

Creating Actionable Solutions For A Net Zero World - An Inclusive Collaboration With Higher Education Institutions

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Abstract

Purpose – Reaching the net zero planet is one of the SDG's main objectives. To effectively accomplish this objective, it is imperative to engage higher education institutions in a comprehensive collaborative effort. These institutions possess the requisite knowledge, skills, and resources to actively contribute to the formulation and execution of practical solutions. The purpose of the study is to analyse the impact of Government initiatives on achieving Net Zero World and to examine the moderating role of educational institutions in this process.

Methods – The study is a positivism philosophy, which deduces the study based on the previous research. The mono method quantitative analysis is used and a convenience sample of 175 educators across Bangalore city are selected for the study. The questionnaires is adapted from the research documents on the topic and the data is analysed using the SPSS and AMOS software. For moderation analysis the Andrew hayes process macros – Model 1 is utilised.

Findings - According to the findings of the survey, educators hold the belief that the responsibility for achieving a net zero world is divided equally between the government and the public, as well as affiliated organizations, with each party accounting for 50% of the overall obligation. Moderating line with the education support is steeper showing that the support from educational institutions positively affects the government initiatives in achieving net zero world

Originality - The novelty of this study is rooted in its methodology of engaging higher education institutions in the formulation of practical strategies to attain a net zero global state. The study seeks to leverage the inventive mindset and specialized knowledge of students and faculty members from these educational institutions in order to tackle the intricate issues related to climate change and sustainability. The adoption of an inclusive approach guarantees that the solutions created are not solely pragmatic and efficient, but also take into account the varied viewpoints and requirements of different stakeholders, result in a more comprehensive and all-encompassing strategy towards attaining a net zero global state.

Implications - Institutions of higher learning should be involved in developing and implementing sustainability programs if we want to see a change. This inclusive approach ensures that all opinions are included when tackling the hard problems of obtaining net zero emissions, which ultimately leads to better solutions. Involving schools also helps produce leaders with the knowledge to advocate for sustainable practices in all sorts of sectors.

Keywords – Climate Change, Global Warming, Net Zero Emissions, Net Zero World, Sustainability.

INTRODUCTION

Achieving net zero emissions of greenhouse gases requires cutting emissions to zero as much as possible and then compensating for any excess emissions by purchasing carbon offsets in an equal amount. (Deutch, J. 2020). In order to prevent the most catastrophic consequences of climate change and maintain Earth's habitability, the

scientific community has been unanimous in demanding that the rate of human-induced warming not exceed 1.5 degrees Celsius above pre-industrial levels. (Seto et al., 2021). There has been a consistent upward trend in emission levels, and the Earth's temperature has increased by about 1.1°C since the late 1800s. Bataille (2020) published a scientific paper. In order to meet the goal of keeping global warming below 1.5°C, as stated in the Paris Agreement, we must reduce emissions by 45 percent by 2030 and reach net zero emissions by 2050. (Krishnan ET AL., 2022). For the human race, the task of moving towards a net-zero world is an enormous and unprecedented undertaking. A total rethinking of our production, consumption, and transportation practices is required (Ürge-Vorsatz et al. 2020). At present, the energy sector is responsible for approximately 75% of emissions of greenhouse gases, making it an essential component in reducing the negative effects of climate change. According to Mishra et al. (2023) Carbon emissions might be drastically reduced if renewable energy sources like wind or solar were used to generate power instead of fossil fuels like coal, gas, or oil. What You Need to Know About Net Zero. (2022, May 23).

The objective of sustainable development Thirteenth Objective: Resolve the issue of climate change and its consequences immediately highlights the fact that people from all around the world, regardless of where they live, will feel the effects of climate change. (United Nations Sustainable Development Goals on Climate Change, 2023). Our present level of preparedness is inadequate to deal with the possible repercussions of an impending climate catastrophe, therefore we must be more vigilant in the future. (Noguchi & Omer, 2020). There is a grave threat to Earth's ecosystems and biodiversity from the human-caused phenomenon known as climate change. The rate of climate change has accelerated beyond what was originally predicted by SDG Indicators due to the acceleration of emissions of greenhouse gases. The date is unknown. With unpredictable and ever-changing weather patterns and the slow but steady rise of sea levels, this phenomenon has the ability to cause devastating repercussions. (Bouma et al., 2019). Climate change threatens to undo much of the progress made in recent years in terms of development if it is not adequately addressed (Fonseca et al , 2020). Also, this occurrence could spark mass migrations, which could lead to political and social unrest as well as wars. Greenhouse gas emissions must fall further and be cut by about half by 2030, just seven years from now, if we are to keep the rise in global temperatures to 1.5°C above pre-industrial levels (Sharma, H. B., et al., 2021). But we have strayed far from the path that was intended. Important, but urgent, are deeds that go beyond empty promises and goals (Hörisch, J., 2021). The challenge at hand requires setting lofty goals that encompass all economies and working towards growth that can withstand the effects of climate change. Along the way, a clear path to achieve zero emissions must be laid out. According to Fei, W., et al (2021) If we care about the future of our children and grandchildren and want to avoid disastrous consequences, we must act immediately.

India is a developing nation with a growing economy and plans to increase its greenhouse gas emissions, starting from a relatively low level, in order to achieve developmental progress and alleviate poverty, (Net zero emissions target (n.d.). According to Li, B., & Haneklaus, N. (2022) Although India is home to 17% of the world's population, its historical emissions of carbon dioxide from 1850 to 2019 only make up 4% of the total emissions throughout the pre-industrial period (Chaudhury, R., et al., 2023). Thus far, India's annual emissions per person are only around one-third of the world average, and the country's overall impact on the phenomena of global warming has been very minor. On November 26, 2021, during the United Nations Framework Convention on Climate Change's 26th session (COP 26), India formally declared their goal to achieve carbon neutrality by 2070. As per the Paris Agreement's Paragraph 19 of Article 4, India has sent its long-term plan for low-carbon development to the UN Framework Convention on Climate Change. With this plan, India will once again work towards its goal of reaching zero net emissions by 2070. In 2020, Salas et al. Common but Differentiated Responsibilities and Respective Capabilities, equality, and climate justice are the pillars upon which India's long-term plan for low-carbon development rests. For low-carbon development to be a reality in India's future, the country must make seven essential shifts. Researchers Uche et al. (2023) expressed that each transition is thoroughly explained in India's low-carbon development strategy paper, which includes both national and international background. Additionally, it details the present policies and programs that are being put into action, as well as the important aspects linked to each change Singh, V. P., & Sidhu, G. (2021).

How the education sector is supporting Global net zero targets. (2023, May 30). The topics of net zero and sustainability are widely addressed on a worldwide scale; nevertheless, a significant portion of the population remains uninformed about their potential contributions to these discussions and their power to effect positive

changes. Educators provide a distinct potential to contribute to global net zero objectives by fostering students' comprehension of the significance of sustainability and climate change, while facilitating gradual measures to curtail carbon emissions and facilitate the transition towards achieving net zero status. One of the issues that must be addressed with education is climate change. Climate Education – Net Zero Climate. (2022, November 8) says that in the UN Framework Convention on Climate Change, the parties agreed that “each party shall, as appropriate, cooperate in and promote the development, application and diffusion, including the transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases, enhance sinks of greenhouse gases or promote adaptation to climate change”. Furthermore, parties of the Convention shall “conduct educational and public awareness activities on climate change and its effects. Ensuring public access to information supports the decision-making process at all levels. They shall cooperate in education, training and public awareness” to educate, and raise awareness. Education has the potential to encourage people’s attitudes and behaviors to change while equipping them with the necessary knowledge to make informed decisions. Education can help inform and prepare young people for the impacts of global warming by teaching them the skills and perspectives they need to navigate and adapt to a changing climate. Therefore, UN. (2022, November 8) claims that this is how we can achieve zero net by 2050. In addition, education empowers people from all sectors of society to strive for a positive change but it also inspires the younger demographic to become active agents in this change. Understanding the factual information about a problem can alleviate the apprehension that often arises due to the prevalent pessimistic portrayal of the matter in public discourse. Within this particular environment, UNICEF has effectively engaged with the intellectual faculties and creative capacities of children across the globe in order to encapsulate the essence of childhood experiences during the era of expeditious climate transformation. *Education - Net Zero Climate. (2020, October 6).*

With this background the current study entitled “Creating Actionable Solutions for a Net Zero World - An Inclusive Collaboration with Higher Education Institutions” is conducted to achieve the following objectives.

OBJECTIVES

The objectives of the study are

- To analyse the impact of Government initiatives on achieving Net Zero World
- To examine the moderating role of educational institutions in achieving Net Zero World

The initial section provides the study's background, while the subsequent section concentrates on the literature evaluation. The third portion delineates the research methodologies, while the fourth component summarises the study's outcomes. The final component of this research delineates its limits and identifies avenues for future investigation.

REVIEW OF LITERATURE

In order to evaluate previous research and original studies about zero-energy education in India, this study employed a systematic literature review approach. After a thorough search, 34 papers were chosen for the review based on their status as English-language research published in the last five years. After receiving the whole texts of each study, a total of 24 literary works were selected for a comprehensive evaluation of their quality. Iterative methods and quality difficulties caused four papers to be excluded from the study. The research for this study was derived from a comprehensive review of twenty relevant academic articles.

In order to determine the quality of each study, the articles were retrieved from prestigious journals and analysed. The databases of Elsevier, Routledge, and CRC Press, Taylor & Francis. Trinity College Dublin, Springer Nature, and Sage databases. Academia, Wiley, JSTOR, and Guildford Press are just a few of the prestigious academic databases that provided the supplementary articles.

Development of research hypotheses

Government activities are of paramount importance in the pursuit of a net zero global state **Sasse, T., et al (2020)**. Governments may effectively promote the adoption of green technologies and the reduction of carbon emissions by enacting laws and regulations **Stern, N., & Valero, A. (2021)** that prioritize renewable energy sources and encourage sustainable habits among businesses and individuals **Obobisa, E. S. (2022)**. Furthermore, governments have the capacity to allocate funds towards research and development endeavors aimed at fostering innovation in the realm of clean energy solutions **Renné, D. S. (2022)**. Simultaneously, they can extend financial assistance and allocate resources to institutions of higher education, enabling them to conceive and execute sustainable ideas. **Levin, K., et al (2020)**.

Therefore, the Hypotheses are:

H1- There is an impact of Government initiatives on achieving at Net zero world in opinion of the educators.

Educational institutions play a pivotal role in producing the impact of government activities in attaining a net-zero world. Educational institutions play a pivotal role in mitigating the impact of governmental initiatives in attaining a Net Zero global state **Prosser, A. M., & Whitmarsh, L. (2022)**. By means of diligent research, ground-breaking innovation, and comprehensive education, these esteemed institutions have the capacity to make valuable contributions towards the formulation and implementation of practical solutions that are in harmony with the objectives set forth by the Government **Slocum, R. (2023)**. Through establishing partnerships with governmental organizations, educational institutions can efficiently utilize their expertise and knowledge, resulting in the implementation of practical and sustainable strategies towards achieving a Net Zero future. Moreover, their inclusive methodology has the potential to foster collaboration across heterogeneous stakeholders and communities, thereby facilitating a joint endeavour towards the advancement of environmental conservation and sustainability **Kwok, A. G., et al (2014, July)**.

H2 – Educational institutions play a moderating role on the effect of Government initiatives in achieving Net zero world

Research gap

There is paucity of research conducted within the Indian context about the attainment of a Net Zero world and the involvement of higher educational institutions in facilitating this transition. The existence of this gap in the literature poses a substantial obstacle in the development of practical strategies for achieving a net-zero global environment. To address this disparity, it is imperative to foster an all-encompassing partnership with institutions of higher education. By engaging these institutions, we can use their expertise and resources, promoting research, innovation, and information sharing that will ultimately result in concrete solutions for attaining a sustainable and net-zero future in India.

RESEARCH METHODS

The following research methods are used for the study:

This study takes positivism as its guiding philosophical framework. Positivism, as a research philosophy, is compatible with theories on a world with zero net emissions. With the help of educational institutions, this research aspires to provide workable answers for achieving a world without net emissions. **Alharahsheh, H. H., & Pius, A. (2020)**.

This study used a deductive method to research. Because it relies on creating a hypothesis from prior notions, collecting data to test it, and then analysing the results, the deductive technique is commonly used in positivist research. **Casula, M., Rangarajan, N., & Shields, P. (2021)**.

Research Methodology – Analysis using a single quantitative approach. Using a quantitative analysis method, the study zeroes down on educators in the city of Bangalore. Researchers in Bangalore sent out surveys to college and university professors in an effort to collect numerical data. Using this way, we were able to collect extensive information about the educators' plans to achieve a zero-carbon future. **Manzoor, A. (2020)**.

In order to collect information from teachers who are interested in participating in the net-zero world initiatives, the researcher uses the survey approach. Enquiries in the survey cover topics such as knowledge of the SDGs, government programs aimed at reaching a net-zero world, and the role of educational institutions in this endeavour. After reviewing official papers and news announcements from the Indian and United Nations governments, a well-organised survey was put together.. *Net zero emissions target. (n.d.). How the education sector is supporting Global net zero targets. (2023, May 30). — SDG Indicators. (n.d.)*.

This study makes use of a cross-sectional research strategy. The researcher surveyed teachers in Bangalore city over the course of four months to gather data.

Using the Cochran method, we determined that a sample size of 175 educators from Bangalore city would be sufficient to draw conclusions with a confidence level of 95% and a margin of error of 7.5%.

Educators with a minimum of five years of experience and a track record of promoting eco-friendly practices in the classroom make up the study's unit of analysis. Teachers were selected for the study if they expressed interest in participating in a short session where they may share their thoughts on the subject.

In this study, convenience sampling, a kind of non-probability sampling, was used to choose the samples. The use of convenience sampling was warranted since it allowed researchers easy access to a large pool of potential teachers in Bangalore city.

The **validity and reliability of data-gathering tool** utilized in this study was conducted.

The construct dependability (Cronbach Alpha) scores of all of the teachers' research instruments were above 0.95, showing that it is quite reliable. We verify the existence of inter-item interactions among the components by employing confirmatory factor analysis. With a Pearson correlation 'r' value of 0.675 that falls inside the criteria, there is substantial evidence of internal consistency. By comparing the levels of agreement between several idea indicators, we can ascertain convergent validity. The indicator's factor loading, composite reliability (CR), and average variance extracted (AVE) can be used to determine convergent validity, according to Hair Jr & et al. (2017). The integers are between 0 and 1. A value of AVE higher than the cutoff of 0.50 is required to guarantee convergent validity. In comparison to MSV, the following measures are superior or on par with it: The acronyms MaxR(H), CR, AVE, and MSV stand for maximum shared square variance, composite reliability, average variance explained, and maximum reliability, respectively. According to Farrell and Rudd (2009), the second criterion assesses discriminant validity using the Fornell-Lacker criterion (Fornell, Cha, & Bagozzi, 1994). Hair Jr. & et al. (2017) state that this method compares latent concept correlation to the square root of the average variance extracted (AVE) in order to assess it. For a latent concept to adequately explain the variance in its own indicators, it is expected that it will be able to do so more so than for other latent constructs. The square root of the average variance extracted (AVE) for each construct is expected to be lower than the correlations with other latent constructs, according to Hair Jr. et al. (2017). The credibility and validity of the Educators questionnaire were established because the current model confirmed all dimensions and met all validity requirements. Using the master validity tool, Gaskins verified that the questionnaire was reliable and valid. (Shia et al. 2023)

In order to analyse the data and evaluate the inter-variable correlations, the study used SPSS Version 22 and AMOS Version 22. To further understand the characteristics that influence educators' perspectives on the Net Zero world and the role of educational institutions, the researcher used a variety of software tools and statistical approaches, including structural equation modelling and factor analysis. Thakkar, J. J., & Thakkar, J. J. (2020).

RESULTS AND DISCUSSION

Results

Demographic profile of the educators

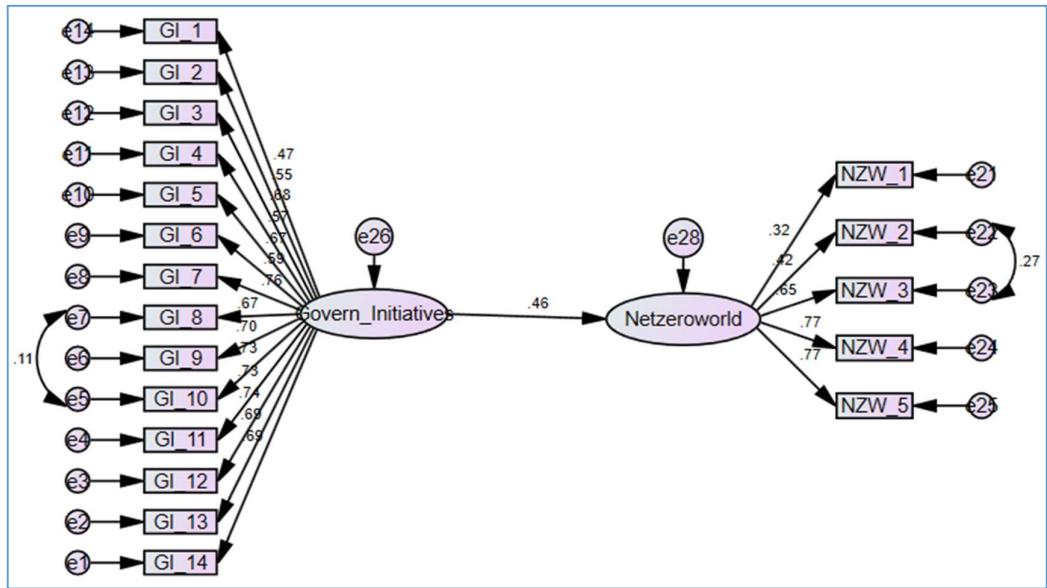
Majority 76% study participants are female as the education Industry in India is dominated by women. 24% educators in the study are in the age group of 30-35 years, 36% belong to the age bracket of 36-40 years and 21% are in between 41-45 years and small percentage of respondents are below 30 years and above 50 years. A vast majority of 67% educators have completed their post-graduation with either SLET or NET, 12% educators in the study are Doctorates. 37% Educators are teaching associates, 24% are Assistant professors, 26% are Associate professors, and a small percentage of Professors are part of the study. A large proportion of 64% teachers are associated with teaching core commerce subjects, 12% are associated with teaching non-core papers, and the remaining educators are specialised in single subjects and handle electives.

Testing of Hypotheses

H1- There is an impact of Government initiatives on achieving at Net zero world in opinion of the educators

Model fit - It is anticipated that the chi-squared value, which is 2.955 when divided by the degrees of freedom, will fall within the range of 3. Between the actual goodness-of-fit number (0.871) and the suggested characteristics, there is an improvement. With an RMR of 0.071, the boundary estimate is complete. The relevant model has good fit metrics and is highly regarded by professionals in the field.

Figure 1- Structural relationship between Government initiatives and achieving Net zero world



The findings of the study indicate that there is a significant positive association between Government actions and the achievement of a Net zero world, with a coefficient of 0.459 ($p < 0.002$), suggesting that Government initiatives lead to a 46% increase in the likelihood of attaining this goal. This statement underscores the pivotal significance of government policies and interventions in facilitating the shift towards a net zero global state. Governments can effectively expedite progress towards this objective by implementing several measures, including the adoption of carbon pricing mechanisms, provision of subsidies for renewable energy sources, and enforcement of emissions restrictions. Hence, it is imperative for government to persist in providing support and allocating resources towards sustainable initiatives, with the aim of expeditiously attaining a state of global carbon neutrality. The absence of governmental assistance would significantly impede and diminish the pace and efficacy of the transition towards achieving a net zero world. Governments have the ability to establish a conducive atmosphere for the adoption of sustainable practices by institutions and individuals through the implementation of financial incentives and regulatory frameworks. Furthermore, governmental entities possess the capacity to exert their influence in order to foster worldwide cooperation and collaboration pertaining to matters of climate change. This serves to guarantee that endeavours are harmonized and that global emissions are collectively diminished. The active participation and commitment of governments globally are essential in order to ultimately achieve a net zero planet.

Table 1 - Structural relationship between Government initiatives and achieving Net zero world

			Estimate	P
Netzeroworld	<---	Govern_Initiativess	0.459	0.002
GI_14	<---	Govern_Initiativess	0.688	
GI_13	<---	Govern_Initiativess	0.688	***
GI_12	<---	Govern_Initiativess	0.737	***
GI_11	<---	Govern_Initiativess	0.727	***
GI_10	<---	Govern_Initiativess	0.729	***
GI_9	<---	Govern_Initiativess	0.699	***
GI_8	<---	Govern_Initiativess	0.665	***
GI_7	<---	Govern_Initiativess	0.757	***
GI_6	<---	Govern_Initiativess	0.593	***
GI_5	<---	Govern_Initiativess	0.668	***

GI_4	<---	Govern_Initiatives	0.572	***
GI_3	<---	Govern_Initiatives	0.678	***
GI_2	<---	Govern_Initiatives	0.554	***
GI_1	<---	Govern_Initiatives	0.466	***
NZW_1	<---	Netzeroworld	0.322	0.003
NZW_2	<---	Netzeroworld	0.422	0.001
NZW_3	<---	Netzeroworld	0.646	***
NZW_4	<---	Netzeroworld	0.769	***
NZW_5	<---	Netzeroworld	0.767	***

According to the findings of the survey, educators hold the belief that the responsibility for achieving a net zero world is divided equally between the government and the public, as well as affiliated organizations, with each party accounting for 50% of the overall obligation. The notion of shared responsibility acknowledges that governments possess the authority to enact policies and regulations that have the potential to bring about substantial transformations. Nevertheless, the efficacy of these measures may be compromised in the absence of public support and active involvement by allied organizations and all the stakeholders. Educators claim that via dissemination of knowledge and the cultivation of public understanding on the significance of achieving a state of net zero, they can engender motivation among individuals and communities to actively participate and make meaningful contributions to the overarching global endeavor. Hence, the attainment of a sustainable and carbon-neutral future necessitates the adoption of a collaborative approach involving governments, the general population, and affiliated organizations.

The results of the SEM analysis led to check the moderating effect of educational institutions in achieving net zero world.

H2 – Educational institutions play a moderating role on the effect of Government initiatives in achieving Net zero world

Table 2 – Results of Moderation analysis – Andrew Hayes Process macros –Model 1

Model : 1						
Y : NZW_1						
X : GI_1						
W : EDC_1						
Sample						
Size: 175						

OUTCOME VARIABLE:						
NZW_1						
Model Summary						
R	R-sq	MSE	F	df1	df2	p
.4938	.2439	.5562	18.3826	3.0000	171.0000	.0000
Model						
coeff	se	t	p	LLCI	ULCI	
constant	.2939	.8520	-.3449	.0306	1.1757	1.3879
GI_1	.9687	.2230	4.3438	.0000	.5285	1.4088

EDC_1	.9507	.2007	4.7358	.0000	.5544	1.3469
Int_1	.1838	.0514	-3.5742	.0005	-.2853	-.0823

Product terms key:

Int_1 : GI_1 x EDC_1

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0565	12.7750	1.0000	171.0000	.0005

Focal predict: GI_1 (X)

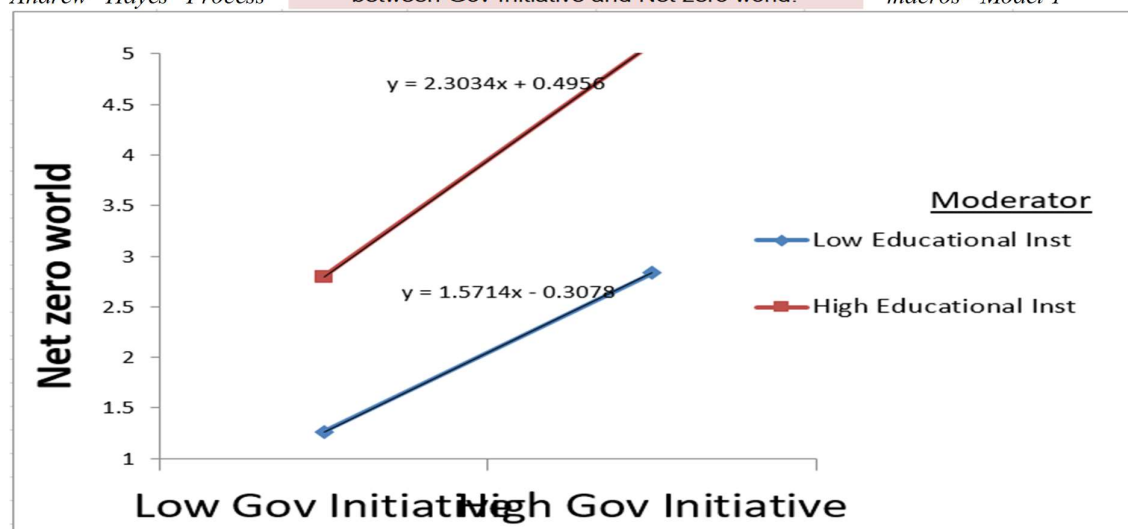
Mod var: EDC_1 (W)

Y: NZW_1 indicates the independent variable, X: GI_1 indicates the dependent variable and W: EDC_1 indicates the moderating variable. The Interaction value of 0.1838 is statistically significant indicating the effect of moderating variable. The R square change of 0.0565 is also significant at $p=0.005$.

Figure 2 – Results of Andrew Hayes Process

Educational Inst strengthens the positive relationship between Gov Initiative and Net zero world.

Moderation analysis – macros – Model 1



government-led endeavours in mitigating emissions and fostering sustainable development. The collaboration between educational institutions and governments is crucial in order to develop practical strategies that may effectively facilitate the required transformations on a worldwide level.

Discussion – Solutions by inclusive collaboration with higher educational institutions

The National Clean Air Programme (NCAP) was initiated by the Ministry of Environment, Forestry, and Climate Change (MoEF&CC) to enhance air quality in 131 cities across 24 states and UTs. The cities also cover every city from non attainment to more than a millionaire. To accomplish this, the program actively involves everyone who will be affected. Achieving this goal in a net-zero world in turn requires a systemic approach, wherein numerous components of the system are interdependent with one another, and education stakeholders — in particular post-secondary institutions — play an essential role. It is on these institutions that the future of creative solutions lies, in scholarly research, teaching and community engagement. The Ministry could collaborate with academic institutions to guide the various potential solutions toward developing and implementing actionable strategies in combating air pollution for a net-zero worldwide. Together, they are able to create a strategy for promoting sustainable development: this requires not simply lifting the atmosphere to a cleaner state, but also ensuring that it exists along with an environmentally friendly and fair path of society.

The Commission for Air Quality Management in the National Capital Region (NCR) and its Adjacent Area has

now come up with a new Clean Finance Policy to help reduce air pollution in NCR. To this end, the commission has notified a list of authorized fuels for industrial and other uses in NCR. These policies and recommendations can be translated into effective net-zero global via the proper implementation. The crackdown on air pollution at the plant under a policy used by the Central Pollution Control Board (CPCB) to clean up Delhi's toxic air is likely to markedly reduce industrial and other emissions in the National Capital Region (NCR), where 400 million people live. Furthermore, we will mandate the use of a general roster of permitted fuels which will ensure usage of cleaner and sustainable replacements. By adopting these policies, the region could make great strides toward achieving a global state of net-zero emissions that are compensated for entirely by removal or offsetting techniques. Such an effort would not only help clean the air but also offers methods to a more sustainable and equitable future for all parties involved.

From April 1, 2020, the country has moved from BS-IV directly to BS-VI standards both for fuel and automobiles. Colleges and universities is able to play an important role in creating consciousness among the masses on the advantages of cleaner fuel and its importance. If we fully and meaningfully integrate sustainability and net-zero environmental studies into academic programs for the next generation, educational institutions can make a significant contribution by effectively preparing them to produce well-informed decisions together with the community. In addition, with the ability to partner with government bodies and other groups for research projects and creative ideas on how best to encourage cleaner and more sustainable fuel alternatives. Together, these initiatives could catalyze a transition to an environmentally sustainable and just future for all.

Our Energy Independence, our Sustainable Future that could make life simpler for everyone The Sustainable Alternative Towards Affordable Transportation (SATAT) program was introduced with the goal of building a compressed biogas (CBG) production unit and making CBG available as a vehicle fuel for sale. To this end, educational institutions can play a big part in upcoming proposals related with the SATAT initiative. If they get hold of certain industrial partners and perform studies on biogas training methods as well as its future applications-corn futures markets were mentioned by some experts yesterday-then they will become indispensable for promoting China's transformation into cleaner fuels Higher Educational institutions have the ability to exercise considerable influence on the development of clean fuel alternatives. Also, teachers hold the key to integrating related themes about sustainable design into the educational curriculum and it is important they do so now more than ever before. The teachers themselves should at the same time spread the message of environmentalist mobility to students practically as well through their own careers. Generally speaking, the participation of colleges and universities can go a long way toward speeding up the acceptance of environmentally friendly fuels as a substitute for conventional varieties and assuring a much better future.

A Vapor Recovery System (VRS) should be installed wherever a gas pump sells gasoline in quantities greater than 300,000 liters each month, cities included with a population between 100 thousand and one million. The Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) initiative in India concerns financial support for electric vehicles. Through such a measure, greenhouse gas emissions from transport--whose extinction would contribute towards global net-zero status--can be brought to a halt. Also, organizations have the option to adopt laws or policies that encourage renewable energy lands and make it difficult for people who traditionally depend upon oil as a low-cost fuel. As a result, the research and investment in green fuel alternatives are destined to flourish. By groups of various kinds providing financial assistance and actively carrying out R D in fields such as this, their contributions are ultimately essential for building ourselves a sustainable future model. Finally, small individual initiatives -- that may appear to be futile efforts on the part of an overcrowded world -- together add up to one big bang when gathered into a single objective. It is precisely this: 'Human action must have no bad ecological consequences if at any cost.'

In promoting the conservation of rivers, the Ministry of Jal Shakti encourages the initiatives of states and Union Territories that help to control pollution in particular segments of rivers across the nation by both providing financial support as well supplying experts help with their research work. This aid is channeled into two main projects: the Central Sector Scheme of Namami Gange, aimed at all rivers in the Ganga basin, and the Centrally Sponsored Scheme of the National River Conservation Plan (NRCP), concerned with other rivers. Educational institutions play a big role in arousing students' awareness about the importance of preserving rivers and efforts to-ward pollution mitigation. To prevent pupils from facing such problems lies with higher learning centres, where they can take measures like mounting a series of programs and activities designed to educate students on how pollution harms ecosystems associated with rivers-or in this stage make it clear that proactive steps must be taken

if these natural resources are to survive into the future. Educational institutions can join hands with various government and non-governmental agencies Participate in research, devise innovative ideas for controlling pollution in rivers. As an active contributor to environmental protection minded young people of tomorrow and a sustainable future where our rivers enjoy a good quality of life, education institutions have their own special soil on which they can play a role here.

Since August 2022, India has augmented its List of Wetlands of International Importance, known as Ramsar Sites. This situation has not yet been clearly resolved. The highest number of Ramsar sites in Asia today is held by India. Working together may lead many educational institutions to play influential roles in delivering information about what Ramsar sites mean and the necessity of preserving them. In college-level academic programs it will be feasible for these kinds of efforts by the press. Education to help improve people's comprehension of precisely what wetlands are doing and the problems they face. Moreover, educational institutions have the ability to organize field trips and workshops at these Ramsar sites where students can experience first-hand the aesthetic appeal of these sites, and can thus have a comprehensive, multi-faceted grasp on the necessity as well as specific reasons behind conservation efforts. By doing so, educational institutions have the potential to instil in the young people of tomorrow a keen sense for environmental protection, and thus spur them ahead in every way to be welcomed faultlessly by history.

To fight against one-time use plastic items, the state has adopted a major approach. Such prohibitions on a total of 19 particular categories of disposable plastic products took effect July 1, 2022. Colleges and universities are ideal for teaching people what happens with this type of environmental pollution-encouraging your students to form habits that do not damage the world we live in. Such facilities may also help students learn first hand about environmental protection through training programs embedded in the education they receive, and lectures on public welfare topics like garbage classification. School organizations and Government will participate: for example schools can work with local communities to introduce advanced garbage disposal systems and promote sustainable lifestyles.

The SAC (Space Application Centre) of ISRO in Ahmedabad had published a complete data regarding desertification and land degradation within India called the Desertification & Land Degradation Atlas of India. The atlas stated that the total area affected under land degradation and desertification in India is 97.84 million hectares during the period of 2018-19. The data about degraded lands region wise on state basis can act as the platform for strategic planning to enhance effective implementation of attempts towards restoration of land. The general idea is that this data is a valuable resource and it can provide essential information as well as some technical insights. Using this information, Higher Educational institutions can also improve how they help students appreciate the importance of land conservation and sustainability. In addition, this knowledge will assist policymakers to formulate effective land degradation and desertification policies & strategies for overcoming the challenges in the process. This data provides a wealth of invaluable information that can be used for guiding decision-making and more broadly achieving land sustainability in India.

The Government has already embarked on embracing circular economy practices. All of them together were 11 committees formed to promote various waste categories toward the advancement of circular economy (CE) action plans. These committees have completed CE action plans for 10 unique trash types. The Environmental Protection Regulations (EPR) The aforesaid rules apply to four categories of waste and are: b) waste plastic; c) Electronic Waste. There is a potential for higher educational institutions to play an important role in propelling and executing the circular economy thoughts on to ground within the Indian context. By integrating principles of sustainability into their curriculums, institutions have the opportunity to teach and raise awareness with students about responsible waste management and recycling; a practice which they can in turn apply at home. This is in addition to those capabilities which individuals are able to conduct research and get creative with methods that help reduce a lot of problems regarding various garbage types. Moreover, schools can collaborate with government agencies as well as other necessary stakeholders to arrange workshops, symposiums and awareness drives. These projects are all about spreading the word on the circular economy and getting people to adopt sustainable ideals.

The National Mission for a Green India (GIM), Nagar van Yojana and many others are the efforts under taken to nurture environment-oriented schemes such as compensatory afforestation planned, approved and executed through Compensatory Afforestation Fund Management & Planning Authority (CAMPA). The States/ UTs also take up several initiatives to promote tree plantation activities under the State/UT Plan, MGNREGA and other relevant programmes. As a result, this causes a massive shift towards making meaningful circular economy

contributions amongst the growing number of individuals educated in educational institutions. In addition, schools have the ability to cultivate their own green projects including Waste Management Audit, Sustainable practice Audit, installation of rooftop gardens, recycling programs and energy conservation drives which aids in creating change at individual as well as a community level. It is much like a model of such acts for students, inspiring a whole generation into sustainable actions.

The Trees Outside Forests in India (TOFI) program was initiated by the Ministry of Environment, Forest and Climate Change (MoEFCC), in collaboration with the Government of India and the United States Agency for International Development (USAID). This is run in Andhra Pradesh, Assam, Haryana, Odisha, Rajasthan, Tamil Nadu and Uttar Pradesh. The budget that it allocates is of \$25 million which will be utilized in 5 years. This program is designed to incentivize the planting of trees in non-forest areas to enhance ecosystem services paid for under the ELLA (REDD+) Protocol at the national level, with specific focus on adding trees to increase C sequestration. Moreover, it also intends to promote inclusive livelihoods and generate economic opportunities for agriculture-based rural regions. C- Educational Sector: They aimed this sector as having utmost potential in terms of helping the program achievements. Educational Institutions can get actively involved by initiating tree plantation efforts and spreading awareness for sustainable ways to teach local masses while also promoting the cultivation of indigenous flora, setting up urban forests & realizing the importance of saving ecological resources. By working closely with educational institutions, the program could help shape long-term sustainability and nurture a new generation of eco-conscious advocates for environmental protection and preservation!

CONCLUSION

This research is designed to determine how collaboration with higher education can enhance inclusive in accomplishing the goal of a net-zero world. This study is novel because it acknowledges the fact that no development will be able to address climate change and those yet more complex problems, let alone lead us towards a net-zero planet on their own. We have ability to utilize the students and the universities, since they are on the front lines of innovation and research. The collaboration will ensure that a wide variety of perspectives is taken into account in making decisions, resulting in strategies informed by diverse insights and with maximum potential for realising a sustainable future. Results of the work suggest that current federal efforts help incentivize commercial achievement of net zero by educational facilities. Working with education; we use their expertise to help implement government led initiatives and move toward a net zero environment. As such, they are well-equipped to undertake robust studies and research that inform sustainable practices and policies. By working together, we can learn to create actionable solutions in line with sustainability ideals, helping our planet and the people on it. Based on their findings and analysis, the researchers recommend future actionable solutions to attain this goal. These measures can include rules and regulations that support green sources of energy, adaptable agriculture practices, and lower carbon emissions within industries. Governments, institutions and individual participation is of utmost importance to this end as they must work together to bring about the execution of these solutions, It would be a common boon for every creature born on earth since ages to come.

SCOPE FOR FURTHER RESEARCH

This is a limitation of the current study, as it was based on feedback from educators. Future research may consider a focus on the role of management in supporting achievement of a Net Zero world. A key step to developing viable solutions for how we might reach a net zero society is to better understand the views and understanding of educators. However, it is equally important to analyze the extent to which management has played its part in achieving this goal. Further research will examine the actual strategies and efforts used by administrators at the institutional level to promote sustainability initiatives and thus contribute significantly to the larger goal of a global state at net zero. This active collaboration can provide the basis for an analysis of combined strategies that incorporate the entirety of the institution and thus lead to inclusive outcomes that build pathways to sustainability. We predict that scholars in the future may study what role, if any, different types of businesses play in realizing a Net Zero world. The study can have intricate intercommunicative details about the combined efforts of higher education institutions and other industries to reach the goal of net zero emissions. Looking at the tactics and techniques used in other sectors can reveal both best practice and novel solutions that can apply to HEIs. This comprehensive strategy, if introduced in the educational institutions mentioned here, will not only support their sustainability efforts but could also lead to a ripple-down effect that encourages businesses across sectors to take active measures towards working for a net zero world.

The current study is descriptive and future research can consider a qualitative analysis through expert interviews

in the industries that are involved in helping achieve of a Net Zero world. Such a research effort would provide invaluable lessons about the many hurdles and opportunities faced by these sectors, serving as an important way for his implementation to be improved. In addition, we recommend that more research is needed to understand the influences of government policy and incentives on mainstreaming environmental actions in HEIs as well as other sectors. Researchers may contribute to this broader field and improved decision making outlets while, ultimately, a more sustainable environment full of sound ecological practices may become the future.

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