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Influences of Drivers and Constraints on Green Hotels' Environmental Performance and Competitive Advantages: The Mediating Role of Green Practices Adoption

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الملخص العربي

يهدف البحث إلى تقييم تأثير الدوافع والقيود على الأداء البيئي للفنادق والمزايا التنافسية: الدور الوسيط لتبني الممارسات الخضراء في الفنادق الخضراء في منطقة البحر الأحمر بمصر. يتكون المجتمع المستهدف من البحث من المديرين المسؤولين عن تبني الممارسات الخضراء في الفنادق الخضراء المعتمدة في منطقة البحر الأحمر. ركز البحث على الفنادق المعتمدة ذات الثلاث والأربع والخمس نجوم خضراء في هذه المنطقة. بالإضافة إلى ذلك ، تم اعتماد المنهج الكمي بناءً على استبيان باستخدام مقياس ليكرت الخماسي. تم توزيع 250 استبانة على المديرين ، في حين تم جمع 228 استبانة لكن 206 استبانة فقط كانت صالحة للتحليل. علاوة على ذلك ، تم إجراء تحليل البيانات باستخدام برنامج SPSS الإصدار 22. كشفت النتائج الرئيسية أنه لم يكن هناك تأثير كبير للقيود الخارجية والداخلية على تنفيذ الممارسات الخضراء في الفنادق الخضراء. من ناحية أخرى ، كان هناك تأثير كبير للدوافع الخارجية والداخلية على تنفيذ الممارسات الخضراء. كما كان هناك تأثير كبير لتطبيق الممارسات الخضراء على الأداء البيئي للفنادق والمزايا التنافسية. وبالتالي ، كان لاعتماد الممارسات الخضراء دور وسيط بين الدوافع الخارجية والداخلية والأداء البيئي للفنادق والمزايا التنافسية. من ناحية أخرى ، كان هناك تأثير كبير للأداء البيئي للفنادق على المزايا التنافسية للفنادق.

الكلمات المفتاحية: القيود ، الدوافع ، الممارسات الخضراء ، الأداء البيئي ، المزايا التنافسية.

Abstract

The current research aims to evaluate the influence of drivers and constraints on hotels' environmental performance and competitive advantages in a mediating role of green practices adoption in green star hotels. The target population of the research consisted of managers who are responsible for green practices adoption in certified green star hotels in the Red Sea region, in Egypt. The research focused on certified three, four and, five green star hotels in this region. Furthermore, a quantitative approach was adopted based on a questionnaire using five point Likert scale. A total of 250 questionnaires were distributed to the managers, whereas 228 questionnaires were collected but 206 questionnaires were valid to analysis. Data analysis was conducted using SPSS version 22. The main findings revealed that there was not a significant impact of external and internal constraints on green practices implementation in the green hotels. On the other hand, there was a significant impact of external and internal drivers on green practices implementation. Moreover, there was a significant impact of green practices implementation on hotels' environmental performance and competitive advantages. Thus, the green practices adoption had a mediating role between external and internal drivers and hotels' environmental performance and competitive advantages. Furthermore, there was a significant impact of hotels' environmental performance on hotels' competitive advantages.

Keywords: Constraints, Drivers, Green Practices, Environmental Performance, Competitive Advantages.

1.1 Introduction

Sustainable tourism development has met the needs of present tourist and host regions while conserving and consolidating future opportunities. Managing the resources led to accomplish the economic, social, and aesthetic needs while preserving cultural completeness, primary ecological processes, biological diversity, and life support systems (Santana, 2001). Since consumers, governments, and society were interested about the natural resources loss, and environmental pollution, the value of green innovation was realized to fulfill of sustainable development. Hotels has been responsible for a considerable ratio of the environmental pollution (Asadi et al., 2020). Moreover, Egypt's Sustainable Development Strategy, Vision 2030, was based on ten pillars covering broadly the United Nations Sustainable Development Goals (SDGs) (Ahmed, 2020). Tourism was explicitly mentioned in SDG "8" that was "decent work and economic growth". SDG "12" was "responsible consumption and production". SDG "14" was "conserve and sustainably use the oceans, seas, and marine resources" (Al-Mashat, 2018).

Al-Mashat (2018) targeted branding Egypt as a responsible destination that recognized environmental and social vulnerability to meet future requirements on green tourism. It could be fulfilled by increasing the hotels green competitiveness by global recognition. Moreover, green tourism criteria could be connected to the 'New Norms' that being developed for hotel rating. Investments in energy efficiency and renewable energy technologies, and cooperate with Ministry of Environment could also be encouraged.

The "green" term meant "*environmentally friendly, that is, doing business in a way that reduces waste, conserves energy, and generally promotes environmental health*" (Rahman et al., 2012, p. 721). On the other hand, an environmental term which meant perfectly compatible with the environment (Faulk, 2000). The green, and environmentally friendly hotel were synonymous (Zengeni et al., 2013). The Green hotels were defined as "*environmentally-friendly properties whose managers are eager to institute programs that save water, energy and reduce solid waste while saving money to protect out only one and only earth*" (Green Hotel Association, 2020, P. 2). A green hotel was also referred to "*an environmentally conscientious operation that promotes and practices energy efficiency, conservation, and recycling, while at the same time providing hotel guests with a sustainable, clean, and healthy produc*t" (Millar & Baloglu, 2008a, P. 10). Various motives for a hotel for applying green practices were exist. The three main motivations were government regulations (Mensah, 2004). Such practices provided varied financial and physical advantages to the hotel owners, employees, and guests. Practicing green influenced on the management cost (Hossan, 2014). Moreover, the most essential variable influencing the managers' decision to implement environmental management plans was the hoteliers' capabilities to create a greener image. Although, the motivation for adopting a green strategy was connected to a marketing strategy, instead environmental management (Yeh et al., 2017). Furthermore, Green customers took into account the products or services they purchased influenced the environment negatively or not (Peattie, 2001). They

also could bear additional costs ranging from 5-20% to satisfy their green wishes (Lee et al., 2010).

Kravitz (2013) stated that the advantages of constructing and implementing green hotels were decreasing annual operating costs by 51 % and reducing energy costs by 67 %. The actual asset value of the properties was increased by 71 % and return on investment in incorporating green building and operating strategies by 85 %. Moreover, Yang (2019) reported that Hyatt hotels has set clear values, including a 25% reduction in energy use, a 20% reduction in water consumption, and a 25% reduction in greenhouse gas emissions. Millar and Baloglu (2008b) stated that the preferred green hotel's attributes by the guest included energy-saving light bulbs throughout the room, low flow toilets and faucets, towel re-use, sheets change upon sensors, and key cards. The other attributes, which were not preferred by the guests, were refillable shampoo and soap dispensers and low flow showerheads, as these items diminished their convenience in bathing. Otherwise, the green transformation led to drawing strong environmental-driven strategies, changes on business goals, by positioning all stakeholders together, working towards the same aim. Therefore, it is important for both managers and customers to be supported by the existence of eco-labeling (Diniz, 2012).

1.2 Problem of the research

A gap has existed between managers' consciousness of hotels' environmentally-friendly practices. Therefore, a need for training and increased awareness of green management was required (Mbasera et al., 2016). Furthermore, Managers were not persuaded with their current green practices. This revealed an information gap

where environmental policies should be reviewed orderly to highlight sensitive areas of greening. The environmental strategy should be severely pursued to assure implementation met the needed principles of greening (Fukey and Isaac, 2014). Therefore, the hotels had a shortage of green practices implementation. Thus, the current research discussed this problem.

1.3 Aim and objectives of the research

The current research aims to evaluate the influence of drivers and constraints on hotels' environmental performance and competitive advantages in a mediating role of green practices adoption in green star hotels in Hurghada, Egypt. This aim was divided into three objectives as follows:

- Assessing the influence of external and internal constraints on green practices adoption.
- Evaluating the influence of external and internal drivers on green practices adoption.
- Investigating the influence of green practices adoption on the hotels' environmental performance.
- Assessing the influence of green practices adoption on the hotels' competitive advantage.
- Evaluating the influence of the hotels' environmental performance on their competitive advantages.

1.4 Research questions

- To what extent there were differences between respondents' experience regarding green hotels' dimensions?

- To what extent there were differences between Hotels' green rating regarding green hotels' dimensions?

1.5 Importance of the study

The influence of green management policies on hotel performance has raised continued discussions in which no crucial positions have been arrived at (Mbasera et al., 2018). Despite the varied studies applied globally on environmental management and organizations' adherence to going green in the tourism industry in developing countries, there has been limited discussion of problems encountering hotels to apply green management initiatives (Mbasera et al., 2017). Furthermore, Halbe (2013) recommended that further studies should examine how successful these stimulant programs were regarding uptake, and stimulating investment in the hotel industry. Studies should also look into how the existing programs could be improved or expanded. Mishra (2016) stated that there was a scarceness of research on the environmental management practices of hotels in all the cities of Asia. Therefore, there is an accelerated need for such type of research. As well, there was a lack of systematic studies addressing the restraining forces for adoption of environmental strategies in the hotel industry (Mak and Chang, 2019).

2. Literature review

2.1 Benefits of Green Practices Implementation in Hotels

The hotel chain Scandic's environmental efforts accomplished financial advantages, for example, the water and energy savings, more stimulated employees, and a strong adherence to environmental conservation. It also

enticed more guests, which raised the hotel's profit. Moreover, the sustainable efforts, success, and the connected publicity of Scandic induced it a competitive advantage among competitors in Scandinavia (Eggeling, 2010). In addition, Fayyad et al. (2013) found that the most important benefits of green hotels in Egypt were improving the hotel management performance, work environment, and reducing the operational materials consumption. Moreover, the recycling conserved GHG emissions to a large extent. Furthermore, the hotels should follow recycling rigorously to help the environment and realize monetary benefits. (Singh et al., 2014). The hotels in Bangkok also followed environmental management practices by applying the Green Leaf certification. It was a classification program for hotels that developed environmental quality and conservation. (Mishra, 2016). In contrast, the hotels that were a part of the green key certification program had a higher recognized likelihood of enticing new customers and retaining old ones (Dodds & Holmes, 2016).

A well-prepared and applied environmental management programs supported the levels of job satisfaction and organizational adherence among hotel staff (Sourvinou and Filimonau, 2017). In contrast, the customers positively perceived the hotels' environmental adherence, with a significant impact on guest satisfaction and loyalty (Merli et al., 2019). On the other hand, the main motivator of the adoption of Green Star criteria was the hotels' adherence to environmental sustainability. There were also statistically significant differences between four and five Green Star hotels in all sustainable development goals (SDG) addressed (Abdou et al., 2020).

2.2 Constraints of Implementing Green Practices in Hotels

The lack of support; demand; and perceived difficulty were only three constraints of applying environmental practices (SAENYANUPAP, 2005). In contrast, nine determinants could prevent the applying of environmental management systems (EMS) by small and medium-sized hotels. In descending order, they were (a) applying and repair costs, (b) lack of knowledge and skills, (c) lack of insistence sense, (d) opacity of EMS standards, (e) lack of competent verifiers/consultants, (f) lack of stimulation and professional advice, (g) inconsistent guidance, (h) outcome suspicion, and (i) inconsistent support (Chan, 2010). Moreover, the hotel managers were less ready to apply social sustainability. The hotel chains seemed limited in their policy because the hotel owner was not ready to spend in sustainability measures (Rheede and Blomme, 2012). In addition, the main obstacles to the adoption of environmental technologies in hotels could be classified to three categories. Product-related obstacles involved immaturity, unreliability, high primary cost, and ongoing maintenance requirement of the environmental technology. External obstacles comprised inconvenience of the government, unpredictable weather, and the likely negative influence of technologies on customer service. Internal barriers contained the physical constraints of the building, a lack of owner initiative and resources, budgetary priorities, the potential effect of the technologies on daily operations, and the short duration of hotel management contracts (Chan et al., 2015).

Chan et al. (2020) also added that the most prevalent barriers to embrace of environmental technologies in hotels,

ranked in order from greatest to least, were (1) environmental feasibility, (2) lack of green knowledge and green network, (3) monopolized after-sales service, (4) government and initial support, (5) customer experience, (6) human resource constraints and (7) financial performance. The hotels with green awards, a green committee in place, audited environmental programs (e.g., ISO14001) were less affected by the previous barriers.

The challenges of embracing green practices were also the deficiency of "know-how" in green practices and technologies and the imperfect management support in the UAE hotels. Other challenges were the workers; guests' culture and the shortage of specialists in applying green practices (Al-Aomar and Hussain, 2017). Employees in the hotels recognized the difficulty to embrace green management initiatives as well. The hotel managers had a lack ideas to go green and make life healthier. One of the main challenges was the difficulty to change hotel constructions to green building (Mbasera et al., 2017).

2.3 Drivers of Implementing Green Practices in Hotels and its impact on the hotel performance

Three dimensions of hotel manager attitude toward environmental sustainability practices were operational management, social obligation, and sustainability strategy. The hotel managers' attitudes toward sustainability practices relied on their social demographics, the hotel type, the hotel ownership, their hotel was affected by the 2004 tsunami or not, and the year their hotel was built (SAENYANUPAP, 2005). In addition, the hotels accomplished the green business criteria by self-

investigating green purchase, environmental policy, management system, employee education, and consumer education respectively. It also supported hotels' competiveness of environmental preservation, health, and highlighted hotels' features (Chen & Chen, 2012). The most important incentives for converting hotels into green were decreasing operational costs, conforming to governmental and international legislations, and satisfying customers' desires (Fayyad et al., 2013). In contrast, personal environmental norms interpreted within-hotel variation, but green organizational climates interpreted between-hotel variation and moderated the influence of personal environmental norms on employees' environmental behavior. Corporate participation in combining environmental policies, human resources management and environmental education for employees should be applied (Chou, 2014). In addition, the Environmental knowledge, environmental awareness and environmental concern were positively correlated to ecological behavior and ecological behavior was positively associated with intention to apply green practices in hotels. Additionally, ecological behavior mediated the relationship between the three green triggers and intentions to apply (Chan et al., 2014).

Furthermore, consumers' support was identified as the most influencing factor towards applying green practices than cost and employees' support in the hotel (Deraman et al., 2017).

Customers' attitude and environmental concern positively affected the managerial intention to apply hotel green practices. Moreover, customers' attitude and employees' environmental concern were also critical in greening the

business process (Verma and Chandra, 2018). The determinants as external institutional pressures and internal slack resources had a significant positive influences on hotel applying of green activities and that, in turn, had a significant positive influences on performances (i.e., environmental performance and competitive advantage). The green activities had a mediating influence on the relationships between determinants and performances. Moreover, environmental performance had a mediating influence on the relationship between green activities and competitive advantage (Hsiao et al., 2018). In contrast, the Green Human Resource Management (GHRM) improved employees' organizational adherence, their eco-friendly behavior, and hotels' environmental performance. Therefore, the hotel top management and HR managers should set green human resource management policies (Kim et al., 2019). Green HRM positively participated in the environmental performance of the organization. Mediating roles of environmental concerns and environmental responsibility were also statistically significant. Furthermore, the relationship between Green HRM and environmental performance would be stronger when employees became more interested in the environment (Umrani et al., 2020). Training and employee engagement were also critical tools in directly motivating employee adherence and organizational citizenship behavior towards the environment (OCBE), and hotels' environmental performance. OCBE mediated the influences of training and performance management on environmental performance. The vital interaction of training and employee engagement significantly supported environmental performance. (Pham et al., 2020).

Green innovation processes influenced the hotel environmental and economic performance significantly. Therefore, the hotel could reduce waste, support competitive potential, save money, and customers concerned to the environment could be enticed to these hotels (Asadi et al., 2020). Moreover, managers' environmental values were an important predictors of stakeholder involvement for chain restaurants compared with independent restaurants. The managers' environmental leadership was a substantial determinant of stakeholder involvement for independent restaurants rather than chain restaurants. Stakeholder involvement was a more critical factor in enhancing a restaurant's environmental sustainability in chain restaurants than independent restaurants. The influence of environmental sustainability on the financial and nonfinancial performance was similar for both chain and independent restaurants (Jang, 2020).

2.4 Adopting Green Strategy in hotels

The hotel managers used economic incentives to convince senior managers about investing in green energy programs. Participating in local/regional/national educational forums created support systems to maximize energy-efficiency. Other organizations appointed an energy specialist to guide hotels, and restaurants in energy-efficiency measures. Ontario's new building code, promoted sustainability in commercial buildings. The government's regulations for sustainability measures positively influenced the hotels' managers to consider sustainability (Halbe, 2013).

When the hotel made the guests part of the solution, they took interest in the changes. Hotel managers should embrace regular environmental audits to record and monitor

environmental performance for energy, water, and solid waste. The management should create environmental awareness through developing an environmental and training team and having a written environmental policy which was regularly updated and reviewed. The management must also promote partnerships with external stakeholders, cooperating with non-governmental organizations, training customers in environmental management, teaming up with local government, and recycling firms to promote waste sorting and recycling (Fukey and Isaac, 2014).

To be certified by Illinois Green Business Association, the hotel managers should communicate the end-goals for change to the departments' heads to communicate between management and employees. The hotel could inform suppliers about the new initiatives and seeking out additional supportive community resources to facilitate transition to green practices. The hotel could market the green practices through word of mouth and social media. Recycling unused guest amenities, donating old hotel furniture, connecting with the local green business network, and seeking out sponsorships that promote sustainability could aid in hotel's commitment to long term sustainability (Gilmore et al., 2014). Moreover, there was also no single strategy to improve a hotel's green performance, but each hotel should analyze its own situation and then determine the most effective strategy accordingly (Sari and Suslu, 2018).

Learning orientation, innovativeness, and quality management positively affected the adoption of proactive environmental strategies in hotels in Thailand. The green strategies led directly to positive environmental

performance regarding to the consumption of utilities, waste management, and environmental risk management, leading to cost competitiveness and competitive advantage through differentiation (Singjai et al., 2018).

A group of hotel chains has a significantly higher average energy efficiency and branding value than those of a group of independent operators when holistic carbon emissions reduction is considered. Thus, this study encourages stakeholders to promote green hotel policies to independent hotel operators to achieve a higher brand value with lower carbon emissions and to adopt greater use of business intelligence to assist the decision-making of hotel operators in conformity with the United Nations (UN) Sustainable Development Goals (SDGs) (Chen, 2019).

2.5 Green Practices Implementation in Hotels

A hotel could start its green hotel practices by putting recycling bins or asking guests to turn off the rooms' lights when they left. The guests should identify if they wanted to clean their rooms daily. These simple steps were less costly than other green approaches and they made a difference in developing a green hotel. Hotels could also offer disposable shampoo, soap, shower gel and hair conditioning only. Furthermore, the polluting materials such as battery and cartridge should be recovered properly. The hotel should embraced green products in all staff's facilities and restrooms. The hotels should take extreme care to decrease the use of plastic due to its difficult decomposition (Fukey and Isaac, 2014).

Most of the sample hotels applied some green programs for managing energy, water and solid waste, and some had a written environmental policies, and some of them were environmentally assessed and had obtained green

accreditation certificates from some organizations. The hotels have agreed on nine green programs to conserve energy, seven programs to conserve water and five green programs to reduce solid waste production (Fayyad et al., 2013). The chain hotels were stronger adopters of green practices than independent hotels were, likely due to leveraging economies of scale by uniform corporate practices. Moreover, hotels in the Midwest were found to be the most environmentally friendly regarding their use of no or low cost green practices. Additionally, the hotel size had little influence on the extent to which hotels managed energy consumption (Rahman et al., 2012). In contrast, no policies for green management occurred in hotels in Zimbabwe and South Africa, although some hotels participated in some green practices (Mbasera et al, 2016). The green initiatives were applied in the hotels, mainly to conserve resources and for cost reduction (Mbasera et al., 2018).

Furthermore, the green hotel operators should follow the leading green traits and services that motivated customers' positive assessment and favorable attitudes toward green hotels. They also should extend their strategies to improve their image by developing environment-friendly activities. The managers should be well conscious of the prevailing situations and challenges before embracing green practices or not since the decision could influence their guests (Deraman et al., 2017).

Bagheri et al. (2020) prioritized the indicators that determined the ecological features of hotels. The "energy" dimension was significantly important, while "water effective usage," "energy supply and efficient use," and "renewable energies use" were the most important

indicators, respectively. The managers should concentrate on these indicators to promote the hotels' ecological level. Moreover, Sari and Suslu (2018) explained that the basic green practices were considered more important by the managers than the advanced ones. This was because the basic green practices were more evident to the people around the hotel than the advanced ones. In contrast, small and medium hotels embraced three types of environmental management practices (communications, organizational and operational) and the public actor role was crucial for applying expensive operational measures (Buffa et al., 2018).

2.6 Green Star Hotel (GSH) Program

GSH program directly confirmed the 17 Sustainable Development Goals (SDGs) released by the United Nations. The goals related to tourism industry represented to SDG 8: Decent work and economic growth, SDG 11: Sustainable Cities & Communities, SDG 12: Responsible consumption and production, SDG 13: Take urgent action to combat climate change & its impacts, and SDG 14: Life below water (Greenstarhotel.org, 2021).

GSH program was a national certification and capacity-building program established under the patronage of the Egyptian Ministry of Tourism. It confirmed hotels and resorts to develop their environmental performance and social standards. This certification distinct hotels that demonstrated sustainable environmental management through compliance with a carefully designed standard. The GSH program standard was internationally recognized by the Global Sustainable Tourism Council (GSTC). In addition, the aspects of hotel operation that were impacted by the green star hotel program were sustainable

management, training and instructions, water, energy, waste, guest information, food and beverage and kitchen, housekeeping and guest rooms, gardening and beach area, and interior and exterior appearance. The Certified Green Star Hotels were 92 certified Green Star hotels that included 26802 rooms. These hotels were distributed by 8 % in Hurghada, 17 % in Safaga, 24 % in El Gouna, 9 % in Marsa Alam, 29 % in South Sinai, 5 % in Marsa Matrouh, and 8 % in Cairo, Ain El Sokhna, and Alexandria (Green Star Hotel, 2021; Egyptian Hotel Association, Ministry of Tourism, United Nation World Tourism Organization, 2019).

Furthermore, the hotel should consider the procedures to join the GSH-Certified family of hotels. These procedures involved (1) registering the hotel with the GSH Program unit at Egyptian Hotel Association (EHA), (2) providing information about the hotel, (3) making initial payment of certification fees, and (4) attend a training session delivered by certified GSH professionals. Moreover, (5) the hotel's management and operations should comply with the GSH program standards, (6) avail your hotel to be audited by international GSH-certified auditors mandated to document compliance, (7) and receive 'GSH Certificate' of compliance with the GSH standards showing a star rating (3, 4 or 5 Stars) reflecting the level of compliance achieved (Greenstarhotel.org, 2021).

When the hotel has got the green star hotel award, It could have many benefits such as decreasing the operational cost (energy, water, and waste management), and increasing the operational efficiency (planning and monitoring tools). The hotel could also receive professional guidance and training through access to customized training and guidance to

achieve the GSH award, and access to professional online tools (monitoring, marketing, staff instructions). The hotel could increase its competitive advantages through distinguishing among peers for environmental sensitivity, recognizing efforts internationally, higher visibility for environmentally conscious guests and tour operators, demonstration of sustainable and social responsibility, and priority in participation in local government energy and environmental programs. Green star hotel- awarded hotels also supported sustainability by impacting the environment though increasing energy efficiency, thus reducing consumption and consequently GHG emissions, reduction of water consumption, conservation of the biodiversity of marine life, improving waste management, and reduction in the use of chemical pesticides, etc. This award supported the local economy as well by protection of Egypt's natural resources and cultural assets, facing the rising demand on energy and water, creation of green jobs, and support to local communities through trading (buying or selling) locally-made and traditionally-designed products. In addition to get 3, 4 or 5 green stars the hotel has to fulfill at least 20 points, 110 points, and 140 points respectively (Green Star Hotel, 2021).
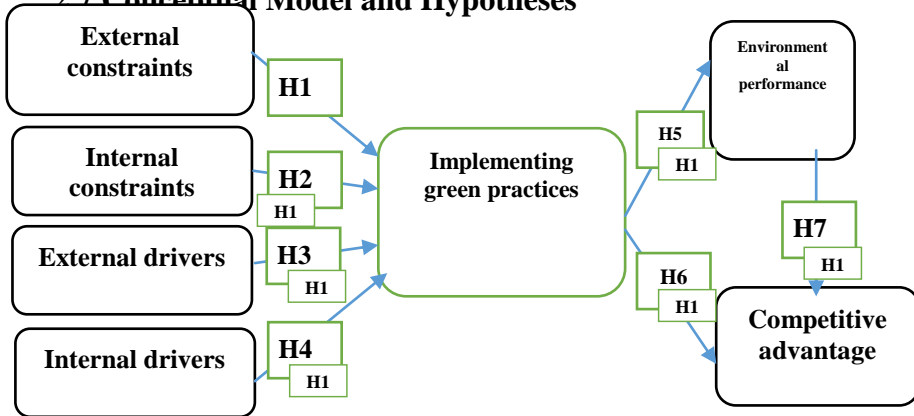
2.7 Conceptual Model and Hypotheses

Figure 1: External and Internal Constraints and Drivers that Influence of Green Hotels' Environmental Performance and Competitive Advantages
Source: Mak and Chang (2019); Mak et al. (2017); Woolverton & Dimitri (2010); Hsiao et al. (2014); Tsai and Liao (2017).

The conceptual model and hypotheses were adopted from a literature review. External restraining forces (ERFs) referred to forces that are not controllable by the hotels but may hinder the adoption of environmental strategies. A total of seven ERFs were identified: (1) inadequate government support and subsidies, (2) inadequate follow-through of policies by the government, (3) conflict between environmentally friendly practice and hotel star rating system, (4) green hotel standards being too high and rigid, (5) inadequate customer environmental education and awareness, (6) customers' ingrained travel habits, and (7)

lack of a role model for benchmarking. All of these ERFs were found as a detrimental force that hindered the adoption of green strategies (Mak and Chang, 2019). Therefore, the hypothesis one was supposed as follows:

H1: External constraints have a significant negative influence on implementing green practices in the green hotels.

On the other hand, Internal Restraining Forces (IRFs) were forces within the hotels that could prevent the adoption of green strategies. Six key IFRs were identified: (1) lack of environmental awareness of hotel management, (2) difficulties in introducing change within the hotel, (3) customer orientation outweighs environmental orientation, (4) short-term orientation outweighs long-term orientation, (5) pressure for profit maximization, and (6) lack of green building design and features (Mak and Chang, 2019). All of these restraining forces were found that impeded the adoption of green practices in hotel industry (Mak et al., 2017; Banerjee, 2002; Woolverton & Dimitri, 2010). Thus, the hypothesis two was proposed as follows:

H2: Internal constraints have a significant negative influence on implementing green practices in the green hotels.

In addition, The External Driving Forces (EDFs) represented to the external factors that cannot be directly controllable by the hotels, yet they could significantly influence the adoption of environmental strategies. A total of eight EDFs were identified from the literature review. (1) The implementation of appropriate policies and regulations by the government was critical to propel green strategy adoption (Mak and Chang, 2019; Chan, 2013; Chan & Wong, 2006; Hsiao et al., 2014). (2) Subsidies and rewards

offered by the government, as well as (3) counseling and assistance provided by the government were also considered as important EDFs by the participants (Mak and Chang, 2019; Tsai and Liao, 2017). Moreover, (4) information and experience sharing among practitioners was regarded as an important EDF by the participants (Mak and Chang, 2019).

(5) The collaboration among industry, government and academia was considered crucial in stimulating not just the adoption rate, but also the diversity of environmental strategies. (6) An increased availability of green products was deemed as a prominent force expediting the adoption of environmental strategies (Mak and Chang, 2019). Furthermore, (7) rising customer environmental awareness and (8) an increased number of NGOs promoting environmental protection, customers are more aware of and willing to pay for environmentally sustainable products or services, thereby providing drives and incentives for hotels to become more environmentally friendly (Chan & Hawkins, 2012). Therefore, the hypothesis three was proposed as follows:

H3. External drivers have a significant positive influence on implementing green practices in the green hotels.

On the other hand, the internal driving forces (IDFs) referred to forces within the hotels that could encourage the adoption of green strategies. They were five drivers. (1) Environmental awareness and attitude of hotel management, (2) support by corporate headquarters, (3) high level of corporate social responsibility (CSR), (4) belief in balancing green practices and service quality, and (5) availability of green building features (Mak & Chang, 2019; Carballo-Penela & Castromán-Diz, 2014; Chan and

Hawkins, 2012; Levy & Park, 2011). Thus the hypothesis four was suggested as follows:

H4: Internal drivers have a significant positive influence on implementing green practices in the green hotels.

The green activities had a mediating influence on the relationships between determinants and performances (i.e., environmental performance and competitive advantage) (Hsiao et al., 2018). Thus, the hypotheses five and six were proposed as follows: **H5:** Implementing green practices has a significant positive influence on environmental performance of the green hotels.

H6: Implementing the green practices has a significant positive influence on competitive advantage of the green hotels.

Moreover, environmental performance had a mediating influence on the relationship between green activities and competitive advantage (Hsiao et al., 2018). Therefore, the hypothesis seven was supposed as follows:

H7: Environmental performance of the green hotels has a significant positive influence on their competitive advantage.

3. Methodology

3.1 Population of the research

The total Egyptian certified green star hotels were 92 hotels that included 26802 rooms. They represented 10 % of hotel capacity in Egypt. These hotels were distributed by 8 % in Hurghada, 17 % in Safaga, 24 % in El Gouna, 9 % in Marsa Alam, 29 % in South Sinai, 5 % in Marsa Matrouh, and 8 % in Cairo, Ain El Sokhna, and Alexandria. They were classified according to green star hotels rating as follows: three green stars were 2 hotels, four green stars represented 37 hotels, five green stars represented 32 hotels, and the

hotels were in process of certification represented 21 hotels (Green Star Hotel, 2021).

Therefore, the target population of the research consisted of managers who are responsible for green practices adoption in certified green star hotels in in the Red Sea region (El Gouna, Hurghada, Madinat Makadi and Safaga). These managers were Front Office Manager (he or she is the team leader of green program in hotels' sample), Housekeeping Manager, Chief Engineering, F&B Manager, and Executive Chef. The total number of them were 190 managers. The researcher targeted all of them in the targeted hotel population. Furthermore, total number of the green star hotels in these destinations were 42 hotels that were divided into 16 hotels in El Gouna, 13 hotels in Hurghada, 11 hotels in Madinat Makadi, and 2 hotels in Safaga. They represented almost 45.6 % of the green star hotels in Egypt. These hotels were classified according to green star hotels rating as follows: three green stars were 2 hotels, four green stars represented 20 hotels, five green stars represented 16 hotels, and there were 4 hotels in process of certification. The researcher discarded the four hotels which were in process certification.

Moreover, the research focused on certified three, four and, five green star hotels. These hotels were 38 hotels, which represented 41.3 % of the total Green Star hotels in Egypt. Therefore, the researcher selected this region to conduct the research, due to it represented the biggest cluster of the hotels that apply the green practices in Egypt. In addition, when target population were fewer than 50 cases, Henry (1990) advised against probability sampling. He argued that you should collect data on the entire target population, as the influence of a single extreme case on subsequent

statistical analyses was more pronounced than for larger samples. Therefore, the researcher collected data from the entire hotel population.

3.2 Research Tool

To achieve the research aim, a quantitative approach was adopted based on a questionnaire. It was developed and directed to hotels' managers who are responsible for green star practices adoption. The questionnaire consisted of 65 questions which were divided into 9 sections. Section one included respondents' profile such as gender, age, position, and years of experience. Section two involved hotel information as hotel category, location, green practices certification, and hotel green star rating.

Furthermore, section three consisted of external constraints of green practices such as inadequate government support, follow-through policies by the government, inadequate customer environmental awareness, green hotel standards being too high and rigid, conflict between environmentally friendly practices and hotel star rating system, and lack of a role model for benchmarking hindered the adoption of green practices (Mak and Chang, 2019).

Section four was internal constraints of green practices adoption. These constraints involved lack of environmental awareness of hotel management, difficulties in introducing change within the hotel, customer orientation outweighed environmental orientation, short-term orientation outweighed long-term orientation, pressure for profit maximization, and lack of green building design and features (Mak & Chang, 2019).

Section five was external drivers of adopting green practices. These drivers encompassed the implementation of appropriate policies and regulations by the government;

subsidies, rewards, counseling and assistance offered by the government; information and experience sharing among practitioners. They also included the collaboration among industry, government and academia; an increased availability of green products; rising customer environmental awareness; and an increased number of NGOs promoting environmental protection (Mak & Chang, 2019).

Section six was internal drivers of green practices adoption. These drivers consisted of top management's attitude and perceived importance of environmental strategies, the level of support given by corporate headquarters. They also included the adoption of environmental strategy was an important component of CSR, linking service quality and environmental practices was associated with an increase in customer satisfaction, and the availability of green building features had an impact on adopting green practices (Mak & Chang, 2019).

In addition, section seven encompassed green practices implementation as the hotel has a clear environmental policy, managers update their knowledge about the environmental impacts of hotel industry, managers in the hotel are interested in the best environmental practices in hotel sector, and the hotel gives priority to purchase ecological products. These practices also involved the hotel applies energy and water-saving practices, the managers publish regular external reports about environmental impacts or provide information on a website, Managers have discretion (time and funds) to undertake initiatives for environmental improvements, and managers and employees are committed to improving the environmental performance of the organization.

Furthermore, green practices included the hotel gives the employees training on environmental issues, the hotel recognizes and rewards the environmental initiatives of its employees, the managers educate guests about responsible environmental practices, the managers try to facilitate customer collaboration in achieving a more sustainable hotel, and the hotel organizes activities related to nature and the environment for its customers (Singjai et al., 2018).

Moreover, section eight included hotel's environmental performance. It consisted of Lower water and energy consumption, lower use of non-renewable resources, lower use of toxic materials, less solid waste, fewer discharges and emissions, noise abatement, less damage to the landscape, and lower risk of serious accidents (Singjai et al., 2018).

Finally, section nine involved hotel's competitive advantage. It comprised of Gaining brand image, the quality of the service offered is better than that offered by competitors, maintaining your current customers and attracting new ones, and achieving greater credibility in front of the society. It also included general costs are minimized because of the unification of some administrative and/or technical processes, reduction in regulation compliance costs, reduction in insurance premium costs, and better access to bank loans and lower financial costs (Hsiao et al., 2018; Singjai et al., 2018) . From section three to nine were measured according to the five-point Likert scale: 1= strongly disagree, 2=disagree, 3=neutral, 4= agree and 5=strongly agree.

3.3 Data collection procedures
Collecting data was depended on printed, and online questionnaires via e-mail, or Google Drive link. They were

distributed to five managers who are responsible for green practices adoption in each green star hotel. The respondent filled the printed questionnaire or received the Google Drive link of the questionnaire and asked to fill and submit it at a later time.

A total of 250 questionnaires were distributed to the managers, whereas 228 questionnaires were collected (91.2 % of the distributed questionnaires). The non-valid questionnaires were 22 forms, whereas 206 questionnaires were valid to analysis. These valid questionnaires exceeded the targeted population (190 managers).

3.4 Data Analysis

Data analysis was conducted using SPSS version 22. Appropriate statistical analyses were performed such as descriptive statistics, and Cronbach's alpha, simple linear regression, and ANOVA test were applied.

3.5 Validity and reliability of the questionnaire

3.5.1 Validity of the questionnaire

To ensure the content validity of the questionnaire, the initial questionnaire has been given to five referees to judge its content validity, the clarity of its items' meaning to avoid any misunderstanding, and to assure its linkage with the main research aims. The experts recommended modifying the wording of some statements, and clarifying the meanings of some statements**.** The experts were experienced academic professors and lecturers in the field of tourism and hospitality management.

3.5.2 Reliability of the questionnaire
Table 1: Reliability analysis of the research

The Dimensions	No. of Statements	Alpha Coefficient
External Constraints	7	0.75
Internal Constraints	6	0.72
External Drivers	8	0.70
Internal Drivers	5	0.87
Implementing Green Practices	13	0.94
Environmental Performance	10	0.95
Competitive Advantage	8	0.86
The Overall Scale's Cronbach's Alpha	57	0.72

variables

The reliability of the questionnaire was ensured by using Cronbach's Alpha test. Alpha Coefficient is a measure of internal consistency of a scale which ranges between 0 and 1 (Tavakol and Dennick, 2011). Cronbach's Alpha was acceptable if it was more than 0.70 (Nunnally, 1978). The Cronbach's Alpha coefficient was calculated and reached 0.72 for all scale items. As shown in table 1, it referred to all items were reliable.

4.1 Results and Discussion
Table 2: The Respondents' Profile

Variable	Response	Frequency	Percent	Rank
Gender	Males	203	98.5	1
	Females	3	1.5	2
	Total	**206**	**100**	**--**
Age	Less than 30 years	1	0.5	4

	30 - 40 years	79	38.3	2
	> 40–50 years	105	51	1
	> 50–60 years	21	10.2	3
	> 60 years	--	--	
	Total	**206**	**100**	**--**
Position Held	Engineering and Maintenance Manager	41	19.9	2
	Front Office Manager	48	23.3	1
	Housekeeping Manager	39	18.9	4
	F&B Manager	40	19.4	3
	Executive Chef	38	18.4	5
	Total	**206**	**100**	**--**
Years of Experience	Less than 10 years	5	2.4	3
	10-20 years	113	54.9	1
	>20-30 years	86	41.7	2
	>30-40 years	2	0.97	4
	Total	**206**	**100**	

As shown in table 2, males represented almost all of the respondents (98.5 %), whereas, females only 1.5 % of them. Furthermore, more than half of the respondents (51 %) were between 40–50 years, followed by 38.3 % of them were between 30 - 40 years. Only 10 % of them were between 50–60 years. It meant that 89.3 % of the managers in the hotels' sample were between 30-50 years. Moreover, Front Office Managers represented 23.3 %, Engineering and Maintenance Managers were 19.9 %, F&B Managers were 19.4 %, and Housekeeping Managers were 18.9 % of the respondents. In addition, Executive Chefs represented 18.4 % of the respondents. It referred to the variety of hotels' managers who were responsible for adopting green programs in the hotel sample.

The researcher also noted that the Front Office Manager, or Engineering and Maintenance Managers were responsible for green program implementation as a team leader in the hotels' sample. It meant that the hotels managers did not employ environmental manager to apply green programs in their hotels. It led to leakage in adopting green program in the hotels' sample.

On the other hand, more than half of the respondents (54.9 %) had between 10-20 experience years, while 41.7 % of them had between 20-30 experience years in hotel industry. It referred to 96.6 % of the respondents had between10-30

experience years in the hotel industry, which meant that
they had high experience in the hospitality industry.

Table 3: The Hotel Data Descriptive Statistics

Variable	Response	Frequency	Percent	Rank
Hotel Grade	Five Stars	99	48.1	1
	Four Stars	43	20.9	3
	Three Stars	64	31.1	2
	Two Star	---	---	
	Total	**206**	**100**	
Hotel Location	El Gouna	102	49.5	1
	Hurghada	28	13.6	3
	Makady Bay	76	36.9	2
	Total	**206**	**100**	
Hotel Holding Green Certification	Yes	206	100	1
	No	--	--	--
	Total	**206**	**100**	-
Type of Green Hotel Certification	National	199	96.6	1
	International	7	3.4	2
	Total	**206**	**100**	-
Green Hotel Star Rating	Five Green Star	118	57.3	1
	Four Green Star	85	41.3	2
	Three Green Star	3	1.5	3
	Total	**206**	**100**	-

Table 3 displays that five star hotels represented 48.1 %,
followed by three star hotels which represented 31.1 %, and
four star hotels represented 20.9 % of the respondents. It
referred to main hotels' categories were represented in the
hotels' sample. In addition, El Gouna was the first region

had green hotels in the red sea which represented almost half of the respondents (49.5 %). Makady Bay was the second region which had green hotels which represented 36.9 %. Hurghada was the third region which had green hotels that represented 13.6 % of the respondents.

It meant that the researcher involved all regions that had green hotels in the Red Sea Governorate. The current finding disagreed with Rahman et al. (2012) who stated that the hotels in the Midwest were found to be the most environmentally friendly regarding their use of no or low cost green practices. Moreover, almost all of the respondents (96.6 %) had national green hotel certification from Ministry of Tourism, Egyptian Hotel Association. The current finding disagreed with Rahman et al. (2012) who stated that the chain hotels were stronger adopters of green practices than independent hotels. Regarding to green hotel star rating, more than half of the respondents (57.3 %) had five green star rating in their hotels, and 41.3 % of them had four green star rating in their hotels, while only 1.5 % of them had three green star rating in their hotels. It referred to 96.6 % of the respondents had a certification in highest five and four green star rating in their hotels.

It meant that almost all hotels' sample applied highest standards of national green practices to preserve hotel environment. The current result disagreed with Fayyad et al. (2013) who revealed that some of hotels' sample obtained green accreditation certificates from some organizations.

Table 4: Descriptive Statistics of Green Practices Implementation Variables in Green Hotels

Green Practices Implementation Variables (N=206)	Mean*	SD	Rank
1. External constraints	3.11	0.721	7
2. Internal constraints	3.20	0.789	6
3. External drivers	4.15	0.666	5
4. Internal drivers	4.27	0.597	3
5. Implementing green practices	4.32	0.546	2
6. Environmental Performance	4.44	0.521	1
7. Competitive Advantage	4.23	0.568	4

In table 4, it is noted that the environmental performance of green hotels was the first variable, where the mean value was 4.44 and the standard deviation was 0.521. On the other hand, the last variable was the external constraints that encountered green practices adoption, where the mean value was 3.11 and the standard deviation was 0.721. Furthermore, mean scores of the variables ranged from 3.11 to 4.44 that meant neutral to agree. The means attitude of external and internal constraints was neutral which rated by overall scores M=3.11; SD= 0.721, and M=3.20; SD= 0.789 respectively. These variables were the sixth and seventh variables in implementing green practices in the hotels' sample. It referred to the external and internal constraints did not hinder green practices adoption.

The current result differed from Chan et al. (2015) who revealed that inconvenience of the government, unpredictable weather, and the likely negative influence of technologies on customer service were external obstacles. The current result also disagreed with Al-Aomar and Hussain (2017); Chan et al. (2015); Mbasera et al. (2017)

who found that the physical constraints of the building, a lack of owner initiative and resources, budgetary priorities, the potential effect of the technologies on daily operations, and the short duration of hotel management contracts were internal barriers.

On the other hand, the means attitude of external and internal drivers was agree which rated by overall scores M=4.15; SD= 0.666, and 4.27; SD= 0.597 respectively. These dimensions were classified the fifth and third variables in implementing green practices in the hotels' sample. It meant that the external and internal drivers enhanced adopting green practices in the green hotels. Moreover, the mean attitude of implementing green practices was agree which rated by overall scores M=4.32; SD= 0.546. This variable was the second variable in implementing green practices in the hotels' sample. It referred that the green hotels in Red Sea Governorate were highly implement green practices to preserve the environment and natural resources. The current result disagreed with Fayyad et al. (2013) who revealed that most of the sample hotels applied some green programs, and some of them had a written environmental policies, and some of them obtained green accreditation certificates from some organizations.

Finally, the means attitude of environmental performance and competitive advantages was agree which rated by overall scores M=4.44; SD= 0.521, and M=4.23; SD=0.568 respectively. These variables were the first and fourth variable in adopting green practices in the hotels' sample. It meant that the green hotels in research sample had high environmental performance in their operations. Thus their

competitive advantages were also high because of implementing green practices.

Table 5: Differences between Respondents' Years of Experiences and Green Star Rating Regarding to Green Hotels Dimensions

Green Hotels Practices Dimensions	Years of Experiences		Green Star Rating	
	F	Sig.	F	Sig.
1. External constraints	5.254	0.002*	2.474	0.087
2. Internal constraints	2.557	0.056*	5.177	0.006*
3. External drivers	0.064	0.979	2.426	0.091
4. Internal drivers	1.502	0.215	0.551	0.577
5. Implementing green practices	0.908	0.438	1.453	0.236
6. Environmental Performance	1.833	0.142	3.313	0.038*
7. Competitive Advantage	0.749	0.524	2.620	0.075

Table 5 illustrates the one-way ANOVA to analyze the differences between respondents' years of experiences and hotels' green star rating regarding green hotels dimensions. The results showed that the significance levels for all variables were more than 0.05. It referred to there were no statistically significant differences between years of experiences concerning green hotels dimensions, except the external, and internal constraints in years of experiences factor, where the significance level was 0.002, and 0.056 respectively.

Furthermore, there were no statistically significant differences between green star rating concerning green hotels dimensions, except the internal constraints, and environmental performance, where the significance level was 0.006, and 0.038 respectively. All of the previous variables' significance levels were less than 0.05 that significance that there were statistically significant differences between years of experiences concerning these variables.

According to the external constraints in table 6, the LSD (Least Significant Difference) test was calculated to determine the sources of differences. There was only statistically significant difference between respondents who had experience from 10-20 years and who had experience more than 20-30 years (Sig. = 0.000). This difference was in favor of respondents who had experience less than 10 years (Mean = 3.43), who had experience from 10-20 years (Mean= 3.27), and who had experiences more than 30-40 years (Mean = 3.07) against who had experience from 20-30 years (Mean = 2.89). Thus, the current result responded to the first research question. It referred to the respondents who had experience from 10-20 years recognized that the external constraints hindered green practices adoption more than the respondents who had experiences form 20-30 years.

On the other hand, regarding to internal constraints in table 6, there were statistically significant differences between the respondents who had experience more than 30-40 years, and who had experience less than 10 years (Sig.= 0.031), and who had experience from 10-20 years (Sig. =0.042), and who had experience more than 20-30 years (Sig. = 0.019). In table 7, these differences were in favor of

respondents who had experience from 10-20 years (Mean = 3.28), and who had experience more than >20-30 years (Mean = 3.10), and who had experience more than 30-40 years (Mean= 4.42); against respondents who had experience less than 10 years (Mean= 3.00).

It may be due to the respondents who had experience less than 10 years were the lowest category who recognized the internal constraints that encountered the green hotels toward adopting green practices because of their low experiences. Thus, the current result responded to the first research question. The current results disagreed with SAENYANUPAP (2005) who illustrated hotel managers' attitudes toward sustainability practices relied on their social demographics.

According to internal constraints, the LSD (Least Significant Difference) test was calculated to determine the sources of differences. Table 8 shows that there was only statistically significant difference between five, and four green star hotels (Sig. = 0.004). In table 9, this difference was in favor of five green star hotels (Mean= 3.33) against four green star hotels (Mean= 3.01).

Thus, the current result responded to the second research question. It meant that five green star hotels recognized the internal constraints hindered the green practices adoption more than four green star hotels. It may be due to the managers and employees in five green star hotels were aware that internal constraints hindered the green practices adoption more than the managers and employees in four green star hotels.

On the other hand, regarding to environmental performance in table 8, there was only statistically significant difference between five, and three green star hotels (Sig. = 0.040). In

table 9, this difference was in favor of three green star hotels (Mean= 5.00), against five green star hotels (Mean = 4.38). Thus, the current result responded to the second research question.

It referred to the environmental performance of three green star hotels was better than environmental performance of five green star hotels. It may be due to the required green criteria for three green star hotels was less than the green criteria that were required from five green star hotels. Moreover, the hotel capacity and operations in three green star hotels were less than five green star hotels. Therefore, the environmental performance of three green star hotels was better than five green star. The current results disagreed with SAENYANUPAP (2005) who illustrated hotel managers' attitudes toward sustainability practices relied on the hotel type.

Table 6: LSD (Least Significant Difference) Test

Dependent variable		(I) Years of Experiences	(J) Years of Experiences	Sig.
1. External constraints		less than 10 years	From 10-20 years >20-30 years >30-40 years	0.619 0.093 0.542
	LSD	From 10-20 years	less than 10 years >20-30 years >30-40 years	0.619 0.000 0.692
Continued Table 6: continued		>20-30 years	less than 10 years From 10-20 years >30-40 years	0.093 0.000 0.710

		>30-40 years	less than 10 years From 10-20 years >20-30 years	0.542 0.692 0.710
2. Internal constraints	**LSD**	less than 10 years	From 10-20 years >20-30 years >30-40 years	0.438 0.779 0.031
		From 10-20 years	less than 10 years >20-30 years >30-40 years	0.438 0.115 0.042
		>20-30 years	less than 10 years From 10-20 years >30-40 years	0.779 0.115 0.019
		>30-40 years	less than 10 years From 10-20 years >20-30 years	0.031 0.042 0.019

Table 7: Means of External and Internal Constraints that Face Green Hotels regarding the Respondents' Years of Experience

Dependent variable	less than 10 years	From 10-20 years	>20-30 years	>30-40 years

1. External constraints	3.43	3.27	2.89	3.07
2. Internal constraints	3.00	3.28	3.10	4.42

Table 8: LSD (Least Significant Difference) Test

Dependent variable		(I) Green Star Rating	(J) Green Star Rating	Sig.
2. Internal Constraints	**LSD**	Five green star	Four green star Three green star	0.004 0.269
		Four Green Star	Five Green star Three green star	0.004 0.073
		Three green star	Five green star Four green star	0.269 0.073
3. Environmental Performance	**LSD**	Five green star	Four green star Three green star	0.085 0.040
		Four Green Star	Five Green star Three green star	0.085 0.102
		Three green star	Five green star Four green star	0.040 0.102

Table 9: Means of Internal Constraints and Environmental Performance of Green Hotels regarding the Hotels' Green star Rating

Dependent variable	Five Green Star	Four Green Star	Three Green Star
1. Internal Constraints	3.33	3.01	3.83
2. Environmental Performance	4.38	4.50	5.00

On the other hand, there was no significant correlation between external constraints and green practices implementation (R=0.002). Furthermore, R^2 which has referred to the coefficient of determination, was 0.000. Moreover, Sig. value was 0.979 which was more than 0.05 suggesting that, the null hypothesis of the research was accepted. Thus, there was not a significant impact of external constraints on green practices implementation in the green hotels. Therefore, the first hypothesis was not accepted. Furthermore, the statistical constant (α) has equaled 4.320 with a significance level of less than 5%, whereas (β) has equaled -0.001-, with a significance level of 0.979. It meant that the managers in the hotels' sample did not consider the external constraints as a burden to adopt green practices, because they already adopted the green practices in their hotels. This result disagreed with Mak and Chang (2019) who found that external constraints hindered the adoption of green practices.

In addition, There was no significant correlation between internal constraints and green practices implementation (R=0.089). Furthermore, R^2 which has referred to the coefficient of determination, was 0.008. Moreover, Sig. value was 0.206 which was more than 0.05 suggesting that,

the null hypothesis of the research was accepted. Thus, there was not a significant impact of internal constraints on green practices implementation in the green hotels. Therefore, the second hypothesis was not accepted. Furthermore, the statistical constant (α) has equaled 4.119 with a significance level of less than 5%, whereas (β) has equaled 0.061, with a significance level of 0.206.

It meant that the internal constraints were not hinder to adopt green practices in the green hotels. It may be due to the green hotels had a strategy to adopt green practices to be more environment friendly. Therefore, these hotels overcome the external, and internal constraints. The current finding disagreed with Mak et al. (2017); Banerjee (2002); Woolverton and Dimitri (2010) who illustrated that internal constraints impeded the adoption of green practices in hotel industry.

Table 10: Linear Regression Coefficients for the Impact of External Drivers on Green Practices Implementation in Hotels

Dependent Variable		Independent Variable
		External Drivers
Green Practices Implementation	R	0.491
	R^2	0.241
	T	8.058
	Sig.	0.000
	Constant	2.646
	β	0.402

It is noted in table 10, there was a medium significant correlation between external drivers and green practices implementation (R=0.491). Furthermore, R^2 which has referred to the coefficient of determination, was 0.241 suggesting that 24 % of the variation of green practices

implementation was explained by external drivers. Moreover, Sig. value was 0.000 which was less than 0.05 suggesting that, the null hypothesis of the research was not accepted. On the other hand, there was a significant impact of external drivers on green practices implementation.

Furthermore, the statistical constant (α) has equaled 2.646 with a significance level of less than 5%, whereas (β) has equaled 0.402, with a significance level of less than 5 %. From the previous result, the following equation was suggested:

Green Practices Implementation=2.646 + (0.402* External Drivers).

Therefore, the third hypothesis was supported. External drivers had a significant positive influence on implementing green practices in the green hotels.

The current finding agreed with Mak and Chang (2019), Chan (2013), Chan and Wong (2006), Hsiao et al. (2014) who illustrated that external drivers influenced positively the green practices adoption in the hotels.

Table 11: Linear Regression Coefficients for the Impact of Internal Drivers on Green Practices Implementation in Hotels

Dependent Variable		Independent Variable
		Internal Drivers
Green Practices Implementation	R	0.511
	R^2	0.261
	T	8.481
	Sig.	0.000
	Constant	2.323
	β	0.467

Table 11 shows that there was a medium significant correlation between internal drivers and green practices implementation (R=0.511). Furthermore, R^2 which has referred to the coefficient of determination, was 0.261 suggesting that 26 % of the variation of green practices implementation was explained by internal drivers. Moreover, Sig. value was 0.00 which was less than 0.05 suggesting that, the null hypothesis of the research was not accepted. On the other hand, there was a significant impact of internal drivers on green practices implementation.

Furthermore, the statistical constant (α) has equaled 2.323 with a significance level of less than 5%, whereas (β) has equaled 0.467, with a significance level of less than 5 %. From the previous result, the following equation was suggested: Green Practices Implementation=2.323 + (0.467* Internal Drivers).

Hence, the fourth hypothesis was supported. Internal drivers have a significant positive influence on implementing green practices in the green hotels.

This finding agreed with Carballo-Penela and Castromán-Diz (2014), Chan and Hawkins (2012), Levy and Park (2011), Kassinis and Soteriou (2015), and Mak and Chang (2019) who found that internal drivers had a positive impact on adopting green practices.

Table 12: Linear Regression Coefficients for the Impact of Green Practices Implementation on Hotels' Environmental Performance

Dependent Variable		Independent Variable
		Green Practices Implementation
Hotels' Environmental	R	0.789
	R^2	0.623

Performance	T	18.350
	Sig.	0.000
	Constant	1.187
	β	0.753

As shown in table 12, there was a strong significant correlation between green practices implementation and hotels' environmental performance (R=0.789). Furthermore, R² which has referred to the coefficient of determination, was 0.623 suggesting that 62 % of the variation of hotels' environmental performance was explained by green practices implementation. Moreover, Sig. value was 0.00 which was less than 0.05 suggesting that, the null hypothesis of the research was not accepted. On the other hand, there was a significant impact of green practices implementation on hotels' environmental performance.

Furthermore, the statistical constant (α) has equaled 1.187 with a significance level of less than 5%, whereas (β) has equaled 0.753, with a significance level of less than 5 %. From the previous result, the following equation was suggested:

Hotels' Environmental Performance =1.187 + (0.753* Green Practices Implementation).

Hence, the fifth hypothesis was supported. Implementing green practices has a significant positive influence on environmental performance of the green hotels.

The current result also agreed with Hsiao et al. (2018) who stated that the green activities had a mediating influence on the relationships between determinants and environmental performances. On the other hand, the current results disagreed with Rheede and Blomme (2012) who indicated that the hotel managers were less ready to apply social

sustainability. The hotel chains seemed limited in their policy because the hotel owner was not ready to spend in sustainability measures.

Table 13: Linear Regression Coefficients for the Impact of Green Practices Implementation on Hotels' Competitive Advantages

Dependent Variable		Independent Variable
		Green Practices Implementation
Hotels' Competitive Advantages	R	0.612
	R^2	0.374
	T	11.047
	Sig.	0.000
	Constant	1.477
	β	0.637

Table 13 displays that there was a medium significant correlation between green practices implementation and hotels' competitive advantages (R=0.612). Furthermore, R² was 0.374 suggesting that 37 % of the variation of hotels' competitive advantages was explained by green practices implementation. Moreover, Sig. value was 0.00 which was less than 0.05 suggesting that, the null hypothesis of the research was not accepted. On the other hand, there was a significant impact of green practices implementation on hotels' competitive advantages. Furthermore, the statistical constant (α) has equaled 1.477 with a significance level of less than 5%, whereas (β) has equaled 0.637, with a significance level of less than 5 %. From the previous result, the following equation was suggested: Hotels' Competitive Advantages =1.477 + (0.637* Green Practices Implementation).

Therefore, the sixth hypothesis was supported. Implementing the green practices has a significant positive influence on competitive advantage of the green hotels.

This finding agreed with Hsiao et al. (2018) who revealed that green activities had a mediating influence on the relationships between determinants and competitive advantage. Furthermore, the current result agreed with Chen and Chen (2012) who found that the hotels accomplished the green business criteria, which supported hotels' competiveness of environmental preservation, health, and highlighted hotels' features.

Table 14: Linear Regression Coefficients for the Impact of Hotels' Environmental Performance on their Competitive Advantages

Dependent Variable		Independent Variable
		Hotels' Environmental Performance
Hotels' Competitive Advantages	R	0.592
	R^2	0.350
	T	10.486
	Sig.	0.000
	Constant	1.361
	β	0.646

Table 14 illustrates that there was a medium significant correlation between hotels' environmental performance and hotels' competitive advantages (R=0.592). Furthermore, R² was 0.350 suggesting that 35 % of the variation of hotels' competitive advantages was explained by hotels' environmental performance. Moreover, Sig. value was 0.00 which was less than 0.05 suggesting that, the null hypothesis of the research was not accepted. On the other

hand, there was a significant impact of hotels' environmental performance on hotels' competitive advantages.

Furthermore, the statistical constant (α) has equaled 1.361 with a significance level of less than 5%, whereas (β) has equaled 0.646, with a significance level of less than 5 %. From the previous result, the following equation was suggested:

Hotels' Competitive Advantages =1.361 + (0.646* Hotels' Environmental Performance). Therefore, the seventh hypothesis was supported. Environmental performance of the green hotels has a significant positive influence on their competitive advantage.

This result agreed with Hsiao et al. (2018) who indicated that environmental performance had a mediating influence on the relationship between green activities and competitive advantage.
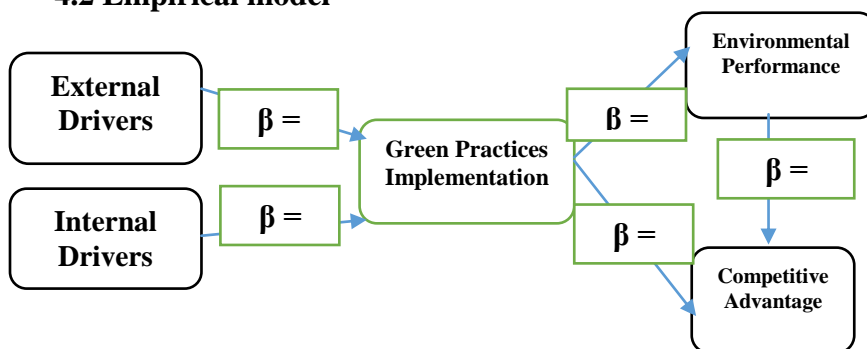
4.2 Empirical model

Figure 2: Factors that Influence the Hotels' Environmental Performance and Competitive Advantages: Mediating Role of Green Practices Implementation

5.1 Conclusion and Recommendations

The current research aims to evaluate the influence of drivers and constraints on hotels' environmental performance and competitive advantages in a mediating role of green practices adoption in green star hotels in Hurghada, Egypt. The target population of the research consisted of managers who are responsible for green practices adoption in certified green star hotels in in the Red Sea region (El Gouna, Hurghada, Madinat Makadi and Safaga). These managers were Front Office Manager, Housekeeping Manager, Chief Engineering, F&B Manager, and Executive Chef. The total number of them were 190 managers. The research focused on certified three, four and, five green star hotels in this region. These hotels were 38 hotels, which represented 41.3 % of the total Green Star hotels in Egypt.

Furthermore, a quantitative approach was adopted based on a questionnaire using five point Likert scale. In addition, data were collected depended on printed, and online questionnaires via e-mail, or Google Drive link. A total of 250 questionnaires were distributed to the managers, whereas 228 questionnaires were collected (91.2 % of the distributed questionnaires). The non-valid questionnaires were 22 forms, whereas 206 questionnaires were valid to analysis. Moreover, data analysis was conducted using SPSS version 22. Appropriate statistical analyses were performed such as descriptive statistics, and Cronbach's alpha, simple linear regression, and ANOVA test were applied.

The main findings revealed that the respondents who had experience from 10-20 years recognized that the external constraints hindered green practices adoption more than the

respondents who had experiences form 20-30 years. Furthermore, regarding to internal constraints, there were statistically significant differences between the respondents' experiences in favor of who have higher experiences against who have less than 10 years experiences. Furthermore, five green star hotels recognized the internal constraints hindered the green practices adoption more than four green star hotels. Moreover, the environmental performance of three green star hotels was better than environmental performance of five green star hotels.

There was not a significant impact of external and internal constraints on green practices implementation in the green hotels. On the other hand, there was a significant impact of external and internal drivers on green practices implementation. Moreover, there was a significant impact of green practices implementation on hotels' environmental performance and competitive advantages. Thus, the green practices adoption had a mediating role between external and internal drivers and hotels' environmental performance and competitive advantages. Furthermore, there was a significant impact of hotels' environmental performance on hotels' competitive advantages.

The current research suggested some recommendations. All categories of green star hotels should appoint environmental manager in their hotels to be responsible for adopting a green program. Three and four green star hotels should accomplish green criteria to be certified as a five green star hotels, preserve the natural resources, and decrease their negative impact on the environment. There are limited certified green hotels (38 hotels) in Red Sea Region. Therefore, Egyptian Hotel Association should set a strategy to encourage the hotels to have a certification of

green programs. Certified green star hotels should keep their adopting of green practices and accreditation of green programs. They should also transform their experience in adopting green practices to non-certified hotels in cooperation with Ministry of Tourism. Certified green hotels should organize green workshops, seminars, training courses, conferences etc. to non-certified hotels to exchange their experiences and incentive them to be green hotels.

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