Poonam Shodh Rachna (ISSN 2456-5563)
(A Multidisciplinary, Peer Reviewed And Refereed Journal)
Vol.3, Issue.VIII, August 2024, Pc : PSR-2408002
http://doi.org/10.56642/psr.v03i08.002

"Teaching Green": A Voyage through the Sustainable Knowledge and Attitude of Arunachal University of studies Faculty in Namsai, Arunachal Pradesh.

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Abstract
With growing environmental damage, it's crucial to take immediate steps for sustainability. People of all ages need to work together creatively and in a well-coordinated manner to address this urgent issue. Education for sustainable development (ESD) plays a pivotal role in instilling an understanding of the long-term benefits of a sustainable environment. This study examines the sustainability knowledge and attitudes of 132 faculty members at Arunachal University of Studies, Namsai. Employing a quantitative approach, the research surveyed faculty from various departments. Analysis revealed a significant relationship between faculty members' sustainability knowledge and their attitudes. This underscores the critical role of well-informed and positively inclined faculty in effectively implementing ESD in higher education institutions (HEIs). These findings highlight the importance of cultivating an environment where sustainability is not just a concept but a guiding principle. HEIs must integrate sustainability principles into teaching, research, and institutional practices. By fostering environmental consciousness and equipping faculty with necessary knowledge and attitudes, HEIs can become agents of change, promoting sustainability within their campuses and beyond. Education for sustainable development becomes a transformative force, shaping future leaders equipped to address the complex challenges of the 21st century. Through such concerted efforts, HEIs can play a significant role in advancing sustainability and fostering a culture of environmental stewardship in society.
Keywords*: Education for sustainable development (ESD), Knowledge, Attitude, Sustainability, Faculty, Higher education institutions (HEIs).*

Introduction

In a time filled with global challenges, the need for environmental sustainability has become more important than ever. We must balance protecting the environment with meeting today's needs while also ensuring that future generations are taken care of. (WCED, 1987; Meadows et al., 1972). This imperative underscores the intricate interplay between social, economic, and environmental dimensions, accentuating the necessity of comprehensive approaches to sustainable development. As societies grapple with escalating environmental issues, Higher Education Institutions (HEIs) are increasingly recognized as critical actors in addressing these challenges. In response to global imperatives such as the United Nations' Sustainable Development Goals (SDGs), HEIs have begun incorporating sustainable development principles into their educational frameworks (Gigauri, 2022). This integration extends beyond traditional academic boundaries, calling upon universities to actively engage in policy formulation and to foster sustainable practices both within their campuses and in broader society.The mounting pressure for zero-carbon commitments and environmental stewardship is reshaping the landscape of higher education. HEIs are facing increased demands to realign their academic offerings with sustainability imperatives, reflecting a growing recognition of their pivotal role in addressing pressing environmental concerns (Gigauri, Vasilev, & Mushkudiani, 2022). Acknowledged as pivotal agents of innovation and economic progress, universities are uniquely positioned to mitigate the adverse impacts of human activities on the economy, society, and the environment (Leal Filho et al., 2021a; Vac & Fitiu, 2017).

Initiatives such as Agenda 21, stemming from the UN Conference on Environment and Development (UNCED) in 1992, underscore the indispensable role of education in advancing sustainability agendas (Olaskoaga-Larrauri et al., 2021). The concept of Education for Sustainable Development (ESD) has consequently permeated HEIs, prompting a transformative shift beyond mere integration into academic curricula (Olaskoaga-Larrauri et al., 2021; Sady et al., 2019). However, despite universities' acknowledgment of sustainability principles, a notable gap exists in recognizing their role in fostering sustainability-conscious behaviors among students (Savelyeva & Douglas, 2016). Nevertheless, the significance of HEIs in promoting Education for Sustainable Development is underscored by their strategic position and influence on graduates (Sprenger & Nienaber, 2018).

Moreover, the emphasis on interdisciplinary approaches to ESD, epitomized by initiatives like the Talloires Declaration in 1990, underscores the imperative of collaborative efforts among academia, environmental practitioners, and policymakers (Mokski et al., 2023). Education emerges as a potent tool for achieving the SDGs, advocating for lifelong learning and informed decision-making to address environmental integrity, economic dynamism, and social justice (Mokski et al., 2023).

In light of these imperatives, HEIs must embrace their pivotal role in advancing sustainability agendas, not merely through academic curricula but also by fostering a culture of environmental stewardship and social responsibility. This paper aims to explore the multifaceted landscape of sustainable development in higher education, examining universities' efforts to integrate sustainability principles and the challenges and opportunities therein.

In the face of accelerating environmental degradation, the urgency for environmental sustainability calls for innovative and coordinated efforts across generations. Education for sustainable development (ESD) is pivotal in fostering an understanding of the long-term benefits of a sustainable environment. This study evaluates the sustainability knowledge and attitudes of 132 faculty members at Arunachal University of Studies, Namsai. Employing a quantitative approach, the research surveyed faculty members from various departments. The correlation test analysis revealed a significant relationship between faculty members' sustainability knowledge and their attitudes. These findings highlight the critical role of well-informed and positively inclined faculty in the successful implementation of ESD in higher education institutions (HEIs), thereby promoting the essential concept of sustainability.

Significant of the study

The significance of this study lies in recognizing the pivotal role of faculty members in shaping students' understanding, values, and skills essential for sustainability. Within the realm of education for sustainable development (ESD), two crucial themes, namely education for development and education for global citizenship, are explored. ESD emphasizes outcome-oriented educational interventions to address global sustainability concerns, facilitating the cultivation of perspectives and values conducive to creating a sustainable future.By assessing the attitudes and knowledge levels of university faculty members towards ESD, this study sheds light on their potential impact on students' perceptions of sustainability. Faculty members serve as key facilitators in imparting knowledge and fostering awareness regarding sustainability principles. Therefore, understanding their perspectives and proficiency in ESD is critical for informing educational strategies aimed at promoting sustainability within higher education institutions. Moving beyond a narrow focus, this study adopts a comprehensive approach to assess faculty members' attitudes and knowledge levels of ESD. By doing so, it aims to provide insights into the broader landscape of sustainability education within the university context. Ultimately, this research contributes to advancing the discourse on sustainability education by highlighting the importance of faculty engagement and competence in fostering a culture of sustainability among students.

Statement of the Problems

The statement of the problem revolves around investigating the sustainable knowledge and attitudes among faculty members affiliated with Arunachal University of Studies, Namsai. In the context of sustainable development, the integration of sustainability into education is paramount, as underscored by the fourth goal of sustainable development emphasizing Education for Sustainable Development. This goal holds significant importance in shaping our collective future, particularly in regions like Arunachal Pradesh characterized by rapid development juxtaposed with abundant natural resources .Given the increasing significance of sustainable practices and the pivotal role of educational institutions in promoting sustainability, it becomes imperative to evaluate faculty members' sustainable knowledge and attitudes. Understanding their perspectives and proficiency in sustainability is crucial for identifying any existing gaps or areas requiring improvement to enhance sustainable practices within the university. Moreover, exploring the correlation between sustainable knowledge and attitude can yield valuable insights into their interplay and contribution to overall sustainability initiatives within the academic community. By delving into this relationship, the study aims to contribute to the existing body of literature on sustainability in higher education and offer recommendations for fostering a culture of sustainability among faculty members at Arunachal University of Studies, Namsai.

Objectives

- To find out the level of sustainable knowledge and attitude of faculty under Arunachal University of Studies
- To study the sustainable knowledge and attitude of faculty with regards to gender, education background, discipline and teaching experience.

Hypotheses

- There exists no difference in sustainable knowledge of faculty with regards to gender, age, locality, and teaching experience.
- There exists no difference in sustainable attitude of faculty with regards to gender, age, locality, and teaching experience.
- There exists no relationship in sustainable knowledge and attitude of faculty under Arunachal University of Studies.

Methodology

The methodology employed in this study utilized a descriptive survey research approach to investigate the sustainable knowledge and attitudes among faculty members at Arunachal University of Studies, Namsai. Descriptive survey research is well-suited for exploring the characteristics, perceptions, and behaviours of a specific population, making it ideal for this investigation into sustainability within an academic context.

Population and Sample

The population of interest comprised all faculty members at Arunachal University of Studies. The researchers opted to survey a sample of 132 faculty members from various departments within the university. The sample size of 132 was determined based on practical considerations and ensuring a representative snapshot of the larger faculty population. By surveying a diverse sample from different departments, the study aimed to capture a broad spectrum of perspectives on sustainability among faculty members.

Descriptive Survey Research Approach

Research Design

The study adopted a descriptive survey research design to explore the sustainable knowledge and attitudes of faculty members at Arunachal University of Studies. The descriptive method was chosen to gain insights into faculty members' perceptions, knowledge, and attitudes toward sustainability within the educational context.

Sample and Sampling Technique

A representative sample of 132 faculty members from various departments was selected through a simple random sampling technique. This ensured that faculty members across gender, age, locality, and teaching experience were included in the study.

Instrument

The primary tool for data collection was a structured questionnaire comprising two sections:

1. Sustainable Knowledge
2. Attitude Towards Sustainability

(The questionnaire was pretested for reliability and validity before being administered to the respondents.)

Data Collection:

Data was collected through self administered questionnaires, with clear instructions provided to the respondents to ensure accurate completion. The data collection period spanned over two months, allowing ample time for responses.

Statistical Tools:

Descriptive Statistics (frequency, percentage, mean, standard deviation) were used to summarize data on sustainable knowledge and attitudes.

Inferential Statistics were employed, such as t-tests, ANOVA, and correlation analysis, to examine differences in knowledge and attitudes based on gender, age, locality, and teaching experience, as well as the relationship between knowledge and attitude.

Data Analysis and interpretation

Objective-1: To find out the level of sustainable knowledge and attitude of faculty under Arunachal University of Studies

Table -1

Level of sustainable knowledge and attitude of faculty

Level of knowledge		Frequency	Percent	Cumulative Percent
	Low	50	37.9	37.9
	Medium	41	31.1	68.9
	High	41	31.1	100.0
	Total	132	100.0	
Level of attitude		**Frequency**	**Percent**	**Cumulative Percent**
	Low	59	44.7	44.7
	Medium	32	24.2	68.9
	High	41	31.1	100.0
	Total	132	100.0	

From the above table-1 indicates that the percent of low level of sustainable knowledge and attitude of faculty are 37.9% and 44.7 %; the percent of medium sustainable knowledge and attitude are 31.1 % and 24.2%; and percent of high sustainable knowledge and attitude are 31.1 % and 31.1 %. It can infer that sustainable knowledge and attitudes of faculty are moderate.

Table 1 presents the distribution of sustainable knowledge and attitudes among faculty members at Arunachal University of Studies. The findings reveal moderate levels of both sustainable knowledge and attitudes, with 31.1% of faculty members categorized under high knowledge and attitude levels. This aligns with existing literature emphasizing the importance of integrating sustainability into higher education curricula to foster environmental consciousness among faculty (Barth & Rieckmann, 2012; Lozano et al., 2017). These moderate levels suggest room for improvement through targeted educational interventions and institutional support to enhance sustainability literacy across disciplines.

H02. There exists no difference in sustainable knowledge of faculty with regards to gender, age, locality, and teaching experience

Table-2

Sustainable knowledge of faculty with regards to gender

Gender	Number	Mean	SD	df	t-ratio	Remarks
Male	**52**	**31.65**	**5.93**	**130**	**0.451**	**Not Significant at 0.05 level**
Female	**80**	**32.16**	**6.58**			

Table No. 2 shows that the calculated value of 't' 0.451 is less than the tabulated value of 't' 1.96, which is statistically not significant at .05 level. Therefore, the null hypothesis not rejected and we can say that there exists no significant difference in the sustainable knowledge of male and female faculty.

Table 2 explores gender differences in sustainable knowledge among faculty members. The non-significant findings ($t = 0.451$, $p > 0.05$) indicate that gender does not significantly influence sustainable knowledge levels at Arunachal University of Studies. This finding contrasts with studies suggesting that gender may impact environmental attitudes and behaviors (Zelezny et al., 2000; Xiao & Mc Cright, 2015). It underscores the need for further exploration into contextual factors, such as disciplinary backgrounds and institutional culture, that may contribute to variations in sustainability knowledge among male and female faculty members.

Table-3

Descriptive analysis of faculty's sustainable knowledge score differences between age groups

Age Group	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
26 to 35 year	68	32.28	6.753	.819	30.64	33.91	17	50
36 to 45	41	31.24	5.966	.932	29.36	33.13	21	50
above 45	23	32.30	5.700	1.189	29.84	34.77	23	47
Total	132	31.96	6.315	.550	30.87	33.05	17	50

Descriptive analysis using one-way ANOVA is run to see faculty's sustainable knowledge score differences between age groups. The result shows that the mean score for sustainable knowledge in age group 26 to 35 years was 32.28, the mean score for sustainable knowledge in age group 36 to 45 years was 31.24, and 32.30 for above 45 years.

Table-4

Sustainable knowledge of Between-Subjects Effects on the basis of age group

age group	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	30.689	2	15.344	.381	.684
Within Groups	5194.122	129	40.265		
Total	5224.811	131			

Table 4 shows that there is no significant difference between the age groups of faculties (26 to 35 years, 36 to 45 years, and above 45 years) on sustainable knowledge at 0.05 level with F- value 0.381(df-2).

Tables 3 and 4 examine age group differences in sustainable knowledge among faculty. The descriptive statistics and ANOVA results indicate no significant differences between age groups ($F = 0.381$, $p > 0.05$). This finding contrasts with research suggesting that younger faculty members may demonstrate higher levels of sustainability awareness due to evolving educational norms and exposure to environmental issues during their academic training (Ryan & Tilbury, 2013). It underscores the complex interplay of generational perspectives and institutional contexts in shaping sustainability knowledge among educators.

Table-5

Descriptive analysis of faculty's sustainable knowledge score differences between locality area

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Urban	32	34.78	6.379	1.128	32.48	37.08	23	50
Semi - urban	65	30.49	6.268	.777	28.94	32.05	17	48
Rural	35	32.11	5.567	.941	30.20	34.03	21	50
Total	132	31.96	6.315	.550	30.87	33.05	17	50

Descriptive analysis using one-way ANOVA is run to see faculty's sustainable knowledge score differences between locality area. The result shows that the mean score for sustainable knowledge of urban area is 34.78, the mean score for sustainable knowledge of semi-urban area is 30.49, and 32.11for rural area. The sustainable knowledge score between locality area ranged lies from 17 to 50.

Table-6

Sustainable knowledge of Between-Subjects Effects on the basis of locality area

Locality area	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	395.553	2	197.776	5.283	.006
Within Groups	4829.258	129	37.436		
Total	5224.811	131			

Table 6 shows that there is significantly difference between the locality area of faculties (urban, semi-urban and rural) on sustainable knowledge at 0.05 level with F- value 5.283 (df-2).

Tables 5 and 6 analyze locality area differences in sustainable knowledge among faculty. The significant differences observed ($F = 5.283$, $p < 0.05$) highlight disparities in sustainability awareness across urban, semi-urban, and rural settings at Arunachal University of Studies. Urban areas tend to exhibit higher levels of environmental consciousness due to greater access to resources and infrastructure supporting sustainability initiatives (Clarke & Harwood, 2013). In contrast, rural and semi-urban areas may face challenges related to limited resources and awareness programs, impacting sustainability education outcomes (Barth & Rieckmann, 2012). These findings underscore the importance of tailored educational strategies to address regional disparities in sustainability literacy.

Table-7

Descriptive analysis of faculty's sustainable knowledge score differences between teaching experiences

Teaching Experience	**N**	**Mean**	**Std. Deviation**	**Std. Error**	**95% Confidence Interval for Mean**		**Minimum**	**Maximum**
					Lower Bound	Upper Bound		
Below 5 years	44	30.91	5.139	.775	29.35	32.47	21	43
5 to10 years	55	32.51	6.984	.942	30.62	34.40	17	50
Above 10 years	33	32.45	6.572	1.144	30.12	34.78	18	50
Total	132	31.96	6.315	.550	30.87	33.05	17	50

Descriptive analysis using one-way ANOVA is run to see faculty's sustainable knowledge score differences between teaching experience. The result shows that the mean score for sustainable knowledge of below 5 years teaching experience was 30.91, the mean score for sustainable knowledge of 5 to 10 years teaching experience was 32.51, and 32.45 for above 10 years teaching experience.

Table-8

Sustainable knowledge of Between-Subjects Effects on the basis of teaching experiences

teaching experiences	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	73.247	2	36.623	.917	.402
Within Groups	5151.564	129	39.935		
Total	5224.811	131			

Table 8 shows that there is not significant difference between the groups on the basis of teaching experiences of faculties on sustainable knowledge at 0.05 level with F- value 0.917 (df-2).

Tables 7 and 8 explore teaching experience differences in sustainable knowledge among faculty. The non-significant findings ($F = 0.917$, $p > 0.05$) suggest that teaching experience alone does not predict sustainability knowledge levels at Arunachal University of Studies. This contrasts with research indicating that early-career faculty may benefit from targeted professional development to enhance sustainability literacy (Sterling et al., 2017). It underscores the need for continuous professional development and institutional support to cultivate sustainability competencies among faculty members across different career stages.

Table-9

Attitude of sustainable on gender basis

Gender	**Number**	**Mean**	**SD**	**df**	**t-ratio**	**Remarks**
Male	**52**	**23.19**	**7.06**	**130**	**0.736**	**Not Significant at 0.05 level**
Female	**80**	**24.16**	**7.60**			

Table No. 9 shows that the calculated value of 't' 0.736 is less than the tabulated value of 't' 1.96, which is statistically not significant at .05 level. Therefore, the null hypothesis not rejected and we can say that there exists no significant difference in the sustainable attitude of male and female faculty.

Table 9 examines gender differences in sustainable attitudes among faculty members. The non-significant findings ($t = 0.736$, $p > 0.05$) indicate that gender does not significantly influence attitudes towards sustainability at Arunachal University of Studies. This aligns with studies suggesting that gender differences in environmental attitudes may be mediated by other socio-cultural factors (Xiao & McCright, 2015). It underscores the complexity of gender influences on sustainability perceptions and the need for nuanced approaches to promoting environmental stewardship among educators.

Table-10

Descriptive analysis of faculty's sustainable attitude score differences between age groups

Age groups	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
26 to 35 years	68	23.07	7.237	.878	21.32	24.83	13	54
36 to 45 years	41	25.07	7.237	1.130	22.79	27.36	14	54
Above 45	23	23.57	8.073	1.683	20.07	27.06	14	47
Total	**132**	**23.78**	**7.383**	**.643**	**22.51**	**25.05**	**13**	**54**

Table 10 shows Descriptive analysis using one-way ANOVA is run to see faculty's sustainable attitude score differences between in age groups. The result shows that the mean score for sustainable attitude in the age group of 26 to 36 years was 23.07, the mean score for sustainable attitude of 5 to 10 years teaching experience 36 to 45 years of age groups was 25.07, and 23.57 for above 45 years.

Table-11

Sustainable attitude of Between-Subjects Effects on the basis of age groups

age groups	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	103.564	2	51.782	.949	.390
Within Groups	7037.065	129	54.551		
Total	7140.629	131			

Table 11 shows that there is no significant difference between the age groups of faculties (26 to 35 years, 36 to 45 years, and above 45 years) on sustainable attitude at 0.05 level with F- value 0.949 (df-2).

Tables 10 and 11 analyze age group differences in sustainable attitudes among faculty. The non-significant findings ($F = 0.949$, $p > 0.05$) suggest uniformity in sustainability attitudes across age groups (26-35 years, 36-45 years, above 45 years) at Arunachal University of Studies. This contrasts with research indicating that younger individuals may prioritize sustainability and environmental responsibility more than older generations (Ryan & Tilbury, 2013). It highlights the importance of considering broader socio-cultural influences on environmental values and behaviors among faculty members.

Table-12

Descriptive analysis of faculty's sustainable attitude score differences between locality area

Locality area	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Urban	32	24.88	7.627	1.348	22.13	27.62	13	47
Semi urban	65	22.72	6.173	.766	21.19	24.25	13	36
Rural	35	24.74	9.001	1.521	21.65	27.83	15	54
Total	132	23.78	7.383	.643	22.51	25.05	13	54

Descriptive analysis using one-way ANOVA is run to see faculty's sustainable attitude score differences between locality area. The result shows that the mean score for sustainable attitude of urban area is 24.88, the mean score for sustainable attitude of semi-urban area is 22.72, and 24.74 for rural area.

Table-13

Sustainable attitude of Between-Subjects Effects on the basis of locality area

locality area	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	143.428	2	71.714	1.322	.270
Within Groups	6997.201	129	54.242		
Total	7140.629	131			

Table 6 shows that there is no significant difference between the locality area of faculties (urban, semi-urban and rural) on sustainable attitude at 0.05 level with F- value 1.322 (df-2).

Tables 12 and 13 explore locality area differences in sustainable attitudes among faculty. The non-significant findings (F = 1.322, p > 0.05) suggest no significant differences in attitudes towards sustainability across urban, semi-urban, and rural settings at Arunachal University of Studies. This contrasts with research suggesting that urban environments may foster stronger pro-environmental attitudes due to greater visibility of environmental challenges and initiatives (Clarke & Harwood, 2013). It underscores the need for tailored educational strategies that account for regional disparities in sustainability perceptions and practices.

Table-14

Descriptive analysis of faculty's sustainable attitude score differences between teaching experiences

Teaching Experience	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below than 5 years	44	25.43	9.510	1.434	22.54	28.32	13	54
5 to10 years	55	23.22	5.827	.786	21.64	24.79	13	36
Above 10 Years	33	22.52	6.195	1.078	20.32	24.71	13	36
Total	132	23.78	7.383	.643	22.51	25.05	13	54

Descriptive analysis using one-way ANOVA is run to see faculty's sustainable attitude score differences between teaching experience. The result shows that the mean score for sustainable attitude of below 5 years teaching experience was 25.43, the mean score for sustainable attitude of 5 to 10 years teaching experience was 23.22, and 22.52 for above 10 years teaching experience.

Table-15

Sustainable attitude of Between-Subjects Effects on the basis of teaching experiences

teaching experiences	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	190.209	2	95.105	1.765	.175
Within Groups	6950.420	129	53.879		
Total	7140.629	131			

Table 15 shows that there is not significant difference between the groups on the basis of teaching experiences of faculties on sustainable attitude at 0.05 level with F- value 1.765 (df-2).

Tables 14 and 15 examine teaching experience differences in sustainable attitudes among faculty. The non-significant findings (F = 1.765, p > 0.05) indicate that teaching experience (below 5 years, 5-10 years, above 10 years) does not significantly predict attitudes towards sustainability at Arunachal University of Studies. This contrasts with research suggesting that early-career faculty may demonstrate higher receptivity to sustainability initiatives as they gain experience in teaching

and academic leadership (Sterling et al., 2017). It highlights the need for ongoing professional development to foster sustainable attitudes among faculty members across different career stages.

Table-16

Showing the relationship between sustainable knowledge and attitude of faculty under Arunachal University of Studies.

Result relationship	Correlation (r)	p-value
Knowledge and attitude	0.226	0.009 p> 0.05

The Table 16 shows a correlation coefficient (r) of 0.226 which reveals that there is positive relationship between the knowledge and the attitude of faculty on sustainable. This implies that the sustainable knowledge of faculty influenced towards the attitude of the faculties.

Table 16 presents the correlation between sustainable knowledge and attitudes among faculty members. The positive correlation coefficient (r = 0.226, p = 0.009) indicates a significant relationship between knowledge acquisition and pro-environmental attitudes. This aligns with research suggesting that higher levels of environmental literacy can enhance support for sustainable practices among educators (Anyolo et al., 2019). It underscores the transformative role of education in fostering sustainable attitudes and behaviors among faculty members at Arunachal University of Studies.

Discussion

The aim of this study was to evaluate the levels of sustainable knowledge and attitudes among faculty members at Arunachal University of Studies, Namsai, with specific attention to gender, age, locality, and teaching experience. The findings revealed a moderate overall level of sustainable knowledge and attitudes among the faculty, which contrasts with prior assumptions about demographic variations in sustainability perceptions (Table 2, Table 4, Table 6, Table 8, Table 9, Table 11, Table 13, Table 15). Specifically, no significant differences were found based on gender, age, locality, or teaching experience, contrary to the hypotheses posited (Table 2, Table 4, Table 6, Table 8, Table 9, Table 11, Table 13, Table 15). These results challenge previous research suggesting that such demographic factors influence sustainability perspectives among academic staff. However, a notable positive correlation between sustainable knowledge and attitudes indicates that enhanced knowledge levels correspond to more positive environmental attitudes, supporting transformative learning theories (Table 16). These findings highlight the importance of tailored educational interventions in higher education institutions to strengthen faculty engagement and promote sustainable practices institutionally and in wider society. Future research should delve deeper into effective educational strategies to bolster sustainability literacy among faculty, fostering greater environmental stewardship within academic communities and beyond.

Conclusion

The assessment of sustainable knowledge and attitudes among faculty at Arunachal University of Studies provides a nuanced portrait of the institution's current stance on sustainability education. This study employed a robust descriptive survey methodology, engaging 132 faculty members through a meticulously designed offline questionnaire. Utilizing SPSS software, the data were rigorously analyzed, revealing a balanced distribution of sustainable knowledge among faculty—37.9% demonstrating low, 31.1% medium, and another 31.1% high levels of awareness. These findings serve as a springboard for targeted interventions aimed at bridging knowledge gaps and enhancing sustainable practices across the university.

Interestingly, demographic analyses uncovered unexpected insights. Despite common assumptions, there was no significant gender gap in sustainable knowledge among faculty, challenging prevailing stereotypes in environmental education. Similarly, age proved inconsequential in predicting

sustainable knowledge, suggesting that sustainability principles resonate universally across generational divides. However, locality emerged as a pivotal factor, with urban faculty exhibiting notably higher levels of awareness compared to their semi-urban and rural counterparts. This geographical disparity underscores the need for context-specific educational strategies tailored to address diverse regional challenges.

Moreover, teaching experience did not significantly influence sustainable knowledge, highlighting the continuous need for professional development initiatives to sustain faculty engagement and knowledge enhancement over time. In terms of sustainable attitudes, the study revealed consistent outlooks across demographics, indicating a unified commitment to sustainability principles among faculty members. This positive disposition sets a strong foundation for fostering transformative change within the university community.

Looking ahead, the study advocates for proactive measures to advance sustainability education at Arunachal University of Studies. Proposed strategies include targeted capacity-building workshops, interdisciplinary collaborations to enrich educational initiatives, and the integration of sustainability-focused research projects into academic curricula. By harnessing these tools and techniques, the university can amplify its impact in nurturing environmentally conscious leaders and innovators capable of addressing complex sustainability challenges on both local and global scales.

In conclusion, while the study identifies areas for growth in sustainable knowledge and highlights demographic dynamics, it underscores the university's potential to lead by example in sustainability education. Through strategic interventions and collaborative efforts, Arunachal University of Studies can cultivate a culture of environmental stewardship that empowers faculty and students alike to drive meaningful change toward a sustainable future.

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