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How effective are incentives in driving green behavior? Analyzing monetary and non-monetary incentives in the hospitality industry

Kaveesha Ann Dilmi[a], Senuri Sannasgala[a], Ranitha Weerarathna[a], Nilmini Rathnayake[b], Sahan Malinga Pitipanaarachchi[a], Nimeshika Dushmanthi[a] and Vageesha Rajapakse[a]

[a]SLIIT Business School, Sri Lanka Institute of Information Technology, Malabe, Sri Lanka; [b]Tasmanian School of Business and Economics, University of Tasmania, Hobert, Australia

ABSTRACT

This study employs a cross-sectional survey of 383 Sri Lankan hospitality employees to examine the impact of monetary and non-monetary incentives on Green Employee Behavior (GEB). Using Structural Equation Modeling (SEM), the study tested relationships between incentives and workplace sustainability actions, distinguishing between in-role and extra-role behaviors. Findings show both incentive types significantly enhance GEB. Monetary rewards, explaining 36.3% variance, primarily drive compliance with green policies, whereas non-monetary rewards exert a stronger influence on voluntary, value-driven behaviors that build long-term green culture. These results highlight the complementary role of incentives: monetary rewards secure short-term adherence, while non-monetary rewards foster sustained commitment to environmental practices. The study provides practical guidance for managers and policymakers in designing dual-incentive strategies that balance immediate compliance with enduring green engagement. By integrating such schemes, hospitality firms can reduce their environmental footprint and align with broader sustainability goals. Beyond managerial implications, the study adds to the growing literature on workplace sustainability by empirically demonstrating how incentive structures distinctly shape in-role and extra-role green behaviors. This evidence emphasizes the importance of tailoring incentive programs to nurture both compliance and proactive contributions to organizational sustainability.

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The Hospitality Industry; Hotel Management; Social Work

1. Introduction

Green Employee Behavior (GEB) is increasingly being recognized as essential to achieving sustainability in organizations. It is referred to as organizational behavior in the workplace that aligns with an organization's environmental goals (Tian et al., 2020), and has emerged into view for its role towards eco-innovation and sustainable practices. The GEB also plays a considerable role in wider frameworks of Corporate Social Responsibility (CSR) and sustainability, which drives competitive advantages such as improved corporate reputation, customer attraction, and distinct market differentiation. This view is empirically supported by Nisar et al. (2023).

The hospitality industry has a very large environmental issue with its energy consumption, carbon footprint, and wasteful waste disposal (Abeydeera & Karunasena, 2019). For instance, suburban hotels in Colombo emit over 7,000 tons of carbon annually, largely due to purchased electricity, in addition, to general power generating sources, like diesel causing emissions and those brought into premises (Abeydeera & Karunasena, 2019). Tourism and hotel industry, a major contributor to Sri Lanka's economy, is also a key source for generating a significant environmental impact. In a similar vein, the global tourism industry is responsible for approximately 5% of carbon emissions and is projected to triple by 2035 (UN Environment Program, 2008). As part of mitigation mechanisms, the industry needs to adopt GEB for reduced environmental impacts and sustainability.

CONTACT Ranitha Weerarathna ranitha.w@sliit.lk; rathnayaken94@gmail.com SLIIT Business School, Sri Lanka Institute of Information Technology, Malabe, Sri Lanka.

Green Human Resource Management (GHRM) practices such as green training, performance appraisals, and compensation have been discovered to positively influence GEB (Ibrahim, 2024). Among these practices, incentive-related mechanisms play a particularly significant role, yet, the relationship between incentive structures and GEB is a research domain that has received scant attention in general, especially in non-western cultural contexts like Sri Lanka (Abeydeera & Karunasena, 2019). Existing literature indicates that incentives, both monetary and non-monetary, are substantial in promoting green initiatives. For instance, cash rewards and eco-awards can motivate green behaviors, while intrinsic motivators such as personal values and organizational pride also contribute sizably (Odhiambo et al., 2023). However, the effectiveness of these incentives can vary based on cultural and organizational factors, hence the need exists for localized studies. On top of this, the results of some studies have poor generalizability in view of the local context.

In the Sri Lankan hospitality industry, addressing the research gap is vital mainly due to three reasons. First, hospitality industry is among the top contributors to the economy in Gross Domestic Product (GDP) and a key source of foreign currency. The second one is, being an industry with high emissions, compounding of environmental issues is attributable to having a limited understanding of incentive mechanisms. Third, as mentioned at the onset, sustainability is a growing concern, and much success of a business depends on it to be a 'good corporate citizen'. Under the umbrella of sustainability falls GEB, which is the crux of the research. While prior studies have shown that GHRM practices and leadership styles, such as environmentally specific servant leadership and green transformational leadership, can indirectly influence GEB (Khan et al., 2022). There is a lack of empirical evidence regarding how monetary and non-monetary incentives directly influence GEB within this context. Understanding this relationship is crucial for the devising of strategies that can be embedded to sustainable practices in Sri Lankan hotels, which received over 1.3 million tourists in 2023, a factor that also indicates economic and environmental importance (Sri Lanka Tourism Development Authority, 2024). Against this backdrop, the present study strives to bridge this research gap by examining the influence of incentive structures (with a strong focus on monetary and non-monetary incentives) on the adoption of GEB within the Sri Lankan hotel industry.

The findings of this study provide empirical evidence regarding how reward mechanisms can motivate GEB towards sustainable operations for both environmental protection as well as enhancing the competitive strategy of Sri Lanka's hospitality industry with special reference to the GEB concept.

2. Critical literature review

Researchers utilized reputed journal databases such as Emerald Insight, Science Direct, Web of Science, Google Scholar, and ResearchGate. The key 'search terms' used for searching the articles included, 'Hospitality industry', 'Incentives' and 'Eco-friendly behavior'. The literature review initially focuses on the dependent variable of the study, namely GEB. It also covers the dimensions frequently used by the researchers to measure the concept of incentives, including monetary and non-monetary incentives which are the independent variables.

2.1. Green employee behavior

In Sri Lanka, too, GHRMpractices have also been shown to influence employees' behavior towards environmental sustainability (Rushya & Dissanayake, 2020), serving as a base that guides GEB. Upon this foundation, Ockersz and Arulrajah (2025) examined the banking sector, specifically the Batticaloa district, and concluded that Corporate Environmental Strategy (CES) influences Voluntary Workplace Green Behavior (VWGB) directly. This relationship is mediated by the Psychological Green Climate (PGC), whereby an effective CES establishes a psychological climate that promotes and infuses voluntary green behavior in employees a core component of GEB.

Similarly, Sivalingam and Arulrajah (2022) examined how Employee Green Behavior mediates the relationship between Organizational Environmental Support (OES) and Organizational Sustainable Performance (OSP) in Sri Lankan commercial banks. The findings validated that EGB moderates this relationship

strongly, emphasizing the importance of initiating green practices in employees to drive sustainable organizational performance.

Conversely, and using the manufacturing industry as the point of reference, Weerarathna et al. (2018) made a comparison of green behavior among employees in the manufacturing and service industries. In the research findings, manufacturing employees were said to have a more robust green behavior traceable to the fact that there were more effective environmental practices and policies in that industry.

Collectively, these studies underscore the pivotal roles of organizational commitment, environmental policies, and constructive workplace climates to encourage GEB across Sri Lankan industries.

2.1.1. Green employee behavior in the hospitality industry

In the resource-intensive hospitality industry where employees are the interface between the hotel (main areas like food & beverages, accommodation, housekeeping etc.) and guests, implementing GEB is crucial for achieving sustainable operations. With sustainability as a key objective, the trend of GEB is becoming highly relevant and sensitive, and corporate reputation rests on this strong foundation. Research also suggests that GHRM practices promote employees' green behavior and Organizational Citizenship Behavior for Environment (OCBE) (Tuan, 2022). Pham et al. (2019), proposed that GHRM practices, including green training, performance management, and employee involvement, affect voluntary green behavior through both direct and interactional elements.

Interestingly, the impact of GHRM practices on GEB is not just limited to direct effects. Empirical studies have found that responsible leadership and employees' themselves feeling a sense of responsibility for the environment serve as mediators in this relationship (Tuan, 2022). Additionally, organizational commitment and environmental attitudes have been identified as significant factors in stimulating ecological behavior among hospitality sector employees (Arshad et al., 2022). The role of CSR in improving employee green behavior has also been spotlighted, with employee well-being serving as a mediator and hotels' environmental strategy as a moderator (Khattak et al., 2021).

In summary, GEB in the hospitality industry is developed through a multilevel approach. Here, GHRM practices, organizational commitment, and CSR initiatives promote sustainable behavior among employees. Environmental laws and green dynamic capabilities significantly support these initiatives (Patwary et al., 2022). Furthermore, brand citizenship behavior and organizational pride have been related to GHRM practices, indicating that employees with stronger green values are more inclined to engage in environmentally friendly behaviors (Elshaer et al., 2023). As sustainability continues to be crucial in the hospitality industry, understanding and leveraging such factors is vital for organizations seeking to enhance their environmental performance through employee engagement.

The integration of sustainable practices is highly necessary for Sri Lanka, a country heavily dependent on its tourism and hospitality industry and also faced with a pressing concern for cutting emissions congruent in achieving the Sustainable Development Goals (SDGs) agenda by 2030. However, motivating employees to continuously engage in GEB remains a challenge that prioritizes opposing forces like short-term financial outcomes over long-term sustainability, particularly in a developing economy.

2.1.2. In-role green behaviors

In-role green behaviors refer to environmentally friendly practices explicitly required by job descriptions. Examples include conserving energy, following a reduction to waste policy, and following green operational guidelines (Bissing-Olson et al., 2013). Research has also established that in-role green behaviors are primarily driven by job expectations and performance incentives. For instance, Norton et al. (2015) has established that when the expectations of green jobs are well set and employees are evaluated on the basis of environmental performance, they are most likely to constantly engage themselves in in-role green behavior. Along the line, Bissing-Olson et al. (2013) disclosed that when employees perceive high levels of organizational support and resources, the propensity of an individual employee to perform in-role green behaviors becomes greater. This especially occurs along with employee efficacy, i.e. when they feel capable of carrying out those roles. This supportive organizational framework promotes adherence to green practices that are usually instituted through specific job roles and policies.

2.1.3. Extra-role green behaviors

Extra-role green behaviors are discretionary actions that employees may undertake beyond their formal job requirements, such as encouraging colleagues to adopt sustainable behavior, or suggesting for improvements to reduce the organization's environmental footprint (Bissing-Olson et al., 2013). In other words, the durability of sustainable practices warrants extra-role behaviors resulting in emotional rewards, that give rise to a 'warm glow' effect. Unlike in-role behaviors, extra-role behaviors are not obligatory; but are influenced by a supportive organizational culture and intrinsic motivation. Dumont et al. (2017) stressed that environmental training and green leadership, as part of GHRM practices, provide a substantial input to extra-role green behaviors and help create an organizational culture supportive of valuation and sustainability initiatives. As Khan et al. (2022) emphasized that Environmental-Specific Ethical Leadership and a positive psychological green climate within the organization motivate employees to engage in extra-role green activities. These findings suggest that ethical and supportive leadership, along with a positive green work environment, increases employees' willingness to participate in extra-role green behaviors.

2.2. Monetary incentives

Attitudes drive behavior, which also resonates with the greening strategy. Substantial evidence shows the far-reaching impact of monetary incentives on promoting GEB. Studies indicate that GHRM practices such as monetary incentives, positively influence brand citizenship behavior and organizational pride among hospitality employees (Elshaer et al., 2023). Green compensation and rewards included in GHRM practices have also been founds to largely contribute to the green behavior of hospitality employees in Bangladesh (Karmoker et al., 2020). Similarly, Nisar et al. (2023) founds that GHRM practices, including green performance management and compensation, positively influence employees' pro-environmental attitudes and green behaviors. A study conducted in Ukrainian organizations concluded that tangible rewards, such as increased wages and bonuses, are effective and significant towards sustaining employees' green behavior (Tsymbaliuk et al., 2022). Green employee rewards strongly predict and are positively related to PEB at work (Odhiambo et al., 2023).

Green monetary incentives are validated to work based on several theories of motivation. Vroom (1964) asserts that people are motivated to act when they feel that their effort will lead them to desired outcomes. If green behavior is contingent on payment, it can easily be induced out of employees. Similarly, in the same sense, Skinner (1953) Reinforcement Theory states that action resulting in a reward tends to recur. Both these theories strongly indicate that money as a motivating factor ought to be utilized to induce sustainability practices in an organization.

Monetary framing and environmental framing of information both have had positive influences on long-term pro-environmental intentions, with the latter stimulating intrinsic motivation (Steinhorst & Klöckner, 2018). Environmental benefit-sharing programs in hotels positively influence employees' PEB, indicating that financial incentives can motivate eco-friendly actions (Peng & Lee, 2019). Overall, these studies prove that monetary incentives, when integrated into a broader green management strategy, can be effective in promoting environmentally friendly behaviors among employees. Therefore, the research proposes that:

H1: Monetary incentives have a significant relationship between the adoption of GEB in the Sri Lankan hospitality industry.

2.3. Non-monetary incentives

Existing literature provides evidence of the powerful impact of non-monetary incentives on promoting GEB in a multitude of contexts and sectors. Scholarly studies unveil that non-monetary incentives, such as social norm information and status competition, can be more practical than monetary incentives in promoting energy-saving behaviors (Liebe, 2021). In the context of recycling, non-monetary incentives are particularly successful for low-willingness behaviors, with perceived environmental responsibility playing a mediating role (Ji et al., 2023). Green rewards including recognition and praise, have had a positive

and significant impact on Pro-Environmental Behavior (PEB) among employees of public universities (Odhiambo et al., 2023). These findings confirm that non-monetary incentives, such as eco-awards and recognition boards can promote organizational citizenship and improve employee satisfaction. Ioannou et al. (2016) identified non-monetary incentives are linked with lower carbon emissions while monetary incentives had the contrary effect. They hypothesized that monetary rewards may crowd out the motivation to perform pro-social behavior. In a general view, the findings suggest how non-monetary incentives go about encouraging GEB and organizational sustainability. In the context of environmental responsibility, non-monetary incentives are more effective than monetary incentives in promoting low-willingness recycling behaviors, with perceived environmental responsibility mediating this effect (Ji et al., 2023).

The theoretical underpinning of non-monetary incentives is Self-Determination Theory by Deci and Ryan (1985) which promotes that individuals are motivated when their needs for autonomy, competence, and relatedness are satisfied. Non-monetary incentives such as praise, appreciation, or participation in decision-making may give the employees a sense of belonging and meaning which will encourage them to implement environmentally friendly actions even without monetary rewards. Likewise, Maslow's Hierarchy of Needs theory holds that after fulfilling basic needs, people are motivated by psychological, and self-actualization needs that can be fulfilled through non-monetary incentives such as praise and personal development.

Non-monetary incentives, such as social norm information and green defaults can effectively promote energy conservation at the household level (Liebe, 2021). These can boost employees' intrinsic motivation towards their jobs, offering benefits to both employers and employees (Morrell, 2011). However, the success of non-monetary incentive programs may depend on employee perceptions related to factors such as pay equity, organizational justice, and perceived managerial discretion (Morrell, 2011). Recent studies have identified the positive influence of non-monetary incentives on GEB in the hospitality industry. For example, green training and development and green performance appraisal have a profound impact on GEB (Karmoker et al., 2020). Other studies found that CSR practices enhanced GEB, mediated through employee well-being (Khattak et al., 2021). Specifically, Environmental-Based Ethical Leadership (EBSEL) may stimulate the PGC that prompts GEB, and green transformational leadership directly affects employees' green behavior, in which green organizational support functions as a mediator in that context (Khan et al., 2022). These findings emphasize that non-monetary factors such as leadership, organizational support, etc., and CSR can create the right environment for greening by hospitality employees, assisting the industry establish a culture of sustainability that ensures better environmental performance. Therefore, the research proposes that:

H2: Non-financial incentives have a significant relationship between the adoption of GEB in the hospitality industry, Sri Lanka.

This study focuses on monetary and non-monetary incentives as the primary independent variables because they are two of the most widely utilized and managerially practical motivators of employees' behavior (Huselid, 1995; Jiang et al., 2012). Even though more pervasive influences such as regulatory policy or cultural context are undoubtedly important, they are often beyond the line manager's control and not so easily implemented or altered on a day-to-day basis. On the other hand, incentive systems can be designed strategically to tap both extrinsic motivation (through monetary reward) and intrinsic motivation (through praise, recognition, and opportunity for development), in accordance with Self-Determination Theory (Deci & Ryan, 2000). By doing so, they are particularly effective in eliciting both in-role and extra-role Green Employee Behaviors.

Although there is extensive evidence presented in the existing literature on monetary and non-monetary incentives in determining GEB, a majority of such studies have been conducted within Western or developed country contexts. Little empirical research has been conducted on how such incentives work in developing economies, particularly in South Asian hospitality industries (Karmoker et al., 2020). Moreover, not many studies have empirically compared the impact of incentives on in-role and extra-role green behavior in this industry. This study bridges these gaps in knowledge by examining the relative impact of money and non-monetary incentives on GEB in the hospitality industry in Sri Lanka, making regional additions to the global sustainability and HRM literature.

2.4. Cultural dimensions & employee incentives

Cultural context plays a significant role in shaping employee perceptions of incentives. Hofstede (2001) suggests that in high power distance and collectivist cultures such as Sri Lanka, workers may respond differently to incentive systems than workers in individualistic cultures. In such contexts, monetary incentives may be compatible with hierarchical workplace culture and formal reward expectations. At the same time, non-monetary incentives like recognition, belonging, and community-based CSR initiatives may be more attractive to collectivist cultures and trigger extra-role green behavior. However, there has been limited research on how these cultural forces moderate the effectiveness of incentive schemes.

2.5. Conceptual framework

The hospitality industry as a whole has been identified as the primary source of ecological degradation due to high energy, water, and non-recyclable product usage (Yue, 2012). There has been an increasingly high demand for GEB across the industry. The GHRM practices have been observed to positively impact Brand Citizenship Behavior (BCB) and push employees towards sustainable behavior (Elshaer et al., 2024). Organizational pride and personal green values also enhance the effectiveness of such GHRM practices. Employee environmental attitude and organizational commitment have also been identified as core determinants in promoting GEB in the hotel industry (Arshad et al., 2022).

In the Sri Lankan context, recent studies have validated these findings. Research on Colombo's five-star hotels concluded that official sustainability training programs significantly influence employee engagement in green operations. Also, both financial and non-financial incentives were found to influence employee motivation toward sustainability, with reward programs and career growth opportunities playing pivotal roles (Nawanjalee, 2024).

Another study of hotels in the Polonnaruwa area indicated a high proportion of GEB among employees, where education was central to supporting green behaviors. The study indicated that employees with higher education levels displayed more energetic environmental actions, such as the conservation of resources and encouraging others to use sustainable actions (Weerakoon et al., 2021).

Along with this, a theoretical model of GHRM for Sri Lanka's tourism sector emphasized the emphasis on incorporating various Human Resource Management (HRM) activities such as green recruitment, training, and performance management to develop a framework that enables employees to embrace environmentally friendly behavior (Siyambalapitiya et al., 2018).

Collectively, these studies emphasize the Sri Lankan hospitality industry's need to adopt a holistic policy for promoting GEB. With the integration of monetary and non-monetary incentives, and sound GHRM practices, hotels could effectively create an eco-conscious workforce that is committed to sustainable practices.

Based on the above-mentioned findings, researchers developed the following conceptual model as follows in Figure 1.

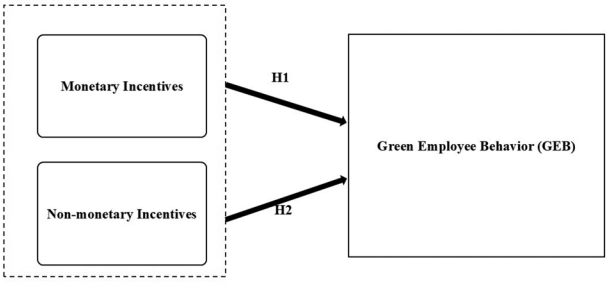

Figure 1. Conceptual framework diagram.
Source: Generated by authors (2025).

3. Data & methodology

3.1. Research study

The study uses a deductive approach to explore how monetary and non-monetary incentives affect GEB in the Sri Lankan hospitality industry. This study was under the approval of SLIIT Business School (CRP/2024/32). Under the ethical approval and consent to participate statement, this study was conducted in accordance with the Declaration of Helsinki ethical guidelines. The SLIIT Business School Undergraduate Research Evaluation Panel approved this study (Approval Number: (CRP/2024/32). All subjects provided informed written consent before participating in the study. The purpose of research, their right to withdraw at any time before anonymization of data, and confidentiality of response were explained to them. There were no incentives given to subjects for study participation. The deductive approach is adopted because the hypotheses have been developed from well-recognized theories, and are backed by empirical evidence according to Renwick et al. (2013). In quantitative studies, the deductive approach is often linked to the testing of hypotheses through a null hypothesis significance test, which has been debated since the middle of the last century (Mertens & Recker, 2020). A cross-sectional survey methodology was used. Quantitative data were gathered using structured questionnaires, specially designed to reflect incentive effects on GEB. Researchers employed convenience sampling, one of the forms of non-probability sampling, to collect data from Sri Lankan hotel employees in the Western Province. The kind of sampling method selected strengthens the study's credibility in ensuring that any conclusion drawn from the research findings can be generalized within the hospitality industry in Sri Lanka. The Western Province was selected as the research setting since it encompasses 19% of hotels with environmental certifications, as stated by Wickramasinghe (2014). Thus, this region is quite suitable and representative of studying sustainability practices. Focusing on this area, the study captures insights from hotels that are actively involved in green initiatives, enhancing relevance of the findings.

The sample size of three hundred and eighty-three (383) respondents was derived using a sample size calculator to ensure statistical validity at a 95% confidence level with a 5% margin of error. This is one of the best methods for large populations, as it optimizes accuracy while maintaining feasibility. The study identified the independent variables of incentive structures and the dependent variable of GEB, consistent with other related studies. Questions regarding monetary incentives, which include financial rewards, bonuses, and salary increments, as derived from Shah (2019), and questions regarding non-monetary incentives include recognition and environmental awards, also taken from Shah (2019). Questions regarding GEB was conceptualized to be of two dimensions, namely, in-role green behavior, which pertains to employees performing their due responsibilities in an ecologically considerate manner, and extra-role green behavior, which describes voluntary acts that extend beyond formal job requirements, based on Bissing-Olson et al. (2013).

Data collection was done based on a structured questionnaire developed in both English and Sinhala medium for higher usability. Survey data was collected both online and using hard copy of printed QR code used by the employees to log into the survey. All the responses were measured on a five-point Likert scale. Items were tested for reliability, and validity through the pilot test conducted among 21 hotel employees before the main data collection. For ensuring content validity, the questionnaire has been reviewed for academic experts by the research supervisors and co-supervisors who recommended and offered relevant feedback during development. Furthermore, the pilot test was conducted on 21 hotel employees to assess clarity, reliability, and validity of items in order to ensure that the instrument had been well-developed before full deployment. Convenience sampling was employed to solicit responses from hotel workers in Sri Lanka's Western Province, measures being taken to restrict response bias by assuring participants that participation and response were voluntary and anonymous, respectively, in both online and distributed questionnaires. The use of the questionnaire openly disclosed that data collected would only be used for research purposes, which helps reduce bias of social desirability and ease respondents into feeling comfortable with their privacy. The method aimed for the aspect of participation not being compulsory but rather voluntary, and inviting more honesty and less pressured responses. And also, ethical processes were followed, such as confidentiality and informed consent, for the protection of the rights and confidentiality of the participants throughout the process.

The reliability of the questionnaire of the pilot survey was assessed using Cronbach's Alpha, a criterion value of 0.7 or higher was considered acceptable internal consistency (Sekaran & Bougie, 2016). Lastly,

this instrument was assessed for validity through the discriminant and convergent validities. These tests attested that the items in the questionnaire reflected the theoretical measures to achieve the study's research objectives. Researchers used SmartPLS 4.1.0.9. software to analyze data gathered. Structural Equation Modeling (SEM), specifically Partial Least Squares SEM (PLS-SEM) was selected for this research because it can accommodate both the measurement and the structural models simultaneously. This is best suited to dealing with models with latent variables, like monetary and non-monetary incentives, and their direct and indirect impact on GEB. PLS-SEM was applied over other statistical approaches as it does not require stringent normality assumptions and is better suited for predictive, exploratory research with relatively smaller sample sizes. SmartPLS 4.1.0.9 implementation allowed complete model evaluation, including reliability, validity, multicollinearity (VIF), and model fit indices (e.g. SRMR). However, PLS-SEM, is sensitive to sample size, although the method manages smaller samples better than covariance based SEM. Even with that, special care was exercised regarding the minimum sample size rules and bootstrapping processes in order to enhance result robustness.

4. Results

4.1. Descriptive findings

Descriptive statistics of the measures explored in this study are shown in Table 1, focusing on Monetary Incentives (MI), Non-monetary Incentives (NI), and Green Employee Behavior (GEB) which is divided into In-role Green Behavior (IGEB) and Extra-role Green Behavior (EGEB). From the results, it can be observed that perceptions are generally good. The mean values vary between 3.044 and 4.611; the standard deviations vary from 0.590 to 0.799, which means that the answers show a medium-low dispersion. The fact that the standard deviations fell between 0.590 and 0.799 indicates that most respondents gave responses which were somewhat consistent and bunched around the mean values of 3.044 to 4.611. This, in a practical sense, means that employees in the Sri Lankan hospitality industry have similar perceptions about monetary incentives, non-monetary incentives, and green employee behavior. This consistency indicates there is no extreme disagreement in opinions; therefore, most employees agree or have similar views in regard to the effectiveness of incentives in encouraging green behaviors. Therefore, this strengthens the reliability of the findings of this study since it shows that observed trends in GEB and incentive perception are not due to outliers or extreme variations but rather a shared view among respondents.

Results show that monetary incentives, MI1 to MI6, lie within a narrow range between 3.044 to 3.760 and, equally consistently, median = 4, which is evidence showing generally these employees have felt this type of incentives will work in bringing results, which monetary incentive, MI3, had the mean at the minimum level 3.044 and with an SD = 0.727. However, some modes are ineffective, especially because one needs financial incentives.

Table 1. Descriptive findings for the survey items.

	Mean	Median	Min	Max	Standard deviation
MI1	3.742	4	1	5	0.637
MI2	3.841	4	1	5	0.590
MI3	3.044	3	1	5	0.727
MI4	3.760	4	1	5	0.662
MI5	3.705	4	1	5	0.711
MI6	3.749	4	1	5	0.719
NI7	3.836	4	1	5	0.671
NI8	3.893	4	1	5	0.799
NI9	3.916	4	1	5	0.721
NI10	3.945	4	1	5	0.722
NI11	3.919	4	1	5	0.772
IGEB12	4.384	4	1	5	0.727
IGEB13	4.418	5	1	5	0.746
IGEB14	4.433	5	1	5	0.737
EGEB15	4.462	5	1	5	0.714
EGEB16	4.209	4	1	5	0.673
EGEB17	4.611	5	1	5	0.746

Source: generated by authors based on Smart PLS (2025).

Non-monetary incentives, the average scores of NI7 to NI11 are a bit higher, ranging from 3.836 to 3.945, with their median at 4, showing more favorable perceptions than monetary ones. Surprisingly, NI8 varied most, with the highest standard deviation (SD = 0.799), which means great variation among perceptions of its success. That is, while non-monetary benefits generally have high reception, their impact may vary among different employees due perhaps to individual differences in aspirations about their careers or preference for recognition.

These findings reiterate the critical role of MI and NI in setting GEB. Preference toward non-monetary incentives, to a relatively larger extent, presupposes that the intrinsic motivator may have long-term effects, especially in career growth and recognition, on employees' commitment to go green. Third, heterogeneity of responses with regard to particular incentives underpins tailored approaches to strategies aimed at both engagement and effectiveness related to green workplace behaviors.

The GEB, mean scores of in-role green behaviors (IGEB12 to IGEB14) ranged from 4.384 (IGEB12, standard deviation = 0.727) to 4.433 (IGEB14, standard deviation = 0.737), while most median scores were at 5, indicating strong endorsement of expected environmental actions within job responsibilities. The highest mean scores were recorded for extra-role green behavior (EGEB15 to EGEB17), reaching a peak of 4.611 (EGEB17, standard deviation = 0.746); medians were consistently at 5, reflecting strong agreement with voluntary, proactive environmental contributions.

The overall perception of MI and NI was positive, along with that of GEB. Non-monetary incentives garnered a higher level of agreement over MI, which shows that intrinsic motivators were strong. Extra-role behaviors viewed the most positive point to their probable importance for enabling organizational sustainability. These results thus give useful insights into the relationships between incentives and green behaviors and form a basis for further discussion and implications related to workplace sustainability.

4.2. Measurement model validation

The measurement model validations are tested against the factor loadings, reliability, convergent validity, and discriminant validity and evaluation of multicollinearity issues in order to determine the goodness of the data.

4.2.1. Factor loadings

To verify the impact of the offending factor loadings, as shown in the Table 4, EGEB16 (0.641) for GEB and MI3 (0.541) for MI on the measurement model. Hair et al. (2022) mention that although a loading of 0.70 and higher is preferable for high indicator reliability, items with loadings between 0.50 and 0.69 may be retained if they do not compromise construct validity. To assess their effect, several tests of robustness were carried out including the Average Variance Extracted (AVE), Composite Reliability (CR), Fornell-Larcker Criterion, and HTMT Ratio. These results confirm that despite lower loadings, neither EGEB16 nor MI3 significantly affected the overall validity and reliability of the model. The constructs possess AVE and CR values larger than 0.70, indicating that most of the variation is explained by the latent variables (Fornell & Larcker, 1981). The Fornell-Larcker Criterion and HTMT Ratio are also in safe ranges, whereby discriminant validity is not at risk (Henseler et al., 2015). Besides, comparison between models was done by excluding EGEB16 and MI3 but the variation in model fit indexes was negligible verifying that their removal does not render the measurement model biased.

Considering these findings, both items were retained because their retention is in line with theoretical expectations and construct robustness. This is in line with Hulland (1999), who states that indicators with moderate loadings can be retained if they contribute meaningfully to the construct. Therefore, the measurement model remains statistically robust and theoretically valid, supporting the retention of these items even though they have slightly lower loadings.

4.2.2. Reliability statistics

Cronbach's alpha values were computed for this study to verify the internal consistency of the constructs. The results indicated that all measures were highly reliable. GEB had a Cronbach's alpha of 0.918, and MI and NI both have 0.879 and 0.882, respectively. These scores are above the generally

Table 2. Reliability statistics for the measurement model validation in the main survey.

	Cronbach's alpha
Green Employee Behavior	0.918
Monetary incentives	0.879
Non-monetary incentives	0.882

Source: generated by authors based on Smart PLS (2025).

Table 3. AVE statistics for the convergent validity in measurement model validation.

	Average variance extracted (AVE)
Green Employee Behavior	0.714
Monetary incentives	0.628
Non-monetary incentives	0.680

Source: generated by authors based on Smart PLS (2025).

Table 4. Factor loadings and construct reliability and validity for main model.

Construct	Items	Outer loadings	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
GEB	EGEB15	0.900	0.918	0.932	0.714
	EGEB16	0.641			
	EGEB17	0.819			
	IGEB12	0.885			
	IGEB13	0.899			
	IGEB14	0.896			
MI	MI1	0.832	0.879	0.906	0.628
	MI2	0.838			
	MI3	0.541			
	MI4	0.846			
	MI5	0.845			
	MI6	0.808			
NI	NI10	0.849	0.882	0.887	0.680
	NI11	0.820			
	NI7	0.758			
	NI8	0.845			
	NI9	0.848			

Source: Authors generated through Smart PLS.

accepted threshold of 0.70 that shows very strong internal consistency among the items (Tavakol & Dennick, 2011). The alpha for GEB is particularly high, indicating very good reliability, which is required for constructs involving behavioral dimensions since variability in perceptions may be present. Similarly, the reliability scores for MI and NI are robust, reflecting consistency in participant evaluations of incentive-related items.

As shown in Table 2, these findings support the reliability of the measurement model and are in line with the established criteria in behavioral and organizational research. According to Tavakol and Dennick (2011), Cronbach's alpha values falling between 0.70 and 0.90 indicate a good level of reliability, though values above 0.90 may denote excellent consistency without redundancy in items. Thus, the results confirm that the constructs are suitable to proceed with further analysis in this study.

4.2.3. AVE statistics

The AVE is an important threshold for the measurement model's convergent validity, in that it accounts for the amount of variance captured by a construct in relation to the variance due to measurement error. As shown in Table 3, AVE values of the constructs in this study indicated acceptable levels of convergent validity. The AVE for Green Employee Behavior is 0.714, which is greater than the recommended threshold of 0.50, indicating that this construct will explain more than half of the variance in its respective indicators. For MI, the AVE value was 0.628, and for NI , it was 0.680; both these values exceed the required benchmark and therefore manifest strong convergent validity. These findings confirm that the constructs used in this study represent a reliable and valid measure of their theoretical concepts, hence justifying the robustness of the measurement model.

The Cronbach's Alpha, Composite Reliability (CR), AVE, and Outer Loadings for the measurement model constructs are shown in Table 4.

Table 5. HTMT ratio for the discriminatory validity in measurement model validation.

	GEB	MI	NI
GEB			
MI	0.616		
NI	0.608	0.879	

Source: generated by authors based on Smart PLS (2025).

Table 6. Variance inflation factor (VIF) for the main model.

	VIF
EGEB15	3.741
EGEB16	1.592
EGEB17	2.194
IGEB12	3.729
IGEB13	3.788
IGEB14	4.028
MI1	2.334
MI2	2.238
MI3	1.301
MI4	2.436
MI5	2.385
MI6	2.195
NI10	2.240
NI11	2.324
NI7	1.719
NI8	2.303
NI9	2.324

Source: Generated through SmartPLS (2025).

4.2.4. Discriminant validity test

Fornell-Larcker Criterion test, cross loadings test and HTMT ratio may be used at one of three points to examine discriminatory validity (Sekaran & Bougie, 2016). HTMT ratio is which have been used for the purpose of validating discriminant validity of a construct for a measurement model by observing the similarity between different constructs.

According to Table 5, the results of HTMT show acceptable levels of discriminant validity amongst the constructs for the current study. In particular, the HTMT ratio of GEB and monetary incentives (MI) was 0.616, and GEB and NI was 0.608, thus being below the generally accepted threshold of 0.85. The HTMT ratio between MI and NI is 0.879, which is above the more conservative threshold but still within the acceptable upper limit of 0.90. In support, Henseler et al. (2015) note that for strong discriminant validity, HTMT values ought to fall below 0.85 and for some contexts, though, values as high as 0.90 may be acceptable, especially when theoretically the constructs are expected to be highly related. This slightly higher ratio supports the theoretical framework of the study that MI and NI, though interrelated, are of different types of motivators. These findings show that the constructs are distinct enough from each other, thereby giving evidence of discriminant validity and further supporting the robustness of the measurement model.

4.2.5. Collinearity evaluation within the measurement model

To assess potential collinearity issues in the measurement model, the Variance Inflation Factor (VIF) values were examined for all indicators through SmartPLS shown in the Table 6. According to Hair et al. (2022), VIF values below 5.0 indicate no multicollinearity issues, while values higher than this could possibly suggest problematic levels of collinearity between indicators. For the present study, all VIF values ranged from 1.301 to 4.028, far lower than the acceptable threshold. In particular, EGE construct indicators' VIFs ranged from 1.592 to 3.741, IGEB indicators ranged from 3.729 to 4.028, MI indicators ranged from 1.301 to 2.436, and NI indicators ranged from 1.719 to 2.324. Although the values were close to 4.0, they were below the 5.0 threshold, suggesting that collinearity is not a concern in the measurement model. These results confirm that the items in each construct do not excessively overlap with respect to shared variance, thus confirming reliability and measurement model validity (Hair et al., 2022). Results are presented in the Table 6.

Table 7. Path coefficients for the structural model validation in the main model.

	Beta value	T-statistic	P-value
Monetary incentives -> Green Employee Behavior	0.376	4.548	0.000
Non-monetary incentives -> Green Employee Behavior	0.260	3.184	0.001

Source: generated by authors based on Smart PLS (2025).

4.3. Structural model validation

To establish the structural model of the survey and the importance of the relationship between the latent variables, researchers employed bootstrapping techniques. Bootstrapping with 5000 sub-sample size at a significance level of 0.05 allowed the beta value, t-statistic, and p-value between the incentives on GEB to be estimated. These results from the structural model provided valuable insights into the relationships among monetary incentives, non-monetary incentives, and green employee behavior in the hospitality industry of Sri Lanka. Thus, path coefficients, explanation strengths, predictive relevancies, and model fit measures have together established the robustness of this structural model in view of viability.

According to Table 7, Beta value showing monetary incentive and GEB is 0.376, indicating that there exists a moderate positive effect between these two latent variables. Statistically, this path is relevant as can be gleaned from the T-statistic value of 4.548, which outpaces the 1.96 critical value associated with 95% statistical confidence, with a p-value of 0.000. Even though the effect size (f^2 = 0.083) falls into the small category, the MI still exert a greater influence on GEB than NI. The findings determine the practical importance of financial rewards in encouraging environmentally sound workplace behavior and highlight the requirement for systematic money-based incentive systems in the hospitality industry. That implies MI are highly motivating towards green employee behavior. The path coefficient of GEB from non-monetary incentives was 0.260, a positive but smaller impact relative to that of monetary incentives. This relationship was again statistically significant, having a T-statistic of 3.184 and a P-value of 0.001, thus confirming that even non-monetary incentives have played their part in contributing substantially to motivating green employee behavior. Although its effect (f^2 = 0.040) is less with respect to monetary incentives, it shows that even non-monetary incentives do shape the green employee behavior to some extent, but to a less diffuse extent.

The R^2 of the model stands at 0.363, indicating that MI and NI have accounted for 36.3% variance in GEB. This value shows an adequate explanatory power at a moderate level, thus confirming the independent variables to be meaningful for the prediction of the dependent variable. Predictive Relevance, according to Q^2 results in 0.344, suggesting that this model has strong predictive accuracy with regard to relevance. The SRMR value is 0.062, less than the threshold value of 0.08, hence this means the model fit is good with no significant difference between observed and predicted covariance matrices. As shown in Figure 2, the results of the structural model showed that both MI and NI have a positive and significant effect on GEB; however, MI show a relatively stronger influence. Validity and reliability with regard to explanatory power, predictive relevance, and fit statistics of the model provide practical implications for hospitality managers to enhance GEB through incentive mechanisms.

5. Discussion

This study probes into the effect of both MI and NI on GEB adoption within the hospitality industry of Sri Lanka, hence serving valuable insights into in-role and extra-role green behaviors. Results give confidence to the hypotheses that MI are very important in predicting GEB (H1) and that NI ave a significant effect on GEB (H2), hence underlining the role of specific incentive mechanisms in the pursuit of organizational sustainability. Monetary incentives were thus an important determinant of GEB with good statistical significance. These findings are in support of, among other studies, those by Merriman et al. (2016) who reviewed that financial rewards motivate employees effectively to adhere to organizational green objectives, especially in structured situations. Ali et al. (2023) note that monetary incentives are crucial in the greening of innovation and enhancement of environmental performance in the competitive industry. Monetary financial incentives like bonuses, created based on ecological performance

parameters, provide immediate motivation for compliance in a particular task while ensuring conformity with organizational objectives.

The complementary role and significance of NI were pointed out to, though, very strong, having a significant positive relation with GEB. Other NI include recognition programs, providing opportunities for career growth, and building supportive work environment culture, which were regarded as very effective in sustaining the employees' long-term engagement. This again echoes the argument of Joseph and Jose (2024), who note that intrinsic motivators are related to deeper psychological commitment to sustainability. Yeşiltaş et al. (2022) further note that a green organizational culture and intrinsic rewards mean the way voluntary environmental behaviors among employees are developed. Furthermore, from the descriptive findings, higher mean scores with lower variability were noted for NI than for monetary ones, mapping the positive attitude of employees toward intrinsic motivators. The finding therefore supports the balanced incentive framework proposed by Li et al. (2024) where financial motivators cause immediate compliance, and intrinsic rewards drive innovation and sustainability.

The extra-role green behaviors also emerge as pivotal in the study, as they have received the highest mean scores among all dimensions of GEB. These are voluntary actions, such as green initiative participation or eco-friendly practices promotion, reflecting deeper value alignment of the employees with the organizational goals of sustainability. According to Bazaraa et al. (2022) enhancing the 'warm glow' effect through the help of participation programs leads to greater commitment among employees to sustainability. Liu and Liu (2023) further support this view by arguing that opportunities for professional growth connected to green initiatives raise employees' propensity for extra-role behaviors. The long-term effects of intrinsic motivators on the issues of voluntariness highlight their significance in placing sustainability in the context of organizational culture, while Chang et al. (2019) confirm this by pointing out that intrinsic awards create innovation and discretionary effort in green initiatives. Above all, these findings become credible based on the robustness of the measurement model, with Cronbach's alpha for all constructs, and AVE for all constructs are ensured. The implication is high reliability and thus convergent validity in that the constructs do reflect multitasking in both GEB and its incentives.

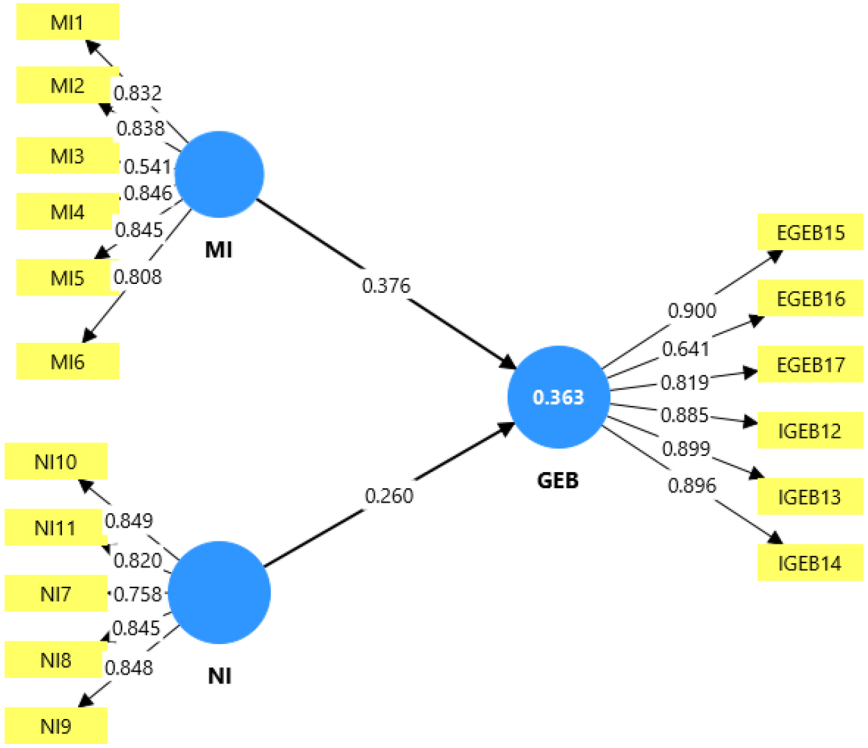

Figure 2. Structural model results.
Source: generated by authors based on Smart PLS (2025).

While much can be learned from this research, such studies also create pathways toward future investigation. For example, results showed that such contextual factors as organizational size, cultural dimensions, and generational differences might interact with incentives and their effects on GEB. For instance, Merriman et al. (2016) argue that cross-cultural research may unravel new ways to adapt incentive mechanisms to heterogeneous employee preferences. According to Hofstede's dimensions of culture, Sri Lanka's relatively high-power distance and collectivism are significant contributing factors in employees' attitudes towards monetary and non-monetary rewards. In high power distance cultures, hierarchical reward systems, managerial-based bonuses are likely to be more accepted and effective because employees are more comfortable with authority-driven decisions and expect leaders to take the lead in reward distribution. Literature supports this, showing that within these cultures, reward preferences align with hierarchical and group-based reward structures (Goktan & Saatçioglu, 2011). Individualistic cultures, however, place more weight on intrinsic motivators like individual development and personal appreciation. For instance, employees in collectivist cultures, such as Sri Lanka, appreciate group-based or seniority-based rewards, which are accompanied by shared responsibility and team-based goals (Bussin et al., 2016). Moreover, research has found that employee attitudes and engagement with reward systems are directly affected by cultural dimensions, necessitating the alignment of HR practices with national culture in order to have maximum impact (Shahid et al., 2024; Ameer & Khan, 2019). This serves to underscore the necessity to create culturally appropriate incentive programs and suggests that cross-cultural studies in the future using frameworks like Hofstede's can offer revealing comparative analysis of how workers in different cultural environments around the globe respond to incentives and GEB. Along the same line of argumentation, Ali et al. (2023) suggest the examination of industry-specific challenges as a means to generalize findings on GEB. Future research could also take a closer look at the long-term sustainability of monetary as opposed to non-monetary incentives, following theoretical advances regarding the role of intrinsic motivators in the realization of voluntary green actions by Yeşiltaş et al. (2022) and Bazaraa et al. (2022).

The findings of the Sri Lankan hospitality industry are aligned with similar research in other countries, supporting the generalizability of the results. For example, in Bangladesh, Green HRM practices such as green rewards and compensation had a significant influence on GEB in the hotel sector, supporting the role of both financial and non-financial incentives (Karmoker et al., 2020). Similarly, in the United Arab Emirates (UAE), research revealed that hospitality employees have different levels of interest in monetary and non-monetary benefits, and a flexible, balanced incentive system is necessary for motivation and performance (Younies & Al-Tawil, 2020). Furthermore, research in Serbia confirmed that internal marketing practices, including reward systems and supportive working environments, were important predictors of green innovative behavior of hotel employees (Bajrami et al., 2025). These overseas findings confirm the success of the dual-incentive strategy under different socio-economic and cultural conditions, reinforcing its relevance beyond Sri Lanka.

Finally, this research confirms that MI (H1) and NI (H2) can become significant drivers in the adoption of GEB in Sri Lanka's hospitality industry. These findings will go a long way in reinforcing the complementary role of both motivators for in-role and extra-role green behavior, hence acting as a sound model for constructing an effective initiative for sustainability. The contributions of the current research add to prior insights from various works such as Bin Saeed et al. (2019), Joseph and Jose (2024) and Merriman et al. (2016) toward discourse on workplace sustainability and a route forward for further research on green behaviors motivated by incentives.

6. Implications

These findings have some implications for actionable identification by hospitality managers in influencing employees to engage in GEB. In line with emerging research, organizations should strategically balance MI and NI to achieve optimal task performance and voluntary green behavior of employees. Monetary rewards such as bonuses and merit pay are appropriate for encouraging in-role, task-related behavior and improving immediate performance outcomes (Mokhniuk, 2016; Cainarca et al., 2019). However, non-financial incentives like praise, career development opportunities, and symbolic rewards are conducive to developing extra-role, discretionary work behaviors like GEB through intrinsic motivation and organizational commitment in the long run (Imbahale, 2016).

Notably, green information system field experiments demonstrate that both monetary and symbolic rewards strongly reinforce energy-saving habits, but non-monetary rewards can also be, or even more, effective in inspiring longer-term participation (Lossin et al., 2016). Accordingly, a double-incentive strategy harnessing monetary rewards in the service of compliance and task conformity, and non-monetary incentives to encourage environmental initiative and ownership can foster more well-rounded and sustainable performance outcomes. For effective implementation, managers must adopt a multi-dimensional incentive strategy by linking monetary rewards to measurable green performance indicators to enable in-role compliance, creating formal non-monetary systems such as reward and career development to encourage extra-role green behavior, and incorporating sustainability objectives into employees' training and performance management systems to foster a long-term green organizational culture.

Specifically, issues relating to sustainability require managers to be fully engaged through the use of a dual-incentive strategy-a combination of extrinsic and intrinsic motivational triggers. For instance, financial incentives related to green Key Performance Indicators (KPI) will instantly attain organizational goals, whereas intrinsic incentives attached to recognition programs or career development opportunities will sustain commitment in the long run. Similarly, Li et al. (2024) and Chang et al. (2019) confirm a dual approach in striking a balance between short-term financial gains and intrinsic alignment of values for a sustainable organizational culture.

Although this study is hospitality industry specific, the social implications of the findings may be transferable to other service sectors such as retailing, tourism, and healthcare, where frontline employees play a significant part in the implementation of sustainability practices. These sectors also depend on in-role compliance and extra-role involvement, and an equitable reward strategy may realize the same green behavior outcomes. Beyond the organization, these findings have wider implications for the tourism industry in Sri Lanka. GEB promotion will increase the competitiveness and brand reputation of the industry to attract environmentally concerned customers. Policymakers can promote sustainability through the provision of tax incentives for green training programs and recognition of eco-friendly businesses.

7. Conclusion

This study explored MI and NI effects on GEB in the Sri Lankan hospitality industry, which is essential for the economy and environmental sustainability. The results place greater emphasis on organizational strategies that need to encapsulate incentives in promoting in-role and extra-role green behavior. MI emerged as a significant stimulator of the immediate compliance attitude toward green policy. Financial motivations, like extra bonuses and addition to salaries, successfully stimulate activity for ecologically friendly behavior of employees in areas directly connected with their job. However, long-term reliance on monetary incentives often creates a transactional mindset. While non-monetary incentives in the form of recognition programs, eco-awards, and career development opportunities were instrumental in sustaining voluntary green behaviors. Intrinsic motivation is developed with such incentives for proactive initiatives in sustainability, such as mentoring colleagues or initiating projects on green aspects. NI instill pride in and shared responsibility toward the organization; hence, they have been the foundation for long-term green culture. A balanced approach combining both incentive types proved most effective, aligning with the diverse motivations of employees. Younger employees may prioritize career growth, while senior employees may value recognition. This highlights the complex nature of motivation, requiring tailored strategies to maximize engagement.

While the study yields interesting information on the incentive-GEB link, the cross-sectional nature of the data does not allow us to make causal inferences. Longitudinal or intervention-based studies would be required in subsequent research to ascertain the direction and persistence of such relations over time.

This study demonstrates how incentives can embed sustainability within organizations. A well-designed incentive system, balancing extrinsic rewards with intrinsic motivation, it is the key to achieving green performance, employee engagement, and long-term sustainable development.

8. Limitations & directions for future research

Since the study is cross-sectional, it would be measuring association rather than causation. Future longitudinal studies could better assess incentive impact change over time and offer better insight into behavior change.

While this study makes an important contribution to current theory, several weaknesses deserve consideration. The study cannot capture long-term shifts in workers' behavior because of its cross-sectional design; therefore, future studies will require a longitudinal design in order to assess long-term consequences of incentives for GEB. In addition, in that the study is specific to the hospitality industry in Sri Lanka, concerns about its generalizability to industries and cultures in general will arise; therefore, future studies must include industries such as manufacturing and education in an effort to discern both similarities and differences.

Due to the self-reporting nature of survey responses, social desirability bias can influence results. Anonymity was ensured to negate this influence, and future studies must attempt to utilize triangulated data sources.

In addition, no analysis in terms of demographic factors, such as age, gender, and educational level, is conducted, and these factors could have an impact on workers' response to incentives; therefore, future studies must explore how such factors impact effectiveness of incentives in general. In addition, no consideration for overall organizational and external factors, such as leadership types, organizational politics, and regulative environments, is taken in this study; therefore, future studies must explore new types of incentives such as gamification, incentives for groups, and technology-facilitated tracking with a view to creating long-term shifts in workplace behavior. By resolving such weaknesses, a strengthened basis for current theory will result, providing deeper insights into effective frameworks for instilling GEB and accomplishing long-term success objectives.

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Author contributions

CRediT: **Kaveesha Ann Dilmi**: Conceptualization, Methodology, Writing – original draft; **Senuri Sannasgala**: Data curation, Formal analysis, Visualization; **Ranitha Weerarathna**: Supervision; **Nilmini Rathnayake**: Supervision; **Sahan Malinga Pitipanaarachchi**: Investigation, Writing – review & editing; **Nimeshika Dushmanthi**: Project administration; **Vageesha Rajapakse**: Investigation, Writing Review & Editing.

Disclosure statement

No potential conflict of interest was reported by the author(s).

About the authors

Kaveesha Ann Dilmi is a graduate of Sri Lanka Institute of Information Technology (SLIIT) in Sri Lanka. She completed BBA (Hons) specializing in Business Analytics in year 2025.

Senuri Sannasgala is a graduate of Sri Lanka Institute of Information Technology (SLIIT) in Sri Lanka. She completed BBA (Hons) specializing in Business Analytics in year 2025.

Ranitha Weerarathna completed Bachelor of Business Management (Human Resources) special degree from the University of Kelaniya, Sri Lanka. He is a Senior Lecturer attached to SLIIT Business School, Sri Lanka Institute of Information Technology (SLIIT). Currently, he is reading for PhD at Swinburne University of Technology.

Nilmini Rathnayake is a PhD student in Management at the Tasmanian School of Business and Economics, University of Tasmania and holds an MPhil in Business and Economics from University of Sri Jayewardenepura. She was a lecturer at the Business School, Sri Lanka Institute of Information Technology. Her research interests include Work-life balance, Decent and Digital work, Sustainable Development, and Higher Education.

Sahan Malinga Pitipanaarachchi is a graduate of Sri Lanka Institute of Information Technology (SLIIT) in Sri Lanka. He completed BBA (Hons) specializing in Business Analytics in year 2025.

Nimeshika Dushmanthi is a graduate of Sri Lanka Institute of Information Technology (SLIIT) in Sri Lanka. He completed BBA (Hons) specializing in Accounting & Finance in year 2025.

Vageesha Rajapakse is a Lecturer in Business Management at the SLIIT Business School, Sri Lanka. She holds a master's degree in business administration and is currently pursuing doctoral research. Her research interests include youth studies, child health, gender studies, entrepreneurship, and higher education. She has published and presented her work at national and international conferences and high-ranked journals.

ORCID

Ranitha Weerarathna http://orcid.org/0000-0002-3871-1241
Nilmini Rathnayake http://orcid.org/0000-0003-2507-5634
Vageesha Rajapakse http://orcid.org/0009-0008-6370-313X

Data availability statement

Data will be provided upon request by contacting the corresponding author.

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