

Assessment of Knowledge, Attitude and Practice (KAP) Correlation Among CFS IIUM Students Towards Sustainable Development Goals (SDGS)

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Abstract: Sustainable Development Goals (SDGs) have gradually evolved into one of the most pressing needs in global economic activity, posing a new challenge in the current era of global economic integration. The UN's 17 Sustainable Development Goals (2018) were created to address environmental pollution and climate change. However, there is a crucial need to assess the level of Knowledge, Attitude and Practice (KAP) domains with these goals among students. Despite the global significance of the SDGs, there is limited research focusing on the extent to which students, as future leaders and change-makers, are equipped to contribute effectively to their achievement. The study aims to investigate the correlation of knowledge and attitude towards the practice of SDGs among Centre for Foundation Studies, International Islamic University of Malaysia (CFS IIUM) students. The study is adapted to a quantitative case study design. An instrument based on a KAP conceptual framework was adopted. Data was collected through Google Forms, specifically aimed at the biological students enrolled in CFS IIUM. The Spearman's rho correlation assessed the relationship between the KAP variables. Results demonstrate a high level of knowledge and attitude of students towards SDGs. However, the practice of students towards SDGs is at medium-high level. The findings show strong correlations between knowledge, attitude, and practice towards SDGs indicating that enhancing education and positive attitudes significantly boost effective practices in achieving SDGs. Integrating these aspects can foster greater commitment to sustainable development. The university needs to improve its courses and training programs dedicated to SDGs awareness. Moreover, educational improvement by identifying the level of awareness among students can guide educational institutions in developing targeted curricula and programs to enhance understanding and engagement towards SDGs.

Keywords: Knowledge, Attitude, Practice, Sustainable Development Goals (SDGs)

1. Introduction

The Sustainable Development Goals (SDGs) have become a crucial requirement in global economic frameworks, posing a unique challenge in the face of growing global economic interdependence. The Sustainable Development Goals (SDGs) comprise 17 goals adopted by the United Nations in 2015 (United Nations, 2015). The goals are “Goal 1: Eliminate Poverty in All Its Forms”; “Goal 2: Eliminate Hunger and Ensure Food Security for People Around the World”; “Goal 3: Ensure a Healthy and Happy Life for People of All Ages”; “Goal 4: Ensure Quality, Open and Equitable Education”; “Goal 5: Achieve Gender Equality and Empower All Women and Girls”; “Goal 6: Ensure Availability and Sustainable Management of Water Resources and Improve Sanitation for All”; “Goal 7: Ensure Access to Sustainable, Reliable, Affordable, and Modern Energy for All”; “Goal 8: Decent Work and Economic Growth”; “Goal 9: Industry, Innovation, and Infrastructure”; “Goal 10: Reduced Inequalities”; “Goal 11: Sustainable Cities and Communities”; “Goal 12: Responsible Consumption and Production”; “Goal 13: Climate Change”; “Goal 14: Life Below Water”; “Goal 15: Life on Land”; “Goal 16: Peace, Justice, and Strong Institutions”; and “Goal 17: Partnerships for the Goals”. These goals aim to eradicate poverty, protect the environment, and promote sustainable development across all UN member countries (Griggs et al., 2013). The SDGs succeeded the Millennium Development Goals (MDGs), which concluded in 2015. All these efforts align with the core principle of the Sustainable Development Agenda: “for a world that leaves no one behind”. The United Nations' 17 Sustainable Development Goals (SDGs), launched in 2018, provide a comprehensive framework for tackling global environmental degradation and climate change. Nevertheless, there is still a significant lack of information regarding the level to which students grasp and actively participate in these objectives within the Knowledge, Attitude, and Practice (KAP) domains.

To enhance understanding and identify pre-university students' barriers to Sustainable Development Goals (SDGs) awareness, gathering information on public knowledge, attitudes, and practices (KAP) regarding the SDGs is a crucial element of the process. Previous research showed that Malaysian people have a good degree of understanding about the environment (Tukiman et al., 2021). Research conducted in Kuala Lumpur by (Afroz & Ilham, 2020) on the KAP of students towards SDGs, employed the KAP model of Schwartz 1976 (Schwartz, 1976) to investigate human behavior, which creates awareness, internally because it relates to environmental problems.

(Schwartz, 1976) introduced the Knowledge, Attitudes, and Practices (KAP) model, a quantitative method that captures both quantitative and qualitative data. KAP surveys help identify misunderstandings or misinterpretations that could hinder the activities we aim to implement and highlight potential barriers to behavior change. In essence, the KAP survey reveals discrepancies between stated knowledge and actual practices, which is why this model was utilized in this research. Schwartz 1976 established the early knowledge, attitudes, and practices (KAP) paradigm, which emphasizes the presence of consciousness based on three elements: knowledge, attitudes, and practices (Schwartz, 1976). The KAP surveys, developed in the 1950s, have become widely used in social science research globally. Their targeted and concise nature makes KAP studies more cost-effective and resource-efficient compared to other social research methods (Ekman & Walker, 2008). KAP surveys are extensively employed to investigate human behavior influenced by environmental issues. (Sabouhi et al., 2011) identified a connection between awareness, knowledge, attitude, and practice, underscoring the importance of knowledge (Salerno et al., 2014).

Although the Sustainable Development Goals (SDGs) are of global significance, there is a noticeable gap in research that comprehensively assesses students' preparedness to understand, embrace, and apply the core principles of the SDGs. As future leaders and agents of change, students play a critical role in shaping sustainable practices and policies that contribute to achieving these goals. Assessing their knowledge, attitudes, and practices (KAP) regarding the SDGs is essential to identify areas where educational and awareness initiatives can be strengthened, with the aim of fostering a more informed and proactive mindset among the next generation of leaders. By enhancing students' understanding, cultivating positive attitudes, and promoting sustainable behaviors, educational institutions can significantly contribute to global efforts toward sustainable development, ensuring a more sustainable future for all. Therefore, this study seeks to examine the relationship between students' knowledge, attitudes, and practices regarding the SDGs at the Centre for Foundation Studies, International Islamic University Malaysia (CFS IIUM).

2. Methodology

Sample Size and Method

A quantitative case study design was adapted to achieve the research objectives. The instrument used was based on a conceptual framework of Knowledge, Attitudes, and Practices (KAP). Data were collected through Google Forms, targeting biological students enrolled in the Centre for Foundation Studies (CFS) at the International Islamic University Malaysia (IIUM). The respondents were selected using purposive sampling. According to the Office of the Deputy Dean for Academic & Internationalisation (ODDAI), 256 students were enrolled in the Biology 2 course during the semester under study. This course includes a subtopic on the Sustainable Development Goals (SDGs). From the population of 256 biological students at CFS IIUM, the sample size was determined using Slovin's Formula Sample Size Calculator (Sebastian, 2024). Ismail and Febriyanti (2022), with a 95% confidence level and a $\pm 5\%$ margin of error. Although there is no universally accepted minimum response rate for research, a common threshold is 60% (Johnson & Wislar, 2012). With a response rate of approximately 76.4%, the data obtained in this study are considered sufficient for conducting further analysis.

Item Development

This research is based on 17 SDG hypotheses. The Knowledge, Attitudes, and Practices (KAP) model, introduced by Schwartz (1976), is a quantitative approach that collects both numerical and qualitative data. KAP surveys are valuable tools for identifying misconceptions or misunderstandings that may hinder the implementation of activities or act as barriers to behavior change. In other words, while KAP surveys provide insights into what respondents report, there may be significant discrepancies between reported behaviors and actual behaviors, which justifies the use of this model in this study. The original KAP framework, developed by (Schwartz, 1976), emphasizes the importance of awareness through its three components: knowledge, attitudes, and practices. First introduced in the 1950s, KAP surveys have become a staple in social science research globally. Due to their focused nature and narrow scope, KAP surveys are both cost-effective and resource-efficient. The model chosen and exported for analysis in this study is (KAP), which is made up of three domains: knowledge (K), attitude (A), and practice (P). Domains are integrated into survey questions to collect valuable data. A knowledge (K), attitude (A), and practice (P) questionnaire were created using data from prior studies to provide the relevant information (Nguyen et al., 2022) (Afroz & Ilham, 2020) (Johnson & Wislar, 2012) (Borges, 2019) (Omisore et al., 2017). When completing the survey questions, all of the questions employ a five-level Likert scale (from 1 to 5), with 1 indicating strongly disagree and 5 indicating strongly agree. The Likert scale is a basic rationality

assessment tool that is frequently used in educational and social research (Joshi & Rahman, 2017). Therefore, the consistency and accuracy of the survey questionnaire will create certain reliability in the data used for analysis (Taherdoost, 2016). The questionnaire consisted of four sections. Section A focused on the demographic background of the respondents. Sections B, C, and D addressed knowledge, attitudes, and practices related to the Sustainable Development Goals. The total number of items was adjusted following validity and reliability tests.

Item Validity and Reliability

A pilot study was conducted to determine the validity and reliability of the instruments. To establish the validity of the instrument, the questionnaire was sent to three academics from different disciplines, namely Medical Education, Biology, and English lecturers for comments and improvements. Based on the feedback received from these academics, the questionnaire was amended accordingly.

Table 1: Reliability Test

Variables	No of items	Cronbach' Alpha
Knowledge	11	0.847
Attitude	15	0.880
Practice	14	0.934
Total	40	0.952

To ensure the reliability of the instruments, a pilot study was conducted with students who had similar characteristics to the actual respondents at CFS IIUM. The reliability test results, presented in Table 1, illustrate the internal consistency of the survey instrument used in the study. The degree of consistency is assessed using Cronbach's Alpha scores for different variables. The table shows that the variable "Knowledge" is composed of eleven items and has a Cronbach's Alpha of 0.847, which is considered a good level of reliability (Hair et al., 2023). The variable "Attitude," consisting of fifteen questions, demonstrates a higher Cronbach's Alpha value of 0.880, indicating a superior level of reliability in assessing participants' attitudes (Hair et al., 2023). In addition, the variable "Practice," which includes fourteen items, has a Cronbach's Alpha coefficient of 0.934, suggesting excellent reliability (Hair et al., 2023). The survey instrument's overall dependability, as shown by a Cronbach's Alpha coefficient of 0.952, encompasses all 40 items across the three variables. This outcome demonstrates a substantial level of internal consistency, suggesting that the survey instrument as a whole is reliable for evaluating the intended ideas (Hair et al., 2023). The results suggest that, despite its overall robustness, the instrument. Improving the reliability of these measurements will provide more accurate and trustworthy data collection in future investigations.

3. Data Analysis

The data was analysed using the Statistical Package for the Social Sciences (IBM SPSS Version 25) programme. For inferential analysis, Spearman's rho correlation coefficient was utilized to determine the relationship between variables (knowledge with practice, and attitude with practice). The assessment of KAP among CFS IIUM students regarding SDG commences with a descriptive analysis, specifically concentrating on mean scores to assess their comprehension and conduct in relation to SDGs. This preliminary analysis offers valuable insights into students' comprehensive perspectives and behaviours towards sustainability. Table 2 presents a modified interpretation scale derived from (Goh, 2018), which classifies response levels according to their average scores. A score ranging from 5.0 to 4.0 is considered "High," suggesting a significant presence or positive response. Scores between 4.0 and 3.0 are

categorised as "Medium-high," indicating a substantial but significantly less prominent level of response. Scores ranging from 3.0 to 2.0 are classified as "Medium-low," denoting a moderate level of responsiveness. Scores ranging from 2.0 to 1.0 are classified as "Low," indicating a limited or poor level of response. This measure is valuable for quantitatively evaluating and analysing the degree to which variables, such as knowledge, attitudes, or practice towards SDGs, are perceived or embraced by CFS IIUM students. It provides a concise structure for researchers to classify and examine average results, offering insights into the diverse levels of involvement or comprehension across several facets of sustainable development within the student population.

Table 2: Mean Interpretation Scale (Goh, 2018).

Mean Score	Level
$5.0 \geq y > 4.0$	High
$4.0 \geq y > 3.0$	Medium-high
$3.0 \geq y > 2.0$	Medium-low
$2.0 \geq y > 1.0$	Low

Subsequently, Spearman's rho correlation analysis is employed to investigate the associations between various variables inside the KAP domains. The purpose of this correlation analysis is to identify any connections between students' knowledge, attitudes, and practice towards SDGs, providing a more comprehensive understanding of how these factors are interconnected within the student community at CFS IIUM. Table 3 presents the interpretation of the Spearman's rho correlation coefficients. A correlation value of 0.70 or above shows a robust link, implying that changes in variables can be substantially predictable. Coefficients within the range of 0.40 to 0.69 indicate a strong relationship, whilst coefficients within the range of 0.30 to 0.39 suggest a moderate relationship. Conversely, coefficients ranging from 0.20 to 0.29 indicate a relationship that is weak, whereas values falling between 0.01 and 0.19 indicate no or insignificant relationship between the variables. These interpretations are crucial for researchers to appropriately evaluate and understand the significance of the observed correlation in the study.

Table 3: Interpretation of Spearman's Rho Correlation R-Value (Dancey & Reidy, 2005).

Spearman's rho	Correlation
≥ 0.70	Very strong relationship
0.40–0.69	Strong relationship
0.30–0.39	Moderate relationship
0.20–0.29	Weak relationship
0.01–0.19	No or negligible relationship

4. Results and Discussions

Gradual increment of pollution pressing the need of Sustainable Development Goals (SDGs), posing new universal challenges (environmental, economic and social for all countries) in the current era of global economic integration (Arora-Jonsson et al., 2023). The adverse harms of pollution can be disastrous to humanity's existence. Therefore, it is crucial for all of us, especially those in the CFS IIUM community to have a great esteem to the issue as well as planning the prospective solutions to the problem. Thus, it may trigger excellent modifications to economy and resource utilization. In this study, we have come out with the small changes in our community by assessing the level of Knowledge, Attitude and Practice (KAP) domains with respect to these goals among our students.

Regarding socio-demographic characteristics, the current sample shows that the majority of students were female (Table 4). This result may be a consequence of constantly increasing the number of students who enrolled in the Biological programme in the Centre for Foundation Studies, IIUM. A similar fashion has been reported by an annual Graduate Tracer Study (GTS) by the Ministry of Higher Education (MOHE) (Gong, 2023). With regards to the field of study, 29.2% of the participants belong to the field of Allied Health Sciences, while 26.7% are pursuing Medicine, 22.5% are studying Pharmacy, 10.8% are in Dentistry, 5.8% are in Nursing, and 5% are in Biosciences. This data underscores the broad demographic composition of the student population.

Table 4: Students' Demographic Background

Demographic		Frequency	Percent
Gender	Male	22	18.30
	Female	98	81.7
Program	Biosciences	6	5
	Allied Health Sciences	35	29.2
	Dentistry	13	10.8
	Pharmacy	27	22.5
	Medicine	32	26.7
	Nursing	7	5.8
		Total = 120	

Respondents in this study showed high knowledge towards SDGs (Table 5). Most of the items indicated that the respondents' knowledge were of high value (> 4.0). Only item K3 (I am aware of the fact that Sustainable Development Goals are targeted to [be] achieve[d] by the year 2030) fell into medium-high level, with a value of mean 3.658. On the other hand, both items K5 (I know to achieve sustainable development, all people in the world must have access to a good education) and K9 (I know healthy seas are essential to our existence) showed the highest value (mean 4.583). For item K5, it indicated that the students mostly agreed that knowledge towards SDGs is good to be imparted in education for achieving sustainable development. The students' agreement is similar with findings of a study (Filho et al., 2023) which emphasized on the need for including SDGs as an educational content. Globally, such education is well defined by UNESCO and further elaborated as an approach to teaching and learning by the World Conference on Education for Sustainable Development in 2009 (Sustainable development concept awareness among students in higher education, 2020). In Malaysia, "green university visions" has helped universities disseminate education on sustainability to the university students (Hamid et al., 2017). For item K9, it is indicated that most students have a great appreciation towards the environment such as the sea. The similar appreciation also has achieved higher polls in Vietnam (Nguyen et al., 2022). However, sustainable development not only dealt with environmental issues, but it also comprises economic, social, and cultural issues as well (Sustainable development concept awareness among students in higher education, 2020). Thus, this study also looks at the social component of SDGs, with focus on the students' attitude and practice towards SDGs.

Table 5: Students' Score on Knowledge Towards (SDGS).

No	Items Knowledge	Mean	Summary Mean	Interpretation
K1	I have heard about the term "Sustainable Development Goals" (SDGs).	4.100		
K2	I recognize that the meaning of the word "Sustainability" is the ability to be maintained at a certain rate or level.	4.333		
K3	I am aware of the fact that Sustainable Development Goals are targeted to [be] achieve[d] by the year 2030.	3.658		
K4	I know the overuse of natural resources is affecting the well-being of future generations.	4.450		
K5	I know to achieve sustainable development, all people in the world must have access to a good education.	4.583		
K6	I know environmental protection are the fundamental element[s] of a nation.	4.500	4.373	High
K7	I know economic growth are the fundamental element[s] of a nation.	4.450		
K8	I know social equity are the fundamental element[s] of a nation.	4.367		
K9	I know healthy seas is essential to our existence.	4.583		
K10	I know increased use of renewable resources can reduce greenhouse gas emissions.	4.575		
K11	I know maintaining good relationship[s] with various countries is crucial to preserve peace around the world.	4.500		

A similar fashion (a high level) on the attitudinal component occurred among the students in the study population (Table 6). However, this finding was inconsistent with the findings in other studies in which there was a revelation of moderate to low degree of attitude regarding SDGs among the students. For example, in Mexico, university students presented a moderate degree of attitudes (Amézaga et al., 2021). Interestingly, it clearly shows that most students prefer to point their finger towards the responsibility of other parties such as government (Item A12, mean 4.558), research institutions (Item A13, mean 4.467) educational institutions (Item A14, mean 4.542) towards the preservation of the earth's sustainability rather than their own responsibility (Item A10, mean 3.908). Among the parties, the students have agreed that the government should take the highest responsibility towards SDGs.

Based on the theory of planned behavior, the empirical evidence showed that in northwestern Mexico (Amézaga et al., 2021), university students presented a moderate degree of knowledge and attitudes regarding sustainability but that they scored at the low-moderate level on behavior. The results are consistent with previous studies, with knowledge ($\beta = .296$) and attitudes ($\beta = .183$) explaining behaviors favorable to sustainable development ($R^2 = .18$, $p < .001$) (Amézaga et al., 2021).

Table 6: Students' Score on Attitude Towards (Sdgs).

No	Items Attitude	Mean	Summary Mean	Interpretation
A1	I think reducing poverty and hunger in the world are more important than increasing the economic welfare of the industrialized countries.	4.158		
A2	I believe society should be provided with the best free basic health services.	4.517		
A3	I believe raising awareness on Sustainable Development Goals among the university students is necessary.	4.550		
A4	I feel a basic environmental course should be a part of our university curriculum.	4.342		
A5	I think in society, males and females should be treated equally in all aspects of life.	4.308		
A6	I believe the rise of global temperature has increased water scarcity.	4.508		
A7	I believe environmental problems are a matter of my concern.	4.467		
A8	I think people from varying cultural backgrounds must be treated with the same respect.	4.600	4.399	High
A9	I try to conserve the use of electric energy at my place.	4.358		
A10	I try to reduce the amount of waste at home by collecting recycled materials.	3.908		
A11	I consider functioning and resilient infrastructure is the foundation of every successful community.	4.258		
A12	I believe the government should take a greater account of sustainability within their political decision.	4.558		
A13	I consider research institutions should take greater account of sustainability in their activities and campaigns.	4.467		
A14	I consider educational institutions should take greater account of sustainability in their activities and campaigns.	4.542		
A15	I believe that participation in a sustainable lifestyle will bring peace and justice globally.	4.442		

The results of students' practices towards Sustainable Development Goals (SDGs) in Table 7 reveal a medium-high engagement level, with a summary mean score of 3.888. This indicates a commendable effort among students to integrate sustainable practices into their daily lives, though there is room for improvement. Students exhibit strong practices in turning off electrical devices after use (mean 4.692) and switching off electrical appliances when not needed (mean 4.583). Whereas, practices like avoiding plastic straws (mean 3.242), discarding recyclable materials separately (mean 3.075), and preferring public transport over private (mean 3.275) are less common. Hence, there is a need to enhance the habit of discussing environmental sustainability (mean 3.433) and actively participating in related sustainability environment events (mean 3.467).

Students demonstrate a solid foundation in sustainable practices, particularly in energy conservation and promoting equality. However, there are areas where practices could be strengthened, such as waste segregation, use of public transport, and active participation in sustainability-related discussions and events. These findings suggest a positive trend towards sustainability but also highlight opportunities for further education and engagement to enhance sustainable behaviors among students.

It is common to find higher levels of knowledge and attitudes than those of behaviors, although there is typically a relationship between knowledge, attitudes, and practices. In the current work, higher levels of knowledge and attitudes were observed (summary mean scores of 4.373 and 4.399, respectively) compared to practices (summary mean score of 3.888). Similar findings were reported by (Saleem et al., 2022).

Table 7: Students' Score on Practice Towards (SDGS).

No	Items Practice	Mean	Summary Mean	Interpretation
P1	I avoid using plastic straw at restaurant/cafe.	3.242	3.888	Medium-High
P2	I bring my own reusable bag for grocery shopping.	3.875		
P3	I discard recyclable material (ex: [as] plastic bottle, newspaper, glass) separately at home.	3.075		
P4	I conserve the use of water supply at my place.	4.083		
P5	I treat people from all caste, creed and religion equally.	4.492		
P6	I prefer public transport rather than a private one.	3.275		
P7	I switch off electrical appliances of my place that I don't need when I am not around.	4.583		
P8	I turn off all electrical devices (air conditioner/light) after using them.	4.692		
P9	I am willing to utilize renewable energy such as using solar power.	4.192		
P10	I avoid using the animal skinned [animal skin] product.	4.383		
P11	I am interested to pay more on environmentally friendly products such as use recycle paper bag instead of plastic bag.	4.175		
P12	I have taken courses related to environmental sustainability.	3.467		
P13	I participate in events (ex: [as] seminar, talk, workshop[s]) that relates [relate] to environmental sustainability.	3.467		
P14	I talk about environmental sustainability with my friends and family.	3.433		

Table 8 displays the correlation coefficients between Knowledge and Practice, as well as Attitude and Practice towards Sustainable Development Goals (SDGs), utilising Spearman's rho analysis. The results demonstrate a substantial and robust positive correlation between Knowledge and Practice ($r = 0.531$, $p 0.01$) as well as between Attitude and Practice ($r = 0.658$, $p 0.01$). The correlation value of 0.531 between Knowledge and Practice indicates that there is a positive relationship between students' understanding of SDGs and their adoption of sustainable behaviours. Similarly, the correlation coefficient of 0.658 between Attitude and Practice suggests that students who have positive views about SDGs are more inclined to participate in sustainable behaviours actively. (Afroz & Ilham, 2020) found that students have a high overall awareness of the Sustainable Development Goals (SDGs), with many demonstrating strong knowledge and a positive attitude towards them. However, their performance in applying the SDGs in practice remains somewhat low (Afroz & Ilham, 2020). The study revealed a weak negative correlation between students' knowledge and their practice levels, suggesting that while students have a good understanding of the SDGs, their practical implementation is less pronounced (Afroz & Ilham, 2020). Nevertheless, this gap can be addressed through strategic approaches and intervention programs implemented by the university (Afroz & Ilham, 2020). Additionally, a strong positive correlation was found between students' attitudes and their practice levels (Afroz & Ilham, 2020), indicating that a positive attitude encourages students to engage more actively in SDG-related practices.

Table 8: Correlation Between Knowledge and Practice And Attitude And Practice.

Correlation Between	N	Spearman's rho Correlation Coefficient	Inference	Correlation
Knowledge and practice	120	0.531**	Strong relationship	Strong relationship
Attitude and practice	120	0.658**	Strong relationship	Strong relationship

***Correlation is significant at the 0.01 level (2-tailed).*

It is important to recognize that environmental approaches differ across institutions, leading to varying levels of student awareness regarding the SDGs (Afroz & Ilham, 2020). Encouragingly, several prominent universities in the Asian region have begun producing annual sustainability reports, a trend that is expected to soon result in the implementation of sustainability policies (Afroz & Ilham, 2020). (Nguyen et al., 2022) (Mahat et al., 2017) found that despite students receiving extensive and comprehensive environmental education, they often fail to translate this knowledge into positive actions and active contributions to environmental sustainability. (Nguyen et al., 2022) suggest implementing effective strategies to encourage students to apply their acquired knowledge, thereby preventing it from becoming inactive and unutilized information. Research by (Nguyen et al., 2022) (Hj. Ahmad et al., 2011) indicates that possessing extensive knowledge about the Sustainable Development Goals (SDGs) does not necessarily correlate with high levels of environmental practice among students. To address this gap, it is important to implement strategies that encourage students to apply their knowledge effectively, ensuring it does not remain unused and inactive.

The significant associations highlight the crucial role of both sharing knowledge and shaping attitudes in fostering meaningful involvement with SDGs among students. By implementing educational efforts that focus on enhancing comprehension of SDGs and cultivating favourable attitudes towards sustainability, it is possible to achieve more consistent and influential sustainable actions. According to (Nguyen et al., 2022), education is crucial for fostering environmental awareness and responsibility among students. It plays a vital role in encouraging them to commit to sustainable consumption by choosing eco-friendly alternatives over non-green products. These findings offer useful insights for educational institutions seeking to foster a culture of sustainability, highlighting the interdependence of information, attitudes, and actions in attaining sustainable development goals.

Moreover, (Tukiman et al., 2021) emphasize the need for continuous education on the Sustainable Development Goals (SDGs) through various channels, including mass media, social media, and other sources. They assert that it is the responsibility of governments, non-governmental organizations (NGOs), and other accountable bodies to disseminate information about the SDGs and their proper implementation to the public (Tukiman et al., 2021). This widespread and well-understood information is expected to foster positive attitudes toward the SDGs among individuals, leading to more frequent and effective SDG management practices in daily life (Tukiman et al., 2021).

The knowledge, attitudes, and behaviours of sustainability among university students are interrelated. In addition to verifying that sustainability exists as a concept in CFS IIUM biological module students, the results demonstrate that attitudes and knowledge can impact actions in a way that is concurrently related to the content on sustainability in Biology. The is a need to expand and realign the syllabus and training to better represent the social aspects of student related to SDG2, SDG 4 and SDG 12 according to (Poza-Vilches et al., 2021).

But there is only so much that can be changed about attitudes and knowledge to affect practices. Studies like this one and others have demonstrated that attitudes and knowledge are frequently not reflected in practices. Thus, it is necessary to investigate the relationship between the practices and contextual factors of the individuals, which may be taken into account in experimental investigations

5. Conclusion

Strong correlations between knowledge, attitude, and practice towards SDGs indicate that enhancing education and positive attitudes significantly boost effective practices in achieving SDGs. Integrating these aspects can foster greater commitment to sustainable development.

The significant correlation of knowledge, attitude, and practice towards Sustainable Development Goals (SDGs) highlights the interconnection of comprehension, belief, and behaviour in promoting sustainable behaviours. Students who have a thorough understanding of SDGs and have favourable attitudes towards sustainability principles are more inclined to put this awareness into action through meaningful behaviours. By implementing educational programmes that support SDGs, students are not only equipped with essential knowledge but also develop attitudes that prioritise sustainability in decision-making and everyday behaviours.

Integrating these elements into educational programs and campus initiatives helps in fostering a culture of commitment to sustainable development among students. Educational institutions can empower students to become proactive contributors to achieving SDGs locally and globally by emphasizing the importance of SDGs through education, promoting positive attitudes towards sustainable practices, and providing opportunities for practical engagement. This comprehensive approach not only strengthens individual abilities but also encourages collaborative efforts towards creating a more sustainable and equitable future.

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