

Assessing the Impact of Environmental Management Accounting on Green Human Resource Management and Green Organizational Behavior. Empirical Evidence from Albanian Hotel Industry

MARSEL SULANJAKU, SHQIPONJË AÇKA
Department of Finance and Accounting,
University of Elbasan, “Aleksandër Xhuvani”,
Elbasan,
ALBANIA

Abstract: - While environmentally sustainable practices have become widely integrated in organizations around the world, their implementation in Albanian companies is still in its early stages of adoption. This study aims to investigate the implementation initiatives and the relationship among environmental management systems in the Albanian hotel industry. Specifically, this study explored the relationship between environmental management accounting (EMA), green human resource management (GHRM) and green organizational behavior (GOB). In addition, the direct relationship between GHRM and GOB was investigated. To fulfill this objective a survey was conducted among 328 employees associated with the hotel industry, representing a core component of Albanian hospitality sector. Structural equation modeling (SEM) was utilized to examine the relationship between the specified constructs. The findings affirm the positive and direct impact of environmental management accounting (EMA) on both green human resource management (GHRM) and green organizational behavior (GOB) respectively. Additionally, the research confirms the direct and positive relationship between GHRM and GOB within Albanian hotel industry. This research provides an important groundwork for future explorations of environmental management systems within Albanian hospitality industry, where similar studies is limited.

Key-Words: - Environmental management accounting, sustainable development, environmental performance.

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1 Introduction

The improvement of socioeconomic conditions and transportation means has considerably increased the frequency of traveling and the surging of the tourism industry. The continuous growth in mobility has essentially contributed to a surge in demand for accommodation, leading to a substantial development of the hospitality sector, especially of the hotel industry, [1], [2]. However, this rapid expansion combined with the government regulations and rising public awareness outlines fundamental constraints, particularly regarding the utilization of natural resources and the reduction of industry's environmental impact, [3]. Confronted with these challenges, organizations are constantly under pressure to promote and implement sustainable environment policies that focus on effective utilization of natural resources and efficient waste management. Environmental awareness promotes green management practices, enabling the organizations not only to comply with governmental regulations but also to be utilized as

a strategic instrument to reduce operating costs and improve social responsibility. Therefore, green management practices have a substantial contribution not only enhancing firms' economic and environmental performance but also in strengthening public reputation, [4], [5], [6].

The hotel industry, characterized by labor-intensive operations and significant ecological impacts is in continuous efforts to enhance economic performance while maintaining environmental sustainability. From this perspective the integration of green practices into environmental interactions is regarded as a strategic managerial instrument for enhancing both environmental and economic performance, [7], [8]. Environmental management accounting (EMA) and green human resource management (GHRM) represent two essential environmental management instruments that have received considerable interest in the efforts to manage and implement environmentally sustainable practices, [9].

Environmental management accounting (EMA) is a strategic management approach that has a pivotal contribution in the integration of environmental issues into management decision-making. EMA provides both physical and monetary information, enabling organizations to systematically evaluate their environmental impact.

By integrating both financial and non-financial indicators EMA provides a more comprehensive framework in the systematic evaluation of environmental performance. Concretely, monetary environmental management accounting (MEMA) utilizes monetary indicators to evaluate financial implications of environmental activities such as costs, savings and investments. Whereas, physical environmental management accounting (PEMA) utilizes physical indicators such as material flows, energy consumption and waste generation to assess the impact of the organization on the environment, [10], [11]. The implementation of EMA is essential in fostering green practices through efficient utilization of natural resources and the reduction of environmental related costs, [12], [13]. EMA implementation allows organizations to further assess their interaction with the environment, while simultaneously enhancing organizational environmental awareness and public accountability through transparent environmental reporting, [14]. EMA assists decision-makers in identifying cost saving opportunities and improve waste management practices. Consequently, EMA plays a crucial role in enhancing resource efficiency and in supporting sustainable development strategies, aligning financial performance with environmental goals, [15], [16], [17].

Green human resource management (GHRM) is another essential environmental management approach that integrates environmentally sustainable practices into traditional human resource management, [18]. By integrating sustainable practices such as green recruitment, green training, green performance management, green compensation and finally green involvement into traditional human resource management, GHRM enhances the employee environmental consciousness, reinforcing the culture of environmental sustainability, [19], [20]. Different studies have demonstrated that the incorporation of green practices into human resource management enhances environmental awareness among employees and encourages the adoption of green behaviors, [21], [22]. By encouraging green behavior and promoting environmental practices among employees, GHRM actively contributes in the reduction of the ecological impacts while

enhancing environmental performance, [7], [19], [23]. GHRM is a strategic management tool that incorporates green practices to firms' strategies, hence making the environmental sustainability an organizational core value, [24].

The utilization of both EMA and GHRM in a structurally and integrated framework not only improve firms' economic and environmental performance but also enhance and promote green organizational behavior (GOB), [8], [25]. GOB consist of both voluntary and proactive employee behaviors and practices that support the organization's pursuit of environmental sustainability, [22], [26], [27]. GOB have a significant contribution in the promotion of the environmental awareness through all organizational levels. Furthermore, GOB has a fundamental role in converting green practices into organizational core values, reinforcing and promoting the company's image and reputation, therefore providing a strategic advantage, [28], [29]. Most of the researchers' findings converge in the fact that GOB is supported and shaped by GHRM, under the influence of EMA and has a significant contribution in creating organizational green culture and promoting sustainable practices, [30], [31], [32].

The present study addresses several gaps in the exploration and understanding of the relationships among key factors of environmental management systems in the hotel industry of Albania, where empirical evidence is scarce. To fulfill this objective a research model was adopted from [25] to explore the relationship between environmental management accounting (EMA), green human resource management (GHRM) and green organizational behavior (GOB) in Albanian hotel industry. In contrast to the model proposed by [25], in which the authors examine the mediating role of GHRM between EMA and GOB, the present research focuses exclusively only on the direct relationships between the variables. The conceptual model provides a detailed examination of EMA, analyzing it through two main components: monetary environmental management accounting (MEMA) and physical environmental management accounting (PEMA). A detailed perspective on EMA is essential for understanding how its two complementary perspectives MEMA and PEMA, comparably affect GHRM and GOB. The study further explores the relationship between GHRM and GOB in the Albanian hotel industry, Figure 1.

1.1 The Relation of Environmental Management Accounting with Green Human Resource Management

Taking into consideration the value creation capabilities of green behavior, scholars have turned their attention to different environmental management systems that facilitate the implementation of the sustainable development frameworks. Environmental management accounting (EMA) and green human resource management (GHRM) are two pivotal instruments that contribute to the efficient utilization and management of natural resources, thereby positively contributing to both economic and environmental performance, [33], [34]. Through EMA implementation, GHRM can utilize a range of financial and non-financial measurable indicators to assess different individual employee engagement in environmental practices, [33], [35]. By providing quantified environmental information EMA facilitates the management to formulate targeted environmental objectives, enabling GHRM to define specific environmental goals and to evaluate individual employees' green performance, [36], [37]. Evaluation of individual green performance lays the foundations for green compensation practices in which EMA has a crucial role in providing the financial insights to effectively support the design of incentive systems in alignment with the firm's environmental goals, [38]. The fulfillment of the environmental goals can be integrated in a compensation system that includes both financial and nonfinancial incentives to promote green employee behavior, therefore contributing directly in the enhancement of GHRM [9], [39], [40]. In a study conducted by [25], a sample of 383 questionnaires were distributed to human resource and accounting managers employed in Chinese hospitality sector. The empirical analysis revealed a significant and positive relationship between the two core components of EMA (MEMA and PEMA) and green human resource management (GHRM). Furthermore, these findings are supported by the study of [41] demonstrating that green accounting not only strengthens GHRM practices, but the two environmental management systems are also integrally and interchangeably integrated with each other in a complete synergy that collectively promotes sustainable development. Following the insights from the above empirical findings and literature review this research proposes the following hypothesis:

- H1a: MEMA has a positive impact on GHRM
- H1b: PEMA has a positive impact on GHRM

1.2 The Relation of Environmental Management Accounting with Green Organizational Behavior

Although numerous studies have examined the relation of environmental management accounting (EMA) with green human resource management (GHRM), the relation between EMA and the green organizational behavior (GOB) remain relatively unexplored. EMA makes a unique contribution in motivating and fostering green behavior across all organizational levels by tracking employee's environmental performance and supporting the reward and compensation systems, [42]. Through the quantification and reporting environmental activities to all organizational levels, EMA enhances the overall ethical awareness and moral responsibility toward environmental issues, [43]. The employees' overall awareness encourages a general culture of environmental accountability that encourage eco-friendly practices across formal and informal timeframes, thereby positively affecting GOB, [44], [45]. Therefore, EMA significantly contributes in the creation of shared environmental awareness and values that are essential for long-term sustainability, [46]. This conclusion is empirically supported also by [25] in a study conducted in Chinese hospitality industry where authors found a positive relationship between the two core components of EMA, with green organizational behavior (GOB). Based on the preceding literature review and empirical findings the following hypothesis are proposed:

- H2a: MEMA has a positive impact on GOB
- H2b: PEMA has a positive impact on GOB

1.3 The Relation of Green Human Resource Management with Green Organizational Behavior

Green human resource management (GHRM) is the integration of environmental policies with the human resource management. GHRM is not limited in conducting green recruitments and training but also in implementing an environmentally oriented framework where the employees in different organizational levels are motivated and promoted according to their environmental performance, [47]. As a result, GHRM strongly promotes sustainable development through institutionalization of environmental values and attitudes, contributing in the creation of the green organizational behavior (GOB), [32], [48]. [30] showed that the involvement of employees of different hierarchic levels in positive environmental practices has a direct contribution in the creation of green

organizational culture, which in turn can serve as a sustainable competitive advantage. Various studies have demonstrated that the GHRM practices foster employees' green behavior, therefore enhancing green organizational behavior (GOB), [24], [42], [49]. GOB promotes green activities not only during working hours but also as an integral part of organizational culture, a shared system of beliefs, values and attitudes that shape collective behavior, [50]. GOB is not limited in transforming and reshaping the green behavior of the employees, by positioning employees as promoters of sustainable practices, enhancing firms' green values, [51]. As a result, GOB can be considered a valuable intangible asset that is difficult to be imitated by competitors, therefore providing competitive advantage, [30], [52], [53]. In a study conducted by [54] in Thailand's hospitality industry, a sample of 375 hotels was analyzed. Empirical findings demonstrated a statistically significant and positive relationship between GHRM and GOB. Similarly, [8], conducted a study involving a sample of 278 participants from employees from both private and public sector organizations located in India. The authors suggest that the adoption of GHRM practices facilitate the development of green organizational behavior. In a related study [42], analyzed 240 responses from hospitality personnel across major cities of Pakistan, empirically confirming a direct and positive correlation between the GHRM procedures and the behavioral outcomes exhibited by employees. The findings indicate that GHRM practices can be effectively utilized to promote green organizational citizenship behavior among employees. Grounded on the above empirical evidence the following hypothesis is presented:

H3: GHRM has a positive impact on GOB

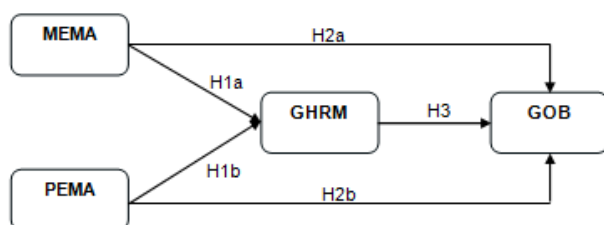


Fig. 1: Research model examining the direct relationships between variables

Source: [25]

2 Methodology

The objective of this empirical study aims to measure the direct effect of environmental

management accounting (EMA) on both, green human resource management (GHRM) and green organizational behavior (GOB), while also examining the influence of GHRM on GOB. To address this research goal, the study collected data from targeted hotel establishments withing Albanian hospitality industry.

2.1 Sampling and Data Collection

According to the Albanian Institute of National Statistics [55], there are 15.547 accommodation and food services operating in Albania, where only 842 units have more than 10 employees. To ensure the relevance and implementation of EMA and GHRM practices, the hotels were selected based on the presence of structurally established finance and human resource management departments and by taking into consideration the degree of their environmental impact.

In structural equation modeling, [56] suggested that the sample size needs to be a minimum of five times larger than the number of variables for factor analysis. As a general rule, larger sample sizes are highly preferred. A sample size between 200 and 400 is normally recommended and accepted as a critical sample size. The questionnaires were distributed to employees who were more likely to be knowledgeable and engaged in sustainable practices, specifically accountants, human resource personnel, and senior officials were targeted. For data collection 450 questionnaires were distributed across 174 selected hotels, resulting in 328 completed responses within a period of approximately two months and 3 weeks, representing a response rate of 72%.

2.2 Measures

To measure the constructs proposed by the model, a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") was utilized. To measure the components of environmental management accounting (EMA), five items were selected to assess monetary environmental management accounting (MEMA) and four items to assess physical environmental management accounting (PEMA), adopting the scales of [16], [25], [26], [57]. For the construct green human resource management (GHRM), four items were selected, based on scales adopted by [18], [19] and [25]. Finally, green organizational behavior (GOB) was measured using four items adopted from the scale proposed by [8] and [25] (Table 1, Appendix).

3 Results

The data analyses were conducted using IBM SPSS Statistics 23.0 for descriptive statistics and reliability and AMOS Graphics 23.0 for hypothesis testing, utilizing structural equation modeling (SEM). The descriptive statistic indicates that approximately 33.5% of the respondents were male and 66.5% female. Regarding the level of education 22.6% had completed a bachelor's degree, 57.9% a master's degree, and 19.5% possessed postgraduate certifications. In terms of professional experience 9.8% of the respondents had less than 5 years of work experience, 33.2% had between six and ten years of experience and the majority (57%) had over ten years of experience.

3.1 Measurement Model

The first step in data analyzing is variable screening for missing data, unengaged responses and outliers. There were no outliers and unengaged responses. The missing data were less than 5% so the mean imputation method was utilized. The items were subject to normal distribution as skewness and kurtosis of all the items resulted between the accepted range of -2 and +2.

The exploratory factor analysis (EFA) was performed using principal axis factoring analysis and oblimin with kaiser normalization rotation. An essential step involved assessing the overall significance of the correlation matrix using Bartlett's Test of Sphericity, which evaluates whether the correlations among the variables are statistically significant. Bartlett's test ($\chi^2 = 2,574.333$; $p < 0.000$) indicates the suitability for factor analysis and Kaiser-Meyer-Olkin (KMO=0.836) which measures the sampling adequacy, indicates the appropriateness of the data for the factor analysis. The communality of the scale, representing the proportion of variance explained by each factor, was also examined to ensure acceptable levels of explanation. The results indicated that all items demonstrated strong communalities within the threshold of ≥ 0.50 , except for item PEMA3 which showed a moderate loading of 0.460. Although slightly below the conventional benchmark, this value remains acceptable in qualitative data research where loadings above 0.40 are considered adequate, [58], [59]. The item was retained as it surpassed the minimum acceptable threshold and it did not adversely affect internal consistency. Subsequent confirmatory factor analysis further supported the item inclusion, increasing the item's standardized loading to 0.54, thus confirming its contribution to

the measurement model. Kaiser's rule identified four factors, that correspond to MEMA, PEMA, GHRM and GOB as defined by the research. During the EFA, item PEMA1 (Product inventory analyses) loaded onto other factor other than its underlying factor. The item was removed and further analysis was continued. The authors repeated the EFA without including this specific item. The results of new analysis confirmed the four-dimensional structure theoretically defined in the research (Table 1, Appendix).

After the assessment of EFA, Confirmatory Factor Analysis (CFA) was computed using IBM AMOS 23.0 to test the measurement models. As part of confirmatory factor analysis, factor loadings were assessed for each item, and all items resulted over the acceptable range ($> .50$). The model-fit measures were used to assess the model's overall goodness of fit (CMIN/df: < 2 , CFI: > 0.90 , TLI: > 0.90 , SRMR: < 0.08 , and RMSEA: < 0.08) and all values were within their respective common acceptance levels CMIN/df = 1.835, CFI = 0.96, TLI = 0.953, SRMR = 0.0475, and RMSEA = 0.05, [59], [60], [61]. Table 2, reports the mean and Pearson's Correlation of the factors utilized in the current study. To address potential multicollinearity issues, the guideline proposed by [56] was followed, which suggests that Pearson's correlation coefficients should be underneath 0.90 benchmark. Accordingly, the results confirmed the absence of multicollinearity among the variables, [56], [62], [63]. Construct Reliability was assessed using Cronbach's Alpha and Composite Reliability. Cronbach's Alpha is utilized to measure internal consistency reliability to show how closely related a set of items are as a group. Cronbach's Alpha for each construct in the study was calculated utilizing the following formula:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \sigma_{Y_i}^2}{\sigma_X^2} \right) \quad (1)$$

where:

k : number of items in the scale

$\sigma_{Y_i}^2$: variance of each individual item

σ_X^2 : variance of the total score

Cronbach's Alpha for each construct was over the minimum required limit of 0.70, [64]. Composite reliabilities (CR) unlike Cronbach's Alpha accounts for standardized factor loadings and error variances and was calculated utilizing the following formula:

$$CR = \frac{\sum_{i=1}^k \lambda_i^2}{(\sum_{i=1}^k \lambda_i)^2 + \sum_{i=1}^k \theta_i} \quad (2)$$

where:

k : number of items for the construct

λ_i : standardized factor loading of item i

θ_i : error variance of item i

Composite reliabilities ranged from 0.786 to 0.843, above the 0.70 benchmark, [65]. Hence, construct reliability was established for each construct in the study.

Table 2. Pearson Correlations

	GHR M	PE MA	ME MA	GOB
GHR M				
PEMA	0.28			
MEMA	0.216	0.27		
GOB	0.463	0.34	0.305	
		6		
N=32	*** Correlations significant at the 0.01 level (2-tailed)			
8,				

Source: Author's computation

3.2 Convergent and Discriminant Validity

Convergent validity of scale items was estimated using Average Variance Extracted (AVE) utilizing the following formula:

$$AVE = \frac{\sum_{i=1}^n \lambda_i^2}{n} \quad (3)$$

where:

λ_i = standardized factor loading of indicator i

n = number of indicators for the construct

All the AVE values for the latent constructs MEMA, PEMA, GHRM and GOB were above the recommended threshold of 0.50, indicating that the latent construct explains more than 50% of the variance in the observed indicators, [66], [67]. Discriminant validity in the study was evaluated using both the Fornell and Larcker Criterion and the Heterotrait-Monotrait (HTMT) Ratio. According to the Fornell and Larcker criterion, discriminant validity is confirmed when the square root of AVE for each construct exceeds its correlations with other constructs in the model. However, Fornell and Larcker criterion has recently faced criticism, leading to the adoption of a more robust technique, the HTMT ratio. When assessed using HTMT ratio, all ratios were below the recommended threshold of 0.85, [68]. Hence, discriminant validity among constructs was established (Table 3 and Table 4).

Table 3. Discriminant validity results based on Fornell and Larcker criterion

	MEMA	PEMA	GOB	GHRM
MEMA	0.711			
PEMA	0.27	0.747		
GOB	0.305	0.346	0.756	
GHRM	0.216	0.28	0.463	0.6

Source: Author's computation

Table 4. Discriminant validity results based on Heterotrait-monotrait ratio (HTMT)

	PEMA	GOB	GHRM	MEMA
PEMA				
GOB	0.357			
GHRM	0.283	0.476		
MEMA	0.273	0.312	0.217	

Source: Author's computation

3.3 Structural Model

In the final stage, the structural model specified by the proposed research model was examined, consisting of four latent constructs: MEMA, PEMA, GHRM and GOB, each measured through multiple indicators. The latent constructs are measured as follows:

$$MEMA_i = \lambda_i \cdot MEMA + \varepsilon_i; i = 1, 2, 3, 4, 5 \quad (4)$$

$$PEMA_j = \lambda_j \cdot PEMA + \varepsilon_j; j = 1, 2, 3 \quad (5)$$

$$GHRM_k = \lambda_k \cdot GHRM + \varepsilon_k; k = 1, 2, 3, 4 \quad (6)$$

$$GOB_l = \lambda_l \cdot GOB + \varepsilon_l; l = 1, 2, 3, 4 \quad (7)$$

where:

λ = standardized factor loadings

ε = measurement error terms

The structural model shows that MEMA is measured by five indicators (MEMA1-MEMA5), while PEMA is measured by three indicators (PEMA2-PEMA4). GHRM is measured through four indicators (GHRM1-GHRM4), and GOB is measured by four observed variables (GOB1-GOB4). All indicators loaded positively into the respective latent constructs with standardized factor loading within acceptable thresholds, indicating satisfactory convergent validity. Measurement errors for each indicator are explicitly specified to account the unexplained variance, thus ensuring rigorous model representation. The structural model in Figure 2, illustrates the hypothesized relationships between the latent constructs. MEMA and PEMA are exogenous variables representing EMA, exhibiting bidirectional covariance which consequently reflects a correlated relationship among each other, $Cov(MEMA, PEMA) = 0.270$.

Coefficient of determination (R^2) represents the proportion of variance explained by the predictors and was calculated utilizing the following formula:

$$R_{GHRM}^2 = 1 - \frac{Var(\zeta_1)}{Var(GHRM)} \quad (8)$$

$$R_{GOB}^2 = 1 - \frac{Var(\zeta_2)}{Var(GOB)} \quad (9)$$

where, R^2 represents the proportion of variance explained by the predictors. In our case $R_{GHRM}^2 = 0.10$ and $R_{GOB}^2 = 0.29$. This indicates that MEMA and PEMA explain 10% of the variance in GHRM, while MEMA, PEMA, and GHRM jointly explain 29% of the variance in GOB. Given the coefficient of determination (R^2) we can derive the disturbance term for each endogenous latent GHRM and GOB respectively as following:

$$Var(\zeta_1) = 1 - R_{GHRM}^2 = 1 - 0.10 = 0.90 \quad (10)$$

$$Var(\zeta_2) = 1 - R_{GOB}^2 = 1 - 0.29 = 0.71 \quad (11)$$

Both exogenous variables, MEMA and PEMA exert direct influences on GHRM. In turn, GHRM significantly predicts GOB. Additionally, MEMA and PEMA also have direct relationship with GOB. These relationships can be expressed as:

$$GHRM = \beta_1 \cdot MEMA + \beta_2 \cdot PEMA + \zeta_1 \quad (12)$$

$$GOB = \beta_3 \cdot MEMA + \beta_4 \cdot PEMA + \beta_5 \cdot GHRM + \zeta_2 \quad (13)$$

where:

β = standardized regression weights (path coefficients)

ζ = structural error terms (disturbances)

Following the assessment of the measurement model, the structural equations indicate that GHRM is predicted by MEMA ($\beta_1 = 0.151$) and PEMA ($\beta_2 = 0.239$) with a disturbance term of 0.90. Similarly, GOB is predicted by MEMA ($\beta_3 = 0.172$) and PEMA ($\beta_4 = 0.190$) and GHRM ($\beta_5 = 0.371$) with a disturbance term of 0.71. The relationships between variables are demonstrated through the direct paths in the structural model represented in the Figure 2.

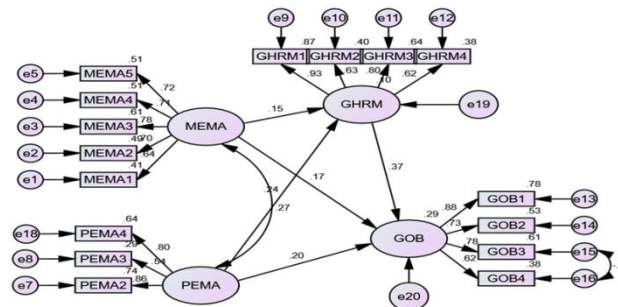


Fig. 2: Structural model depicting the direct paths between latent constructs, with their corresponding standardized regression weights, covariance value among exogenous constructs and residual values associated with endogenous constructs

Source: created by the authors

The standard model-fit measures were used to assess the model's overall goodness of fit (CMIN/df: <2, CFI: >0.90, TLI: >0.90, SRMR: <0.08, and RMSEA: <0.08) and all values were within their respective common acceptance levels ([59],[60],[61]) The four-factor model (MEMA, PEMA, GHRM and GOB) yielded good fit for the data: CMIN/df = 1.833, CFI = 0.962, TLI = 0.953, SRMR = 0.047, and RMSEA= 0.05. Table 5 presents the beta coefficients, t-statistics, and their P-value along the remarks about the theory testing. The results of the structural equation modelling, confirmed the findings through regression path coefficient, t-statistics, probability values (P-values) and related interpretations of the tested hypothesis. Thus, the research model was consistent with the collected data.

Table 5. Results of structural model

Hypothesize d path	Path coefficient	t-value	p-value	R ²	Remarks
GHRM<-- MEMA	0.151	2.33	0.02	0.1	Supported
GOB<-- MEMA	0.172	2.81	0.00	0.2	Supported
GHRM<-- PEMA	0.239	3.63	0.00	0.1	Supported
GOB<-- PEMA	0.190	3.14	0.00	0.2	Supported
GOB<-- GHRM	0.371	6.21	0.00	0.2	Supported

Source: Author's computation

Overall, the results confirm that each construct exert a positive and statistically significant influence on predetermined constructs within specified model. The empirical investigation confirms that:

MEMA exerted a positive and statistically significant influence on GHRM ($\beta_1 = 0.151$, $p < 0.002$), hence affirming hypothesis H1a.

PEMA exerted a positive and statistically significant influence on GHRM ($\beta_2 = 0.239$, $p < 0.0005$), hence affirming hypothesis H1b.

MEMA exerted a positive and statistically significant influence on GOB ($\beta_3 = 0.172$, $p < 0.001$), hence affirming hypothesis H2a.

PEMA exerted a positive and statistically significant influence on GOB ($\beta_4 = 0.190$, $p < 0.002$), hence affirming hypothesis H2b.

GHRM exerted a positive and statistically significant influence on GOB ($\beta_5 = 0.371$, $p < 0.001$), hence affirming hypothesis H3.

In conclusion, the results of SEM confirm that the two dimensions of EMA, concretely MEMA and PEMA play a significant and positive role in enhancing green human resource management (GHRM) and green organizational behavior (GOB). Furthermore, the results confirm that GHRM positively affects GOB.

4 Final Considerations and Discussions

The objective of this study is to explore the relation between environmental management systems using the data collected from 328 respondents from hotel industry in Albania represented by accountants, senior officials and human resources personnel. Consistent with the findings of [9], [25], [41] and [69] this study confirmed the direct and positive relationship between environmental management accounting (EMA) and green human resource management (GHRM). The results moreover, highlight the integrative and direct function of EMA in the development of green organizational culture (GOB). Furthermore, in alignment with prior research by [8], [42] and [54] this study confirmed the positive contribution of GHRM in enhancing GOB within the Albanian hotel industry.

The present study offers significant contribution in the existing literatures of Albanian hotel industry, as a central component of the hospitality sector where similar empirical research is limited. The study provides valuable insight in adopting and implementing environmental management systems such as EMA and GHRM as core instruments in achieving sustainable performance and strategic advantage in the Albanian hotel industry. In Albania where EMA adoption is still in its initial phases, organizations

should focus on creating an adequate framework to support the adoption and implementation of EMA practices. In this context the hotel management can provide special training and courses to the accountants in environmental management accounting. Taking into consideration the importance of sustainable development different government agencies and professional accounting bodies might be interested to collaborate with hotel establishments in proactive environmental trainings. The trainings might give valuable insights and specific guidance on EMA implementation to meet the specific requirements of Albanian hotel industry.

Alternatively, hotel establishments should strengthen GHRM practices starting from the recruitment process where environmental related issues could be incorporated into job descriptions and requirements to attract environmentally aware employees. During interviews, candidates may be asked environmental related questions to evaluate their knowledge and awareness to the environmental issues. An important component in this perspective would be the collaboration of hotel industry with Albanian academic institutions by prioritizing the recruitments of graduates from hotel and tourism management or from similarly related study programs. Green training and development programs when integrated with financial and non-financial green reward and compensations practices evolve into an important component in the promotion and motivation of employees to engage in sustainable practices, further, enhancing the green organizational behavior (GOB). The adoption of these practices implies that employees must be aware and responsible toward environmental goals and targets, aligning employees' individual environmental performance with hotel's environmental strategies.

The study suggests that strong established foundations of EMA and GHRM, enables hotel establishments to create a culture of collective environmental awareness among employees that will further contribute to strengthen and reinforce firm's green organizational behavior (GOB). The study empirically demonstrated that the integration of environmental management systems can directly enhance green organizational behavior (GOB) and promote broader sustainable development within the Albanian hospitality industry.

The present study is subject to certain limitations. The research model does not take into consideration the mediating and moderating effects among constructs. Future studies could further

explore these effects between the presented variables. Future research could explore diverse industry contexts to generalize the present empirical findings.

References

- [1] Salama, W. M. (2024). The nexus between green human resource management on organizational citizenship behavior in the hotel industry: A structural equation modelling approach. *Journal of Infrastructure, Policy and Development*, 8(13), 8512.
- [2] Trang, H. L. T., Lee, J. S., & Han, H. (2019). How do green attributes elicit pro-environmental behaviors in guests? The case of green hotels in Vietnam. *Journal of Travel & Tourism Marketing*, 36(1), 14-28.
- [3] Ouyang, Z., Wei, W., & Chi, C. G. (2019). Environment management in the hotel industry: does institutional environment matter?. *International Journal of Hospitality Management*, 77, 353-364.
- [4] Elshaer, I. A., Azazz, A. M., & Fayyad, S. (2023). Green management and sustainable performance of small-and medium-sized hospitality businesses: moderating the role of an employee's pro-environmental behaviour. *International Journal of Environmental Research and Public Health*, 20(3), 2244.
- [5] Singjai, K., Winata, L., & Kummer, T. F. (2018). Green initiatives and their competitive advantage for the hotel industry in developing countries. *International Journal of Hospitality Management*, 75, 131-143.
- [6] Rizvi, Y. S., & Garg, R. (2021). The study of green human resource management practices in Indian organisations and its relationship with green culture and environmental performance. *International Journal of Environment, Workplace and Employment*, 6(3), 234- 258.
- [7] Awan, F. H., Dunnan, L., Jamil, K., & Gul, R. F. (2023). Stimulating environmental performance via green human resource management, green transformational leadership, and green innovation: a mediation-moderation model. *Environmental Science and Pollution Research*, 30(2), 2958-2976.
- [8] Aggarwal, P., & Agarwala, T. (2023). Relationship of green human resource management with environmental performance: mediating effect of green organizational culture. *Benchmarking: An International Journal*, 30(7), 2351-2376.
- [9] Yong, J. Y., Yusliza, M. Y., Ramayah, T., & Fawehinmi, O. (2019). Nexus between green intellectual capital and green human resource management. *Journal of cleaner production*, 215, 364-374.
- [10] Burritt, R. L., Hahn, T., & Schaltegger, S. (2002). Towards a comprehensive framework for environmental management accounting—Links between business actors and environmental management accounting tools. *Australian Accounting Review*, 12(27), 39-50.
- [11] Phan, T. N., Baird, K., & Su, S. (2017). The use and effectiveness of environmental management accounting. *Australasian Journal of Environmental Management*, 24(4), 355-374.
- [12] Malavige, T., & Wijesinghe, B. A. C. H. (2021). Determinants of Environmental Management Accounting Practices: A Comparative Study between Listed Companies and Small and Medium Enterprises in Sri Lanka. *Sri Lanka Journal of Management Studies*, 3(2).
- [13] Jasch, C. (2003). The use of Environmental Management Accounting (EMA) for identifying environmental costs. *Journal of Cleaner production*, 11(6), 667-676.
- [14] Subramanian, P., & Jaganathan, A. (2022). Promoting Environment Sustainability Through Green HRM: The Socially Responsible Organizations. *Ushus Journal of Business Management*, 21(2), 01-13.
- [15] O'Donohue, W., & Torugsa, N. (2016). The moderating effect of 'Green'HRM on the association between proactive environmental management and financial performance in small firms. *The international journal of human resource management*, 27(2), 239-261.
- [16] Deb, B. C., Rahman, M. M., & Rahman, M. S. (2023). The impact of environmental management accounting on environmental and financial performance: empirical evidence from Bangladesh. *Journal of Accounting & Organizational Change*, 19(3), 420-446.
- [17] Susanto, A., & Meiryani, M. (2019). Antecedents of environmental management accounting and environmental performance: Evidence from Indonesian small and medium enterprises. *International Journal of Energy Economics and Policy*, 9(6), 401-407.
- [18] Jabbour, C. J. C., & Santos, F. C. A. (2008). Relationships between human resource

- dimensions and environmental management in companies: proposal of a model. *Journal of Cleaner Production*, 16(1), 51-58.
- [19] Masri, H. A., & Jaaron, A. A. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. *Journal of cleaner production*, 143, 474-489.
- [20] Cherian, J. and Jacob, J. (2012) A Study of Green HR Practices and Its Effective Implementation in the Organization: A Review. *International Journal of Business and Management*, 7(21): pp.25-33
- [21] Trong Tuan Luu, T. T. L. (2019). Green human resource practices and organizational citizenship behavior for the environment: the roles of collective green crafting and environmentally specific servant leadership.
- [22] Yusoff, Y. M., Nejati, M., Kee, D. M. H., & Amran, A. (2020). Linking green human resource management practices to environmental performance in hotel industry. *Global Business Review*, 21(3), 663-680.
- [23] Kuo, Y. K., Khan, T. I., Islam, S. U., Abdullah, F. Z., Pradana, M., & Kaewsaeng-On, R. (2022). Impact of green HRM practices on environmental performance: The mediating role of green innovation. *Frontiers in psychology*, 13, 916723.
- [24] Daily, B. F., Bishop, J. W., & Govindarajulu, N. (2009). A conceptual model for organizational citizenship behavior directed toward the environment. *Business & society*, 48(2), 243-256.
- [25] Liu, L., & Zhang, C. (2022). Linking environmental management accounting to green organisational behaviour: The mediating role of green human resource management. *Plos one*, 17(12), e0279568.
- [26] Latan, H., Jabbour, C. J. C., de Sousa Jabbour, A. B. L., Wamba, S. F., & Shahbaz, M. (2018). Effects of environmental strategy, environmental uncertainty and top management's commitment on corporate environmental performance: The role of environmental management accounting. *Journal of cleaner production*, 180, 297-306.
- [27] Boiral, O. (2009). Greening the corporation through organizational citizenship behaviors. *Journal of business ethics*, 87(2), 221-236.
- [28] Harris, L. C., & Crane, A. (2002). The greening of organizational culture: Management views on the depth, degree and diffusion of change. *Journal of organizational change management*, 15(3), 214-234.
- [29] 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?. *Sustainability*, 13(3), 1044.
- [30] Gürlek, M., & Tuna, M. (2018). Reinforcing competitive advantage through green organizational culture and green innovation. *The service industries journal*, 38(7-8), 467-491.
- [31] Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological forecasting and social change*, 150, 119762.
- [32] Bombiak, E. and Kluska, M. A. (2018) Green Human Resource Management as a Tool for the Sustainable Development of Enterprises: Polish Young Company Experience. *Sustainability*, MDPI, 10 (6) pp: 1-22.
- [33] Norton, T. A., Parker, S. L., Zacher, H., & Ashkanasy, N. M. (2015). Employee green behavior: A theoretical framework, multilevel review, and future research agenda. *Organization & Environment*, 28(1), 103-125.
- [34] Sabokro, M., Masud, M. M., & Kayedian, A. (2021). The effect of green human resources management on corporate social responsibility, green psychological climate and employees' green behavior. *Journal of Cleaner Production*, 313, 127963.
- [35] Shahrulnizam, N. A. A., Hassan, M. A., Mohamad Azizie, N. A., Rashid, A. H. A., & Wahab, S. R. A. (2024). Roles of Ghrm in Sustainable Organization Practices: A Systematic Literature Review. *International Journal of Academic Research in Business & Social Sciences*, 14(10).
- [36] Vidal-Salazar, M. D., Cordon-Pozo, E., & Ferrón-Vilchez, V. (2012). Human resource management and developing proactive environmental strategies: The influence of environmental training and organizational learning. *Human Resource Management*, 51(6), 905-934.

- [37] Asiaei, K., Bontis, N., Alizadeh, R., & Yaghoubi, M. (2022). Green intellectual capital and environmental management accounting: Natural resource orchestration in favor of environmental performance. *Business Strategy and the Environment*, 31(1), 76-93.
- [38] Bhutto S.A. and Auranzeb (2016), Effects of Green Human Resource Management on Firm Performance: An Emperical Study on Pakistani Firms. *European Journal of Business and Management*, 8(16): pp.119-125
- [39] Hristova, S., & Stevceska-Srbinska, D. (2020). Green HRM in pursuit of sustainable competitive advantage.
- [40] Amjad, F., Abbas, W., Zia-UR-Rehman, M., Baig, S. A., Hashim, M., Khan, A., & Rehman, H. U. (2021). Effect of green human resource management practices on organizational sustainability: the mediating role of environmental and employee performance. *Environmental Science and Pollution Research*, 28(22), 28191-28206.
- [41] Jha, R., Mishra, S., & Sharma, A. (2024). The Integration of Green Accounting and Green Human Resource Management for Sustainable Business Practices. In *Innovative Human Resource Management for SMEs* (pp. 62-76). IGI Global Scientific Publishing.
- [42] Shaikh, S., Memon, F. A., & Baladi, N. (2024). The Green Work Revolution: Exploring the Influence of Green Human Resource Management Practices on Green Organizational Citizenship Behavior in the Hospitality Industry. *RADS Journal of Business Management*, 6(2), 124-137.
- [43] Robertson, J. L., & Barling, J. (2017). Toward a new measure of organizational environmental citizenship behavior. *Journal of Business Research*, 75, 57-66.
- [44] Tabrizi, R. S., Karatepe, O. M., Rezapouraghdam, H., Rescalvo-Martin, E., & Enea, C. (2023). Green human resource management, job embeddedness and their effects on restaurant employees' green voice behaviors. *International Journal of Contemporary Hospitality Management*, 35(10), 3453-3480.
- [45] Domínguez-Falcón, C., Martín-Santana, J. D., & De Saá-Pérez, P. (2016). Human resources management and performance in the hotel industry: The role of the commitment and satisfaction of managers versus supervisors. *International Journal of Contemporary Hospitality Management*, 28(3), 490-515.
- [46] Sundarasan, S., Rajagopalan, U., & Alsmady, A. A. (2024). Environmental accounting and sustainability: A meta-synthesis. *Sustainability*, 16(21), 9341.
- [47] Hooi, L. W., Liu, M. S., & Lin, J. J. (2022). Green human resource management and green organizational citizenship behavior: do green culture and green values matter?. *International Journal of Manpower*, 43(3), 763-785.
- [48] Pham, N. T., Tučková, Z., & Phan, Q. P. T. (2019). Greening human resource management and employee commitment toward the environment: an interaction model. *Journal of Business Economics and Management*, 20(3), 446-465.
- [49] Kehoe, R. R., & Wright, P. M. (2013). The impact of high-performance human resource practices on employees' attitudes and behaviors. *Journal of management*, 39(2), 366-391.
- [50] Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human resource management*, 56(4), 613-627.
- [51] Aboramadan, M., Kundi, Y. M., & Becker, A. (2022). Green human resource management in nonprofit organizations: effects on employee green behavior and the role of perceived green organizational support. *Personnel Review*, 51(7), 1788-1806.
- [52] Shahzad, K., Umer, W., Shahbaz, M., & Ahmad, N. (2021). Green resource management as a strategic asset for organizations in responding to environmental challenges. *Journal of Sustainable Development*, 14(2), 45-57.
- [53] Paillé, P., Chen, Y., Boiral, O., & Jin, J. (2014). The impact of human resource management on environmental performance: An employee-level study. *Journal of Business ethics*, 121(3), 451-466.
- [54] Khammadee, P., & Ninaroon, P. (2022). The effects of green human resource management, green organizational culture and green service innovation on environmental performance. *Journal of Positive School Psychology*, 6(3), 9741-9747.
- [55] Albanian National Institute of Statistics (2024); Industry, Trade and Services, Business Registers. <https://www.instat.gov.al/sq/temat/industria->

tregtia-dhe-sherbimet/regjistrat-e-biznesit/#tab2

- [56] Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long range planning*, 46(1-2), 1-12.
- [57] Sulanjaku, M., & Ballkoci, V. (2026). Exploring the Drivers of Environmental Management Accounting and Environmental Performance: Empirical Evidence from Elbasan Region, Albania. *International Review of Management and Marketing*, 16(4), 296.
- [58] Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* 6th Edition.
- [59] Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modelling: Sensitivity to under parameterized model misspecification. *Psychological methods*, 3(4), 424.
- [60] Ullman, J. B. (2001). Structural equation modelling. In B. G. Tabachnick & L. S. Fidell (2001). *Using Multivariate Statistics* (4th ed& pp 653- 771). Needham Heights, MA: Allyn & Bacon.
- [61] Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological bulletin*, 107(2), 238.
- [62] Frooghi, R., Waseem, S. N., Afshan, S., & Shah, Z. (2015). Effect of offline parent brand dimension on online trust, satisfaction and loyalty: In context of newspaper industry. *Journal of Management Sciences*, 2(2), 223-254.
- [63] Onyinye, I., Jonathan, E., Emmanuel, O. (2018), Foreign capital inflows and unemployment in Nigeria: Anew evidence from ARDL-bounds testing approach. *International Journal of Business*, 5(6), 176-188.
- [64] Nunnally, JC.; Bernstein, IH. *Psychometric theory*. 3. New York: McGraw-Hill; 1994.
- [65] Hair, J. F., Gabriel, M., & Patel, V. (2014). AMOS covariance-based structural equation modeling (CB-SEM): Guidelines on its application as a marketing research tool. *Brazilian Journal of Marketing*, 13(2).
- [66] Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.
- [67] Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021).

An introduction to structural equation modeling. In *Partial least squares structural equation modeling (PLS-SEM) using R: a workbook* (pp. 1-29). Cham: Springer International Publishing.

- [68] Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43(1), 115-135.
- [69] Asiri, N., Khan, T., & Kend, M. (2020). Environmental management accounting in the Middle East and North Africa region: Significance of resource slack and coercive isomorphism. *Journal of cleaner production*, 267, 121870.

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APPENDIX

Table 1. Measurement model results

code	Constructs and items description	Factor loading	Cronbach's alpha	Composite reliability	AVE
Monetary environmental management accounting (MEMA)			0.835	0.837	0.506
MEMA1	Identification of environment-related costs	0.632			
MEMA2	Classification of environment-related costs	0.718			
MEMA3	We use financial indicators to evaluate the costs savings from environmental initiatives	0.785			
MEMA4	Introduction or improvement to environment-related cost management	0.714			
MEMA5	Creation and use of environment-related cost accounts	0.696			
Physical environmental management accounting (PEMA)			0.769	0.786	0.558
PEMA1	Product inventory analyses (i.e. the specification of the types and quantities of materials and energy required and the amount of residues released to the environment)	deleted			
PEMA2	Data on resource utilization (water, electricity,) are regularly collected and monitored	0.916			
PEMA3	Hotels' waste and environmental impacts are measured and reported systematically	0.460			
PEMA4	Our company integrates physical environmental data into internal reports	0.791			
Green human resource management (GHRM)			0.823	0.839	0.572
GHRM1	Environmentally conscious candidates are more valued by hotels	0.916			
GHRM2	Employees receive training on environmental management	0.653			
GHRM3	Green performance is integrated into employee evaluation	0.774			
GHRM4	One of hoteliers' goals is green performance management and compensation	0.625			
Green organizational behavior (GOB)			0.831	0.843	0.577
GOB1	Employees voluntarily engage in activities to reduce energy and water usage	0.813			
GOB2	Employees participate in environmental activities that are not required by their job description	0.768			
GOB3	Employees promote eco-friendly practices among coworkers	0.718			
GOB4	Employees offer innovative ideas to improve environmental performance	0.639			

Source: Author's computation