

HOTELS' GREEN PRACTICES ADOPTION: DETERMINANTS AND TOP MANAGERS' ENVIRONMENTAL COMMITMENT

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ABSTRACT

This study aims to examine the mediating effects of top managers' environmental commitment (EC) between three key variables (i.e., subjective norms, perceived benefits, and environmental knowledge) and the adoption of green practices in Malaysian hotels. This study also evaluates the direct linkages among these variables. A total of 147 hotel top managers returned the completed and valid questionnaires. The participants consisted of top managers, such as owners, general managers, CEOs, and senior managers who possess managerial discretion regarding the hotel's green practices. Top managers' EC was found to be significantly related to green practices adoption in the hotels. Subjective norms (i.e., perceived stakeholder pressure) and environmental knowledge showed direct influences on top managers' EC. On the other hand, the hotels' green practices were mainly explained by environmental knowledge and perceived benefits. Top managers' EC was found to fully mediate the relationship between subjective norms and green practices. Besides, EC partially mediates the linkage between environmental knowledge and green practices. These findings suggest that exposure to environmental knowledge through different platforms and frequent monitoring of the stakeholders' expectations are beneficial in enhancing environmental commitment among hotel top managers and embracing green practices.

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INTRODUCTION

In recent years, there has been rising pressure from various stakeholders in business organizations to embrace green practices in response to the devastating environmental conditions such as climate change. Climate change does not only result in the rise of global surface temperatures but also the loss of habitat, an increase in sea level, and extreme weather events (National Geographic, 2020). Proactive actions by hotel management in adopting green practices are essential, given the large consumption of resources, non-durable products, water, and electricity in the sector (Dimara et al., 2017). Merli et al. (2019) found that the hotel and accommodation sector produced approximately 20% of tourism-related emissions. To be aligned with the Paris Climate Change Agreement and the United Nation's Global Goals, the hotel industry needs to achieve carbon emission abatement levels of 66% and 90% by the year 2030 and 2050, respectively (United Nations, 2018). Furthermore, a recent survey has also shown that 87% of millennials were found to be more loyal to hotel brands that endorse green or environmentally-friendly practices (Shedd, 2020). Yi et al. (2018) state that consumers are increasingly concerned with environmental issues, leading to rising demand for hotels that are actively implementing green practices. In short, green practices are not merely an inviting concept for today's hoteliers, but have gradually evolved into an essential part of an organization's strategic plan that can be served as a source of competitive advantage, especially with the rise of green-conscious consumers (Rahman et al., 2012; Verma & Chandra, 2018).

Generally, green practices encompass different business activities that aim at reducing the adverse implications on the environment (Kim et al., 2017). Kim et al. (2017) further defined green practices in the hospitality industry as a value-added business strategy that brings about advantages to the operators through environmental protection initiatives. Hotels that advocate green practices tend to be involved in resources conservation efforts (e.g., waste management, reduce consumption of water and energy), to purchase eco-friendly products, as well as develop environmental policy and training program (Bagur-Femenias et al., 2016; Choi et al., 2019; Kim et al., 2018b). Kim et al. (2017) summarized that hospitality operators in developed countries participate more actively in green practices as compared to the developing nations, like Malaysia. This is mainly due to the developed nations, particularly European countries that are in the forefront of environmental protection had started the environmental policies much earlier than the other developing countries (Kim et al., 2018b). Typically, larger hotels have more resources for green practices adoption,

but recent studies indicated that smaller scale hotels are joining the green bandwagon (Fernández-Robin et al., 2019). Thus, green initiatives are also important to small-scale hotels as they are personalized and flexible which cannot be offered by larger hotels or chain hotels (Musavengane, 2019).

Past studies have demonstrated several beneficial outcomes of green practices among hoteliers, such as better corporate image, operational efficiency, financial performance, customer satisfaction and customers' revisit intention (Alonso-Almeida et al., 2017; Han et al., 2018; Kim et al., 2016; Teng et al., 2018; Wan et al., 2017; Yin et al., 2019). Thus, hoteliers increasingly value the importance of implementing green initiatives to increase guests' trust (Moise et al., 2021). Meanwhile, the Stakeholder Theory (Freeman, 1984) contends that businesses should take care of different stakeholders' well-being, instead of merely focusing on maximizing profit. Stakeholders' demands have increasingly emerged as social pressure that can influence organizational strategy in recent years, as organizations must conform to regulatory requirements and accepted norms of behavior in the society (Park & Kim, 2014; Saleem et al., 2020).

Despite rising stakeholders' influences and wide coverage about environmental problems in various publications and media, hotel managers tend to have different standpoints and reactions towards the adoption of green practices in their organizations; some act proactively while others remain uninterested and are skeptical of its potential benefits (Alonso-Almeida et al., 2017; Best & Thapa, 2013). This is not surprising as Keogh and Polonsky (1988) argued that one's commitment to the natural environment is partly intrinsically motivated. In this regard, several researchers have stressed on the need to conduct more empirical studies in determining the implications of personal or individual-level factors of the top managers on green practices adoption (Papagiannakis & Lioukas, 2012; Park et al., 2014).

Moreover, from the perspective of Upper Echelons Theory (Hambrick & Mason, 1984), top managers' cognitions, values, and perceptions influence the strategic choices for their organization. Top managers have profound impacts on corporate culture, resource allocation, direction, and strategies of the organization. Top managers' characteristics (e.g., personal values and environmental concern) are related to attitude change for a more environmentally responsive organization (Papagiannakis & Lioukas, 2012; Park & Kim, 2014). It is also important to note that environmental knowledge fosters awareness about the interconnection between organizational activities and consequences to the

environment, thus stimulating the managers to select a development path that can strike a better balance between economic and social development (Chan et al., 2014; Rahman & Reynolds, 2016). Managers' environmental knowledge is not meaningful if it is unable to build the commitment that can lead to green actions.

Thus far, only some studies (e.g., Cantor et al., 2013; Kim et al., 2015; Saleem et al., 2020) evaluated the linkage between top managers' environmental commitment (EC) and green practices in the hotel industry. Moreover, factors that shape such commitment among the top managers remain under-explored. As stressed by Raineri and Paillé (2016), research on individual EC, especially among top managers is not very extensive in contrast to work-related commitment among employees that was widely documented in the organizational behavior literature. Kim et al. (2015) emphasized the need to better understand how individual-level factors affect organizational outcomes (i.e., green practices).

This is because top managers' EC is a key ingredient affecting employees' beliefs and attitude towards green practices which is essential for the organizational goals and in response to stakeholders' demands (Ojo & Fauzi, 2020). Nonetheless, most of the studies focus on the direct determinants of organizational-level outcomes, instead of the mechanism from which environmental factors and upper echelon's characteristics may indirectly affect the implementation of green practices through top managers' EC.

Taken together, this study attempts to provide an additional insight to the literature in several ways. Firstly, we intend to examine the mediating role of top managers' environmental commitment on the relationship between environmental knowledge, perceived benefits, and subjective norms (perceived stakeholder pressure) with the adoption of green practices in the hotel industry in Malaysia. Secondly, we also test the direct influence of environmental knowledge, perceived benefits, and subjective norms on (i) environmental commitment, and (ii) adoption of green practices. The result of this study can benefit hotel management, especially in environmental education and implementation of green practices in the hotel sector. This study also provides information on managerial functions toward the green practices of the hotel.

LITERATURE REVIEW

Top Managers' Environmental Commitment (EC) and Green Practices

EC was defined in different ways depending on the purpose, level of analysis, and context of the study. For the individual-level analysis, Yu et al. (2019, p. 3) described EC as "individual's pursuit of environmental sustainability, willingness to sacrifice personal enjoyment, reducing waste of resources, using environmentally friendly new products and supporting government's adaptation strategies". On the other hand, Davis et al. (2009, p. 178) explained that EC reflects one's "psychological attachment to and long-term orientation toward the natural world". Commitment can be described as "intending to continue in a line of action" (Agnew, 2009, p. 1). The present study focuses on the EC of the hotels' top managers, which can be expressed as "individual involvement and support for hotels' adoption of environmental practices" (Kim et al., 2015, p. 1502).

The concept of EC provides direction to manager's behaviors and notably enables the formulation of green practices in achieving organizational sustainable goals. Managers with high EC would pay attention to green practices. For instance, Kim et al. (2015) described that EC of hotels' general managers encompasses elements, such as dedicated to the environmental preservation of their organization, provide full support for the environmental program, and the involvement in the formulation of environmental strategies. The top managers' EC was essential in developing management capabilities and has a sizeable effect in fostering the adoption of green practices, such as waste reduction, green purchases, water, and energy conservation, environmental training to employees and the minimization of the usage of cleaning products that are detrimental to the environment (Alonso-Almeida et al., 2017; Bagur-Femenias et al., 2016; Han et al., 2018; Kim et al., 2015). Prior study revealed that the lack of leaders' commitment and management support (e.g., Ojo & Fauzi, 2020; Yusof & Jamaludin, 2014) was among the barriers for the implementation of hotels' green practices. Managers with stronger EC play an important role as a catalyst for corporate greening (Kitsis & Chen, 2021; Raineri & Paillé, 2016) and they are able to influence employees to partake in pro-environmental behavior (Tariq et al., 2020).

As indicated in the Upper Echelons Theory (Hambrick & Mason, 1984), several aspects influence top managers' perception and interpretation of the environment such as socio-demographic factors, personality, values, experience, and cognition. Top management needs to evaluate both internal and external environmental factors in making

strategic choices that can affect the organizational performance under the condition of bounded rationality (Abatecola & Cristofaro, 2020; Bromiley & Rau, 2016; Mensah & Ampolo, 2020).

Cantor et al. (2013) stressed that a high level of organizational support and strong personal commitment demonstrated by the environmental managers significantly contributes to the implementation of green initiatives. Moreover, a recent study by Saleem et al. (2020) supported the positive link between top management commitment and corporate environmental strategy. This line of reasoning leads to the following hypothesis:

H1: Environmental commitment is positively related to hotels' green practices.

Subjective Norms

In a general view, subjective norm was originally defined by Ajzen (1991) as an individual's perceived social pressure to perform or not to perform certain behavior. Such social pressure may stem from those who are important to him or her, such as family members, relatives, friends, and colleagues (Onel, 2017). In the analysis of individual outcomes, subjective norm was found to be the precursor of a person's pro-environmental behavior, such as energy-saving, practice recyclable activities, etc. (Yusliza et al., 2020). Past studies have empirically testified the relationship between subjective norm and commitment to the environment (Budovska et al., 2019; Yu et al., 2019) in different contexts, inclusive of hotel guests and undergraduate students.

In the context of an organization, the social pressures that motivate key managers to engage in green initiatives are mainly derived from the expectations of various key stakeholders, such as suppliers, customers, employees, government, general community, and shareholders (Cantele & Zardini, 2020; Chen et al., 2017; Kitsis & Chen, 2021). Besides, non-governmental organizations can exert social pressures to the management by creating environmental awareness among the public, but their influences are not substantial as compared to other stakeholders as indicated by Wang et al. (2020). The stakeholders who are concerned about the environmental issues may influence managerial decisions in two ways, either using pressure or through cooperation (Cantele & Zardini, 2020; Parviainen et al., 2018).

Besides, several global environmental initiatives, such as the European Green Deal, Global Green New Deal, ASEAN strategic plan for environment, ASEAN tourism standard and environmental rating systems, which direct towards the achievement of green economy and sustainable tourism development have indirectly been putting pressure to various sectors, especially to hotel sector to actively engage in green practices. The hoteliers are expected to be more environmentally responsive due to the external forces (Abdou et al., 2020).

Furthermore, Davis et al. (2015) pointed out that individuals will become more committed if they depend on others to meet their needs. Hotel managers need to conform to the stakeholders' requirements or expectations as the smoothness of the hotel operation and its financial performance rely on the supports of key reference groups. Besides, organizations that embark in green practices were found to boost employees' sense of meaningfulness in their job and improve work engagement (Casey & Sieber, 2016; Karatepe et al., 2020).

This can be related to the stakeholder theory which posits that an organization's primary focus is on building relationships and generating value for its stakeholders (Freeman & Dmytriyev, 2017). Hotel managers who perceive greater pressure from various stakeholders are more committed in getting involved and supporting the formulation of environmental policies and strategies (Tumpa et al., 2019). Dubey et al. (2017) argued that to enhance the green commitment among hotels' employees; the adoption of environmental policies must be enforced by the top.

As discussed earlier, organizations need to weigh different demands by stakeholders in deciding the resource allocation to implement green practices (Calabrese et al., 2019). Hotel managers are playing the role of an agent and they are compelled to comply with the environmental rules imposed by the local council or relevant associations. In many instances, the design and implementation of green policies are due to strong institutional pressure (Gupta & Gupta, 2021). Likewise, Ouyang et al. (2019) explained that the institutional environments, such as the regulative environment (e.g., government regulation and policies), normative environment (e.g., competitors' practices and industry association that can detect the norms and standards in the industry), and the expectations from other stakeholders exert considerable pressures on hoteliers to engage in green practices.

A few studies revealed that subjective norms (perceived stakeholder pressure) were closely linked with top managers' EC (Kitsis & Chen, 2021) and green practices adoption (Papagiannakis & Lioukas, 2012; Park & Kim, 2014). In a sample of hotels in the U.S., Park and Kim (2014) found that perceived stakeholder's pressure was the most influential factor in determining the top managers' decision on the adoption of green practices as compared to perceived economic benefits and environmental concern. Therefore, we proposed the following hypotheses:

H2: Subjective norm is positively related to managers' environmental commitment.

H3: Subjective norm is positively related to green practices.

Environmental Knowledge

Environmental knowledge refers to "general knowledge of facts, concepts, and relationships concerning the natural environment, and its major ecosystems" (Fryxell & Lo, 2003, p. 48). The term also reflects the knowledge and awareness about environmental issues, problems, and possible solutions (Zsóka et al., 2013). Although there were several past empirical studies showed that environmental knowledge is a prerequisite for meaningful green behavior among hotel employees (Chan et al., 2014; Safari et al., 2018), limited studies evaluated its implication on top managers. According to Yucedag et al. (2018), the knowledge of environmental issues is highly interconnected with a person's attitude (e.g., commitment).

In short, environmental knowledge is an important factor that can strengthen a person's commitment to behave in an environmentally friendly manner and reduce harm to the environment (Geiger et al., 2019; Kim et al., 2018a). Thus, top managers with environmental knowledge have a better understanding between business activities and environmental consequences that can promote their commitment to be actively involved in crafting green practices. Based on a sample of managers from different industries, Fryxell and Lo (2003) indicated that managers with strong environmental knowledge have a greater appreciation on the value of natural capital. Their findings showed that environmental knowledge encouraged managers to advocate greening initiatives and develop new environmental programs.

Furthermore, Roy and Thérin (2008) argued that continuous acquisition of knowledge on specific environmental issues allows managers to implement green practices that are beyond regulatory requirements. This

is particularly important since environment conservation has turned out to be the management's key consideration in hotel operations. Environmental knowledge enables managers to implement appropriate green practices in dealing with complex environmental issues (Martinez-Martinez et al., 2019).

In their systematic evaluation on the studies that were underpinned by the Upper Echelon Theory, Bromiley and Rau (2016) summarized that both cognitive and socio-behavioral factors affect top management's strategic decision and performance. Cognitive aptitudes (i.e., environmental knowledge) can act as a motivational force for a person to behave in an environmentally friendly manner (Geiger et al., 2018). People are less likely to adjust their behavior and actions that harm the natural environment if they lack related knowledge (Geiger et al., 2019). As such, this line of reasoning leads to the following hypotheses:

H4: Environmental knowledge is positively related to top managers' environmental commitment.

H5: Environmental knowledge is positively related to hotels' green practices.

Perceived Benefits of Green Practices

Studies showed that perceived benefits were one of the reasons for hotels to go green. Perceived benefits of green practices for hotel operation consist of financial benefits (Chen et al., 2018) and non-financial benefits (Zaiton et al., 2016). The most cited financial benefit was cost-savings (Alonso-Almeida et al., 2017; Chandran & Bhattacharya, 2019; Kularatne et al., 2019), which can be achieved through the improvement in energy and water efficiency; reduce the cost for water usage, waste disposal, and material usage (Butler, 2008; Chandran & Bhattacharya, 2019). Perceived financial benefits were indicated as the most influential factor in improving managerial environmental commitment (Cheyne & Barnett, 2001). Overall, hoteliers who are actively practicing green practices through environmental programs and guidelines would be able to gain benefit from resource efficiency (Chen et al., 2018).

Besides, the managerial belief about non-financial benefits, such as improved public image and employee morale has also been identified as the triggering factor for green practices adoption (Abdou et al., 2020; Chen et al., 2018; Pereira et al., 2021). A good hotel image can create a competitive advantage that can improve market share and productivity of the

employees (Singjai et al., 2018). Drawing from the Upper Echelon Theory on the implication of managerial perception on strategy, Park et al. (2014) asserted that perceived advantages of environmental management showed a relatively strong relationship with hotels' involvement in green practices. Moreover, Pamfilie et al. (2018) also revealed that perceived economic benefits promote the adoption of green practices among hoteliers. Hence, we propose the following hypotheses:

H6: Perceived benefits are positively related to top managers' environmental commitment

H7: Perceived benefits are positively related to hotels' green practices

The Mediating Effect of Managers' Environmental Commitment

Top managers' EC is a strong internal force for green practices adoption, which is a growing concern in the hotel industry. Top managers identify and recognize the roles of influential stakeholders of their organizations and their response to these forces indicates their level of EC, which affects their decision on green practices adoption. Banerjee et al. (2003) revealed the mediating role of top management commitment between external forces (i.e., public concern and regulatory forces) and environmental strategies in high environmental impact industries (e.g., manufacturing, chemical, pharmaceutical, and utilities). This shows that social pressures are capable of inducing managers' EC and green practices.

On the other hand, environment knowledge plays a role in enhancing managers' cognition of the need for environmental conservation (Geiger et al., 2019), thus fostering their commitment to take actions and transforming into a more environmentally responsible hotel. An individual with some degree of felt commitment to the environment would behave in a more environmentally friendly way (Yusliza et al., 2020). Managers' commitment, especially one who champions the environmental initiatives is vital in the success of hotels' green practices (Abdou et al., 2020).

Previous studies showed that managers' perceived benefits have an impact on EC (Abdou et al., 2020; Chen et al., 2018; Pamfilie et al., 2018) as well as green practices adoption (Alonso-Almeida et al., 2017; Chandran & Bhattacharya, 2019; Kularatne et al., 2019). Moreover, Verma and Chandra (2018) found that the desire to gain competitive advantages fosters top management commitment and leads to the realization of environmental strategy. Based on the reviews, we postulate that subjective norms (perceived stakeholder pressure), top managers' environmental

knowledge, and perceived benefits of green practices can potentially induce managers' EC that eventually leaves a positive impact on the adoption of hotels' green practices. Thus, the following hypotheses are formulated:

H8a: The relationship between subjective norms and green practices is mediated by environmental commitment among top managers.

H8b: The relationship between environmental knowledge and green practices is mediated by environmental commitment among top managers.

H8c: The relationship between perceived benefits and green practices is mediated by environmental commitment among top managers.

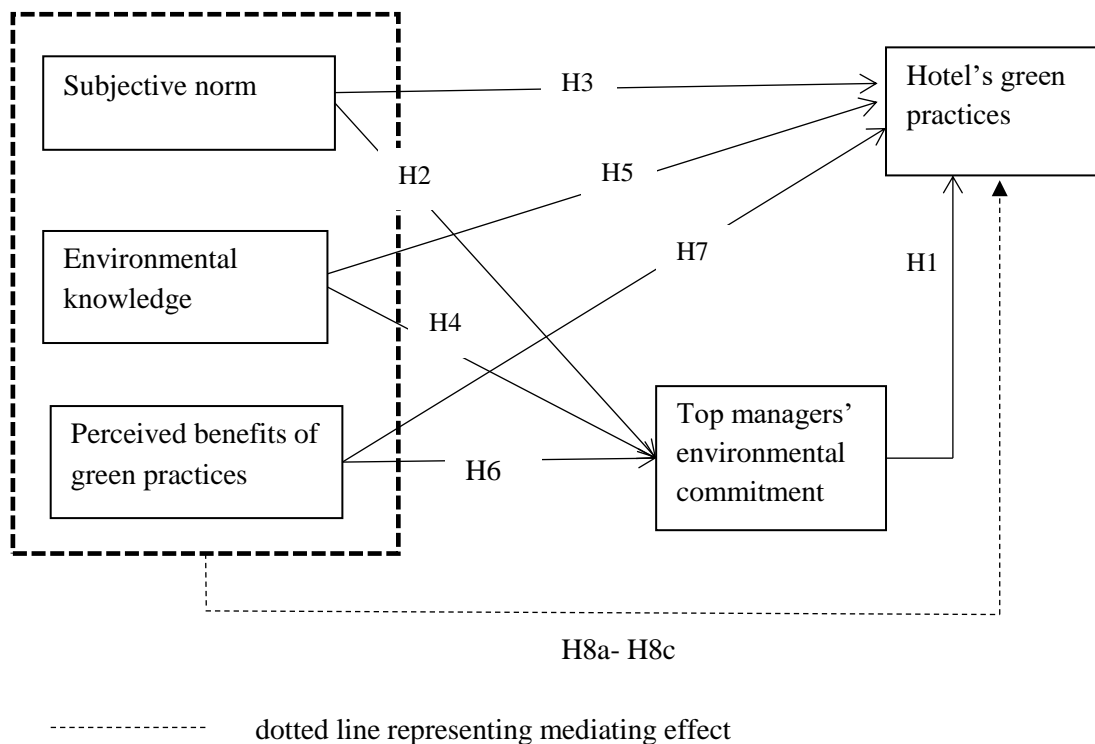


Figure 1. *Research Framework*

METHODOLOGY

The target population of this study was top-level managers of the hotel, such as owners, general managers, CEOs, and senior managers who possess managerial discretion regarding the hotel's green practice. A convenient sampling technique was used to select the hotels in this study. The data was collected between September and November 2019. This research had

obtained the approval from the Scientific and Ethical Review Committee from the university.

Due to the dispersed sampling locations, covering different states in Peninsular Malaysia, six research assistants were recruited and trained to collect the data from the hotel's top managers. The G*Power 3.1.9.4 F-test (Faul et al., 2007) was used to determine the minimum sample size. With an effect size of 0.15 and the power of the test set at 0.80 as recommended by Cohen (1988) which is commonly used in social science research, the minimum sample size required for this research is 85.

Several remedy actions were taken to enhance the generalizability of the data. First of all, the questionnaire of this study was well-designed to ensure that the data collected is accurate which is able to produce a generalizable result (Ng, 2006). Thus, a pre-test and pilot test were conducted to ensure the validity and reliability of the measurement scales. The second way to improve the convenient sampling is by including as many participants as possible (Stratton, 2021). The research assistants had approached as many hotels as possible and sought the help from the human resource department personnel or front desk manager to contact the relevant top manager of the hotel to get their consent to participate in the survey. However, several hotels had refused to take part during the first visit, so in total, only 350 questionnaires were distributed to the hotels. The research assistants then personally handed the self-administered questionnaire to the managers or sought help from the personnel in charge to pass it to the respective hotels' top managers. In view of the busy schedule of the top managers, the research assistants made a subsequent visit to the hotels to collect the questionnaire. A cover letter was enclosed together with the questionnaire to explain the purpose of the survey and to ensure that the data collected was for academic purposes. Both the cover letter and questionnaires were prepared in English language, which is the second language in Malaysia.

Nevertheless, only 161 questionnaires out of 350 managed to be collected during the subsequent visit(s). A total of 14 questionnaires had to be discarded as the respondents did not meet the criteria or due to incomplete information. In the socio-demographic section of the questionnaire, the respondents were asked to indicate their position. As a result, the final data was based on the 147 hotels' top managers who had returned valid questionnaires. As the sample for this study is 147 which exceeded the minimum sample size of 85, it can therefore be concluded that

the sample is deemed to be sufficient to detect the required effect size of 0.15.

Out of the 147 hotels' top managers who responded to the survey, 65 (44%) were male and 82 (56%) were female. The majority of them aged more than 35 years old ($n=58$, 39%) with at least Diploma qualification ($n=94$, 64%). There were only two respondents who were managing directors and the remaining 145 respondents were general managers of the hotel. The citizenship status for all the responding managers was Malaysian. For the size of the hotel, 68 (46%) hotels had less than 50 rooms, 28 (19%) between 50 and 100 rooms, 15 (10%) were hotels with 101 and 150 rooms while 31 (21%) with more than 200 rooms, while the remaining 5 hotels (3%) were hotels with 151-200 rooms. Our sample includes 48 (33%) budget hotels while city/business hotels and boutique hotels were 39 (27%) each. Other types of hotels include 6 (4%) heritage boutique hotels, 4 (3%) theme park resorts/hotels, 3 (2%) golf hotels, one (1%) eco/nature resort and the rest belong to other categories. Among these hotels, there were 10 (7%) five-star hotels, 22 (15%) four-star hotels, 42 (29%) three-star hotels, and 73 (49%) two-star hotels and below. A large proportion of the hotels ($n = 111$, 76%) indicated that their primary customers were a combination of business and leisure travelers, 25 (17%) key customers were leisure travelers, while 11 (7%) hotels' main customers were leisure travelers.

Measurement Instrument

All items used to develop the self-administered questionnaire were adopted or adapted from past studies which were originally in English language. A five-point Likert scale was employed to measure the adopted measurement items ranging from strongly disagree (1) to strongly agree (5). Prior to the pilot test, a pre-test was conducted by inviting academic professors who have expertise in environmental practices to evaluate the relevancy of the questionnaire items to ensure its content validity. Meanwhile, a pilot test was carried out with 30 respondents to assess the reliability of the key constructs in this study. As the hotel managers are able to understand and communicate in English, the translation in different languages is not required in this study.

Subjective norms were measured with a six-item scale adapted from Yilmaz (2014). The original scale was developed by Sandve and Øgaard (2013). A minor amendment was made on the scale as found in Yilmaz (2014), in which the term "green marketing" has been modified to "green practices" to suit the purpose of the present study. Sample items include "I

believe that our guests expect our hotel to get involved in green practices". The measure also covered social pressures from the government, the general community, shareholders/owners, employees, and suppliers. The reliability score was 0.92.

Perceived benefits of green practices were measured with a six-item scale, adopted from Park and Kim (2014) with an inter-item reliability score of 0.87. Sample items include "Green practices contribute to the reduction of the operational costs", and "Green practices improve our hotel image."

Environmental commitment was a three-item scale, adopted from Kim et al. (2015). An example of the item is "I am committed to the environmental preservation of our hotel". The alpha coefficient of reliability was 0.90.

Green practices consist of seven items. The measure was developed by referring to Bagur-Femenias et al. (2016) and Kim et al. (2015). Minor amendments were made, such as "your organization" was replaced with "my hotel". The sample items include "My hotel buys environmentally friendly products," and "My hotel implements energy-saving practices". The alpha coefficient of reliability was 0.92.

Data Analysis

Statistical Package for the Social Sciences (SPSS) version 25 and SmartPLS version 3.2.4 software were used for data analysis. The SPSS software was used to generate the descriptive analysis, whereas the SmartPLS software was employed to run the partial least square-structural equation modeling (PLS-SEM) for hypothesis testing. PLS-SEM has been used in various disciplines in estimating a complex model with many constructs and indicators and it examines the relationships between the latent constructs (Hair et al., 2019). PLS-SEM is not constraint by the distributional assumptions as it is based on a non-parametric approach and it generates higher statistical power as compared to the covariance based-structural equation modeling (Hair et al., 2019). It is also able to test a complex structural model vigorously and check the robustness of the structural model (Hair et al., 2019; Sarstedt et al., 2020). Sarstedt et al. (2017) also explicated that "PLS-SEM is a causal-predictive approach to SEM that emphasizes prediction in estimating statistical models, which structures are designed to provide causal explanations" (p.3). A two-step analytical approach was pursued to evaluate the measurement model and structural model (Anderson & Gerbing, 1988).

RESULTS

As the self-reported survey method was employed in this study, a Harman single factor test was used to measure the common method bias by means of conducting Exploratory Factor Analysis (EFA). The items of all the key variables in this study were loaded together in EFA. The results from the unrotated factor solution demonstrated that a five-factor structure emerged, and the total cumulative variance was equal to 68.68%. The first factor is the largest contributor as it accounts for 33.16% of the total variance, which is well below the threshold value of 50% (Podsakoff et al., 2003). Thus, the data set is free from the common method bias. Meanwhile, the second, third, fourth and fifth factors explained 17.45%, 8.59%, 5.77%, and 3.71% of the total variance, respectively. The normality test was conducted by assessing the skewness and kurtosis values. The skewness value for the key constructs ranged from 0.319 to 0.958, whereas the kurtosis values ranged from 0.393 to 2.952. As the skewness values for all constructs were between -1 and +1 and kurtosis values were between -3 and +3 (Hair et al., 2007), the data was considered normal.

Table 1. *Inter-Correlations score and Basic Statistics*

No.	Construct	1	2	3	4	5	6	7
1	Size of Hotel							
2	Rating of Hotel	0.22**						
3	Subjective Norm	0.13	-0.12					
4	Environmental Knowledge	0.04	-0.06	0.30**				
5	Perceived Benefits of Green Practices	0.09	-0.06	0.53**	0.47**			
6	Environmental Commitment	0.04	-0.10	0.57**	0.52**	0.47**		
7	Green Practices	0.41**	0.16	0.34**	0.15*	0.37**	0.31**	
	Mean	-	-	3.83	3.94	3.96	3.97	3.36
	Standard Deviation	-	-	0.68	0.65	0.67	0.72	0.88
	Cronbach Alpha	N/A	N/A	0.92	0.93	0.87	0.90	0.92

Note. *= p value $<$ 0.05, **= p value $<$ 0.01

Two control variables were included in the analysis, such as the size of the hotel and rating of the hotels. These control variables were not the primary interest of the study; however prior studies indicated that these variables could influence green practices (Park & Kim, 2014). Table 1 presents the inter-correlation scores, standard deviation, and mean scores of each construct. The results revealed that the size of the hotel was significantly correlated with hotels' green practices adoption. The larger the

hotel size will result in the more active green practices being adopted in the hotel (Park & Kim, 2014; Rahman et al., 2012).

Evaluation of Measurement Model

A PLS algorithm was conducted to test the convergent and discriminant validity of the constructs. Table 2 depicts the factor loadings of items, average variance extracted (AVE) score and composite reliability score for each construct (Hair et al., 2019). Only one item (perceived benefits of green practice item 2 = PB2) with factor loading of 0.245 was removed from the

Table 2. *Convergent Validity Result*

Constructs	Items	Loadings	AVE	CR
Subjective Norm	SN1	0.866	0.703	0.934
	SN2	0.864		
	SN3	0.845		
	SN4	0.845		
	SN5	0.747		
	SN6	0.859		
Environmental Knowledge	EK1	0.722	0.614	0.941
	EK2	0.800		
	EK3	0.749		
	EK4	0.833		
	EK5	0.819		
	EK6	0.833		
	EK7	0.691		
	EK8	0.858		
	EK9	0.796		
	EK10	0.716		
Perceived Benefits of Green Practices	PB1	0.751	0.657	0.905
	PB3	0.836		
	PB4	0.832		
	PB5	0.867		
	PB6	0.759		
Environmental Commitment	EC1	0.925	0.842	0.941
	EC2	0.918		
	EC3	0.910		
Green Practices	GP1	0.838	0.647	0.928
	GP2	0.717		
	GP3	0.868		
	GP4	0.798		
	GP5	0.752		
	GP6	0.840		
	GP7	0.809		

Note. AVE=Average Variance Extracted, CR=Composite Reliability

measurement model. Except for EK7, the rest of the items have achieved a minimum required loading of 0.708 (Hair et al., 2019). EK7 was retained as the AVE score for each construct exceeded the threshold value of 0.500 (Hair et al., 2019). The AVE values ranged from 0.614 to 0.842. For composite reliability, the score for each construct has surpassed the minimum cut-off value of 0.7, ranging from 0.905 to 0.941. None of the construct composite reliability scores exceeded 0.95. Thus, there is no indication of indicator redundancy, which could compromise the content validity of the measurement (Hair et al., 2019). Thus, the convergent validity is deemed to be ascertained.

The discriminant validity was examined by generating Heterotrait-Monotrait (HTMT) Ratio (Henseler et al., 2015). Table 3 shows that none of the HTMT ratios is greater than the threshold of 0.85 ($HTMT_{0.85}$). Thus, it can be concluded that the constructs included in this study were conceptually different from each other (Hair et al., 2019).

Table 3. *Heterotrait-Monotrait Ratio Criterion*

No.	Construct	1	2	3	4	5
1	Subjective Norm	-				
2	Environmental Knowledge	0.33	-			
3	Perceived Benefits of Green Practices	0.59	0.48	-		
4	Environmental Commitment	0.62	0.53	0.56	-	
5	Green Practices	0.37	0.10	0.08	0.41	-

Evaluation of Structural Model

The structural model was assessed using the bootstrapping technique with 5000 re-samples. Table 4 depicts the path coefficient, t-statistics, effect size, predictive relevance, and explanatory power of the model. The explanatory power for EC and green practices is greater than 0.26 and it is indicated as a substantial level (Cohen, 1988). Based on the t-statistical results, the subjective norm ($\beta=0.424$, $t=6.245$, $p<0.001$) and environmental knowledge ($\beta=0.354$, $t=4.242$, $p<0.001$) are positively related with EC. However, perceived benefits ($\beta=0.074$, $t=1.018$, $p>0.05$) are not significantly related to EC. Thus, hypotheses 2 and 4 are well supported by the data, but not hypothesis 6.

Table 4 reveals that EC ($\beta=0.287$, $t=2.941$, $p<0.01$), environmental knowledge ($\beta=0.309$, $t=3.744$, $p<0.001$), and perceived benefits ($\beta=0.335$, $t=4.564$, $p<0.001$) are positively related with green practices. Therefore, hypotheses 1, 5, and 7 are supported. On the other hand, subjective norms

do not exert a significant direct influence on green practices ($\beta=0.068$, $t=0.696$, $p>0.05$), thus the result fails to support hypothesis 3.

Table 4. *Structural Model Results*

H	Path	Beta	SE	t-Statistics	Results	f ²	Q ²	R ²
H2	SN > EC	0.424	0.068	6.245**	Supported	0.235		
H4	EK > EC	0.354	0.083	4.242**	Supported	0.179	0.371	0.462
H6	PB > EC	0.074	0.072	1.018	Not Supported	0.006		
H1	EC > GP	0.287	0.098	2.941*	Supported	0.072		
H3	SN > GP	0.068	0.098	0.696	Not Supported	0.004		
H5	EK > GP	0.309	0.082	3.744**	Supported	0.101	0.232	0.388
H7	PB > GP	0.335	0.073	4.564**	Supported	0.109		

Note. SE = Standard Errors, SN=Subjective Norm, EK=Environmental Knowledge, PB=Perceived Benefit of Green Practices, EC=Environmental Commitment, GP=Green Practices, Q²=Predictive Relevance, R²=Explanatory Power, *= p-value<0.01, ** = p-value < 0.001

For the mediation analysis, Table 5 shows that EC mediates the relationship between subjective norm and green practices ($\beta=0.122$, $t=2.457$, $p<0.01$). The finding indicates that a full mediation exists since the direct effect is insignificant, while the indirect effect appears to be significant (Zhao et al., 2010) when EC is examined as a mediator. To add, EC has been found to partially mediate the linkage between environmental knowledge and green practices ($\beta=0.102$, $t=2.625$, $p<0.01$). Conversely, the relationship between perceived benefits and green practices is not mediated by EC ($\beta=0.021$, $t=0.885$, $p>0.05$). Hence, hypotheses 8a and 8b are supported by the data, but not hypothesis 8c.

The f² values 0.02, 0.15, and 0.35 denote small, medium, and large effect sizes, respectively (Cohen, 1988), the significance hypotheses paths, H2 (SN→EC) and H4 (EK→EC) show the medium effects size. Meanwhile, H1 (EC→GP), H5 (EK→GP), and H7 (PB→GP) indicate small effect sizes. The blindfolding technique is also conducted to examine the predictive relevance of the endogenous construct: EC and green practices. Table 4 indicates that the cross-validated redundancies value (Q²) for EC is 0.371 and green practices is 0.232, which are above zero, indicating that the exogenous variables in the current research model have predictive relevance for endogenous constructs (Hair et al., 2019). The exogenous variables explained 46.2% (R²=0.462) and 38.8% (R²=0.388) of the variance in

EC and green practices adoption, respectively. As the R^2 is above 0.26, this indicates a substantial model based on Cohen's (1988) guideline.

Table 5. *Mediation Analysis Statistical Result*

H	Path	Beta	Std. Error	t-Statistics	Results	Bootstrapping Confidence Interval	
						5% LL	95% UL
H8a	SN > EC > GP	0.122	0.050	2.457*	Supported	0.049	0.212
H8b	EK > EC > GP	0.102	0.039	2.625*	Supported	0.043	0.168
H8c	PB > EC > GP	0.021	0.023	0.885	Not Supported	-0.011	0.066

Note. SN=Subjective Norm, EA=Environmental Awareness, EK=Environmental

Knowledge, PB=Perceived Benefit of Green Practices, EC=Environmental

Commitment, GP=Green Practices, LL=Lower Level, UP=Upper Level,

*=p value<0.01

DISCUSSION AND CONCLUSIONS

The overarching purpose of the present study is to investigate the interplay among subjective norms, environmental knowledge, environmental awareness, EC, and hotels' green practices in Malaysia. Parallel with our expectation, this study confirms that managers' EC is positively related to the adoption of green practices in a hotel, which is in line with an earlier study by Kim et al. (2015) based on a sample of the U.S. hotels' general managers. This shows that top managers with a greater level of EC are willing to devote time and effort to become involved and endorse green initiatives in their premises. The present finding is also consistent with the study by Saleem et al. (2020) and supports the notion of Upper Echelon Theory (Hambrick & Mason, 1984) that top management strategic judgment and choices (e.g., green practices) reflect their personal characteristic (e.g., commitment toward environmental preservation).

Meanwhile, subjective norms or the perceived stakeholder pressure were found to have the most profound influence in shaping the EC of the hotels' top managers in this study. The result agrees with the past studies (Park & Kim, 2014; Saleem et al., 2020) which supports the claim that perceived social pressure from a company's stakeholders can affect managers' commitment and attitude towards environmental initiatives. An interesting finding is that subjective norms are not related to green practices directly, but rather predict green practices indirectly through EC, indicating

a full mediation. This shows that subjective norms will promote green practices adoption mainly through top manager's EC. Top managers who perceive greater social pressures from stakeholders are more committed to supporting the environmentally friendly efforts, and in turn more prone to adopting green practices. Based on stakeholder theory, management should consider various stakeholders' expectations in making their judgment for the appropriate strategy. If they fail to do so, hotels may risk losing customers and damage the company's image (Kim & Kim, 2016). In this regard, it is also important to take note on the decision-making process from the upper echelon perspective (Hambrick & Mason, 1984). This is because management's commitment towards a particular action is likely to be affected by their perceptual and interpretative processes (Park & Kim, 2014; Saleem et al., 2020). Thus, when top managers realize that they cannot simply ignore the demands from the stakeholders, they have a greater sense of EC to incorporate green practices into the hotel operation.

Next, the present finding also shows that environmental knowledge has a direct positive effect on both managers' EC and adoption of green practices. Environmental knowledge has been recognized for its positive influence on an individual's pro-environmental behavior (Geiger et al., 2019; Safari et al., 2018). The results are consistent with Fryxell and Lo (2003) who postulated that scientific and practical knowledge related to the environment significantly affects managers' evaluations and strategic actions. In the mediation analysis, we have discovered that environmental knowledge influences green practices indirectly through top manager's EC. This shows that environmental knowledge is essential in evoking hotel top managers' EC, which in turn becomes an important source for the adoption of green practices in the hotels. The result is in line with the assumptions of Upper Echelon Theory (Hambrick & Mason, 1984), which state that personal attributes of key managers affect how they view the environmental issues, thus affecting their personal commitment and corporate decision. Top managers with adequate environmental knowledge have a better understanding of the consequences of deteriorating natural environment on human well-being and business operations. In turn, this stimulates top managers' commitment to play a key part in preserving the environment by adopting green practices.

As predicted, perceived benefits have a considerable impact on the implementation of green practices in the hotels, which corroborates with several past studies (e.g., Abdou et al., 2020; Park et al., 2014). Nevertheless, there was an absence of a significant direct relationship between perceived benefits with managers' EC. The assumption of the indirect relationship

between perceived benefits and green practices, through EC was not established. The results imply that the organizations still engage in green practices despite the absence of, or lack of, top managers' EC. This is rather surprising since the potential benefits should stimulate hotel managers' commitment towards green practices. Nevertheless, certain qualitative studies (e.g., Alonso-Almeida et al., 2017; Choi & Han, 2019) indicated that perceived benefits were not a sufficient motivator for a company to execute the environmental responsible strategy as some managers viewed that it is time-consuming and costly, especially when the focus is about short-term profitability. A plausible explanation for the absence of a positive link between perceived benefits and EC is that when there are obvious shreds of evidence of the potential benefits, it is easier to convince the top managers to adopt green practices. The efforts towards an environmentally friendly hotel can be initiated by others within the organization, while the top managers may remain open-minded towards the implementation of green practices that are advantageous to the hotels although they may not be fully involved. Some researchers (Ferdig, 2007; Hemingway, 2005) postulated that anyone within the organization can emerge as a change agent for green practices regardless of their roles or positions. Nevertheless, the results should not undermine the critical role of top managers' EC.

Theoretical Implications

While supporting the linkages between EC and green practices as addressed by existing works (e.g., Kim et al., 2015), this study provides a unique insight to the existing pieces of literature by confirming that subjective norms (i.e., perceived stakeholder pressure) and environmental knowledge determine the hotels' adoption of green practices through top managers' sense of commitment to the environment in Malaysia, which is a developing country. Several theoretical implications are identified. First of all, we found that subjective norm has a stronger effect on top managers' EC than environmental knowledge and perceived benefits. Cantele and Zardini (2020) argued that the most effective and significant method to encourage managers to engage in green practices is social pressure where managers' green action commitment is influenced by various stakeholders such as suppliers, customers, employees, government, general community, and shareholders.

Secondly, perceived benefits have revealed to be the strongest factor that led managers to be involved in green practices by the implementation of environmental programs and guidelines (Chen et al., 2018; Kim et al., 2017). This is followed by environmental knowledge and top manager's EC.

Chandran and Bhattacharya (2019) denoted that hoteliers are willing to practice green initiative due to costs savings and brand image which could sustain the performance of hotels (Abdou et al., 2020; Chen et al., 2018; Kularatne et al., 2019). Thus far, there are limited studies that have tested the relationship between perceived benefits and green practices among top managers in hotel sector. As a result, this has offered a new finding in the field of environmentally responsible behavior studies.

Thirdly, top manager's EC played an important role in the proposed model by mediating the relationship between subjective norm and green practices as well as between environmental knowledge and green practices. Top manager's EC should not be neglected if hoteliers intend to adopt green practices. The EC of top managers is essential for the success of hotels' green practices (Abdou et al., 2020) as they are responsible for leading the entire organization and setting themselves as a role model by taking the initiatives to transform their hotel to be a more environmentally responsible hotel (Geiger et al., 2019).

Practical Implications

Given the increasing number of environmental issues, the insights we gleaned point to the need to delve more deeply into finding the most effective way in providing environmental education among present and future managers so that they have greater environmental knowledge and create greater awareness to develop a greener hotel. Relevant environmental knowledge helps managers avoid the ignorance about the environmental impacts of hotel operations. This can be achieved by attending workshops, conferences, seminars, and talks that are related to hotels' green practices. Through these events and activities, managers can remain well-informed and convinced about the benefits of adopting green practices. Thus, they are more likely to possess greater EC, which can eventually translate into actions for a greener hotel. Moreover, Hsiao et al. (2018) stressed that a budget should be allocated for acquiring and developing human resources with environmental knowledge and expertise. Besides, the hotels should have environmental policies in place and emphasize on the use of eco-friendly equipment and facilities. Additionally, it is important to have a top manager or senior manager with high EC to oversee the implementation of green practices. As the tourism and hotel industries are closely related, hoteliers' efforts to preserve the natural environment are not only beneficial to the hotel (e.g., greater cost efficiency, competitiveness, and profitability), but also serve as a way in ensuring the sustainability of the business in the long run.

In view that subjective norms influence top managers' EC, the government's national policy and relevant regulations that emphasize green growth will serve as strong signals to hoteliers to be committed in supporting green initiatives. The finding also points out that environmentally conscious customers, employees, and the general community can express their views and provide suggestions for an environmentally friendlier hotel via various communication channels as their actions can influence hotels' green decision. The suppliers can influence the hoteliers by promoting a collaboration to develop green supply chains (Al-Aomar & Hussain, 2017). It is also important for managers to monitor and understand stakeholders' environmental expectations regularly, so that they can take appropriate actions to respond to the demands of various stakeholders. In addition, hotel associations can disseminate more information regarding the benefits of green practices adoption and share the knowledge on achieving effective and efficient green practices. Relevant stakeholders including Malaysian Association of Hotels, and Ministry of Tourism, Arts, and Culture and Ministry Investment Development Authority (MIDA) should allocate a budget for hotels to initiate green practices, such as the installation of solar panel on top of the hotel roofs. In addition, MIDA and the Malaysian Green Technology and Climate Change Centre (MGTC) could enlarge or extend the coverage of the current tax incentive package, known as Green Investment Tax Allowance (GITA) and Green Income Tax Exemption (GITE), to the hotel sector (EdgeProp, 2016; My Hijau, 2018).

Limitations and Future Study

Having carried out the study, there are some limitations that have been discovered. Firstly, this study is a cross-sectional design study, therefore, it precludes the ability to draw the causality of the proposed relationships. Besides, the number of the hotels' top managers who participated in this study can be considered as small, and this may limit the generalization of the results. As such, a longitudinal study that involves more top managers from different hotels will enhance the reliability and generalization of the study.

Next, this study did not capture the ownership types of the hotels (e.g., chain-affiliated or independent). Future researchers can extend the present study by evaluating the relative influence of different stakeholders' perceived benefits on top managers' EC and green practices, which is moderated by the hotel size and ownership types of the hotels (Nejati et al., 2014; Ouyang et al., 2019; Rahman et al., 2012). Besides, the present study

included hotels of different ratings, and yet, the proportions of 4 and 5-star hotels were relatively small as compared to other categories. It is also possible for future researchers to include a more equal number of hotels from different categories to enable sound comparison and further analysis to be performed.

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