



Environmental Engagement in Higher Education Institutions

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Abstract

Higher Education Institutions (HEIs) are the potential stewards of the environment. Their influence extends from the workplace to the communities and homes where they play a vital role in environmental engagement. Hence, this paper investigates the 3 drivers of environmental engagement, namely, Knowledge and Awareness (KA), Personal Engagement (PE), and Policies and Practices (PP) in Environmental Engagement (EE) of the 213 faculty of the 9 HEIs in the Philippines. The study used a Quantitative Approach employing the comparative and correlational analyses of the survey results derived from the duly validated instruments. Pearson Product Moment Correlation test shows that the Knowledge and Awareness (KA) driver has no relationship while Personal Engagement (PE), and Policies and Practices (PP) have a significant relationship with Environmental Engagement (EE). The consistency of the faculty's Environmental Engagement at home and at work, as supported by the Behavior Consistency Theory, prevails over Knowledge and Awareness. The faculty's Environmental Engagement is high in the tasks with tangible economic value such as energy and water conservation but low in those with intangible benefits like recycling or waste segregation. While the Policies and Practices driver is significantly related to Environmental Engagement, less than half of the faculty are engaged in training, campaign, and policy participation. Thus, the study recommends incentivizing faculty Environmental Engagement and needs assessment for environmental learning and development programs. The study offers a valuable contribution to the latent literature on Environmental Engagement in Higher Education.

Keywords: drivers of environmental engagement, Higher Education Institutions

1. Introduction

Higher Education Institutions (HEIs) are at the forefront in the combat against climate change damage through their policy formulation, curriculum improvement, instruction, research, and other environmental initiatives. Yet, “there is little evidence that such efforts are contributing to adaptation, mitigation, or reversal of climate change” (Reimers, 2021). While managing the impact of climate change comes as a collaborative responsibility among government agencies, private organizations, and individual stakeholders, HEIs are morally pressured to escalate their efforts in promoting environmental engagement because of their far-reaching influence on the above factors. Thus, beyond the curriculum, the HEIs have established policies to support environmental practices in the workplace. Along with these initiatives is a need to explore the level of environmental engagement of the HEIs faculty while at work. Hence, a study focusing on faculty’s active participation in the organization’s environment-related tasks becomes imminent.

This study lies on the premise that knowledge, behavior, and policies drive the faculty’s environmental engagement at work. The environmental issues tackled in the study are the practices related to waste segregation, recycling, plastic waste, energy and water conservation, and environmental laws. Two hundred thirteen (213) faculty members from 4 universities and 5 colleges in the province of Negros Occidental, Philippines were surveyed to determine their level of environmental engagement in the workplace and to investigate the drivers that greatly influence their engagement in environment-related tasks. It further investigates the role of HEIs environmental policies and practices in escalating the faculty’s commitment or compliance towards environmental obligations.

2. Purpose of the Study

Notably, there is meager literature on drivers of employees’ environmental engagement in Higher Education Institutions (HEIs) in the Philippines. While some HEIs have aligned their environmental framework with Corporate Social Responsibility (CSR) advocacy, how their systems trickle down at the operational level to escalate faculty’s environmental engagement is still unexplored. To fill the gap, this study aims to provide empirical evidence on the link that drives faculty Environmental Engagement (EE) and to cull the data on how the HEIs can improve their environmental policies at work.

3. Research Problem

The main problem advances the argument that Knowledge and Awareness (KA), Personal Engagement (PE), and Policies and Practices (PP) can drive the faculty’s Environmental Engagement (EE) at work. Specifically, this study seeks to answer the following research questions:

1. What is the level of Environmental Engagement (EE) of the HEIs faculty?
2. In which specific environmental practices at home and at work are the respondents highly engaged?

3. Is there a relationship between each driver and the level of environmental engagement of the respondents?
4. Are the respondents committed, compliant, and or resistant to the environmental tasks at work?

4. Literature Review

Higher Education Institutions (HEIs) face major challenges in keeping their faculty and employees engaged in environmental tasks at work. This is because “not all educators and leaders are familiar with the sustainable development approach, and they cannot incorporate it into the university operation” (Čiegis & Gineitienė, 2006). For a sustainable development approach to work, HEIs must first look at the environmental engagement status of their faculty in the workplace.

4.1 Escalating Environmental Engagement at Work

According to the United Nations Environment Program Finance Initiative – UNEP-FI 2011 report (Making Environmental Engagement Happen, 2011), environmental engagement among employees is now an integral part of corporate sustainability strategies. However, organizations are facing numerous challenges such as reaching the employee base effectively, keeping the issue relevant to employees, and lack of adequate resources. For environmental engagement to be successful, UNEP-FI 2011 report identified 5 success factors: Top management support, a clear link between the proposed activity and the employee’s job, involvement of employees in the program, incentives for employee participation, and awareness-raising activities. Furthermore, Kiesnere and Baumgartner (2020) stressed that the “top management involvement in sustainability management of the company is a key success factor.” They opined that managers not only provide resources and design incentives for employees to promote sustainability initiatives but also strongly influence organizational culture. Moreover, incentivizing the employees for their environmental engagement is helpful. Merriman, et al. (2015) indicated that “preference for a sustainability objective was significantly higher when the environmental project offered complementary benefits for financial objectives that are explicit.”

4.2 Environmental Sustainability as a Part of University Function

Čiegis and Gineitienė (2006) remarked that sustainability issues related to the environment must be integrated within the main functions of a university. These include the research processes and different operational activities of the university and its community. However, Olsen, et al. (2020) observed that the “current educational practices are not well aligned to support the development of environmentally informed citizens, including adequate teacher preparation.” While there are more compelling issues to resolve, Reimers (2021) suggested that “engaging teachers in networks with other educators and with colleagues in universities including scientists, can leverage the support of a professional community in developing teacher capacity to engage professionally.”

4.3 Environmental Engagement Studies in Educational Institutions, Philippines

A study of 400 science teachers from 26 public secondary schools in Region XI, Philippines found that “science teachers had a high level of environmental literacy and integration of environmental issues” and that ecological knowledge and awareness influenced the teachers’ level of integration of environmental issues in their classes (Garcesa and Limjuco, 2014). However, it concluded that “the teachers might have a high level of awareness and knowledge about the environment, but their awareness did not motivate them to integrate environmental education in their classes” (Garcesa and Limjuco, 2014). Moreover, a separate study on the level of environmental awareness and involvement of teacher education seniors at Batangas State University in the Philippines found that “respondents were unaware of environmental issues and policies while moderately participative in activities relevant to environmental protection and conservation” (Lualhati, 2019). The study recommended the university to enhance its campaign and introduce varied environmental activities towards strengthening environmental awareness.

4.4 Compliance and Commitment

The term compliance is often used by regulatory bodies to denote an organization’s adherence to the requirements or standards. Commitment, on the other hand, is a behavioral term that is usually intrinsic in origin. As such, commitment works around the concept of employee engagement. The study by Swarnalatha and Prasanna (2013) explored various definitions of employee engagement. The definitions of employee engagement by different authors are denoted in the following terms: “express themselves cognitively, and emotionally (Khan, 1990); “work with a passion and feel a profound connection” (Gallup, 2006); “increase commitment” (International Survey Research), among others. While both authors believe that commitment is not synonymous with employee engagement, they argued that organizational commitment is closely related to employee engagement. It is, therefore, implied that commitment, and not just compliance, is the core of employee engagement. Furthermore, Madsen and Hasle (2017) presented the topologies of compliance and commitment to better understand the two constructs. Using foundational theories as the basis, they proposed that “compliance is rooted on Safety Management and Occupational Health and Safety Management System while commitment is based on Human Resource Theory and Mc Gregor’s Theory X and Y.” Both authors implied that commitment is behavioral in nature, and both logics or concepts are important in the management practice. The study also discussed “how the two logics can influence concrete work environment practices and approaches to management in organizations” (Madsen & Hasle, 2017).

5. Research Methodology

This study used a quantitative approach to research employing comparative and correlational analyses using the Statistical Package for Social Sciences (SPSS) Version 28 and Microsoft Excel. It employed the survey method based on the self-made and expert-validated questionnaire. Relevant literature materials provided the foundation of the study and the basis for the discourse of the findings.

5.1 Research Instrument: Validity and Reliability

The research instrument was divided into 5 sections: Respondents' Profile, Personal Engagement Level, Knowledge and Awareness, Environmental Policy and Practices, and Commitment Levels that used the 5-point Likert scale.

To ensure content validity, 2 sets of experts consisting of 3 members each were sought. The first set consists of environmental experts while the second is composed of credible accomplished researchers. Experts were provided with a content-validity sheet using the prescribed criteria. Experts' feedback was incorporated into the instruments. The face validity, on the other hand, was done by the authors, considering their extensive experience in research. To ensure the reliability of the self-made questionnaires, 24 sets of questionnaires representing 11% of the total respondents were tested. The reliability coefficient of the test was computed using Cronbach's Alpha Coefficient, a statistical tool used to measure the internal consistency or reliability of a psychometric test score for a sample of examinees. The computed alpha was found to be 89.73 which connotes the reliability of the instrument.

5.2 Respondents

The respondents are the faculty members from 9 Higher Education Institutions (HEIs) from the Province of Negros Occidental, Philippines. These participating HEIs are as follows: Carlos Hilado Memorial State University, University of Negros Occidental-Recoletos, Philippine Normal University Visayas (Cadiz Campus), Central Philippine State University (College of Education), Visayan Maritime College, Colegio San Agustin (College of Education), Binalbagan Catholic College, Kabankalan Catholic College, and La Carlota City College. HEIs are represented by a letter (A to I) as shown in Table 1. The order of presentation is not necessarily in the same sequence as mentioned above. Furthermore, quota sampling is used in the study. The HEIs were provided with a survey link and a total of 213 respondents, representing 30% of the total HEIs population participated in the study. The summary of respondents is shown below.

Table 1: Summary of Respondents

Participating HEIs	A	B	C	D	E	F	G	H	I	Total
Number of Respondents	47	40	11	31	29	21	10	11	13	213
% of Sample per HEI Population	20%	22%	31%	35%	35%	30%	30%	30%	37%	30%
% of Total Sample	22%	19%	5%	15%	14%	10%	5%	5%	6%	100%

5.3 Data Interpretation

The data culled from the survey are described per range of values of the mean scores. The respondents' PE is classified as High Engagement to Disengagement; PP from High Influence to Low Influence; Faculty EE from Highly Engaged to Disengaged; KA from Excellent to Very Low; and Personal Outcome from Committed, to Compliant, and Resistant. Tables 2 and 3 summarize the categories.

Table 2: Knowledge and Awareness (KA) Score and Description

KA Score	0 - 3	4 - 5	6 -7	8 - 9	10
Description	Very Low KA	Minimal KA	Moderate KA	High KA	Excellent KA

Table 3: Data Range of Values and Interpretation

Range of values	Personal Engagement (PE)	Environmental Policy and Practices Influence (PP)	Faculty Environmental Engagement (EE) Level	Personal Outcome
1.00 -1.80	Disengagement	No Influence	Disengaged	Resistant
1.81 - 2.60	Very Low Engagement	Very Low Influence	Somewhat Disengaged	Somewhat Resistant
2.61 - 3.40	Low Engagement	Low Influence	Minimally Engaged	Somewhat Compliant
3.41 - 4.20	Medium Engagement	Medium Influence	Moderately Engaged	Compliant
4.21 - 5.00	High Engagement	High Influence	Highly Engaged	Committed

6. Major Findings and Discussion

The findings for every research question have discoursed below.

1. What is the level of Environmental Engagement (EE) of the respondents?

The respondents were asked about the frequency of their environmental engagement in tasks at work such as recycling, plastic waste, segregation, energy conservation, paper use, etc. Findings reveal that 12% (26) are classified as Highly Engaged, characterized as deeply committed – naturally taking all possible worthwhile actions for the environment, and 54% (115) are considered Moderately Engaged – those who act with alertness in responding to the current environmental condition. Moreover, one-third or 32% (68) of the respondents are Minimally Engaged, those who have some few attachments to the environment, and 2% (4) are Somewhat Disengaged, those who are at times detached from the environment.

Overall, only 2 out of 3 or 66% are deemed environmentally engaged, with 26 (12%) Highly Engaged and 115 (54%) Moderately Engaged. Table 4 summarizes the findings.

Table 4: Respondents Level of Environmental Engagement

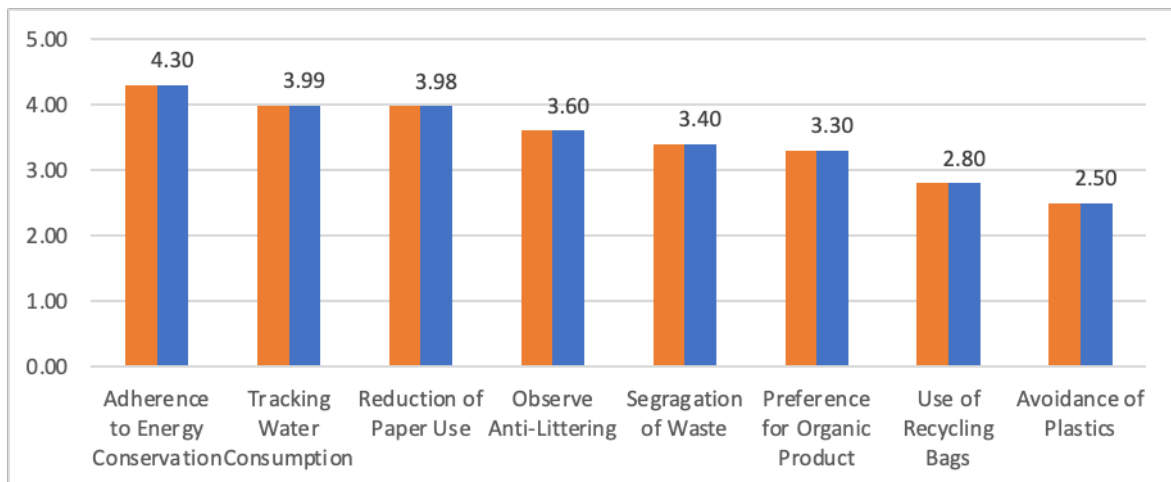
Range of Value	1.0 - 1.8 Disengaged	1.81-2.6 Somewhat Disengaged	2.61-3.4 Minimally Engaged	3.41 - 4.20 Moderately Engaged	4.21 - 5.00 Highly Engaged	Total
Number of Respondents	0	4	68	115	26	213
Percentage	0%	2%	32%	54%	12%	100%

2. In Which specific environmental practices at home and at work are the respondents highly engaged?

The analysis of the mean score revealed that the respondents' High Engagement is one that adheres to energy conservation (4.30); Medium Engagement at keeping track of water consumption (3.99), and reduction of paper use (3.98). On the other hand, Very Low Engagement is in the avoidance of plastics (2.5) and use of recycling bags (2.80). These levels of engagement are also consistent with the respondents' engagement at home. Furthermore, the data using frequency reveal that these environmental practices have Low Engagement participation from the respondents: 27% (58) in recycling bags, 30% (64) in avoiding plastic products, and 42% (89) in waste segregation.

Apparently, the respondents' environmental engagement in tasks with direct cost-benefit and economic value is high. The respondents are aware that disengagement from water and energy conservation and paper use reduction – can be wasteful and very costly. Hence, it is imperative to escalate their engagement in these tasks to avoid the high cost of energy and other resources. The Low Engagement tasks – recycling, avoidance of plastics, and segregation of waste, aside from being time-consuming, do not provide direct economic benefits. Figure 1 provides a summary of the findings.

Figure 1: Respondents level of engagement per environmental task



3. Is there a relationship between each driver and the level of environmental engagement of the respondents?

To find out the relationship between each driver and the level of environmental engagement, the study first determined the mean scores of the 3 drivers as shown in Table 5 below.

Table 5: Respondents Level of engagement with 3 Drivers vs EEE score

3 Drivers:	Mean score
Personal Engagement (PE) - Home; out of 5	3.45
Knowledge and Awareness (KA); out of 10	5.81
HEIs' Policy and Practices (PP) influence; out of 5	3.42
Faculty Environmental Engagement (EE) – Work Score; out of 5	3.18

The level of relationship between each of the three drivers: Personal Engagement (PE), Knowledge and Awareness (KA), and Policies and Practices (PP) and the respondents' Environmental Engagement (EE) defined the significance of influence in the faculty's environmental engagement. Pearson Product Moment Correlation (PPMC) was used to determine the level of the relationship. PPMC or Pearson r shows the linear relationship between 2 sets of data. The higher the Pearson r , the closer the relationship between the 2 sets of data. Furthermore, to determine the level of statistical significance, the p -value (between 0 and 1) was determined. The smaller the p -value, the stronger the evidence that the null hypothesis is to be rejected. A p -value of .05 or less indicates the significance of the relationship.

Analysis reveals that both drivers, Personal Engagement (PE) and Policies and Practices (PP) have a significant relationship with the respondents' Environmental Engagement (EE). This means that the respondents with higher PE and PP tend to have higher EE. Conversely, low PE or PP is associated with low EE. Specifically, PE has a positive correlation with EE ($r=.445$, $p < .05$) and the p -value is less than 5%, indicating acceptance of the alternative hypothesis. Likewise, PP has a positive correlation with EE ($r=.163$, $p < .05$) and the p -value is also less than 5%, implying acceptance of the alternative hypothesis.

It is not surprising that the respondents' environmental behavior or Personal Engagement (PE) at home is also consistent with their engagement at work. The relationship between PE (at home) and EE (at work) validates the argument of Behavioral Consistency Theory that people's tendency to behave in a manner that matches their past actions or decisions is the default behavior. Fessenden (2018) wrote, "Behavioral consistency is a judgment to which we default in order to ease decision making: it is easier to make one decision and stay consistent with it than it is to make a new decision every single time we are presented with a new problem." Cronqvist, et al. (2012) used behavioral consistency theory in a study of CEOs' personal leverage (i.e. home purchases) vs corporate leverage (financial behavior as an executive) of the firms they manage, and it was found that the "CEOs' personal behavior can, in part, explain the corporate financial behavior of the firms they manage." Specifically, the study found a "positive, statistically significant, and robust relation" that CEOs who are "conservative in terms of their personal leverage are found to manage firms that choose more conservative corporate capital structure" (Cronqvist, et al., 2012).

This also supports Robert Cialdini's Principles of Persuasion – Commitment and Consistency, as "not only will people go out of their way to behave consistently, they will also feel positive about being consistent" (Fessenden, 2018).

Further analysis reveals that the respondents who say PP has a higher influence on them tend to have higher EE too. Policies and Practices have always been the major determinant of Employee Engagement, (Gifford and Young, 2021), whether the employees are rewarded or not for observing them religiously, and such is the reason why PP has a strong relationship with the respondents' Environmental Engagement (EE). But while there is a statistical association between these 2 variables (PP and EE), the respondents, however, still have low to medium engagement on environmental policies related to training in which one-third (72/253) of the respondents deem it a waste of time, and only less than a half (40%) participate in the campaign and policy formulation.

On the other hand, Knowledge and Awareness (KA) driver has no significant relationship with EE ($r = .043$, $p > .05$) as the p -value is more than 5% implying acceptance of the null hypothesis. The observed data reveal that the variation and spread of KA scores among the respondents is so close that there are substantial respondents with minimal KA having a mean score of 4-5 yet with high EE level, and or moderate KA having a mean score of 6-7 but with low to moderate EE level, thereby disregarding KA as a factor. A hypothetical question is thus raised: Is it possible that some respondents acted and behaved against their environmental knowledge and awareness? This question is addressed by a study that suggested that personality traits play a stronger role than knowledge, especially in environment-related tasks. Personality defines people's beliefs, values, and attitudes, and "scientists have found that personality factors can influence our likelihood to engage in environmentally sensitive practices" (Thomas, 2014). Milfont and Sibley (2012) determined the association between each of the 5 Big Personality Types – Agreeableness, Openness, Conscientiousness, Extraversion, and Neuroticism with environmental engagement. "Agreeableness, Conscientiousness, and Openness to experience were the traits most strongly linked to environmental engagement" (Milfont and Sibley, 2012). The 5 Big Personality Theory is so far the closest explanation of why people behave differently from their own knowledge of environmental engagement, both at home and at work. In reality, the phenomena of people behaving against their knowledge or disregarding it are too common. People still smoke and drink alcohol despite knowing the negative effect of smoking on their health, or they keep on gambling despite knowing that the odds of winning are less. Funke (2017) suggests that man's behaviors appear to be "a product of conscious and unconscious influences, and these behaviors are primarily logical, not causal." To be more concrete on his discourse, he quoted the study of Kaiser et al. (1999) who analyzed the relationships among environmental knowledge, environmental values, and ecological behavior or intention as well as observed behavior. The study "concluded that on the basis of structural equation modeling, only 40% of the variance in the intention that it entails was attributable to knowledge and values, but this intention explained 75% of the variance in observed behavior," Funke (2017). He further wrote, "from the viewpoint of action, it is not possible to act without knowledge but that we humans can act – at least at a surface level– against our knowledge" (Funke, 2017).

Table 6 summarizes the findings.

Table 6: Level of Relationship between Drivers and Faculty Environmental Engagement

Drivers	Pearson r	P-Value	Interpretation
Personal Engagement (PE)	0.445	0	Relationship is significant
Knowledge and Awareness (KA)	0.043	0.534	Relationship is non-significant
Policies and Practices (PP)	0.163	0.017	Relationship is significant

4. Are the respondents committed, compliant, and or resistant to the environmental tasks in the workplace?

The respondents were asked to choose the best description of their environmental engagement related to the time they spent, their personal effort, campaign participation, environmental outlook, and future concern. This description defines their Personal Outcome in the environmental engagement that determines Commitment, Compliance, or Resistance. Overall, 1 in 4 or 25% (54) claimed that they are committed to environmental engagement in the workplace. Close to half or 45% (96) are merely compliant. On the other hand, 29% (61) are somewhat compliant, and 1% (2) are resistant to the engagement.

Since commitment works around the concept of employee engagement, it is, therefore, one notch higher than compliance. However, Madsen and Hasle (2017) argued that while commitment is rooted in Human Resource Theory, and compliance is from Occupational Health and Safety Management, “both logics or concepts are important in the management practice.” Overall, 70% of the respondents are committed and or fully compliant with their environmental obligation in the workplace. Thus, the remaining 30% hardly comply or somewhat resist environmental engagement. Table 7 summarizes the findings.

Table 7: Summary of Respondents' Personal Outcomes in environmental engagement

Personal Outcome					
1.0 - 1.8 Resistant	1.81 - 2.6 Somewhat Resistant	2.61-3.4 Somewhat Compliant	3.41 - 4.20 Compliant	4.21 - 5.00 Committed	Total
0	2	61	96	54	213
0%	1%	29%	45%	25%	100%

7. Limitations of the study

This study is focused on 3 identified drivers of environmental engagement covering 9 HEIs in the Philippines only, and it does not include other possible drivers.

8. Conclusion

The following conclusions are derived from the findings:

1. High environmental literacy does not generally translate into high environmental engagement among faculty members of HEIs.

In the context of this study, there is a gap between knowledge and behavior in relation to environmental engagement. People's behavior is more of a default than of knowledge as the former has a stronger relationship with the respondents' environmental engagement than the latter. The respondents' environmental behavior at home and at work is consistent, supporting the Behavior Consistency Theory. The behavior construct usually makes up one's personality, and the Big 5 Personality Theory is illustrated in the respondents' environmental engagement. The study of Milfont and Sibley (2012) explained these behavioral engagements, although this paper has not explored the respondents' respective personalities yet.

2. Economics plays a significant role in environmental engagement. The environmental tasks that have concrete and tangible economic value escalate the respondents' environmental engagement. High engagement among the respondents was shown in energy and water conservation and paper use-reduction since doing otherwise entails a high cost. On the other hand, the tasks like waste segregation and recycling, with indirect and abstract benefit to most respondents, yield low to medium engagement only.
3. While the environmental policy has a medium influence on the faculty, less than half of them are engaged in training, campaign, and policy participation.
4. The study has provided empirical evidence to suggest policy improvement for the HEIs environmental framework.

9. Recommendation

The study recommends the following:

1. Address the lukewarm attitude of the respondents towards environmental training in the HEIs, considering the Needs Assessment in the framework of environmental learning and development. Apparently, one third of the respondents find the environmental training a waste of time and likewise, have low environmental policy participation. While the study has not explored the details of the training in the HEIs, it is very likely that the Needs Assessment was not considered as shown by their negative comments. Needs Assessment focuses on Organization analysis – how the training is aligned to the organizational goals; Person Analysis – who needs the training; and, Task analysis – what types of training are to be conducted. Needs Assessment is a requirement prior to the preparation of a meaningful learning and development program.
2. Incentivize environmental engagement. To escalate environmental engagement among faculty members, reward them monetarily, by credit hours, or by any other appropriate incentives. Moreover, consider environmental engagement as part of the job performance criteria.

3. Create an Environmental Audit. An audit gauges the HEI's environmental policies' effectiveness against certain standards or criteria. An environmental audit requires objective setting, stakeholder participation, and tools like engagement surveys, material consumption audits, facilities efficiency metrics, and many other relevant tools.

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