

International Journal of Human Capital in Urban Management
(IJHCUM)

Homepage: <http://www.ijhcum.net/>

ORIGINAL RESEARCH PAPER

The mediating role of Green Training & Development in the relationship between Emotion Appraisal and Regulation on Employee Eco-Friendly Citizenship Behavior

H. Vasudevan^{1,*}, M. Y. Cheok², N.A.R. Md Saad², K. Gengatharan³, R. Nagarathanam⁴, R. Abdul Wahhab¹

¹Tun Razak Graduate School, Universiti Tun Abdul Razak, Kuala Lumpur, Malaysia

²Bank Rakyat School of Business, Innovation, Technology and Entrepreneurship, Universiti Tun Abdul Razak, Malaysia

³Institute Pendidikan Guru Malaysia, Kampus Sultan Abdul Halim, Kedah, Malaysia

⁴Department of Accountancy and Business, Tunku Abdul Rahman University Management and Technology, Malaysia

ARTICLE INFO

Article History:

Received 22 July 2025

Revised 12 September 2025

Accepted 29 November 2025

Keywords:

Digital readiness; Student entrepreneurship; Barriers; Cross-cultural perspective; Institutional support; Digital transformation.

ABSTRACT

BACKGROUND AND OBJECTIVES: Green Training and Development is a crucial initiative for Higher Education Institutions to foster eco-friendly behavior by enhancing knowledge and emotional skills for sustained behavior. Society prioritizes economic development over environmental quality, neglecting environmental damage. Public awareness is limited, and educational employees are under-researched in environmental awareness. Sustainable consumption promotes responsible use of natural resources and essential services, ensuring the protection of people's well-being. The research highlights a significant under-researching of environmental awareness and behavior among educational employees, highlighting a lack of scholarly attention on the psychological and behavioral factors influencing these employees. A research gap exists on green training in reconciling environmental values with economic priorities or job security, highlighting the need for further understanding. The study examines the influence of green training and development on employees' eco-friendly citizenship behavior in higher education institutions, focusing on the mediating effect.

METHODS: The study uses a quantitative method, utilizing a consent survey method and a questionnaire as the research instrument. The number of respondents in this study was 399 employees. This study utilized convenience sampling to select respondents in Malaysia. This study utilized SPSS, the SOBEL test, and SMART PLS4.

FINDINGS: The study's objectives and hypotheses significantly influenced each variable. Seven hypotheses have been accepted (H1: t-value = 9.093), (H2: t-value = 4.204), (H3: t-value = 6.273), (H4: t-value = 6.233), (H5: t-value = 5.191), (H6: t-value = 4.218) and (H7: t-value = 3.874).

CONCLUSION: Research suggests that implementing greening or environmental management systems in the workplace is crucial for sustainable higher education development, as it enhances employee emotions and eco-friendly behavior. The study provides practical advice for institutions aiming to create a sustainable workforce by focusing on the human aspect of environmental management.

DOI: [0.22034/IJHCUM.2026.03.02](https://doi.org/10.22034/IJHCUM.2026.03.02)



NUMBER OF REFERENCES

66



NUMBER OF FIGURES

2



NUMBER OF TABLES

8

*Corresponding Author

Email: hemaloshinee@unirazak.edu.my

Phone: +60126281490

ORCID: [0000-0002-2767-8044](https://orcid.org/0000-0002-2767-8044)

Note: Discussion period for this manuscript open until October 1, 2026 on IJHCUM website at the "Show Article."

INTRODUCTION

Malaysian education promotes “green” training to foster industrial development and sustainable workplace practices, with educators enhancing green training skills in line with the Ministry of Education (MOE) aspirations. Green training and development in higher education institutions is crucial for employee development in this century, as it should be present in all groups. Unwanted environmental behavior includes unhealthy energy use, improper waste disposal, pesticide use, unsanitary disposal, and improper waste recycling in public spaces and parks (Soleimanpouromran et al., 2020). Green training skills encompass the skills, knowledge, attitudes, and values necessary to live in a society that minimizes the environmental impacts of human activity (Haldorai et al., 2022). The recommendation is to implement green training and development to improve employees’ eco-friendly citizenship behavior. Green training can enhance educators’ human capital production skills, promote sustainable economic, social, and environmental development, and encourage eco-friendly behavior among higher education employees. Implementing this strategy not only benefits the national economy but also promotes social and environmental sustainability in higher education institutions. Malaysian Higher Education Institutions (Kanapathy et al., 2021) are increasingly recognizing the significance of green training and development (Ghouri et al., 2020), focusing on supporting human capital development and fostering eco-friendly citizenship behaviors among employees (Aboramadan et al., 2021; Darvishmotevali et al., 2022) in technical (Agrawal et al., 2020) and professional fields (Lopez-Bernabe et al., 2020), thereby promoting high eco-friendly productivity development education (Korenetskaya et al., 2020). The research underscores the significance of incorporating green training elements into higher education, particularly in emotional self-assessment, regulation, and eco-friendly behavior (Dararvishmotevali et al., 2022; Ma et al., 2022). Human resource practices are crucial for implementing green training and development in employees, forming quality human capital for sustainable, environmentally friendly development in higher education institutions. Research on eco-friendly citizenship behavior in various industries, such as manufacturing (Aslam et al., 2021; Jayabalan et al., 2020; Ong et al., 2020; Perez et al., 2020), hotels

(Menseh et al., 2021; Umrani et al., 2020;), fashion (Salem et al., 2020), airline (Hwang et al., 2020), food & beverage industry (Nam, 2020), cosmetic industry (Sadiq et al., 2021), and banking industry (Ali et al., 2021; Ogalo et al., 2020), has shown a gap in understanding employees’ eco-friendly citizenship behavior at Malaysian higher education institutions. Previous studies on emotional intelligence, green training, and green behavior have been done in many sectors and religious orientations, such as the manufacturing industry (Sahan et al., 2024), household food waste (Khorakian et al. 2024), and retail stores (Evina et al., 2024). Research (Mohammad et al., 2020; Stankevičiūtė et al., 2020; Wiradirja et al., 2020; Darvishmotevali et al., 2022) on environmental citizenship behavior among employees in Malaysian higher education is limited, with fewer studies on eco-friendly citizenship behavior. This highlights a gap in green training and development in the emerging area of eco-friendly citizenship behavior in higher education. Studies suggest that Malaysian higher education employees have a better understanding of attitudes and ecological sustainability for green training (Anwar et al., 2020; Aziz et al., 2021; Kyriakopoulos et al., 2020; Yusliza et al., 2020). Literature reviews reveal that internal employee weaknesses are the root cause of issues in green training, emotional self-appraisal, and education regulations (Al-Ghazali et al., 2021). The rationale for focusing on Malaysia is to align with the country’s educational goals. The study highlights Malaysia’s educational focus on promoting “green” training to promote industrial development and sustainable workplace practices, aligning with the country’s educational goals. So, the study examines the influence of green training and development on employees’ eco-friendly citizenship behavior, focusing on the mediating effect at Malaysian Higher Education Institutions in the year 2024.

Literature review

Smart cities are being developed to address the challenges of rapid urbanization, focusing on sustainability, efficiency, and improving the quality of life for citizens. Smart cities utilize advanced resource management techniques like sensors for water leak detection, smart grids for electricity management, and smart waste management systems to minimize environmental impact. For example, research in China demonstrates that smart city initiatives

can significantly enhance urban green training development by promoting green technology innovation and optimizing industrial structures. But the relevance of the current study lies in the social and human aspects of a sustainable urban environment, which are significantly impacted by green training development.

Green training and development

Green training is a promising method for promoting workplace efficiency, knowledge, and skills, ultimately fostering environmental sustainability (Umar *et al.*, 2021). Green training promotes environmental citizenship, sustainability, and a supportive workplace environment, thereby encouraging eco-friendly behavior among employees, according to various studies (Aboramadan *et al.*, 2021; Darvishmotevali *et al.*, 2022; Haldorai *et al.*, 2022; Vargas-Hernández *et al.*, 2022). Green policy and training improve employees' awareness, competence, and mental readiness for eco-friendly behavior (Chaudhary, 2020), leading to staff development and enhanced efficiency in an eco-friendly environment. Green training addresses internal employee weaknesses that may hinder the effectiveness of technological solutions. The study on green training development emphasizes the importance of human resource practices and emotional intelligence in promoting sustainable development and employee development for a smart, sustainable city in the educational field.

Self-emotion appraisal and regulation of emotion

Organizations may be reducing their focus on emotional intelligence, particularly in enhancing eco-friendliness (Darvishmotevali *et al.*, 2022), due to a decrease in the emergence of feelings (Vasudevan, 2013; Vasudevan *et al.*, 2017; Vasudevan *et al.*, 2017; Vasudevan, 2020). Emotions effectively convey information, and revising measures to improve environmental performance results (Kraiger *et al.*, 2021). Emotional skills are crucial for meaningful life generation (Goleman, 2001), and the education system must prioritize the development of emotional intelligence among higher education employees (Geßler *et al.*, 2021). Del Campo *et al.*, (2020) emphasize the importance of a healthy, safe, and conducive green learning environment for quality education and increased self-emotion appraisal. Respect, confidence, and appreciation are essential

for educators to feel a sense of belonging, and proactive administrators must coordinate green human resources practices and materials to achieve educational objectives (Darvishmotevali *et al.*, 2022; Priksat *et al.*, 2021; Vargas-Hernández *et al.*, 2022).

Employees' eco-friendly citizenship behaviour

Smart cities utilize technological solutions like smart grids and waste management systems to reduce their ecological footprint. Green training is crucial for fostering eco-friendly citizenship behaviors among employees, supporting sustainability goals in smart cities. Afsar *et al.*, (2020) suggest that eco-friendly citizenship encourages employees to adopt green behavior to mitigate environmental issues. Kim *et al.*, (2019) highlight that environmentally conscious employees utilize their green skills and behaviors to exceed their professional responsibilities. Employee eco-friendly conduct refers to their intentional or voluntary actions aimed at protecting the environment from the harmful effects of human activities (Saeed *et al.*, 2019). Environmentally friendly citizenship behavior attracts green employees, enhancing environmental performance (Anwar *et al.*, 2020; Mohammad *et al.*, 2020; Aslam *et al.*, 2021; Mensah *et al.*, 2021). Companies can contribute to sustainable development and contribute to eco-friendly citizenship behavior in various sectors (Bombiak, 2019). Mediating effect of Green Training & Development in the relationship between self-emotion appraisal and regulation of emotion on the employees' eco-friendly citizenship behaviour Wong and Law (2002) highlighted four dimensions of emotional intelligence: regulation of emotion, others' emotion appraisal, self-emotion appraisal, and use of emotions. Employees who self-evaluate and regulate their emotions can enhance their awareness of their external environment and ecosystem. High-emotion employees, characterized by self-emotion appraisal and emotional regulation, are more conscious and open to environmental issues, despite understanding others' feelings (Alipour *et al.*, 2021). Emotionally intelligent workers are committed to responding to the external environment and regulating their feelings, enhancing their eco-friendly citizenship (Anwar *et al.*, 2020; Mohammad *et al.*, 2020; Aslam *et al.*, 2021; Mensah *et al.*, 2021). Academic staff's knowledge, technical skills, and direct relationships with university management significantly influence

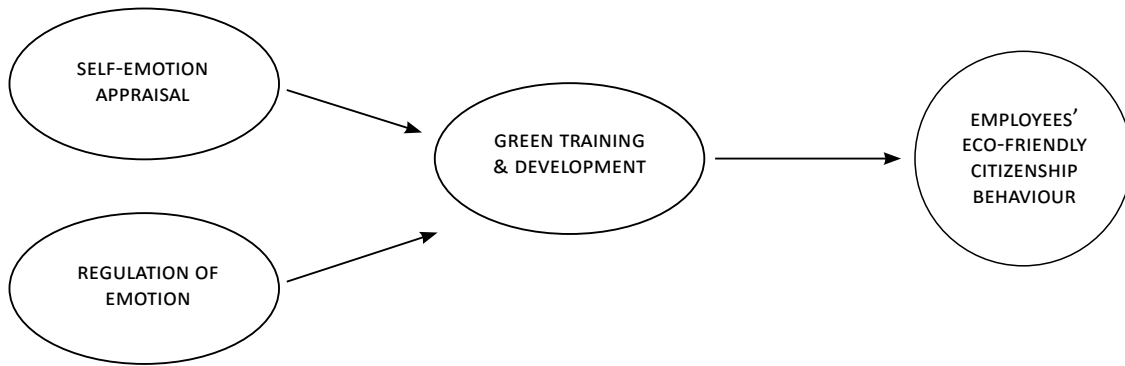


Fig. 1: Enhancing employees' eco-friendly citizenship behavior: The effect of green training & development on self-emotion appraisal and regulation of emotion at Malaysian Higher Education Institutions

campus sustainable growth, according to positive results for both organizations and employees (Aboramadan, 2020). Green training significantly impacts eco-friendly behavior among employees, potentially encouraging frequent training and awards for environmentally conscious practices like littering, conservation, and recycling (Saeed et al., 2019). Kim et al. (2019) assert that green training significantly influences an individual's eco-friendly behavior, thereby mitigating harmful environmental impacts.

Analytical framework

Fig. 1 reveals that Garden and Moran's multi-intelligence theory suggests that green training and development can enhance self-emotion appraisal and eco-friendly citizenship behavior in higher education institutions. Emotional intelligence, including self-evaluation and emotion regulation (Smith, 2020), is crucial for employees to adapt to environmental changes through effective green training education (Morse, 2020). Emotional intelligence plays a crucial role in green sustainability, enabling individuals to use knowledge about environmental and human violations to minimize environmental harm (Chang et al., 2021; Karatepe et al., 2021; Soleimanpouromran et al., 2020). Education promotes economic, social, cultural, and political growth, but institutions must protect the human environment to enhance real intelligence, a perspective from Gardner's multiple intelligences. Emotional intelligence enhances employees' adaptability, learning, and awareness of environmental issues, leading to increased eco-friendly citizenship behavior (Azhar et al., 2021; Karatepe et al., 2021). Green training enhances employees'

green intelligence, promoting eco-friendly behavior and citizenship behavior, as per studies by Umar et al., (2021). Research by Niyomdech et al. (2019) and Pham et al., (2018) at Thailand University indicates a positive correlation between green training and Organizational Citizenship Behavior for Environmental (OCBE). Previous studies have shown a positive correlation between green training and environmental citizenship behavior in the manufacturing sector (Malik et al., 2021). The research uses the Ability-Motivation-Opportunity (AMO) perspective to suggest that green training and development positively impact eco-friendly citizenship behavior (Ababneh, 2021; Ahmed et al., 2021; Amrutha et al., 2021; Úbeda-García et al., 2021), while green management in a company develops employees' skills, motivates them, and provides environmental improvement opportunities (Pham et al., 2019). Green training aids organizations in enhancing their human resources and capabilities, thereby promoting eco-friendly behavior (Yu et al., 2020).

MATERIALS AND METHODS

Survey design and data collection

The study utilized a quantitative method, allowing participants to complete questionnaires at their own pace, ensuring the objectives and research questions were addressed effectively. The study employs a quantitative approach and deductive reasoning to test a theory on the impact of green training and emotional regulation on eco-friendly behavior among employees, using specific measurements and scales. The study utilized IBM SPSS software version 26, the SOBEL test, and SMART PLS4 for data analysis, focus-

ing on content and construct validity to ensure reliability and accurate measurement of respondents' responses. This software is suitable for a study due to its use in Structural Equation Modeling (SEM), which can analyze complex relationships between variables, including the proposed mediating effect of green training and development. The study uses the SOBEL test to assess the statistical significance of a mediating effect between green training and emotional appraisal/regulation, aiming to understand eco-friendly behavior. The study was conducted in a non-contrived setting, using a cross-sectional time horizon and questionnaires to gather information on dependent and independent variables. This study employs a quantitative approach, convenience sampling, and a self-administered questionnaire to collect data and test an established theory using deductive reasoning. The science-based questionnaire was utilized for understanding human meanings and actions, employing scales and specific measurements in its quantitative data collection method. The study involved both academic and non-academic staff from Malaysian Higher Education Institutions, using non-probability convenience sampling. The study, conducted by the Ministry of Education in 2021, surveyed 500,000 academic and non-academic employees from all of Malaysia's higher education institutions. The study involved 500 employees, 399 of whom answered online survey questions, and used SPSS and SMART PLS3 for data analysis and a 5-point scale for measurement. The measurement items in [Table 1](#):

RESULTS AND DISCUSSION

Profile respondents

The demographic profile of the respondents reveals a predominantly female (63.4%) and 21-25-year-old age group (38.1%), indicating a youthful sample in [Table 2](#). The ethnic makeup of the population was predominantly 55.9% Malay, with a significant percentage of 21.1% being Chinese and 18% being Indian. The majority of respondents, comprising 56.1%, held a Degree/Professional certificate or post-graduate qualifications (35.3%), indicating a highly educated sample. The professional experience ranged from less than 2 years (32.3%) to 2-5 years (34.1%). The majority of participants (47.1%) attended 2-5 courses in environmental training. The occupational roles were diverse, with lecturers being the largest group (26.8%) and other professional roles also present.

The study's findings are more comprehensive and applicable due to the diverse demographic.

Descriptive analysis

[Table 3](#) presents a descriptive analysis that provides insights into the central tendency, dispersion, and distributional characteristics of four constructs: Self-Emotion Appraisal (SEA), Regulation of Emotion (ROE), Employee Eco-friendly Citizenship Behaviour (EEFCB), and Green Training and Development (GTD). The mean score for SEA and Accountability in the sample is 3.9279, indicating a high level of SEA and accountability among respondents. The mean scores of ROE and EEFCB (3.7888) show moderately positive levels, while GTD has the lowest mean score of 3.4106, indicating a lower level among respondents. Standard deviation and variance are dispersion measures that indicate the spread of scores around the mean, with lower values indicating less variability and higher values indicating greater dispersion. The standard deviations for all constructs are relatively similar, indicating similar levels of variability in respondents' perceptions across the constructs.

Normality test

In [Table 4](#), the Kolmogorov-Smirnov and Shapiro-Wilk tests were used to analyze SEA, yielding a 0.135 and 0.927 statistic, respectively, with a significance level of less than 0.001. The study reveals a significant deviation from normality in the distribution of SEA. The Kolmogorov-Smirnov and Shapiro-Wilk tests showed non-normality in the ROE, with a significance level of less than 0.001 and a statistic of 0.936, respectively. The ECB variable, with a Kolmogorov-Smirnov and Shapiro-Wilk statistic of 0.092 and 0.959, respectively, indicates that it is not normally distributed. The GTD variable, with a Kolmogorov-Smirnov and Shapiro-Wilk statistic of 0.093 and 0.888, respectively, indicates that it does not follow a normal distribution.

Multiple regression analysis & mediation analysis using the Sobel test

According to linear regression analysis presented in [Table 5](#), in terms of direct relationship, it is ascertained that hypothesis 1, indicating that SEA was a significant predictor of EEFCB, where it was significant at the 0.05 level and its t-value was 13.477. Besides that, ROE was a strong predictor of EEFCB as well be-

Table 1: Measurement items

Variables	No of items	Measurement item	Scale
Employee eco-friendly citizenship behavior	7	I voluntarily participate in environmental actions and initiatives in my daily work activities. I recommend effective environmental protection methods to colleagues, even when it's not their direct responsibility. I actively participate in environmental events organized by our Higher Education Institutions (HEIs). I am taking environmental actions that positively impact the reputation of our Higher Education Institutions. I actively participate in various projects, endeavors, or events that tackle environmental issues within our Higher Education Institutions (HEIs). I generously allocate time to assist my colleagues in considering the environment in all their work activities. I encourage my colleagues to adopt more environmentally conscious behaviors.	5-Likert Scale
Green Training and Development	6	I have received sufficient training on environmental issues. I can secure opportunities to receive training on environmental issues. I frequently receive environmental training. The environmental training provided by Higher Education Institutions (HEIs) is effectively utilized. The environmental training has led to a thorough evaluation of the employee's citizenship behavior. I have opportunities to increase my citizenship behavior after attending the environmental training.	5-Likert Scale
Self-appraisal emotion	4	I have a clear understanding of their approach towards green training and environmental citizenship behavior among employees. I possess a comprehensive understanding of my emotions and environmental concerns. I am well-informed about my stance on green training and development. I am always satisfied with the environmental training.	5-Likert Scale
Regulations of emotion	4	I always know my workmates' emotions from his/her behavior in the environment. I am adept at observing others' emotions towards environmental issues. I am sensitive to others' emotions and feelings regarding environmental behavior issues. I possess a comprehensive understanding of the emotions of those around me regarding environmental training and behavior.	5-Likert Scale

Table 2: Profile of responde

		Frequency	Percent
Gender	Male	146	36.6
	Female	253	63.4
Age	21-25	152	38.1
	26-30	43	10.8
	31-35	54	13.5
	36-40	59	14.8
	41-45	29	7.3
	46-50	33	8.3
	51 & above	29	7.3
Ethnic group	Malay	223	55.9
	Chinese	84	21.1
	Indian	72	18
	Other	20	5
Education level	SPM	12	3
	Degree/A-level	22	5.5
	Degree/Professional certificate	224	56.1
	Post-graduate	141	35.3
Years of service	< 2 years	129	32.3
	2 -5 years	136	34.1
Number of environmental training courses attended	< 1	164	41.1
	2 to 5	191	47.9
	6 to 10	35	8.8
	>10	9	2.
Occupation	Student	57	14.3
	Head of IT	1	0.3
	HR manager	13	3.3
	Professor Vice chancellor	1	0.3
	Manager	1	0.3
	Senior HR director	2	0.5
	Chief designer	1	0.3
	Tour guide	1	0.3
	Researcher	1	0.3
	Other	99	24.8
	Engineer	1	0.3
	Lecturer	107	26.8
	Senior lecturer	35	8.8
	Junior lecturer	17	4.3
	Senior executive	18	4.5
	Program coordinator	2	0.5
	Head of program	15	3.8
	Professor/Associate Professor	21	5.3
	IT coordinator	6	1.5

Table 3: Descriptive analysis

	N	Mean	Std. Deviation	Variance	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	Statistic
SEA	399	3.9279	0.80726	0.652	-0.862	0.122	1.186	0.244
ROE	399	3.7888	0.82349	0.678	-0.81	0.122	0.786	0.244
EEFCB	399	3.7214	0.83364	0.695	-0.568	0.122	0.364	0.244
GTD	399	3.4106	1.03401	1.069	1.691	0.122	16.27	0.244

Table 4: Normality test

	Kolmogor- ov-Smirnov ^a	Shapiro-Wilk				
	Statistic	df	Sig.	Statistic	df	Sig.
SEA	0.135	399	<.001	0.927	399	<.001
ROE	0.163	399	<.001	0.936	399	<.001
EEFCB	0.092	399	<.001	0.959	399	<.001
GTD	0.093	399	<.001	0.888	399	<.001

Table 5: Multiple regression analysis & mediation analysis using the Sobel test

Direct relationship				
Variable	Beta coefficient	t value	p value	Value
SEA	0.546	13.477	<0.01	
ROE	0.321	7.938	<0.01	
Dependent variable: ECB				
F value	0.632			340.613
R ²				
Mediation analysis (SEA → GTD → ECB)				
SEA → GTD		11.304		
GTD → ECB		14.685		
Test statistics				8.957
p value				0.00
Mediation analysis (ROE → GTD → ECB)				
ROE → GTD		11.367		
GTD → ECB		14.685		
Test statistics				8.988
p value				0.00

cause its t-value was 7.938 and significant at the 0.05 level. Hence, it demonstrated that, although different statistical approaches were adopted, it is ascertained that the statistical outcome of Table 5 coincides with the one presented in Table 6. It is also noted that the R-squared value of this model was 0.632, which indicates that 63.2 of the variance in EEFCB was explained by the variance in SEA and ROE. The F value of 340.613 also shows that the model is fit and thus representative of the sample of the population. The mediation analysis presented in Table 5 was analyzed using the Sobel test as well as linear regression analysis. The empirical result evidenced that GTD played a crucial role in influencing the relationship between SEA and EEFCB in Hypothesis 4, as its test statistical value was 8.957 and significant at the 0.05 level. In Hypothesis 5, it was found that it significantly influenced the relationship between ROE and EEFCB, whereby its test statistic was 8.988 and significant at the 0.05 level. It is also noted that such a statistical outcome coincided with the one shown in Table 6, although different statistical approaches were adopted.

Assessment of SEM

Reliability analysis

Table 6 reveals that the EEFCB construct has a Cronbach's alpha of 0.944, indicating excellent internal consistency. The construct's composite reliability values, rho_a and rho_c, are above the acceptable threshold of 0.7, indicating its high reliability. The AVE for EEFCB is 0.749, exceeding the recommended minimum of 0.5, indicating that the construct's indicators capture a significant portion of the variance. The GTD construct has a Cronbach's alpha of 0.884, indicating strong internal consistency, and composite reliability values of 0.918 and 0.914, indicating robust reliability. The GTD construct has a high internal consistency and reliability, with an Average Variance Extracted (AVE) above the 0.5 threshold and composite reliability values of 0.907 and 0.933, respectively. The ROE indicator captures significant variance, while the SEA construct has strong internal consistency and high reliability values, as indicated by the AVE and Cronbach's alpha. The AVE for SEA is 0.759, indicating that a significant portion of the variance is attributed to the construct's indicators.

Cross-loading

Table 7 and Fig. 2 showcase cross-loadings for

EEFCB, GTD, ROE, and SEA to evaluate their discriminant validity. The indicators EEFCB1 through EEFCB7 exhibit strong loadings on their respective constructs, with values ranging from 0.772 to 0.897. The loading of EEFCB1 is 0.772, followed by EEFCB2 at 0.861, EEFCB3 at 0.888, EEFCB4 at 0.863, EEFCB5 at 0.888, EEFCB6 at 0.897, and EEFCB7 at 0.884. The high loadings indicate that each of these items strongly represents the ECB construct. The indicators GTD1 through GTD6, except for GTD4, exhibit significant loadings on their construct for the GTD construct. The GTD1 has a loading of 0.807, followed by GTD2 at 0.861, GTD3 at 0.872, GTD5 at 0.884, and GTD6 at 0.868. GTD4's lower loading of 0.449 suggests it may not be as robust an indicator of the GTD construct as other indicators. The indicators ROE1 through ROE4 show strong loadings for the construct ROE, with values of 0.879, 0.887, 0.851, and 0.908, respectively. The high values of each indicator confirm that they effectively reflect the ROE construct. The construct SEA indicators SEA1 through SEA4 exhibit strong loadings, with SEA1 at 0.877, SEA2 at 0.856, SEA3 at 0.888, and SEA4 at 0.863.

Discussion

The study aimed to understand the interplay of various factors in influencing eco-friendly behaviors through the significance of the findings. The study confirmed hypothesis 1, indicating that SEA is a significant predictor of EEFCB. Yuen *et al.*, (2023) suggest that high self-awareness leads to environmental awareness and long-term eco-friendly practices among individuals. Self-determination theory suggests that individuals with high self-awareness appreciate environmental behavior meaning, as supported by studies by Ryan and Vansteenkiste (2023); Ryan *et al.*, (2021). Individuals with a strong sense of personal responsibility and commitment to environmental sustainability are more likely to foster a culture of eco-friendly behavior in organizations (Usman *et al.*, 2023). The model developed for EEFCB confirmed Hypothesis 2, as ROE was a strong predictor. Emotion regulation is crucial for comprehending the sustained commitment to environmentally friendly traditions and the development of environmentally friendly behaviors in various contexts (Havarangsi and Vithayaporn, 2024; MacDonald and She, 2015). Employees who can regulate emotions effectively can manage frustrations and obstacles in implementing

Table 6: Reliability analysis

Construct	Measurement Items	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	AVE
EEFCB	E1: I voluntarily participate in environmental actions and initiatives in my daily work activities.	0.944	0.945	0.954	0.749
	E2: I recommend effective environmental protection methods to colleagues, even when it's not their direct responsibility.				
	E3: I actively participate in environmental events organized by our Higher Education Institutions (HEIs).				
	E4: I am taking environmental actions that positively impact the reputation of our Higher Education Institutions.				
	E5: I actively participate in various projects, endeavors, or events that tackle environmental issues within our Higher Education Institutions (HEIs).				
	E6: I generously allocate time to assist my colleagues in considering the environment in all their work activities.				
	E7: I encourage my colleagues to adopt more environmentally conscious behaviors.				
GTD	G1: I have received sufficient training on environmental issues.	0.884	0.918	0.914	0.648
	G2: I can secure opportunities to receive training on environmental issues.				
	G3: I frequently receive environmental training.				
	G4: The environmental training provided by Higher Education Institutions (HEIs) is effectively utilized.				
	G5: The environmental training has led to a thorough evaluation of the employee's citizenship behavior.				
	G6: I have opportunities to increase my citizenship behavior after attending the environmental training.				
ROE	R1: I always know my workmate's emotions from his/her behavior in the environment.	0.904	0.907	0.933	0.777
	R2: I am adept at observing others' emotions towards environmental issues.				
	R3: I am sensitive to others' emotions and feelings regarding environmental behavior issues.				
	R4: I possess a comprehensive understanding of the emotions of those around me regarding environmental training and behavior.				

SEA	S1: I have a clear understanding of their approach towards green training and environmental citizenship behavior among employees.	0.894	0.897	0.926	0.759
	S2: I possess a comprehensive understanding of my emotions and environmental concerns.				
	S3: I am well-informed about my stance on green training and development.				
	S4: I am always satisfied with the environmental training.				

Table 7: Cross-loading test

	EEFCB	GTD	ROE	SEA
EEFCB1	0.772			
EEFCB2	0.861			
EEFCB3	0.888			
EEFCB4	0.863			
EEFCB5	0.888			
EEFCB6	0.897			
EEFCB7	0.884			
GTD1		0.807		
GTD2		0.861		
GTD3		0.872		
GTD4		0.449		
GTD5		0.884		
GTD6		0.868		
ROE1			0.879	
ROE2			0.887	
ROE3			0.851	
ROE4			0.908	
SEA1				0.877
SEA2				0.856
SEA3				0.888
SEA4				0.863

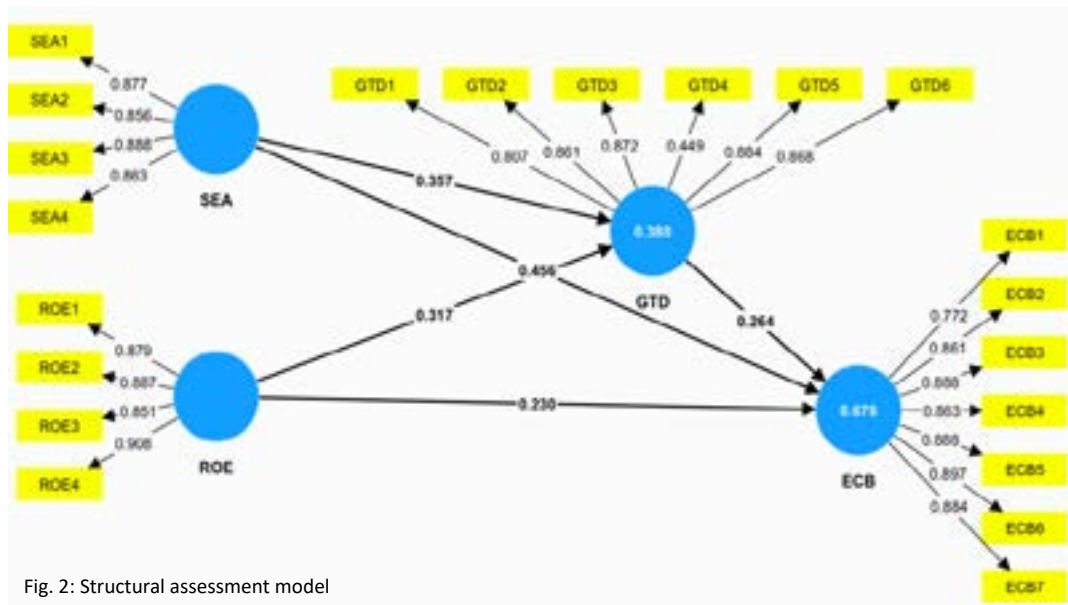


Fig. 2: Structural assessment model

environmentally friendly ventures, promoting a consistent and dedicated approach towards environmental responsibility (Yu *et al.*, 2020; Deshpande and Srivastava, 2023). Higher ROE enhances teamwork and efficiency, as employees with better emotional regulation communicate effectively and work towards common environmental goals (Yu *et al.*, 2020).

The study confirmed Hypothesis 3, indicating that GTD is a significant predictor of EEFCB. Eco-training programs enhance workers' environmental knowledge and skills, potentially initiating sustainable behavioral activities towards workplace sustainability interventions (Novita *et al.*, 2022; Ruiz-Perez *et al.*, 2021). Greener performance potential in GTD programs can be realized through better quality and wider-spread programs, as suggested by various studies (Jeronimo *et al.*, 2020; Usman *et al.*, 2023; Yesiltas *et al.*, 2022). Continuous training and development enhance the workforce's knowledge and skills in environmental technologies and practices, thereby enhancing their potential to achieve the sustainability goals of the organization (Novita *et al.*, 2022). The study reveals that GTD significantly influences the correlation between SEA, ROE, and EEFCB, as per Hypotheses 4 and 5. The integration of environmental education could enhance the adoption and continuation of pro-environmental behavior. The mediating role of GTD demonstrates that an effective training

program requires a holistic approach that considers both emotional and environmental aspects. The integration of environmental sustainability can enhance employee commitment and responsibility by fostering a deeper understanding of both emotional and practical aspects of their actions. The Human Factor provides an intuitive and useful understanding of human behavior in environmental decision-making (Byrd, 2022). Moreover, organizational culture plays another vital role in promoting eco-friendly citizenship behaviors because it can breed such a positive and facilitative work environment that, at length, allows them to foster open channels of communication and joint effort on the environmental concerns, which at length, enhance the general efficacy of green training programs by the organization itself (Priyadarshini *et al.*, 2023; Azhar and Yang, 2022).

Practical and implications

In the practical context, the implication can be categorized into two as follows:

Academician

- Existing courses that are relevant to using the sustainability component in teaching and learning should be listed, reviewed, and improved to increase employees' awareness on the green sustainability.
- Sustainability components in training modules and competencies of academic and support staff academ-

Table 8: Direct & indirect effects of the construct's relationship

Path Relationship	Hypothesis	t-value	Sig.	Decision
SEA → EEFCB	Self-emotion appraisal positively impacts eco-friendly citizenship behaviors.	9.093	0.000	Supported
ROE → EEFCBE	Regulation of emotions positively impacts eco-friendly citizenship behaviors.	4.204	0.000	Supported
GTD → EEFCBE	Green training & development positively impacts eco-friendly citizenship behaviors	6.273	0.000	Supported
SEA → GTD	Self-emotion appraisal positively impacts green training & development	6.233	0.000	Supported
ROE → GTD	Regulation of emotions positively impacts green training & development	5.191	0.000	Supported
SEA → GTD EEFCB	Green training & development mediates the relationship between self-emotion appraisal and eco-friendly citizenship behaviors	4.218	0.000	Supported
ROE → GTD EEFCB	Green training & development mediates the relationship between the regulation of emotions and eco-friendly citizenship behaviors	3.874	0.000	Supported

ic can develop academician awareness, knowledge, and skills.

- Can increase employees' professional commitment in green training issues.
- Combining the disciplines of the field of study and the concept of sustainability in each of the relevant courses enhance employees' performance and self-awareness to the research and learning process.
- Improving a healthy lifestyle among campus residents.
- Provide awareness to employees about the importance of biodiversity of flora and fauna.
- Equality and social justice for all campus residents.

Nation / Institutions

- Carries the meaning of energy and water produced and used in a way that can support human development.
- To build our nation toward the earth's flora and biodiversity.
- Nature's balance must be defined and preserved.
- Create and enjoy an environmentally friendly, safe, and equitable life balance.
- Formulation of ethical policies for sustainable research and learning.
- Creating a pedestrian and cycling-friendly campus is a sustainable aspect that needs to be practiced.

- Reducing the ingress of motor vehicles and indirectly reducing the emission of carbon monoxide gas inside the campus.
- Have a guarantee of adequate energy supply to meet current and future needs.

Limitations and future direction

The study acknowledges several limitations and suggests future study as follows:

Convenience sampling: The study utilized convenience sampling, a non-probability method, which may introduce selection bias due to its potential inaccuracy in capturing the entire Malaysian academic and non-academic staff population. In future studies, the sampling has to investigate different sampling methods to improve the generalizability of the findings to a broader population.

Cross-sectional design: The research utilized a cross-sectional design, collecting data at a single point in time, making it challenging to establish causality or understand variable relationships over time. In future studies, the researchers have to utilize a longitudinal research design to better understand the long-term impact and causal relationships between the variables.

Data distribution: The normality test revealed that variables Self-Emotion Appraisal, Regulation of Emo-

tion, Employee Eco-friendly Citizenship Behavior, and Green Training and Development do not follow a normal distribution, potentially affecting the validity and reliability. The objective is to bridge the gap in understanding eco-friendly behavior across various industries and diverse geographical locations.

Instrument weakness: The Green Training and Development construct's low loading value of 0.449 suggests it may not be a robust indicator, potentially affecting the study's reliability. Future studies must investigate additional factors beyond emotional intelligence and green training that influence eco-friendly citizenship behavior.

CONCLUSION

This study's findings have the potential to significantly enhance research and practice. The theory combines emotional and institutional aspects to develop eco-friendly citizenship behavior, emphasizing the significance of sustainability-related positive emotional cues in maximizing green training benefits. Green training and development initiatives significantly influence emotional management strategies and eco-friendly citizenship behavior. Secondly, this study aims to demonstrate the significant role of self-emotion appraisal and emotion regulation in enhancing the benefits of green training and development initiatives and eco-friendly citizenship behavior. The study will provide evidence on the significance of emotion-management strategies in this specific context. The study's findings could assist higher education policymakers in creating eco-friendly citizenship behavior interventions to achieve long-term employee behavior objectives. The current study's fourth finding reveals a sampling limitation, specifically focusing on convenience sampling. Convenience sampling is used for easy and specific responses, while purposive sampling is crucial for accurate population representation and preventing bias, impacting research validity and reliability. In the future study, the sample size should be increased to 500 for more accurate results. The outcomes could help Malaysian higher education institutions understand the relative importance of individual emotion strategies in meeting sustainability goals. It implies that focusing solely on green training and development will not be sufficient to increase eco-friendly citizenship behaviour unless adaptive emotion regulation interventions are used. Self-emotion appraisal is predicted to sig-

nificantly influence green training and development, which in turn is expected to significantly influence eco-friendly citizenship behavior. Researchers predict that green training and development will play a crucial role in influencing self-emotion appraisal and eco-friendly citizenship behavior.

AUTHOR CONTRIBUTIONS

H. Vasudevan, M.Y. Cheok, R. Nagarathnam, and K. Gengatharan performed the literature review and experimental design and analyzed and interpreted the data, and H. Vasudevan and R. Abdul Wahhab prepared the manuscript text and manuscript edition. M.Y. Cheok, R. Abdul Wahhab, and H. Vasudevan performed the experiments and literature review, compiled the data, and prepared the manuscript. M.Y. Cheok, K. Gengatharan, and R. Nagarathnam performed the data analysis and findings, while Md. S. Nurul Ar Rasyid performed data collection, and H. Vasudevan and R. Abdul Wahhab compiled the data analysis and findings for the manuscript edition.

ACKNOWLEDGEMENT

The authors express gratitude for the UniRazak Research Grant's (UNIRAZAK/RMC/2023/002) support in their research study, expressing their appreciation for the grant's guidance and endorsement.

CONFLICT OF INTEREST

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancy, have been completely witnessed by the authors.

OPEN ACCESS

©2026 The author(s). This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution, and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license unless indicated otherwise in a credit line to the material. If material is not included

in the article’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit: <http://creativecommons.org/licenses/by/4.0/>

PUBLISHER NOTE

Tehran Urban Research & Planning Centre (TURPC) takes a neutral position on claims on disputed territories, place names, international boundaries, jurisdiction in published maps, and institutional affiliations. TURPC is committed to retracting a paper after its publication if it becomes apparent that there are serious problems in its content, in terms of research and publication ethics (<https://www.ijhcm.net/journal/process?ethics>).

ABBREVIATIONS

$\bar{Y}$	Average of observed data
R^2_{adj}	Adjusted coefficient of determination
$\bar{Y}$	Average of observed data
AVE	Average variance extracted
R^2	Coefficient of determination
E	Percentage maximum error
H	Hypothesis
	Level of significance
p	Percentage occurrence of a condition
<i>p-value</i>	Probability value
SMART PLS	Partial least squares (PLS) path modeling method.
Z	Level of Confidence
SOBEL	Sobel’s Test for Mediation
GTD	Green Training & Development
SEA	Self-Emotion Appraisal
ROE	Regulation of Emotion
EEFCBE	Employee Eco-Friendly Citizenship Behaviour
MOE	Ministry of Education

REFERENCES

- Ababneh, O. M. A., (2021). How do green HRM practices affect employees’ green behaviors? The role of employee engagement and personality attributes. *J. Environ. Plann. Manage.*, 64(7): 1204-1226 (23 pages)
- Aboramadan, M., (2020). The effect of green HRM on employee green behaviors in higher education: the mediating mechanism of green work engagement. *Int. J. Organ. Anal.*, 30(1): 7-23 (17 pages)
- Aboramadan, M.; Karatepe, O. M., (2021). Green human resource management, perceived green organizational support and their effects on hotel employees’ behavioral outcomes. *Int. J. Contemp. Hosp. Manag.*, 33(10): 3199-3222 (24 pages)
- Afsar, B.; Umrani, W. A., (2020). Corporate social responsibility and pro-environmental behavior at workplace: The role of moral reflectiveness, coworker advocacy, and environmental commitment. *Corp. Soc. Responsib. Environ. Manag.*, 27(1): 109-125 (17 pages)
- Agrawal, S.; Puri, R., (2020). *Green HRM: A Climate Conscious Route to Triple Bottom Line*. Sage Publications Pvt. Limited. 1-42 (42 pages)
- Alipour, H.; Amelshahbaz, S.; Safaeimanesh, F.; Peyravi, B.; Salavati, A., (2021). The impact of environmental stimuli on hotel service employees’ service sabotage—mediation role of emotional intelligence and emotional dissonance. *Sustain.*, 13(2): 2-18 (17 pages)
- Amrutha, V. N.; Geetha, S. N., (2021). Linking organizational green training and voluntary workplace green behavior: Mediating role of green supporting climate and employees’ green satisfaction. *J. Clean. Prod.*, 290: 125876 (1 page)
- Anwar, N.; Mahmood, N. H. N.; Yusliza, M. Y.; Ramayah, T.; Faezah, J. N.; Khalid, W., (2020). Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *J. Clean. Prod.*, 256: 120401 (1 page)
- Aslam, H.; Azeem, M. U.; Bajwa, S. U.; Ramish, A.; Saeed, A., (2021). Developing organisational citizenship behaviour for the environment: the contingency role of environmental management practices. *Manag. Decis.*, 59 (12): 2932-2951 (20 pages)
- Azhar, A.; Yang, K., (2022). Examining the influence of transformational leadership and green culture on pro-environmental behaviors: Empirical evidence from Florida city governments. *Rev. Public Pers. Adm.*, 42(4): 738-759 (22 pages)
- Aziz, F.; Md Rami, A. A.; Zaremohzzabieh, Z.; Ahrari, S., (2021). Effects of emotions and ethics on pro-environmental behavior of university employees: A model based on the theory of planned behavior. *Sustain.*, 13(13): 2-17 (16 pages)
- Bombiak, E., (2019). Green human resource management – the latest trend or strategic necessity? *Entrep. Sustain.*, 6(4): 1647-1662 (16 pages)
- Chang, T. W.; Hung, C. Z., (2021). How to shape the employees’ organization sustainable green knowledge sharing: Cross-level effect of green organizational identity effect on green management behavior and performance of members. *Sustain.*, 13(2): 2-19 (18 pages)
- Chaudhary, R., (2020). Green human resource management and employee green behavior: An empirical analysis. *Corp. Soc. Responsib. Environ. Manag.*, 27(2): 630-641 (12 pages)
- Darvishmotevali, M.; Altinay, L., (2022). Green HRM, environmental awareness and green behaviors: The moderating role of servant leadership. *Tour. Manag.*, 88: 104401 (1 page)
- Del Campo, A. G.; Gazzola, P.; Onyango, V., (2020). The mutualism of strategic environmental assessment and sustainable development goals. *Environ. Impact Assess. Rev.*, 82: 106383 (1 page)
- Deshpande, P.; Srivastava, A. P., (2023). A study to explore the linkage

- between green training and sustainable organizational performance through emotional intelligence and green work life balance. *Eur. J. Train. Dev.*, 47(5/6): 615-634 **(20 pages)**
- Evina, E.; Saputra, A. R. P.; Nuvriasari, A., (2024). Green Training, Green Recruitment, and Green Transformational Leadership on Employee Performance in Retail Store. *Int. J. Manag. Knowl. Learn.*, 13(1): 13-27 **(15 pages)**
- Geßler, S.; Nezelek, J. B.; Schütz, A., (2021). Training emotional intelligence: Does training in basic emotional abilities help people to improve higher emotional abilities? *J. Posit. Psychol.*, 16(4): 455-464 **(10 pages)**
- Ghourai, A. M.; Mani, V.; Khan, M. R.; Khan, N. R.; Srivastava, A. P., (2020). Enhancing business performance through green human resource management practices: An empirical evidence from Malaysian manufacturing industry. *Int. J. Product. Perform. Manag.*, 69(8): 1585-1607 **(23 pages)**
- Goleman, D., (2001). Emotional intelligence: Issues in paradigm building. *The emotionally intelligent workplace*, 13: 1-13 **(13 pages)**
- Haldorai, K.; Kim, W. G.; Garcia, R. F., (2022). Top management green commitment and green intellectual capital as enablers of hotel environmental performance: The mediating role of green human resource management. *Tourism Manag.*, 88: 104431 **(1 page)**
- Havarangsi, P.; Vithayaporn, S., (2024). Revisiting Multi-Level Stakeholders Management to Retain Green Tourism Destination in Koh Mak, Trat Province, Thailand. *J. Politics Gov.*, 14(2): 1-15 **(15 pages)**
- Hwang, J.; Lyu, S. O., (2020). Relationships among green image, consumer attitudes, desire, and customer citizenship behavior in the airline industry. *Int. J. Sustain. Transp.*, 14(6): 437-447 **(11 pages)**
- Jayabalan, N.; Zafir, M. M.; Kumar, R. M. H. M.; Hayati, Y.; Mai, F. M. B., (2020). The role of OCBE on green HRM towards performance sustainability. *Int. J. Innov. Creat. Change.*, 13 (5): 388-399 **(12 pages)**
- Kanapathy, S.; Lee, K. E.; Mokhtar, M.; Zakaria, S. Z. S.; Sivapalan, S., (2021). A framework for integrating sustainable development concepts into the chemistry curriculum towards achieving education for sustainable development in Malaysia. *Int J Sustain High. Educ.*, 22(6): 1421-1449 **(29 pages)**
- Karatepe, O. M.; Rezapourghdam, H.; Hassannia, R., (2021). Does employee engagement mediate the influence of psychological contract breach on pro-environmental behaviors and intent to remain with the organization in the hotel industry? *J Hosp Mark Manag.*, 30(3): 326-353 **(28 pages)**
- Khorakian, A.; Baregheh, A.; Jahangir, M.; Heidari, A.; Saadatyar, F. S., (2024). Household food waste prevention behavior: the role of religious orientations, emotional intelligence, and spiritual well-being. *J. Environ. Plann. Manag.*, 67(1): 59-84 **(26 pages)**
- Korenetskaya, I. N.; Lantikova, O. V.; Semenova, N. S., (2020). Integrating sustainable development issues in the English language classroom and developing eco-linguistic competence of university students. In *Digital future economic growth, social adaptation, and technological perspectives* (pp. 311-319). Cham: Springer International Publishing **(9 pages)**
- Kraiger, K.; Ford, J. K., (2021). The science of workplace instruction: Learning and development applied to work. *Annu. Rev. Organ. Psychol. Organ. Behav.*, 8(1): 45-72 **(28 pages)**
- Kyriakopoulos, G.; Ntanos, S.; Asonitou, S., (2020). Investigating the environmental behavior of business and accounting university students. *J. Sustain. High. Educ.*, 21(4): 819-839 **(21 pages)**
- Lopez-Bernabe, E.; Foudi, S.; Galarraga, I., (2020). Mind the map? Mapping the academic, citizen and professional stakeholder views on buildings and heating behaviour in Spain. *Energy Res. Soc. Sci.*, 69: 101587 **(1 page)**
- MacDonald, E. F.; She, J., (2015). Seven cognitive concepts for successful eco-design. *J. Clean. Prod.*, 92: 23-36 **(14 pages)**
- Malik, S. Y.; Hayat Mughal, Y.; Azam, T.; Cao, Y.; Wan, Z.; Zhu, H.; Thurasamy, R., (2021). Corporate social responsibility, green human resources management, and sustainable performance: Is organizational citizenship behavior towards environment the missing link? *Sustain.*, 13(3), 2-24 **(23 pages)**
- Mensah, H. K.; Agyapong, A.; Osei, B. A., (2021). Effect of corporate social responsibility on eco-citizenship behaviour in luxury hotels: eco-lifestyle as a moderator. *J. Glob. Responsib.*, 12(2): 189-209 **(21 pages)**
- Mohammad, N.; Bibi, Z.; Karim, J.; Durrani, D., (2020). Green human resource management practices and organizational citizenship behaviour for environment: The Interactive Effects of Green Passion. *Int. Transact. J. Eng. Manage. Appl. Sci.*, 11(6): 1-10 **(10 pages)**
- Morse, C., (2020). Training for a new environment: Using military operational concepts in counseling veterans. *J. Clin. Psychol.*, 76(5): 841-851 **(11 pages)**
- Nam, S. J., (2020). Moderating effects of consumer empowerment on the relationship between involvement in eco-friendly food and eco-friendly food behaviour. *Int. J. Consum. Stud.*, 44(4): 297-305 **(9 pages)**
- Niyomdech, L.; Yahya, K. K., (2019). Examining the relationship between human resource management practices and organizational citizenship behavior for environment among administrative staff in a Thailand University. *Sains Humanika*, 11(2): 37-44 **(8 pages)**
- Novita, D.; Hidayatulloh, A. N.; Renwarin, J. M.; Santoso, R.; Mardikaningsih, R., (2022). Relationship between Eco Transformational Leadership, Eco Training, and Employee Eco Behavior on Sustainable Corporate Performance of SMEs. *Front. Psychol.*, 13: 2-4 **(3 pages)**
- Ogalo, H.; Fatima, S.; Hasnain, A., (2020). Green HRM and OCBE in the banking sector: An empirical view. *Int J Psychosoc Rehabil.*, 24(7): 2695-2705 **(11 pages)**
- Ong, J. O.; Riyanto, S., (2020). Green human resource management in manufacturing company. *J. Bus. Manag.*, 22(4): 48-57 **(10 pages)**
- Perez, D.; Stockheim, I.; Tevet, D.; Rubin, M. M., (2020). Consumers value manufacturer sincerity: The effect of central eco-friendly attributes on luxury product evaluations. *J. Clean. Prod.*, 267: 122132 **(1 page)**
- Pham, N. T.; Jabbour, C. J. C.; Vo-Thanh, T.; Huynh, T. L. D.; Santos, C., (2023). Greening hotels: Does motivating hotel employees promote in-role green performance? The role of culture. In *Knowledge Management, Organisational Learning and Sustainability in Tourism* (pp. 57-76). Routledge **(20 pages)**
- Prikshat, V.; Malik, A.; Budhwar, P., (2021). AI-augmented HRM: Antecedents, assimilation and multilevel consequences. *Hum. Resour. Manag. Rev.*, 33(1): 100860 **(1 page)**
- Priyadarshini, C.; Chatterjee, N.; Srivastava, N. K.; Dubey, R. K., (2023). Achieving organizational environmental citizenship behavior through green transformational leadership: A moderated mediation study. *J. Asia Bus. Stud.*, 17(6): 1088-1109 **(22 pages)**
- Ryan, R. M.; Vansteenkiste, M., (2023). Self-determination theory. In *The Oxford Handbook of Self-Determination Theory* (pp. 3-30). Oxford University Press **(28 pages)**
- Ryan, R. M.; Deci, E. L.; Vansteenkiste, M.; Soenens, B., (2021). Building a science of motivated persons: Self-determination theory's empirical approach to human experience and the regulation of behavior. *Motiv. Sci.*, 7(2): 1-97 **(97 pages)**
- Sadiq, M.; Adil, M.; Paul, J., (2021). An innovation resistance theory

- perspective on purchase of eco-friendly cosmetics. *J. Retail. Consum. Serv.*, 59: 102369 **(1 page)**
- Saeed, B. B.; Afsar, B.; Hafeez, S.; Khan, I.; Tahir, M.; Afridi, M. A., (2019). Promoting employee's proenvironmental behavior through green human resource management practices. *Corp. Soc. Responsib. Environ. Manag.*, 26(2): 424-438 **(15 pages)**
- Sahan, U. M. H.; Jaaffar, A. H. H.; Osabohien, R., (2024). Green human resource management, energy saving behavior and environmental performance: A systematic literature review. *Int. J. Energy Sect. Manag.*, 19(1): 220-237 **(18 pages)**
- Smith, S. Y., (2020). Emotional Intelligence, Learning, and Job Longevity: A Phenomenological Study of Public Defenders (Doctoral dissertation, University of Phoenix). 1-24 **(24 pages)**
- Soleimanpouromran, M.; Ahmadi Moghadam, A., (2020). The study of green intelligence on environmental experiences and environmental citizenship behavior. *Cent. Asian j. environ. sci. technol. innov.*, 2(2): 79-90 **(12 pages)**
- Úbeda-García, M.**; Claver-Cortés, E.; Marco-Lajara, B.; Zaragoza-Sáez, P., (2021). Corporate social responsibility and firm performance in the hotel industry. The mediating role of green human resource management and environmental outcomes. *J. Bus. Res.*, 123: 57-69 **(13 pages)**
- Umar, M.; Khan, S. A. R.; Yusliza, M. Y.; Ali, S.; Yu, Z., (2021). Industry 4.0 and green supply chain practices: an empirical study. *Int. J. Product. Perform. Manag.*, 71(3): 814-832 **(19 pages)**
- Umrani, W. A.; Channa, N. A.; Yousaf, A.; Ahmed, U.; Pahi, M. H.; Ramayah, T., (2020). Greening the workforce to achieve environmental performance in hotel industry: A serial mediation model. *J. Hosp. Tourism. Manage.*, 44: 50-60 **(11 pages)**
- Usman, M.; Rofcanin, Y.; Ali, M.; Ogbonnaya, C.; Babalola, M. T., (2023). Toward a more sustainable environment: Understanding why and when green training promotes employees' eco-friendly behaviors outside of work. *Hum. Resour. Manag.*, 62(3): 355-371 **(17 pages)**
- Vargas-Hernández, J. G.; Ali, M. M., (2022). Organizational culture, knowledge, learning organizations, and innovation on sustainable organizations: Strategic implications. In *Smart Cities, Citizen Welfare, and the Implementation of Sustainable Development Goals* (pp. 239-263). IGI Global. **(25 pages)**
- Vasudevan, H., (2013). The influence of emotional intelligence and creativity on employee's work commitment and performance. *Int. J. Hum. Capital Urban Manage.*, 3(3): 233-255 **(23 pages)**
- Vasudevan, H.; Mahadi, N., (2017). Emotional intelligence, commitment and climate in organizations: Bridging contribution and practical implication. *Rev. Integr. Bus. Econ. Res.*, 6(2): 202-216 **(15 pages)**
- Vasudevan, L., (2020). Emotional Intelligence in the context of Malaysian banking industry: Theory and method application. *Rev. Integr. Bus. Econ. Res.*, 9(2): 56-76 **(21 pages)**
- Vasudevan, L.; Mahadi, N.; Robert, F. A., (2017). A review on managers' emotional intelligence and citizenship behavior in today's workplace: Bridging a challenges and contribution. *Int. J. Hum. Capital Urban Manage.*, 2(4): 319-334 **(16 pages)**
- Wiradirja, I. R.; Ras, H.; Pranadita, N.; Macmud, S.; Anwar, H.; Haspada, D., (2020). Environmental performance: Role of green employee involvement practices, green training and green shared vision. *J. Secur. Sustain. Issues.*, 10(2): 721-733 **(13 pages)**
- Yu, J.; Ariza-Montes, A.; Hernández-Perlines, F.; Vega-Muñoz, A.; Han, H., (2020). Hotels' eco-friendly physical environment as nature-based solutions for decreasing burnout and increasing job satisfaction and performance. *Int J Environ Res Public Health.*, 17(17): 2-17 **(16 pages)**
- Yu, W.; Chavez, R.; Feng, M.; Wong, C. Y.; Fynes, B., (2020). Green human resource management and environmental cooperation: An ability-motivation-opportunity and contingency perspective. *Int. J. Prod. Econ.*, 219: 224-235 **(12 pages)**
- Yuen, H. K.; Spencer, K.; Edwards, L.; Kirklin, K.; Jenkins, G. R., (2023). A magic trick training program to improve social skills and self-esteem in adolescents with autism spectrum disorder. *The Am. J. Occup. Ther.*, 77(1): 7701205120 **(1 page)**
- Yusliza, M. Y.; Amirudin, A.; Rahadi, R. A.; Nik Sarah Athirah, N. A.; Ramayah, T.; Muhammad, Z.; Mokhlis, S., (2020). An investigation of pro-environmental behaviour and sustainable development in Malaysia. *Sustain.*, 12(17): 2-21 **(20 pages)**

COPYRIGHTS

©2026 The author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, as long as the original authors and source are cited. No permission is required from the authors or the publishers.



HOW TO CITE THIS ARTICLE

Vasudevan, H.; Cheok, M.Y.; Md Saad, N.A.R.; Gengatharan, K.; Nagarathanam, Abdul Wahhab, R., (2026). *The mediating role of Green Training & Development in the relationship between Emotion Appraisal and Regulation on Employee Eco-Friendly Citizenship Behavior*. *Int. J. Hum. Capital. Urban Manage.*, 11(3): 449 - 466.

DOI: [0.22034/IJHCUM.2026.03.02](https://doi.org/10.22034/IJHCUM.2026.03.02)

URL: https://www.ijhcum.net/article_732265.html

