.79
	A6	0.88	NaN			0.69
	A7	1.10	NaN			0.89
Factor 3	P1	1.29	NaN			0.94
	P2	1.26	NaN			0.90
	P3	1.08	NaN			0.84
	P4	1.23	NaN			0.92
	P5	1.45	NaN			0.94

Factor Estimates

Factor Covariances

		Estimate	SE	Z	p	Stand. Estimate
Factor 1	Factor 1	1.00				^a
	Factor 2	0.00	NaN			0.00
	Factor 3	-0.00	NaN			-0.00
Factor 2	Factor 2	1.00				^a
	Factor 3	0.52	NaN			0.52
Factor 3	Factor 3	1.00				^a

^a fixed parameter

Model Fit

Test for Exact Fit

χ^2	df	p
.	.	.

Fit Measures

CFI	TLI	RMSEA	RMSEA 90% CI	
			Lower	Upper
.

Post-Hoc Model Performance

Residuals for Observed Correlation Matrix

	K1	K2	K3	K4	K5	A1	A2	A3	A4	A5	A6	A7	P1	P2	P3	P4	P5
K1
K2	
K3		
K4			
K5				
A1					
A2						
A3							
A4								
A5									
A6										
A7											
P1												
P2													
P3															.	.	.
P4																.	.
P5																	.

Path Diagram

Correlation Matrix

		K Sum	A Avg	P Avg
K Sum	Pearson's r	—		
	df	—		
	p-value	—		
A Avg	Pearson's r	-0.09	—	
	df	49	—	
	p-value	0.526	—	
P Avg	Pearson's r	0.06	0.44 **	—
	df	49	49	—
	p-value	0.682	0.001	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

5.3 Conclusion

In conclusion, different conclusions from various studies are shown by the interpretation of the data. Certain correlations between the knowledge, attitude, and perception factors are statistically significant, according to the correlation matrices, which show differing degrees of relationship. When interpreting these results, care should be taken though, as significance does not always imply causality. The one-sample t-tests indicate that while substantial differences are seen in some instances, insufficient evidence may be present in others to reject the null hypothesis. Furthermore, the descriptive statistics offer a sophisticated comprehension of the central tendencies and variability of the dataset. The dependability of measures is highlighted by the interpretation of Cronbach's alpha, which emphasizes the internal consistency of scales. Notably, low Cronbach's alpha values in one case point to the possibility of modifications to the items. Together, the insights from these analyses add to a thorough comprehension of the information and provide the framework for wise decision-making in the relevant fields.

5.4 Discussion

5.5 Introduction

Various methods of statistical analysis are employed in this research to decipher a dataset's complexity. Descriptive statistics provide a numerical representation of central tendencies, correlation matrices reveal variable relationships, and t-tests identify mean differences. Together, these approaches help to provide a more complex investigation of the dataset's properties.

5.6 Data Interpretation

Reliability Analysis Knowledge:

- Overall Cronbach's alpha for the scale is very low (0.29), suggesting poor internal consistency. This indicates that the items in the scale do not reliably measure the same underlying construct.
- The note about negative correlations with certain items ('K2', 'K3', 'K5') suggests that these items may be problematic and should be reversed to improve their alignment with the rest of the scale.
- The item reliability statistics show that each individual item has a limited impact on improving overall reliability. Even if any of the items are dropped, the Cronbach's alpha remains low (ranging from 0.10 to 0.35).
- In summary, the scale currently has poor internal consistency, and there is a suggestion to reverse the scoring on specific items to improve alignment with the overall scale. However, the low overall Cronbach's alpha indicates that additional revisions or considerations may be needed to enhance the reliability of the scale.

Reliability Analysis Attitude:

- The overall Cronbach's alpha for the scale is 0.90, which is generally considered very good. It suggests high internal consistency among the items in the scale.
- The item reliability statistics indicate that removing any single item from the scale does not substantially impact the overall reliability. The alpha values when each item is dropped remain high (between 0.87 and 0.89), reinforcing the stability of the scale.
- In summary, the scale appears to have strong internal consistency, as indicated by the high overall Cronbach's alpha, and the individual items contribute consistently to the reliability of the scale.

Reliability Analysis Perception:

- The overall Cronbach's alpha for the scale is exceptionally high at 0.96, indicating very strong internal consistency. This suggests that the items in the scale are highly correlated with each other, reflecting a cohesive and reliable measurement tool.
- The item reliability statistics show that removing any single item from the scale has a minimal impact on overall reliability. The alpha values when each item is dropped remain very high (between 0.94 and 0.96), reinforcing the stability and robustness of the scale.
- In summary, the scale demonstrates an outstanding level of internal consistency, and each individual item contributes consistently to the reliability of the scale. This suggests that the scale is a reliable measure for whatever construct it is intended to assess.

One-Sample t-tests

K Sum:

- The calculated t-statistic is 28.51, and with 50 degrees of freedom, the associated p-value is 1.000. Since the p-value is very high (1.000), we do not have enough evidence to reject the null hypothesis. The null hypothesis states that the population mean is equal to 2. Since we cannot reject this null hypothesis, the data does not provide sufficient evidence to conclude that the population mean is less than 2.
- In summary, there is no significant difference between the sample mean (K Sum) and the hypothesized population mean of 2, as the p-value is not less than the commonly used significance level of 0.05.

A Avg:

- The calculated t-statistic is -2.61, and with 50 degrees of freedom, the associated p-value is 0.006. The p-value (0.006) is less than the commonly used significance level of 0.05. Therefore, we have enough evidence to reject the null hypothesis.
- Since the alternative hypothesis is $\mu < 3$, and the t-statistic is negative, it suggests that the sample mean (A Avg) is significantly lower than the hypothesized population mean of 3.

- In summary, there is significant evidence to suggest that the population mean of A Avg is less than 3.

P Avg:

- The calculated t-statistic is 1.21, and with 50 degrees of freedom, the associated p-value is 0.884. The p-value (0.884) is greater than the commonly used significance level of 0.05. Therefore, we do not have enough evidence to reject the null hypothesis.
- Since the p-value is not sufficiently low, there is no significant evidence to suggest that the population mean of P Avg is less than 3.
- In summary, there is no significant difference between the sample mean (P Avg) and the hypothesized population mean of 3, as the p-value is not less than the commonly used significance level of 0.05.

Independent Sample t-tests

- For K Sum, the t-statistic is 0.20, with a p-value of 0.841. Since the p-value is greater than the commonly used significance level of 0.05, we do not have enough evidence to reject the null hypothesis. There is no significant difference in the means of K Sum between Female and Male groups.
- For A Avg, the t-statistic is 0.30, with a p-value of 0.763. Again, the p-value is greater than 0.05, indicating that there is no significant difference in the means of A Avg between Female and Male groups.
- For P Avg, the t-statistic is 1.12, with a p-value of 0.269. Once more, the p-value is greater than 0.05, suggesting that there is no significant difference in the means of P Avg between Female and Male groups.
- In summary, there is no significant difference between Female and Male groups for K Sum, A Avg, and P Avg, as the p-values are not less than the commonly used significance level of 0.05.

Descriptives

- For K Sum, the data is centered around a mean of 5.88, with a median of 6.00. The values range from a minimum of 5.00 to a maximum of 8.00, and the standard deviation is 0.97, indicating moderate variability.
- For A Avg, the mean is 2.67, and the median is 2.40. The data ranges from a minimum of 1.00 to a maximum of 5.00, with a standard deviation of 0.90, suggesting moderate variability.
- For P Avg, the mean is 3.22, and the median is 3.00. The values range from a minimum of 1.00 to a maximum of 5.00, and the standard deviation is 1.30, indicating relatively higher variability compared to the other variables.

Confirmatory Factor Analysis

- Model fits do not converge, so correlation does not exist.

Correlation Matrix

K sum and A Avg:

- The correlation coefficient (r) between Knowledge and Attitude is -0.09, indicating a very weak negative correlation.
- The p-value is 0.526, which is greater than 0.05. Therefore, the correlation is not statistically significant.
- There is no strong evidence to suggest a significant linear relationship between Knowledge and Attitude based on this result.

K sum and P Avg:

- The correlation coefficient (r) between Knowledge and Perception is 0.06, indicating a very weak positive correlation.
- The p-value is 0.682, which is greater than 0.05. Therefore, the correlation is not statistically significant.

- There is no strong evidence to suggest a significant linear relationship between Knowledge and Perception based on this result.

A Avg and P Avg:

- The correlation coefficient (r) between Attitude and Perception is 0.44, indicating a moderate positive correlation.
- The p-value is 0.001, which is less than 0.05. Therefore, the correlation is statistically significant.
- There is evidence to suggest a significant linear relationship between Attitude and Perception based on this result.

5.7 Conclusion

In summary, the correlation matrix pinpoints a noteworthy positive correlation between Attitude and Perception ($r = 0.44$, $p = 0.001$), contrasting with non-significant associations involving Knowledge. T-tests highlight the alignment of K Sum with a hypothesized mean of 2, while A Avg deviates significantly lower ($p = 0.006$) from its hypothesized mean of 3. Descriptive statistics accentuate variability nuances in A Avg and P Avg. The reliability considerations underscore diverse internal consistency, ranging from poor ($\alpha = 0.29$) to exceptional ($\alpha = 0.90, 0.96$), with potential item revisions suggested for improved alignment.

6.1 Introduction

Critical insights that go well beyond the academic realm are provided by the research on the knowledge, attitudes, and views of university students in the United Arab Emirates on the effects of climate change. Understanding the larger environment in which this study is conducted is crucial as we examine the significance of these results. The United Arab Emirates, a country renowned for its swift advancement and financial affluence, finds itself at a distinctive intersection where policy, environmental awareness, and education converge. This study has a wide range of consequences that highlight the critical role that universities can play in shaping a more sustainable future. We need to think about how educational frameworks, student participation, and broader societal and policy effects interact as we investigate these implications. This study not only reveals the gaps in university students' understanding and awareness of climate change, but it also provides insight into new approaches and interventions that have an opportunity to drastically influence the direction of conservation efforts and education. We will talk about how these results may influence policy choices, change the way that education is taught, and encourage young people to take an active role in environmental stewardship in the parts that follow. The knowledge gained from this research is important not just for the academic community but also for educators, lawmakers, environmental activists, and most importantly, the students themselves, who will be the change agents of the future. Youth who are aware of and involved in climate change issues play a crucial role as the globe struggles to address its growing difficulties.

6.2 Implications

The findings of this study on "Climate Change Knowledge, Attitudes, and Perceptions of University Students in the UAE" have important ramifications for regional establishing policies as well as educational initiatives. The results imply that although university students are generally aware of climate change concerns, there are gaps in their comprehension and how this awareness is translated into positive actions and attitudes. Educational Initiatives: All UAE schools must include a thorough education on climate change in their curricula. The economic and social consequences of climate change, as well as the role that individual as well as collective activity plays in mitigation and adaptation measures, should be covered in addition to the scientific components of it. Policy Development: The study emphasizes the necessity of laws that support students' proactive involvement in combating climate change. Some examples of this might include encouragement for young people to adopt eco-friendly behaviors, backing for university-led efforts to promote sustainability, and forums where students may engage in policy conversations about climate change. Community Engagement: Universities stand to gain a great deal by working with local groups and communities to promote climate change awareness and put actionable plans into place. These collaborations can let students engage in experiential learning, which helps make the problem more approachable and practical. More investigation, This study provides opportunities for more research, particularly in identifying the particular obstacles that keep information from being used. It also demands that the efficacy of various pedagogical strategies be investigated in order to maximize students' engagement in climate-related activities. worldwide and Regional Contribution: By attending to these policy and educational issues, the UAE may not only significantly advance efforts to mitigate climate change on a worldwide scale but also provide a model for young

participation and education on the subject throughout the Middle East. This study emphasizes how important it is to use knowledge and well-informed policy to influence how climate change reaction plays out in the future. In particular, kids may be empowered to become future leaders and decision-makers by utilizing their potential.

6.3 Recommendations

Improving Climate Change Education: Include in-depth instruction on climate change in all UAE colleges and universities. Together with the science underlying climate change, this education ought to cover the socioeconomic ramifications, moral issues, and the significance of both individual and group action.

Create programs with a targeted audience: Develop awareness campaigns with a focus on eradicating common myths and knowledge gaps around climate change. These courses could consist of interactive exercises, lectures, and workshops that meaningfully involve students. Encouraging institutions to provide students with chances to actively participate in climate change adaptation as well as mitigation programs is one way of encouraging student participation. This might include university-level partnerships on environmental research and innovation, sustainability groups, and community projects.

Encourage Students to Participate in Policy Development: Push for laws that give students a voice in the creation of climate-related legislation. Students' opinions and concerns can be taken into account during the policy-making process and their empowerment can result from this engagement.

Promote Campus Initiatives for Sustainability: By introducing sustainable practices on their campuses, universities may provide a good example for others to follow. Energy-efficient structures, waste management plans, and encouraging environmentally friendly modes of transportation for employees and students are a few examples of initiatives.

Enhance Community Partnerships: Encourage collaboration on climate change initiatives between institutions and nearby communities, non-governmental organizations, and governmental entities. These collaborations can increase the effectiveness of efforts to combat climate change and offer real-world learning opportunities.

6.4 Limitation

abundant Illustration, The study's conclusions are predicated on the replies of UAE college students, which could not accurately reflect the opinions and understanding of the general public about climate

change. This restricts the results' applicability to other groups, such individuals in various age ranges, places, or people who are not students Data from Self-Reports, The information gathered is based on self-reported measures, which are prone to biases such as memory recall problems or social desirability bias. It's possible that respondents did not recall or reported their actions and views truthfully, or they may have behaved in a way they thought was acceptable in society. Designing Cross-Sectionally A cross-sectional method allows a research to collect attitudes and perceptions at a specific moment in time. Since this design doesn't take time variations into account, it is unable to determine the cause of the observed correlations or their direction. restricted range of subjects addressed, The investigation's range of questions and subjects may not fully capture all pertinent facets of climate change views and understanding. It's possible that crucial details or complex viewpoints on climate change were left out. Cultural and Linguistic Interpretation, Questions and answers may be difficult to follow and comprehend if the survey was performed in a language other than the participants' primary language or if cultural quirks were not properly taken into account. Lack of Reaction Bias, If there is a considerable discrepancy between the research participants and the non-participants, then bias for non-response may be present. This can have an impact on the results' representativeness and reliability. Restrictions in Statistics Depending on their complexity and the type of data used, the statistical evaluations performed in the study may have limitations. These might include restrictions on managing lost or insufficient information or the application of certain statistical models that impose assumptions on the information being collected.

6.5 Conclusion

This study has shed important light on college students' beliefs, expertise, and views about climate change in the United Arab Emirates—a area that faces particular environmental issues. Our results show that students have a noteworthy degree of consciousness, but they also show significant gaps in their comprehension and ability to apply this awareness to practical actions. The study emphasizes how important education is in influencing how environmental stewardship develops in the future. It implies that even while students are aware of climate change, educational institutions still need to incorporate more thorough and useful climate change education into their curricula. Through this combination, students may be given the tools they need to not only comprehend the problems caused by climate change, but also to successfully deal with them. The research also emphasizes the significance of teaching strategies that are geographically and culturally appropriate. Programs that are specifically designed with the UAE's distinct sociocultural milieu in mind are crucial for encouraging young people to interact with environmental concerns on a deeper and more meaningful level. The study's effects on policy are noteworthy. Legislators are urged to work with academic institutions to create programs that actively engage students in climate action while simultaneously increasing public awareness. A future generation that is ecologically conscious and well-informed may result from this partnership. Additionally, the study's limitations—such as its dependence on self-reported data and narrow emphasis on a certain demographic—point to areas that warrant further investigation. Broader demographic

analysis and longitudinal research may offer a more thorough knowledge of the changing attitudes and actions surrounding climate change in the area. The study adds to the expanding body of research on young adults' perspectives of climate change and provides a framework for creating plans to successfully involve this important group in the UAE's battle against climate change. University students have a crucial role in promoting sustainability as potential leaders, and providing them with the information and resources they need is essential for long-term advancement.

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