

Doctoral Thesis Summary

## **Green human resource management and corporate environmental performance in the hotel industry**

Udržitelný rozvoj lidských zdrojů a environmentální výkonnost  
v hotelnictví

Author: **Nhat Tan Pham, Ph.D.**

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Supervisor: doc. Ing. Zuzana Tučková, Ph.D.

External examiners: prof. Ing. Milota Vetráková, Ph.D.  
doc. PhDr. Ing. Aleš Gregar, CSc.

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## ABSTRACT

The rising public anxiety for environmental issues has stimulated the research working on green policies, especially in human resource management strategy. Despite the theme of green human resource management (GHRM), defined as environmental management-oriented human resource management strategy, has been outspreading recently, previous publications have so far undeveloped (1) the indirect effects of employee environmental commitment and organizational citizenship behavior for the environment (OCBE) towards the connections between GHRM practices and corporate environmental performance; (2) the interactive influences of among GHRM practices (two- and three- way interaction effects) on corporate environmental performance; and (3) GHRM practices applied for developing environmental sustainability in the hotel industry. By extending Ability-Motivation-Opportunity and social exchange theories, this work aims to bridge such research gaps via examining a new conceptual framework, which explores the direct, indirect and interactive roles of GHRM practices (e.g., training, performance management, and employee involvement) to organizations' environmental performance.

The mixed-methods is applied, the thesis chooses 3- to 5-star hotels in Vietnam for conducting both qualitative and quantitative studies. The qualitative study with the case study strategy is first worked to enrich the understandings of the complex phenomenon of GHRM practices applied in hotels, accordingly develop the measurement for the quantitative study. The quantitative approach is then employed to assess hypotheses. The survey strategy, questionnaire technique, and cross-sectional design are adopted for data collection. 220 valid respondents are then analyzed by SMART-PLS and SPSS with PROCESS model.

Main findings suggest that: (1) green training and green employee involvement are critical tools in stimulating directly OCBE and corporate environmental performance, (2) the indirect role of OCBE towards effects of green training and green performance management on corporate environmental performance is found, and (3) an essential interaction between green training and green employee involvement, especially at the high and average conditions of employee involvement, strengthens significantly organizations' green performance. However, unexpected results are also recognized: (1) green performance management may be an unimportant consideration in analyses of direct and interactive influences, and (2) employee environmental commitment does not mediate the connection between GHRM practices and corporate environmental performance.

The thesis consists theoretical contributions by (1) highlighting the relevance of Ability-Motivation-Opportunity and social exchange theories in green context to investigate the relationships between GHRM practices and corporate environmental performance; (2) enriching the existing literature to fill the research gaps through an analysis of the indirect roles of employee environmental commitment and OCBE, and the interactive effects of GHRM practices on corporate environmental performance. The thesis's practical implications, limitations, and further works are also emphasized.

## ABSTRAKT

Rostoucí zájem veřejnosti o otázky z ochrany životního prostředí podnítl výzkum zaměřený na zejména na oblast strategie řízení lidských zdrojů z pohledu dodržování ekologických principů. Navzdory tomu, že se téma řízení lidských zdrojů (především tedy ekologické řízení lidských zdrojů), které je zde definováno jako environmentální management a strategie orientované na lidské zdroje, v posledních letech rozšiřuje a předchozí publikace doposud nerozvíjejí nepřímé účinky zaměstnaneckých závazků k životnímu prostředí a vlastnímu chování organizace v oblasti životního prostředí se propojení mezi ekologickým řízením lidských zdrojů a environmentální výkonností podniku ukazuje jako velmi nové a nepoznané. Stejně tak jako jeho další interaktivní vlivy účinků aplikace ekologického řízení lidských zdrojů (účinky obousměrné a třísměrné interakce) na environmentální výkon podniku a následné postupy aplikované pro rozvoj environmentální udržitelnosti v např. v segmentu hotelnictví.

Cílem disertační práce je vyplnit mezery v současném vědeckém poznání. S využitím modelu Schopnost-Motivace-Příležitost a sociálních výměnných teorií práce zkoumá vztahy mezi udržitelným rozvojem lidských zdrojů a environmentální výkonností. A to prostřednictvím koncepčního rámce, který zkoumá přímé, nepřímé a interaktivní role postupů ekologického řízení lidských zdrojů v daných organizacích a jeho využití k vyšší environmentální výkonnosti organizací.

Práce využívá induktivní a konjunktivní přístup společně se smíšenou metodikou výzkumu. Hlavní výzkum byl proveden ve 3 až 5 hvězdičkových hotelích ve Vietnamu. Nejprve je využit kvalitativní výzkum v podobě případových studií. Jejich cílem je komplexně pochopit praktiky ekologického řízení lidských zdrojů uplatňované v hotelích a zároveň vytvořit měřítka pro kvantitativní studii. Kvantitativní přístup se následně používá k posouzení stanovených hypotéz. Pro sběr dat je následně využito dotazníkového šetření. 220 platných respondentů je poté analyzováno pomocí metody SMART-PLS a SPSS s modelem PROCESS.

Hlavní zjištění ukazují, že:

- školení (zaměřená na ekologická chování zaměstnanců) a poté využití tohoto chování zaměstnanců v práci je rozhodující pro přímou stimulaci chování organizace v oblasti životního prostředí a environmentální podnikové výkonnosti,

- existuje zásadní interakce mezi ekologicky chovajícími se zaměstnanci a ekologickou výkonností organizací.

V práci jsou podrobně vysvětleny teoretické poznatky, které zdůrazňují význam modelu Schopnost – Motivace – Příležitost a sociálních výměnných teorií v environmentálním kontextu za účelem prozkoumání vztahů mezi postupy řízení lidských zdrojů z pohledu dodržování ekologických principů a environmentálním výkonem podniku. Práce obohacuje současnou literaturu o analýzu vlivu nepřímých rolí environmentálního závazku zaměstnanců a chování organizace v oblasti životního prostředí. V závěru práce jsou zdůrazněny také praktické důsledky, omezení celého výzkumu a postup dalšího možného pokračování výzkumu.

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# 1. INTRODUCTION

## 1.1 Motivation and need for the study

Sustainability and environmental protection have emerged as global concerns. The increasing environmental issue is boosting firm's application of environmentally responsible management because they are working in a competitive worldwide economy, and they need not only be efficient but also be responsible, particularly in activities directed at protecting the environment (Yong et al., 2019). Therefore, environmental management (EM) has been paid attention by scholars and practitioners. Indeed, implementing an effective EM is strategically important to organizations, as reacting to external changes can increase customers' demand towards an organization's products or services, and reinforce its competitive position (Ambec and Lanoie, 2012).

In terms of the hotel industry, the environmental problems have been concerned by hotels as they are major tourism performers that cause strong environmental impacts (Molina-Azorín et al., 2009) through using significant amounts of natural resources (Scanlon, 2007). Additionally, along with internal benefits (e.g., cost reduction, efficiency), the external benefits (e.g., customer satisfaction, image) (Molina-Azorín et al., 2015) have encouraged hotels to involve themselves in environmental practices. Accordingly, EM strategy has become crucial for tourism firms to come up with a greater competitive advantage (Blanco et al., 2009).

Among the approaches approved by organizations to stress environmental issues, "green" human resource management (GHRM) is becoming an emergent research topic (Ren et al., 2018) and coined entirely by Renwick et al. (2013). The increasing attention for this theme is because GHRM plays a critical part in reaching the organization's environmental goals (Paillé et al., 2014). The importance of GHRM is not only demonstrated through its internal aspects (e.g. employee environmental commitment, green behavior, environmental performance) but also external aspects. For instance, GHRM is also considered one of the good ways to ensure a good relationship between organization and their stakeholders (Yusoff et al., 2018), including external stakeholders (e.g. customers, partners, local authorities).

So far, GHRM-linked publications have attracted more and more management scholars and provided an insight in this field. There are theoretical studies that shed light an understanding relating to GHRM literature (e.g. Ren et al., 2018; Renwick et al., 2016), and empirical publications that have approached the impact of GHRM policies at either the individual level or the organizational level. For instance, the topic associated with green employee attitudes, commitments, and behaviors as consequences of GHRM practices has been investigated by prior researchers, such as Dumont et al. (2018) and Luu (2018). Additionally, some empirical works have explored the linkage between GHRM practices and organizations' environmental performance (e.g. Masri and Jaaron, 2017; Guerci et al., 2016), financial performance

(Longoni et al., 2018) and green supply chain management (e.g. Nejati et al., 2017). However, the papers published to date have left the following research gaps:

First, on the basis of Ability-Motivation-Opportunity (AMO) theory, which emphasizes the connections between human resource management (HRM) practices and organizational performance through developing the employees' ability, enhancing employees' motivation, and providing opportunity to employees, Jiang et al. (2012) address the critical roles of HRM outcome, such as employee attitudes (e.g. employee commitment) and employee behavior (e.g. organizational citizenship behavior-OCB), in mediating the HRM–organizational performance relationship. By extending this reasoning into green context, employee environmental commitment understood as “*as an internal, obligation-based, motivation*” towards the environment (Perez et al., 2009), and organizational citizenship behavior towards the environment (OCBE) considered as encompassing an individual's discretionary behavior directed towards environmental improvement which are not required by the organization (Daily et al., 2009), that are expected to mediate the connection between GHRM practices and corporate environmental performance. Admittedly, the success of an organizations' EM depends heavily on employees' green behavior because such behavior may generate the overall improvement of organization's environmental performance (Kim et al., 2019; Lo et al., 2012). Yet, the existing literature has a lack of empirical studies that link GHRM practices to firm's green performance through employee environmental commitment and their pro-environmental behavior (Kim et al., 2019).

Second, this work has been motivated by the importance of interaction among GHRM practices. Scholars in this field (e.g. Pinzone et al., 2016; Rayner and Morgan, 2018) mobilize the well-established the AMO theory. Conforming to this theory, HRM practices may generate firms' organizational performance by enhancing the employees' ability (e.g. through training), motivation (e.g. by using a performance management system), and opportunities (e.g. by applying a suggestion system). While the effect of green training (ability), green performance management (motivation), and green employee involvement (opportunity) on employee green commitment and behavior (Kim et al., 2019; Luu, 2018) and firms' environmental performance (Masri and Jaaron, 2017; Yusoff et al., 2018) appears to be established, to the best of the author's knowledge, there has not been a study of GHRM practices focusing on how ability, motivation, and opportunity go together to influence an organization's environmental performance (interactive influences) to date. In fact, none of ability, motivation, or opportunity can ensure performance on its own (Bos-Nehles et al., 2013). From AMO theory, to deal with the relationships among ability, motivation, and opportunity, scholars have suggested multiple configurations such as the additive model, the combinative model, and the multiplicative model (Blumberg and Pringle, 1982; Bos-Nehles et al., 2013; Kim et al., 2015).

The additive model (where performance is represented by the additive combination of ability, motivation, and opportunity) assumes that each factor

contributes independently to performance. The combinative model (two-way interaction) can be expressed by functions such as performance, illustrating a two-way interaction involving both combinations of ability and motivation and ability and opportunity. Bos-Nehles et al. (2013) present this combinative model, suggesting that ability is a prerequisite of performance, that motivation and opportunity can only help in the presence of sufficient ability, and that motivation and opportunity impact performance in combination with ability, but not on their own (Kim et al., 2015). The multiplicative model (a three-way interaction) represents classic work performance theories that hypothesize complementarity or an interaction among ability, motivation, and opportunity. In this respect, these components must all be present, at least to some degree, in order for a task to be performed, and performance will drop when any of these values decrease. Performance depends on a model of a three-way interaction between ability, motivation, and opportunity (Blumberg and Pringle, 1982). In the context of HRM practices, there has been little research aimed at explaining how these factors (ability, motivation, and opportunity) operate together. In addition, the findings of these few studies do not show the supremacy of a particular model (i.e. the additive, combinative, or multiplicative model); for example, the combinative model is supported by Bos-Nehles et al.'s (2013) research, while Kim et al. (2015) prefer the multiplicative model.

Last, in the hotel industry, its contribution to global GDP is essential, and where human resources (Ružić, 2015) and service quality (Molina-Azorín et al., 2015) indicate undeniable competitive advantage. Environmental issues have been concentrated on by more and more hotels as they often cause a negative effect on the environment by using significant amounts of natural resources (Scanlon, 2007). The role of HRM in EM is thus of strategic importance for hotels, although few scholars have concentrated on this theme. Particularly, there has been little investigation exploring deeply GHRM practices applied in hotels (Kim et al., 2019; Singjai et al., 2018). Moreover, most the environment-linked studies in this context only give an emphasis to general EM policies (e.g., Chan and Hawkins, 2012; Molina-Azorín et al., 2015). Thus, it is necessary to implementing a study aimed at understanding GHRM practices utilized and providing an in-deep overview in applying such practices and its consequences towards environmentally sustainable development in the hotel industry.

From above arguments, the existing literature is still uncovering,

- The mediating roles of employee environmental commitment and OCBE to the connections between GHRM practices and corporate environmental performance.
- Contributions of interaction among GHRM practices (two- and three- way interactive effects) to corporate environmental performance.
- GHRM practices applied for developing environmental sustainability in the hotel industry.



Consequently, **the research problem of this study is to explore the role of green human resource management practices in improving corporate environmental performance in the hotel industry.**

## **1.2 Research questions and objectives**

### **1.2.1 Research questions**

On the basis of such research gaps, following research questions should be answered to fulfill the limitations of previous works.

- RQ1: What and how do hotels apply GHRM practices?
- RQ2: Do GHRM practices affect employee environmental commitment, OCBE, and hotel's environmental performance?
- RQ3: Do employee environmental commitment and OCBE mediate the linkages between GHRM practices and hotel's corporate environmental performance?
- RQ4: Are there interactive effects among GHRM practices on hotel's corporate environmental performance?

### **1.2.2 Research objectives**

Anchored in AMO and social exchange theories, this research aims to explore GHRM practices applied in hotels and investigate the connection between GHRM practices and corporate environmental performance. Research objectives are as follows:

- RO1: to identify GHRM practices applied in hotels
- RO2: to examine direct effects of GHRM practices on employee environmental commitment, OCBE, and hotel's corporate environmental performance
- RO3: to investigate the mediating roles of employee environmental commitment and OCBE towards the linkages between GHRM practices and hotel's corporate environmental performance
- RO4: to study the interactive effects of GHRM practices (e.g. green training x green performance management; green training x green employee involvement; green training x green performance management x green employee involvement) on hotel's corporate environmental performance

### 1.3. Overview of methodology

This thesis works on the mixed-methods, including qualitative and quantitative studies. Details of each approach are illustrated in Table 1, as follows

Table 1 Summary of research methodology

<b>Research paradigm</b>	Positivist	Interpretivist
<b>Research approach/ methodology</b>	Mixed-methods	
	Qualitative study	Quantitative study
<b>Research strategy/ methods</b>	Case study	Survey
<b>Research techniques</b>	Semi-structured and in-depth interviews	Questionnaire
<b>Object of analysis</b>	3- to 5-star hotels in Vietnam	
<b>Sample size</b>	Three cases (three hotels)	220 employees working in such hotels
<b>Data analysis</b>	<ul style="list-style-type: none"> <li>- All interviews contents were retyped and saved in a Microsoft Word file</li> <li>- Case by case</li> <li>- Compare and contrast</li> </ul>	<ul style="list-style-type: none"> <li>- Smart-PLS, SPSS and PROCESS package</li> <li>- Respondents' profile</li> <li>- Measurement assessment</li> <li>- Common method variance</li> <li>- Mean, standard deviations, and correlation</li> <li>- Direct influences</li> <li>- Indirect influences</li> <li>- Interactive influences</li> <li>- Conditional process analysis</li> <li>- Data visualization</li> </ul>

*(Source: the author)*

## **2. LITERATURE REVIEW – Concepts and theories**

### **2.1 Green human resource management**

The term GHRM is generally defined as EM-oriented HRM strategy (Renwick et al., 2013). Scholars have viewed GHRM as a new line of research with the aim of studying organizational environmental management through the deployment of HRM practices (Jackson and Seo, 2010). By extending the AMO theory into green context, Renwick et al. (2013) clarify GHRM practices and its roles by developing three core components, which has been increasingly paid attention by prior researchers (Guerci et al., 2016; Masri and Jaaron, 2017; Pinzone et al., 2016), as follow:

- The development of green Abilities (A) such as green training and green recruitment;
- The Motivation of employees for green activities (M) such as green performance management, green reward;
- The creation of green Opportunities (O) such as green employee involvement and green organizational culture.

### **2.2 The organizational citizenship behavior towards the environment and Employee environmental commitment**

In terms OCBE, this concept is extended from the theme of organizational citizenship behavior (OCB) into the environmental context (Raineri and Paillé, 2016). Therefore, OCBE can be understood as *‘individual and discretionary social behaviors that are not explicitly recognized by the formal reward system and that contribute to a more effective environmental management by organizations’* (Boiral, 2009). Similarly, OCBE is also highlighted as encompassing an individual’s discretionary behavior directed towards environmental improvement which are not required by the organization (Daily et al., 2009). Discretionary behaviors are not specified in job descriptions and help to make the organization and/or society more sustainable through the combined efforts of individual employees (Lamm et al., 2013).

In regards to employee environmental commitment, which is defined *“as an internal, obligation-based, motivation”* towards the environment (Perez et al., 2009), or *“as a frame of mind denoting both a sense of attachment and responsibility to environmental concerns in the workplace”* (Raineri and Paillé, 2016). Thus, this theme reflects an employee’s discretionary sense of commitment in the environmental aspect (Luu, 2018).

### **2.3 Corporate environmental performance**

The environmental standards have been considered by more and more organizations, and brought out relative advantages and productivity enhancements for the organization (Siyambalapitiya et al., 2018). Indeed, environmental protection

activities are also embedded in business operations to measure the firm's performance (Gil et al., 2001). Hanna et al. (2000) also state that "most would agree that a facility's environmental performance is an outcome or result of its operational system", meaning that effectiveness in environmental activities is regarded as one of organization's operational goals. As, the environmental improvement in organizations is important and seen as one facet of organizational effectiveness (Daily et al., 2009) because of reducing environmental troubles (Jabbour and Santos, 2008) and increasing financial performance (Ramanathan, 2018).

Thus, corporate environmental performance is viewed as an organization's affirmative outcome towards the natural environment and seen as a part of organizational performance of firms (Daily et al., 2012).

## **2.4 Applied organizational theories**

### ***Ability-Motivation-Opportunity (AMO) theory***

According to Appelbaum et al. (2000) and Boxall and Purcell (2003), the AMO theory emphasizes that HRM practices may have a connection to the organizational performance through developing employees' ability (e.g. recruitment, training), enhancing employees' motivation (e.g. performance management, reward), and providing employees green opportunity to participate (employee involvement, suggestion systems, and organizational culture). The theory has been revealed by several management researchers.

On the basis of AMO theory, widely accepted in HRM literature for explaining the linkage between HRM and organizational performance, Renwick et al. (2013) have worked on GHRM practices. In accordance with Renwick et al. published studies, and the AMO framework, GHRM practices include three main components aiming to develop green abilities, motivate green employees, and create green opportunities. Also, under this theory, GHRM practices can be able to affect an individual's abilities (by training), motivation (by reward, performance management), and opportunities (by employee involvement, teamwork, organizational culture) that may be expected to influence directly and indirectly (via employee environmental commitment and OCBE) corporate environmental performance. Further, extending Blumberg and Pringle's (1982) arguments in to green context, it is argued that interaction among GHRM practices may have connection to organizations' environmental performance.

### ***Social Exchange Theory***

The social exchange theory coined by Emerson (1976) is one of the most influential theories applied in studies for investigating the workplace behavior. The theory indicates that when an employee perceives benefits from their organization's actions, they feel obligated to reciprocate (Jiang et al., 2012). Here, the reciprocity

rule is central for utilizing the social exchange theory, which has been paid attention by many management researches.

From research objectives, this study needs to measure the connections of GHRM practices to employee environmental commitment and OCBE. By extending this theory, an effective GHRM application is expected to influence employees' perception which motivates them to reciprocate their organization. In green context, employee environmental commitment and OCBE representing two of these reciprocal behaviors have become an interesting research field in management fields. Consequently, social exchange theory is appropriate for examining the linkages between GHRM practices and employee environmental commitment and OCBE.

### **3. QUALITATIVE STUDY – Applied green human resource management practices**

Developing employees' green ability by recruiting and training is important but the qualitative work only indicates an emphasis on green training instead of both. Specifically, hotels adequately run the environmental training programs. Training programs, such as energy efficiency, waste management, and recycling, are necessary for all employees. Hotels also address the roles of training communication (e.g., by e-mail group, notices) and of evaluating the performance of the program.

GHRM practices, such as green employee involvement and organizational culture, have been applied at such hotels, especially in cases A and B. For instance, sharing environmental initiatives or programs with others (e.g., setting green team, meetings, green boxes) is highlighted by such both hotels. For green organizational culture, this practice is underlined in both cases through hotel's vision, mission and core value. These hotels have considered the environmental responsibility as one of the strategic priorities and addressed the importance of the hotel's top management in giving environmental programs, initiatives, and goals to employees.

Lastly, green performance management and reward systems have been concerned by hotels, especially in hotels B and C. Setting environmental targets/responsibilities for individuals and teams, providing environmental feedbacks to them, and reports of environmental performance have been pointed out at such hotels. In terms of motivating employees by green rewards, this study acknowledges the importance of offering both non-monetary-based rewards through recognition from supervisors/managers and monetary-based rewards (e.g., bonus) to employees and teams.

Table 2 summarizes the applied GHRM practices as follows

Table 2 Applied GHRM practices

Green practices		Case A		Case B		Case C	
		M	E	M	E	M	E
Training	Hotel provides all employees with environmental trainings.	V	V	V	V	V	V
	Hotel communicates environmental training and information to the workforce.	V	V	V	V	V	V
	There are evaluations about performance of training program.	V	V	V	V	V	V
Performance management	Hotel establishes the EM information system for monitoring these activities.	V	X	V	X	V	X
	Hotel requires the report of employee's environmental performance.	X	X	V	V	V	V
	The environmental performance is an indicator of performance management system.	X	X	V	V	V	V
	Hotel sets the clear green targets and responsibilities for employees and managers	X	X	V	V	V	V
	Supervisors monitor the environmental protection activities.	V	V	V	V	V	V
	Hotel translates environmental feedbacks (from customers or top management) to employees or teams.	V	V	V	V	V	V
Pay and reward	Hotel has the monetary-based reward (e.g., bonus).	X	X	V	V	V	V
	Hotel sets up green targets as a part of reward system.	X	X	V	V	V	V
	Hotel establishes the recognition-based reward.	V	V	V	V	V	V
Employee involvement	Employees consult and suggest solutions in solving environmental issues.	V	V	V	X	X	X
	Employees are encouraged to make suggestions and decisions for environment improvements.	V	V	V	V	X	X
	Hotel emphasizes sharing environmental initiatives or programs with employees (e.g., green team).	V	V	V	V	X	X

	Hotel gives opportunities to employees to involve and participate in green suggestion schemes.	V	V	V	V	X	X
Green organizational culture	Vision, mission, and value consist in emphasizing the environmental protection.	V	X	V	X	X	X
	Top management provides employees with environmental training, initiatives, and goals.	V	V	V	X	X	X
	Hotel has environment-oriented policies in management and specific environmental tasks.	V	V	V	V	X	X
	Hotel defines punishment system in case of noncompliance in environmental regulations and rules.	V	V	V	V	X	X

*V: Applied practices in hotel, X: Not yet; M: Managerial level, E: Employee level.*

*(Source: the author)*

## 4. QUANTITATIVE STUDY – Hypothesis development and conceptual framework

### 4.1 Summary of research hypotheses

Table 3 illustrates the proposed hypotheses aimed at investigating

(1) the direct effects of GHRM practices, such as green training, green performance management, and green employee involvement, on employee environmental commitment, OCBE, and corporate environmental performance;

(2) the indirect effects of such GHRM practices on corporate environmental performance via the mediating roles of employee environmental commitment and OCBE; and

(3) the interactive effects among GHRM practices on corporate environmental performance.

Table 3 Summary of proposed hypotheses

<b>Hypotheses</b>
<i>Direct influences</i>
Effects of Green human resource management practices on Employee environmental commitment and OCBE

H1a	<i>Green training has a significant and positive effect on employee environmental commitment</i>
H1b	<i>Green performance management has a significant and positive effect on employee environmental commitment</i>
H1c	<i>Green employee involvement has a significant and positive effect on employee environmental commitment</i>
H2a	<i>Green training has a significant and positive effect on OCBE</i>
H2b	<i>Green performance management has a significant and positive effect on OCBE</i>
H2c	<i>Green employee involvement has a significant and positive effect on OCBE</i>
<b>Indirect influences</b>	
Employee environmental commitment and OCBE mediate effects of Green human resource management practices on corporate environmental performance	
H3a	<i>Green training has a significant and positive effect on corporate environmental performance</i>
H3b	<i>Green performance management has a significant and positive effect on corporate environmental performance</i>
H3c	<i>Green employee involvement has a significant and positive effect on corporate environmental performance</i>
H4a	<i>Employee environmental commitment mediates effects of green training on corporate environmental performance</i>
H4b	<i>Employee environmental commitment mediates effects of green performance management on corporate environmental performance</i>
H4c	<i>Employee environmental commitment mediates effects of green employee involvement on corporate environmental performance</i>
H5a	<i>OCBE mediates effects of green training on corporate environmental performance</i>
H5b	<i>OCBE mediates effects of green performance management on corporate environmental performance</i>
H5c	<i>OCBE mediates effects of green employee involvement on corporate environmental performance</i>
<b>Interactive influences</b>	
The interactive effects of Green human resource management practices on corporate environmental performance	
H6a	<i>There is a two-way interactive effect of green training and green performance management on corporate environmental performance.</i>
H6b	<i>There is a two-way interactive effect of green training and green employee involvement on corporate environmental performance.</i>

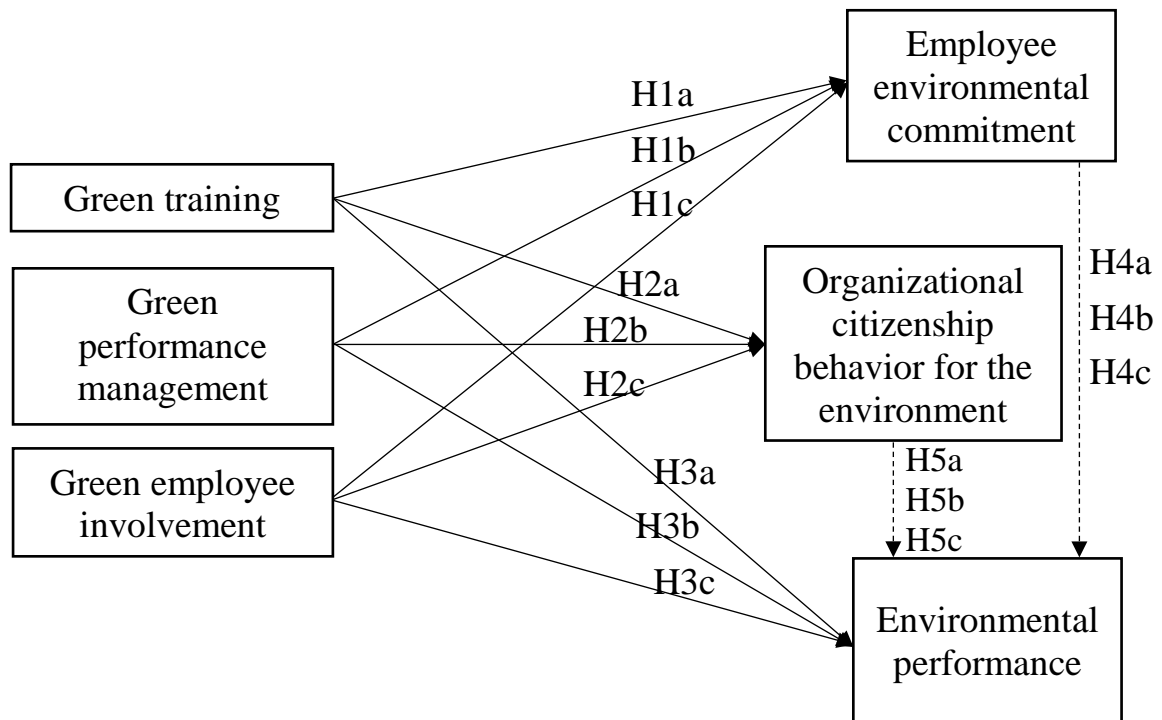


H7	<i>There is a three-way interactive effect among green training, green performance management, and green employee involvement on corporate environmental performance</i>
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*(Source: the author)*

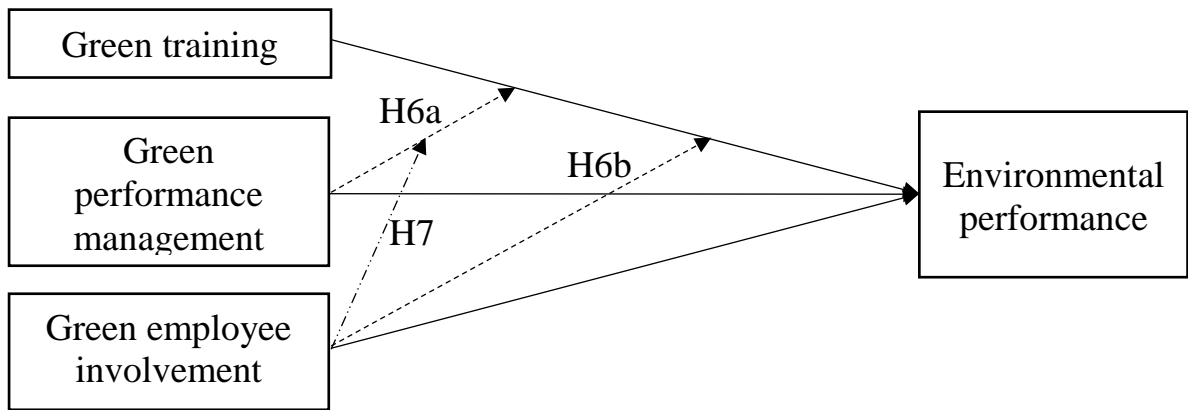
## 4.2 Conceptual framework

Anchored on AMO and social exchange theories, and the existing literature of GHRM, this work develops conceptual frameworks as follows



*(Source: the author)*

*Figure. 1: Conceptual framework - effects of GHRM practices on environmental performance*



(Source: the author)

Figure. 2: Conceptual framework - interactive effects among GHRM practices on environmental performance

## 5. QUANTITATIVE STUDY – Hypothesis testing

### 5.1 Measurement assessment

According to Nunally and Bernstein (1994), the results (see Table 5) indicate a reasonable reliability as Cronbach’s alpha and composite reliability are higher than the benchmark of 0.7. The acceptable convergent validity is recognized because all AVE (Average Variance Extracted) values exceed 50% (Hair et al., 2011), which is the case for the present data (see Table 4). Finally, Fornell-Larcker criterion (Fornell and Larcker, 1981) is used to test the discriminant validity. For each variable, the square root of AVE needs to be larger than the highest correlation (see Table 4). The author therefore concludes that the discriminant validity is consistent for the research.

Table 4 Correlation and Discriminant validity

	AVE	(1)	(2)	(3)	(4)	(5)	(6)
<b>EP (1)</b>	0.711	<b>0.843</b>	-	-	-	-	-
<b>EEC (2)</b>	0.557	0.352	<b>0.746</b>	-	-	-	-
<b>OCBE (3)</b>	0.538	0.401	0.629	<b>0.733</b>	-	-	-
<b>EIN (4)</b>	0.587	0.579	0.461	0.525	<b>0.766</b>	-	-
<b>PEM (5)</b>	0.600	0.369	0.462	0.469	0.423	<b>0.775</b>	-
<b>TRA (6)</b>	0.573	0.534	0.589	0.532	0.521	0.536	<b>0.757</b>

Note: Values for the square root of the AVE are placed in the main diagonal in the matrix in bold font.

(Source: the author)

Table 5 Constructs and Measurement Model Assessment

Constructs/items	Code	Mean	Indicator loadings
<b>Green training (TRA)</b> <b>Cronbach's Alpha = 0.850; Composite Reliability = 0.889</b>			
An adequate amount of training in environmental issues is provided for direct employees within the hotel	TRA1	3.591	0.810
Employees can get a chance to be trained on environmental issues	TRA2	3.591	0.678
Employees receive environmental training frequently	TRA3	3.468	0.759
Employees use their environmental training effectively	TRA4	3.650	0.775
Employees have many opportunities to use the environmental training	TRA5	3.596	0.740
There is adequate evaluation of employee's performance after offering environmental training	TRA6	3.664	0.774
<b>Green performance management (PEM)</b> <b>Cronbach's Alpha = 0.834; Composite Reliability = 0.882</b>			
Employees know the specific environmental targets, goals and responsibilities that each employee must accomplish	PEM1	3.591	0.734
Employees' environmental behavior/targets and contributions to hotel's environmental performance are assessed	PEM2	3.736	0.775
Providing regular feedback to employees or teams to achieve environmental goals or improve hotel's environmental performance	PEM3	3.705	0.771
Achievement of environmental goals is seen as one of the criteria in system of employee performance appraisal	PEM4	3.896	0.816
Roles of managers in achieving environmental outcomes included in appraisals	PEM5	3.723	0.775
<b>Green employee involvement (EIN)</b> <b>Cronbach's Alpha = 0.823; Composite Reliability = 0.876</b>			
Providing opportunities to employees to involve and participate in green suggestion schemes and	EIN1	3.736	0.801

joint consultations for environmental issues problem solving			
The hotel offers workshops or forums for staff to improve environmental behavior and exchange their tacit knowledge	EIN2	3.623	0.693
Managers keep open communications with employees on environmental issues	EIN3	3.573	0.794
Employees are allowed to make decisions concerning environmental problems	EIN4	3.677	0.713
Employees are involved in problem-solving groups related to environmental matters	EIN5	3.768	0.821
<b>Organizational citizenship behavior towards the environment (OCBE)</b> <b>Cronbach's Alpha = 0.857; Composite Reliability = 0.891</b>			
I suggest new practices that could improve the hotel's environmental performance	OCBE1	3.627	0.782
I encourage my colleagues to adopt more environmentally conscious behaviors	OCBE2	3.691	0.709
I stay informed of the hotel's environmental efforts	OCBE3	3.673	0.757
I make suggestions about ways to protect the environment more effectively	OCBE4	3.732	0.753
I volunteer for projects or activities that address the hotel's environmental issues	OCBE5	3.627	0.667
I spontaneously give my time to help my colleagues take the environment into account	OCBE6	3.677	0.693
I undertake environmental actions that contribute positively to the hotel's image	OCBE7	3.636	0.767
<b>Employee environmental commitment (EEC)</b> <b>Cronbach's Alpha = 0.866; Composite Reliability = 0.897</b>			
I really care about the environmental concern of the hotel	EEC1	3.750	0.826
I would feel guilty about not supporting the environmental efforts of the hotel	EEC2	3.618	0.758
The environmental concern of the hotel means a lot to me	EEC3	3.586	0.729
I feel a sense of duty to support the environmental efforts of the hotel	EEC4	3.586	0.619
I really feel as if the hotel's environmental problems are my own	EEC5	3.646	0.777

I feel personally attached to the environmental concern of the hotel	EEC6	3.627	0.694
I strongly value the environmental efforts of the hotel	EEC7	3.650	0.799
<b>Corporate environmental performance (EP)</b> <b>Cronbach's Alpha = 0.919; Composite Reliability = 0.937</b>			
The hotel manages well wastes and emissions from operations	EP1	3.296	0.889
The hotel manages well the risks such as: the environmental accidents, the use of water, electricity	EP2	3.332	0.824
The hotel reduces uses of non-renewable materials and components, and toxic materials	EP3	3.327	0.803
The hotel manages well the water consumption	EP4	3.327	0.812
The hotel manages well the energy consumption	EP5	3.355	0.861
The hotel limits the damage to landscape	EP6	3.427	0.868

(Source: the author)

## 5.2. Hypothesis testing

*Effects of Green human resource management practices on Organizational citizenship behavior towards the environment, Employee environmental commitment, and Corporate environmental performance*

Table 6 Hypothesis Testing and Path Coefficients (Direct Effects)

Hypothesis	Path	Coefficient (b)	Conclusion
H1a	TRA -> EEC	0.4054*	Supported
H1b	PEM -> EEC	0.1687	Rejected
H1c	EIN -> EEC	0.1789	Rejected
H2a	TRA -> OCBE	0.2696*	Supported
H2b	PEM -> OCBE	0.1974	Rejected
H2c	EIN -> OCBE	0.3012*	Supported
H3a	TRA -> EP	0.3034*	Supported
H3b	PEM -> EP	0.0349	Rejected
H3c	EIN -> EP	0.4058*	Supported

Note: \*Direct effect is significant at the 0.05 level.

(Source: the author)

***Organizational citizenship behavior towards the environment and Employee environmental commitment mediate effects of Green human resource management practices on environmental performance***

Table 7 Hypothesis Testing and Path Coefficients (Indirect Effects)

Hypothesis	Path	Coefficient (b)	Conclusion
H4a	TRA -> EEC -> EP	-0.0200	Rejected
H4b	PEM -> EEC -> EP	0.0662	Rejected
H4c	EIN -> EEC -> EP	0.0358	Rejected
H5a	TRA -> OCBE -> EP	0.0548*	Supported
H5b	PEM -> OCBE -> EP	0.0759*	Supported
H5c	EIN -> OCBE -> EP	0.0485	Rejected

Note: \*Indirect effect is significant at the 0.05 level.

(Source: the author)

***The interactive effects of Green human resource management practices on environmental performance***

Table 8 Hypothesis Testing and Path Coefficients (Interactive Effects)

Hypothesis	Path	Coefficient (b)	Conclusion
H6a	TRA x PEM -> EP	0.0744	Rejected
H6b	TRA x EIN -> EP	0.4136*	Supported
H7	TRA x PEM x EIN -> EP	0.1544	Rejected

Note: \*Interactive effect is significant at the 0.05 level.

(Source: the author)

***Conditional process analysis – testing the interactive effect of green training and employee involvement on corporate environmental performance***

Table 9 Conditional influences at varying values of green employee involvement (EIN)

Moderators	Focal predictors	
	Coefficient (b)	Conclusion
LOW	0.2240*	TRA significantly influences EP
AVERAGE	0.4162*	TRA significantly influences EP
HIGH	0.6726*	TRA significantly influences EP

Note: \*Conditional effect is significant at the 0.05 level.

(Source: the author)

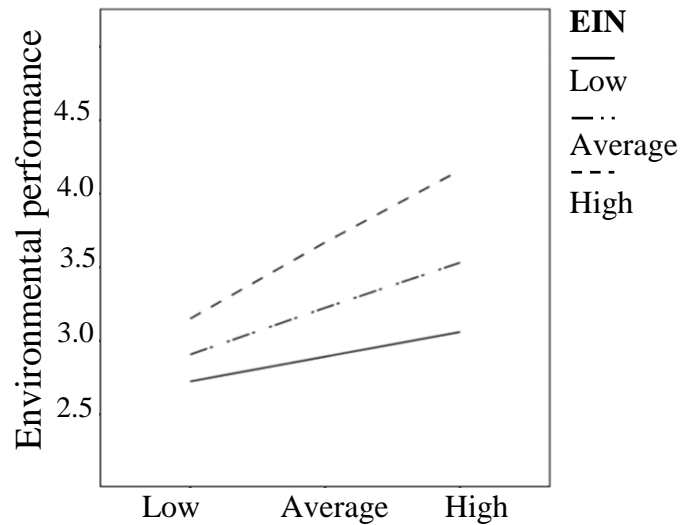


Fig. 3: Conditional effect at the values of EIN

(Source: the author)

As illustrated in research questions and objectives, the quantitative study aims to investigate the direct and interactive influences among GHRM practices on corporate environmental performance, and the mediating influences of employee environmental commitment and OCBE on such connections. With eight-ten proposed hypotheses, the thesis supports following hypotheses: H1a, H2a, H2c, H3a, H3c, H5a, H5b, and H6b, while H1b, H1c, H2b, H3b, H4a, H4b, H4c, H5c, H6a, and H7 are rejected. Table 16 summarizes hypothesis testing as follows.

Table 16 A summary of tested hypotheses

Hypotheses		Conclusion
H1a	<i>Green training has a significant and positive effect on employee environmental commitment</i>	Supported
H1b	<i>Green performance management has a significant and positive effect on employee environmental commitment</i>	Rejected
H1c	<i>Green employee involvement has a significant and positive effect on employee environmental commitment</i>	Rejected
H2a	<i>Green training has a significant and positive effect on OCBE</i>	Supported
H2b	<i>Green performance management has a significant and positive effect on OCBE</i>	Rejected

H2c	<i>Green employee involvement has a significant and positive effect on OCBE</i>	Supported
H3a	<i>Green training has a significant and positive effect on corporate environmental performance</i>	Supported
H3b	<i>Green performance management has a significant and positive effect on corporate environmental performance</i>	Rejected
H3c	<i>Green employee involvement has a significant and positive effect on corporate environmental performance</i>	Supported
H4a	<i>Employee environmental commitment mediates effects of green training on corporate environmental performance</i>	Rejected
H4b	<i>Employee environmental commitment mediates effects of green performance management on corporate environmental performance</i>	Rejected
H4c	<i>Employee environmental commitment mediates effects of green employee involvement on corporate environmental performance</i>	Rejected
H5a	<i>OCBE mediates effects of green training on corporate environmental performance</i>	Supported
H5b	<i>OCBE mediates effects of green performance management on corporate environmental performance</i>	Supported
H5c	<i>OCBE mediates effects of green employee involvement on corporate environmental performance</i>	Rejected
H6a	<i>There is a two-way interactive effect of green training and green performance management on corporate environmental performance.</i>	Rejected
H6b	<i>There is a two-way interactive effect of green training and green employee involvement on corporate environmental performance.</i>	Supported
H7	<i>There is a three-way interactive effect among green training, green performance management, and green employee involvement on corporate environmental performance</i>	Rejected

(Source: the author)



## 5.2 Discussion

This research aims to investigate the relationships between GHRM practices (training, performance management, and employee involvement) and corporate environmental performance in the hotel industry. These findings are highlighted and discussed with respect to the three research questions as follows.

*“RQ2: Do GHRM practices affect employee environmental commitment, OCBE, and hotel’s corporate environmental performance?”*

*“RQ3: Do employee environmental commitment and OCBE mediate the linkages between GHRM practices and hotel’s corporate environmental performance?”*

*“RQ4: Are there interactive effects among GHRM practices on hotel’s corporate environmental performance?”*

### ***The direct influences of GHRM practices on employee environmental commitment, OCBE, and corporate environmental performance.***

Regarding the first research question, except for green performance management, the study confirms that GHRM practices, especially green training and green employee involvement, are important enablers for strengthening individual commitment and voluntary behavior towards the environment at work and the hotel’s environmental performance. Therefore, considering activities such as providing employees with adequate training and creating opportunities for them to be involved in green suggestion schemes could improve their environmental attitudes and behavior and improve green performance. The findings of this work show relationships between GHRM practices and employee environmental commitment. Environmental policies aimed at developing employee competence (e.g. training programs) and providing green opportunities through employee involvement are critical for organizations to stimulate individual responsibility and attachment at the workplace (Pinzone et al., 2016). Analyzed results also confirm links between GHRM practices and OCBE. Previous studies suggest the relevance of the application of environmental training and employee involvement in strengthening green voluntary behavior (Saeed et al., 2018). In addition, the effects of green training and employee involvement on corporate environmental performance are proven by this research. This is in line with Guerci et al.’s (2016) and Moraes et al.’s (2018) conclusions. Thus, these findings are consistent with the existing GHRM literature.

Contrary to the author’s expectation, green performance management does not directly influence employee environmental commitment, OCBE, and hotel’s environmental performance. Though appraising employee’s green activities may partially boost the environmental knowledge, skills and abilities (Masri and Jaaron, 2017) and encourage the environmental engagement and responsibility of employees (Govindarajulu and Daily, 2004), analyzed results have no support this argument. As an environmental performance management commonly has less effect on intrinsic motivational drivers; for example, employee commitment towards the environment

(Pinzone et al., 2016). Similarly, failure to influence of green performance management on OCBE and environmental performance is not in line with previous works. For instance, two direct effects of this practice on OCBE and corporate green performance are supported by Saeed et al.'s (2018) and Pham et al.'s (2019) studies, and Guerci et al.' (2016) study, respectively.

***The mediating influences of employee environmental commitment and OCBE towards the connections between GHRM practices and corporate environmental performance.***

The results confirm the critical mediating roles of both employee commitment and OCBE in the influence of GHRM practices, especially green training and green performance management, on corporate environmental performance. This is the first study in which such effects have been investigated to fill the existing research gap in published studies and address the second research question. Specifically, the empirical findings demonstrate that these two green practices result in stronger green performance through the mediating role of individual green voluntary behavior and their sequential mediation analysis of both OCBE and employee environmental commitment. Therefore, stimulating employees' attachment to, responsibility for, and discretion in green projects in the workplace is important to increase the effectiveness of environmental training and performance management policies aimed at achieving the organization's green goals. Though there is a lack of empirical studies that specifically investigate the links between each of the GHRM practices to environmental performance via individual environmental commitment and green behavior, the findings are in line with Kim et al.'s (2019) suggestion, which states that the success of environmental management depends on the application of GHRM through the mediating role of employees' green voluntary behavior. In the literature, Ren et al. (2018) propose a theoretical framework that implies that an effective green strategy may promote environmentally friendly attitudes and behavior, consequently improving environmental performance. With respect to the unexpected findings, the mediating role of employee environmental commitment is not supported. Merely maintaining this factor is not enough to mediate the effects of GHRM on environmental performance. In addition, the analysis of the links between green employee involvement and the dependent variables via the sequential mediation analysis of the two mediator variables confirms that there is no influence. This analysis complements existing studies recommending that OCBE be seen as a key point in unlocking and mediating relationships between GHRM practices (e.g. green training and performance management) and corporate environmental performance, even though employee commitment is also suggested as a mediating factor (Ren et al., 2018).

***The interactive influences of GHRM practices on corporate environmental performance.***

By utilizing interaction analysis to explore the interactive effects of GHRM practices on environmental performance, the results support the proposition that integrating both green training and green employee involvement together significantly strengthens a hotel's environmental performance, especially when green employee involvement levels are high or average. This bridges the research gaps surrounding the interactions of GHRM practices and provides a response to the third research question. Training programs and employee involvement policies for the environment should be implemented simultaneously; thus, organizations need to ensure that not only are green training programs provided to all employees, but also that policies are in place to encourage employees to be involved in green suggestion schemes and environmental activities at work. Although the author acknowledges that there is a lack of published papers investigating the interactions of GHRM practices in the green context in particular, the findings of this study are in line with the suggestions of a few previous studies to employ the AMO framework to examine links between HRM practices and performance in general (e.g. Bos-Nehles et al., 2013). However, unexpected results are also found; for instance, in relation to the two-way interaction of green training and green performance management and the three-way interaction of the three GHRM practices. This contradicts the arguments of Blumberg and Pringle (1982), who argue that performance could be greater when practices to develop employee abilities (e.g. training), motivate employees (e.g. performance management), and provide opportunities (e.g. employee involvement) need to be implemented together. This work adds a rich understanding of the interactions among GHRM practices and their roles to the existing literature.

Generally, green performance management is not seen as a critical tool to stimulate employee environmental commitment and OCBE as well as drive corporate environmental performance. Although some published studies reveal the significant contribution of this practice to pro-environmental behavior and company's green effectiveness, this may not be consistent with this work. Because individual's eco-friendly commitment and behaviors, which are not required or rewarded by organizations, may be affected by their perceptions towards the organization's green climate/culture and green strategy (Saeed et al., 2018). Thus, green policies aimed at encouraging employees to actively participate in environmental activities at work: for example, creating green opportunities for them to involve in joint consultation for solving environmental issues, that may be preferred than green practices designed to focus on employee's green performance evaluation in boosting employee commitment and behaviors for the environment. In turn, it enhances corporate green performance. In addition, respondents chosen to conduct this study are managerial employees influenced by local culture (Vietnamese culture), and thus, the results of green performance evaluation may have less influence their engagement and behavior towards the environmental protection than non-managerial employees. As such, the

position of employees (managerial & non-managerial levels) may be considered to understand whether appraising employee's green performance should be applied to enhance organisation's green performance.

## 6. THEORETICAL AND PRACTICAL CONTRIBUTION

This thesis consists of several contributions. First, by extending the AMO theory framework into the green context, the study is first to investigate the mediating roles of employee environmental commitment and OCBE on the linkages between GHRM practices and corporate environmental performance.

Second, the study contributes to the existing literature of GHRM by highlighting the AMO theory in exploring the interactions of GHRM practices in generating corporate environmental performance. This is critical to bridge the limitations of published studies; scholars have not yet concentrated on the interactive effects of GHRM practices despite some concerns in current GHRM-oriented studies.

Third, anchored on AMO and social exchange theories, although addressed by a few prior researches (e.g. Pinzone et al., 2016), this work sheds light on the existing literature by clarifying contributions of GHRM application in directly enhancing employee environmental commitment, OCBE, and corporate environmental performance, especially in the hotel industry.

Fourth, this study provides an insight into GHRM application in the hotel industry and clarify empirical evidences that hotels' top management need to focus on applying such GHRM practices to stimulate employee environmental commitment and voluntary workplace green behavior, accordingly improve environmentally sustainable development at hotels.

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**Pham, N. T.**, & Tučková, Z. (2018). Green Human Resource Management Practices in the Hospitality Sector. 1<sup>st</sup> International Conference on Tourism Research 2018, JAMK University of Applied Science, Jyväskylä, Finland.

**Pham, N. T.,** Vo, Ng., Nguyen, Lien. H. L., & Nguyen, H. M. (2018). Why Human Resource Management Should Go Green in Hotels: Internal Benefit Perspective. 12<sup>th</sup> International Management Conference (ICM 2018) - Management Perspectives in the Digital Era, Bucharest, Romania.

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Vo, Ng., Chovancová, M., Nguyen, Lien. H. L., & **Pham, N. T.** (2018). The Contribution of Guest Online Reviews on Upscale Hotels to Sustainable Tourism. 5<sup>th</sup> International Conference on Finance and Economics, Ton Duc Thang University, Vietnam.

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**Pham, N. T.,** Phan, Q. P. T., Tučková, Z., Nguyen, L. H. L. (2018). Role of Motivating Green Employee in Enhancing Eco-Initiative: A Study in the Hotel Industry. Economics, Management, Finance (EMF 2018): New Trends and Challenges for Academics and Entrepreneurs, Pan-European University, Bratislava, Slovak Republic.

Thanh, V.T., Nguyen, T.H.L., **Pham, N.T.,** & Le, N.H. (2019). How does relationship quality influence customer loyalty in a group package tour? An interactive analysis. 25<sup>th</sup> Asia Pacific Tourism Association Annual Conference, Da Nang, Vietnam.

# **AUTHOR'S CURRICULUM VITAE**

## **1. Personal information**

- Full name: Nhat Tan Pham
- Address: Nám. T.G. Masaryka 3050, 76001 Zlín, Czech Republic.
- Nationality: Vietnamese
- Mail: [nhatpham1729@gmail.com](mailto:nhatpham1729@gmail.com) and [pham@utb.cz](mailto:pham@utb.cz)

## **2. Work experience**

- 2010 - Ongoing: Lecturer at University of Labour and Social Affairs (Campus II), Ho Chi Minh City, Vietnam.
- 2010: Marketing research assistant at PROMIND Company, Ho Chi Minh City, Vietnam.

## **3. Education**

- 2017 - Ongoing: Phd candidate at Tomas Bata University in Zlín, Zlín, Czech Republic.
- 2011 - 2014: Master degree at University of Economics Ho Chi Minh City, Ho Chi Minh City, Vietnam.
- 2006 - 2010: Bachelor degree at University of Economics Ho Chi Minh City, Ho Chi Minh City, Vietnam.

## **4. Research interests**

Green HRM, sustainable HRM, HRM, sustainable business, circular economy, sustainable consumption & production, tourism management, hospitality management & marketing.

## **5. Research activities at Tomas Bata University in Zlín**

Head of the research team, Internal Grant Agency of FaME TBU No. IGA/FaME/2018/009 “HRM application as a source of organizational performance in tourism services in the context of sustainable tourism” - Guarantor: Tučková Zuzana, doc. Ing. Ph.D.

## **6. Research contributions**

He published 10 papers (in Vietnamese and English) in peer reviewed Journals, and 10 conference papers (in Vietnamese and English).



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