AN ANALYTICAL STUDY ON THE IMPORTANCE OF ECO-FRIENDLY PRACTICES AND ITS LEVEL OF ADOPTION IN STAR CATEGORY HOTELS

Sonali Chhetri

School of Hotel management Airlines & Tourism, CT University, Punjab India.

Email: sonalitiwari0302@gmail.com

Amit Kumar*

School of Hotel management Airlines & Tourism, CT University, Punjab India.

Corresponding Author Email: ak.amitmathur@gmail.com

ABSTRACT

The COVID-19 pandemic has given an opportunity for hotels to understand the importance and adoption towards sustainable practices to reduce their ecological impact as it has given rise to usage of less eco-friendly practices. Similarly, with a strong population base and increasing demand for rooms, upcoming hotel projects in Uttar Pradesh follow innovative green concepts in terms of infrastructural development, amenities, services and products. This study will focus on the star category hotels of the Heritage Arc of Uttar Pradesh namely Agra, Lucknow and Varanasi. A five point likert scale based questionnaire was used to collect data from hotel employees (N=108) to determine the importance of eco-friendly practices and its correlation in their level of adoption. Exploratory factor analysis and Correlation regression analysis was computed to test the hypothesis. The results of the study highlighted that variables for importance of eco-friendly practices were not identical when compared with the variables for adoption of eco-friendly practices and suggested hotels to exercise the variables of importance along with the existing adopted practices. Secondly, three dimensions namely adoption of energy saving practices, adoption of hotel sustainable policies and adoption of air pollution control practices were found to be most important with their respective βeta coefficient values (.211), (.197) and (.177). Further results concluded that the findings from correlation and regression analysis determines a positive and significant correlation between (.720) importance of eco-friendly practices and adoption of eco-friendly practices in star category hotels of Uttar Pradesh.

KEYWORDS: Sustainable practices, Green concepts, Star category hotels, Heritage Arc, Eco-friendly practices.

Eur. Chem. Bull. **2023,**12(Special Issue 5), 3380-3402

3380

INTRODUCTION

With rich cultural heritage, natural beauty and variety in ecology, Indian hospitality industry have emerged as an important service sector in India. India ranked 10th among 185 countries to GDP contribution of 6.8% in the total economy in year 2019 but it accounted a drop for 5.5 % of the global GDP in 2020 due to the pandemic (IBEF, 2021). With major initiatives from the Government of India, domestic tourism has emerged 300% in comparison to the Pre-COVID period with customers looking more for hygienic, safe and eco-friendly environment (Hindu business line, 2021). Though the pandemic has declined the overall revenues of the hotel but it also gave an opportunity for hotels to understand the importance and adoption towards sustainable practices to reduce their ecological impact as the pandemic have given rise to plastic usage and harmful chemicals. This study will focus on the star category hotels of the Heritage Arc of Uttar Pradesh namely Agra, Lucknow and Varanasi. Uttar Pradesh, India's fourth largest and highly populated state is working on large scale to protect the environment. Eco-friendly practices started getting momentum in the Indian State of Uttar Pradesh due to the expansion of several star hotel setups over a past decade. The total number of approved star category hotels being 24 and there are large number of unapproved hotels in Uttar Pradesh (MOT, Government of India, 2020). The main purpose for choosing the Heritage Arc is that the Government of Uttar Pradesh created a chain of survey triangulations to enhance hospitality and tourism in the state. With a strong population base and increasing demand for rooms, upcoming hotel projects in Uttar Pradesh practices innovative green concepts in terms of infrastructural development, amenities, services and products.

Findings in the 11th Sustainability roundtable conference at Centre for Hospitality Research, Cornell in February 2021, discovered that despite the pandemic hotel industry considered eco-friendly practices as a top priority for one major reason: Their customers. According to Sustainable Travel report, approximate 70% of the customers are expected to make reservations in lodging establishments that follow eco-friendly practices [17]. It is noticed that the hotel industry devours a considerable number of natural resources mainly water and energy. Specially with extreme weather conditions in India, energy management systems are gaining popularity with advance technology solutions like automated temperature sensors, HVAC inter-face, sensor lighting etc [19]. With the increase in environmental sensitivity among the general public and stringent government policies in the last decade and post pandemic scenario, customers have shown a growing demand for hotels that practice green operations. According to a study conducted on Indian travellers in 2020, majority of them preferred to stay in eco-friendly hotels and 38% preferred to stay in chain hotels practising green operations during the pandemic (Statista Research Department, 2021). Eco-friendly practices may be defined as services that focuses on utilising amenities and facilities conserving the environment, natural resources and reduction in carbon emissions [26]. There are several government policies which encourages hotel industry to adopt eco-friendly practices, reasons being long term financial benefits, lifestyle changing attitudes of customer, sensitisation of the various stakeholders, brand image of the organisation, governmental policies and revisit intention of the customers [24]. A recent study on "influence of eco-friendly technologies in hospitality industry" pointed that employee working in organisations adopting eco-friendly practices show high satisfaction level in terms of green initiatives, remuneration, individual health and working hours [47]. Various star hotels in India like ITC hotels have adopted sustainable programmes like

"Welcom Environ", The Orchid hotel Mumbai being trend setters in the field of "Green Hotels", The Taj Group with the Environment Awareness and Renewal Program (EARTH) to support and educate towards environment conservation [40]. It is noticed that star hotels are more inclined towards adopting eco-friendly practices than non-star hotels due to better financial positions and intensive programmes [37]. With the recent increase in environmental sensitivity among customers, many hotels have shown an increase in the adoption of green practices in India. Such studies on importance and adoption of eco-friendly practices has not been conducted in the heritage arc of Uttar Pradesh. Stemming from the above data and considering the increasing societal significance on the importance and adoption of eco-friendly practices, the current study attempted to analyse the importance of eco-friendly practices and its level of adoption in star category hotels of Uttar Pradesh.

REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

Concept of Eco-friendly Practices

Environmentalism has been recognised as one of the major corporate concerns of the 1990's as environmental awareness has witnessed a significant increase globally. Previous study by [38] observed that in 1990s, hotels started inculcating the concept of eco-friendly practices due to growth of technology and changing customer perception towards protecting the environment. Similar study by [12] stated the originality of hotel sustainability back to 1960's, due to increasing consciousness environmental impacts. Similarly, in the Indian context environmental conservation dates back to the primordial Vedic period indicating human sensitivity towards the environment. Ancient Aryankas and Upanishads provide deep insight into holistic living with vernacular architecture as a prominent feature in Indian construction. The concept of eco-friendly practices refers to the advancement and measures adopted by the organization, implementing all activities and operations ensuring minimum negative ecological impact [4]. Similar theories by various researchers states eco-friendly practices as approaches which aims to decrease the overall negative environmental impact .Such conservation approaches benefit local cultures, natural resources and economy in terms of energy and water management [5]. Hotels actively participate in environmentally friendly procedures, institute rigorous green programs, and commit to achieving environmental improvement (Green Hotel 2008).

According to the International Tourism Partnership [ITP] (2017), a program designed to assist hospitality industry to practice responsible business practices, sums it up while all of these definitions capture the essence of what an eco-friendly hotel is, the definitions are very diverse. One lodging establishment may implement extensive steps to reduce energy consumption while another may engage in recycling linen programs."The question may arise which eco-friendly practices are of the most importance ?" as both type of establishments are implementing conscious steps to reduce and save natural resources. To combat this issue, the current study analyses to explore the most important eco-friendly practices in hotel industry and gives formation to hypothesis1.

Hypothesis 1: There is a set of eco-friendly practices in the hotel industry that is of most importance.

Importance and Adoption of Eco-Friendly Practices-Customers

21st century customers are conscious about their ecological footprint, choose environment friendly hotels and demand for green practices. With increasing demand by customers for sustainability, lodging establishments are adopting eco-friendly practices in their daily operations

[6]. An increase in customers concern and awareness towards eco-friendly practices through technology based applications is apparent in the conscious marketplace (Han et al., 2014).Demographically female gender, highly educated customers and young generation show more concern about eco-friendly practices; this enables to identify market segments and strategies to attract customers with pro-environmental behaviour .However, female customers expressed more importance to price attribute than that of eco-friendly attribute of the hotel while selecting a hotel.Therefore it is extremely important to train hotel employees in tangible and non - tangible eco-friendly practices to advertise and maximise customer involvement. The study also concluded that cost and employee support are internal factors while customers support is considered as an external factor which influences the adoption of eco-friendly practices in the hotel. For a hotel to adopt eco-friendly practices it is essential to increase customer awareness on environmental protection and equally important to get support from the management, government and various stakeholders [41].

Importance and Adoption of Eco-Friendly Practices -Hotels

Despite the negative economic impact due to pandemic, international hotel chains are expanding their footprint in India, accounting to 47 percent share by 2020 and 50 percent by 2022 in the hospitality sector. Similarly, domestic travellers are expected to fuel growth post pandemic Along with the expansion of properties, however, contribute to numerous harmful impacts on the environment. The only choice left for the industry is to recognize the prerequisites for using natural resources sensibly and monitor consumption by embracing environmentally sensitive practices and strategies[19] . According to Pizman 2008, the Intercontinental group (IHG) was the first eco-friendly hotel launched in 2008 with key features as windmill power, sewage treatment plant, recycled glass windows etc. [45] pointed that water consumption per guest in a hotel is significantly higher than in private dwellings. Hotels use 400-784 litres of water per day whereas residential use 303-400 litres per day [8]. In harmony with the above findings, [2] revealed the necessity for installing sensor systems to reduce resource consumption. Several researchers have agreed preserving natural resources, enhancing electrical efficiency, lowering greenhouse gas emissions, procuring local products aids in reducing environmental burden. [1]. Earlier findings stated that hotel managers are reluctant to implement eco-friendly practices due to cost related factors like certification fees and environmental audits [46]. However due to stringent Government rules many establishments worldwide have adopted green operations to differentiate themselves from respective competitors. In fact, chain affiliated hotels adopt extensive green practices as compared to resorts and independent hotels due to strong financial support Establishments adopting sustainability ideas proves beneficial for organisation and individual, improves credibility, reputation and decreases environmental degradation. Trained employees represent as excellent ambassadors for promoting brand image. Similarly, application of green technology helps resource optimization, cost and understand customers preference in hotel selection. The adoption of eco-friendly practices have competitive advantages like enhanced corporate image, reduced operational cost , preference to local consumption, higher guest satisfaction and opts for certification and auditing to sustain the eco-friendly practices .Eco-friendly practices are important part in hotel operation however various factors like geographical location , hotel category, financial status of the establishment and governmental support plays an important role in supporting the adoption of eco-

friendly practices in the hotel. This complexity of importance and adoption deserves to be studied in depth. Therefore, the study offers to create the second hypothesis to examine the correlation between importance and level of adoption of eco-friendly practices in star category hotels.

Hypothesis 2: There exists a correlation between importance and level of adoption of eco-friendly practices in star category hotels**.**

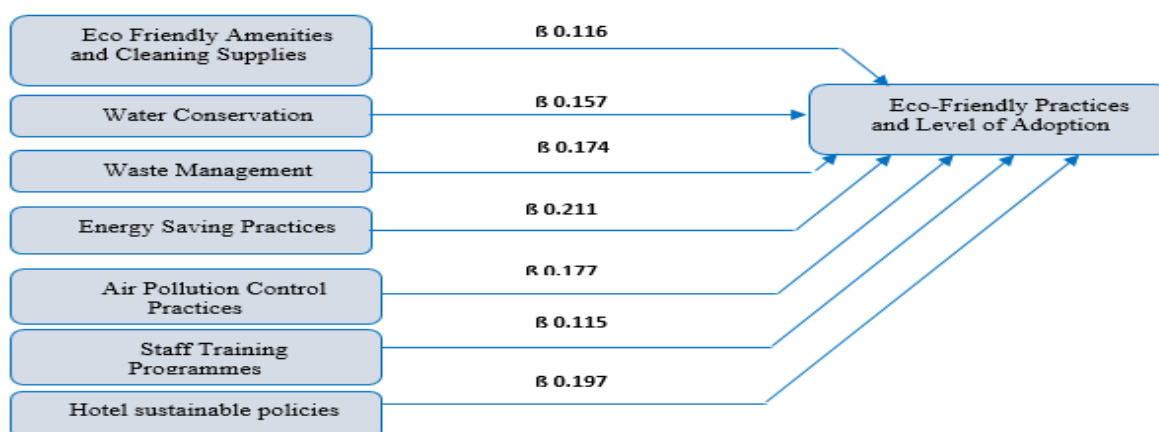**Dimensions of Eco-Friendly Practices and its level of Adoption**

Figure 1. Proposed Conceptual Framework –Adoption of eco-friendly practices with their Beta Coefficients

RESEARCH METHODOLOGY

The study has been carried out in the star category hotels of "Heritage Arc''in Uttar Pradesh on a sample size of 108 hotel respondents .The primary data based study uses a structured questionnaire and data were collected from the employees of star category hotels. The questionnaire was divided into two sections. The first section consisted of the demographic profile of the respondents. The second section consisted of questionnaire on a five-point likert scale on the importance and adoption of eco-friendly practices. 47 attributes of eco-friendly practices were taken to understand its importance and adoption. The Cronbach Alpha value for importance **(.977)** and **(.972)** for adoption. Factor analysis was

computed and interpretation was made accordingly. The hypothesis was to determine the correlation between importance and adoption, since there were no single variable of both dimensions, two scales were developed to measure level of importance and adoption of eco-friendly practices.

Scale Development

In order to test the hypothesis formed, the researcher developed a scale to measure the importance and adoption of eco-friendly practices in case of hoteliers and studied their variables in the following dimensions of the study.

	Dimensions	Variable/no of items
Hoteliers	Importance	47
	Adoption	47

Eur. Chem. Bull. **2023,**12(Special Issue 5), 3380-3402

3384

Process of developing scale:

A five point likert scale used in case of hotel employees for adoption of eco-friendly practices are; never (1), rarely (2), sometimes (3), often-(4), always (5) and scale used for importance are; not at all important(1) , slightly important(2), somewhat important (3),moderately important(4), extremely important(5).

In order to measure the dimensions, the researcher performed the following calculations.

➢ All the scores were converted into Z scores for all the variables of each dimension.

➢ Total score of all the variables of each hotel dimensions (importance and adoption) for all 108 hoteliers

➢ On the basis of range, class interval was decided by dividing the range by 5.

➢ Then 5 categories were decided on the basis of Z score division.

TABLE 1. Hotelier: Importance of Eco-Friendly Practices

		EFP Importance
N	Valid	108
	Missing	0
Mean		.0000
Range		207.01
Minimum		-169.75
Maximum		37.26
Class Interval		41.4
Very Low Level		From -169.75 To -128.35
Low Level		From -128.34 To -86.96
Moderate Level		From -86.95 To -45.57
High Level		From -45.56 To -4.18
Very High Level		From -4.17 To -37.26

TABLE 2. Hotelier: Adoption of Eco-Friendly Practices

		EFP Adoption
N	Valid	108
	Missing	0
Mean		.0000
Range		158.04
Minimum		-107.60
Maximum		50.44
Class Interval		31.6
Very Low Level		From -107.60 To -76.0

Eur. Chem. Bull. **2023,**12(Special Issue 5), 3380-3402

3385

Low Level	From -75.99 To -44.41
Moderate Level	From -44.40 To -12.82
High Level	From -12.81 To 18.79
Very High Level	From 18.80 To 50.5

After scale development level of importance and adoption were determined followed by correlation between both of them and finally impact of level of importance was checked on level of adoption using linear regression analysis.

RESULTS & DISCUSSION

Demographic profile of the respondents

TABLE 3. Sample distribution of demographic characteristics (N=108)

Variables		Percentage (%)
Gender	Male	65.7
	Female	33.3
Age	18-30 years	37
	31-40 years	37
	41-50 years	18.5
	51-60 years	6.5
	Above 60 years	0.9
Location of the hotel	Agra	17.6
	Lucknow	35.2
	Varanasi	47.2
Departments	Kitchen	8.3
	Food and Beverage Service	17.6
	Front Office	34.3
	Housekeeping	22.2
	Sales and Marketing	4.6
	Engineering	2.8
	Training & Development	4.6
	Human Resources	5.6
Level of Designation	Operational	16.7
	Supervisory	37
	Managerial	46.3

Star Category	5 star		29
	4	Star	16
	3 Star		56
	2 & 1Star		7

Exploratory factor analysis on importance of eco-friendly practices

In order to test the 1st hypothesis, Exploratory Factor Analysis was computed to determine the most important factor for importance of Eco-friendly practices. The KMO measure of sampling adequacy is 0.877 which indicates the present data is suitable for factor analysis. After extraction and rotation, the most important factor 1 explained 50.792% of total variance, factor 2 explained 9.569% of total variance, factor 3 explained 3.692% of total variance, factor 4 explained 3.095% of total variance, factor 5 explained 2.891% of total variance, factor 6 explained 2.694% of total variance, factor 7 explained 2.379% of total variance and factor 8 explained 2.339% of total variance that can be extracted. As evident, it was found that from the total 8 components, 1st factor is most important and can be extracted.

TABLE 4. Rotated Component Matrix

Rotated Component Matrix[a]								
	Component							
	1	2	3	4	5	6	7	8
Plant local species in garden for low water consumption.	.820							
Participation in voluntary activities like tree plantation drive / river cleaning etc.	.803							
Conducting workshops/seminars on sustainability issues.	.797							
Hotel involves managers in monitoring eco-friendly practices in the department.	.790							
Visible communication on green practices to the guest (posters and signage).	.778							
Hotel pursues green certification programme / internal audits from reputed organisations.	.775							
Kitchen garden for growing organic herbs and vegetables.	.750							
Installation of water sprinklers for use in hotel lawn.	.698							
Using washer and dryer with full load in the laundry.	.696							
Staff training on water, energy and waste management techniques.	.631							
Recycling grey water to reuse in bathrooms and watering plants.	.608							

Eur. Chem. Bull. **2023,**12(Special Issue 5), 3380-3402

3387

Educate guests on sustainable policies and practices of the hotel.	.599						
Provision of rainwater harvesting system.	.512						
Linen recycle in guestrooms and food and beverage outlets to save water in laundry.	.490						
Categorisation of smoking and non-smoking guestrooms.		.850					
Placing indoor plants instead of cut flowers in guestrooms and public areas, which act as air purifier.		.846					
Regular maintenance of air conditioning vents.		.783					
Periodic cleaning of exhausts (bathroom, kitchen, laundry etc).		.780					
Placement of indoor plants instead of cut flowers instead which act as air purifier.		.629					
Using star rated energy equipment and appliances.		.584					
Encourage business with eco- friendly suppliers /service providers.		.577					
Food portion control to reduce wastage and leftover.		.575					
Installation of LED bulbs in all the areas of the hotel.		.574					
Emphasis on using local /organic produce in their menu.		.546					
Utilising eco-friendly cleaning supplies and laundry agents.		.536					
Adopting eco-sustainable designs in the hotel infrastructure.		.460					
No bathtubs in standard guest bathroom except suite rooms.		.425					
Skylight windows in the public areas of the hotel for natural light.			.616				
Practices to minimise use of paper in hotel (digital systems).			.595				
Automatic Dimmers in the public areas during daytime.			.560				
Ideal temperature settings in the air conditioning.			.539				
Follow standard operating procedure prompt disposal of packaging materials.			.518				
Switching Alternate lighting of bulbs in corridors and back areas.			.492				
Provision of jute bags / wicker baskets for collecting laundry from guestrooms.				.749			

Installation of solar panels for lights and water heaters.				.682			
Installation of water efficient devices like dual flush toilet, aerated shower heads in the bathroom.				.519			
Techniques to compost kitchen and garden waste.				.511			
Maintenance of vertical /rooftop garden.					.729		
Donate old furniture, equipment, guestroom amenities to the needy for reuse.					.695		
Hotel tie up with NGO to donate leftover food to the needy.					.587		
Usage of occupancy sensors in guestroom.					.520		
Installation of refillable dispensers for guestroom amenities (shampoo, body wash).						.739	
Refillable glass bottles instead of single use plastic water bottle.						.681	
Placement of air purifiers in the guest rooms.						.538	
Use of non -disposable crockery in food and beverage outlets.							.690
Recycling discards like linen, napkins and crockery.							.603
Placement of wet and dry bins in the guestrooms, public areas.							.451
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalization.[a]							
a. Rotation converged in 12 iterations.							

The most important factors of Importance of Eco-friendly practices are given below-

Factor -1 includes following 14 variables

1. Plant local species in garden for low water consumption.
2. Participation in voluntary activities like tree plantation drive / river cleaning etc.
3. Conducting workshops/seminars on sustainability issues.
4. Hotel involves managers in monitoring eco-friendly practices in the department.
5. Visible communication on green practices to the guest (posters and signage).
6. Hotel pursues green certification programme / internal audits from reputed organisations.
7. Kitchen garden for growing organic herbs and vegetables.
8. Installation of water sprinklers for use in hotel lawn.
9. Using washer and dryer with full load in the laundry.
10. Staff training on water, energy and waste management techniques.
11. Recycling grey water to reuse in bathrooms and watering plants.
12. Educate guests on sustainable policies and practices of the hotel.

13. Provision of rainwater harvesting system.

14. Linen recycle in guestrooms and food and beverage outlets to save water in laundry.

Thus, it can be concluded that hypothesis 1 is accepted, supporting that there is a set of eco-friendly practices in star category hotels that is of most importance

Exploratory Factor Analysis for Adoption of Eco-Friendly Practices

In order to test the second hypothesis, that is to examine the correlation between importance and level of adoption of eco-friendly practices in star category hotels, Exploratory Factor Analysis was performed to determine the most important factor of adoption of eco-friendly practices. The results of Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (homogeneity of Variance) is 0.886 which indicates the present data is suitable for factor analysis. Similarly, Bartlett's test of sphericity is significant ($p < 0.001$); that explains existence of sufficient correlation between variables to proceed with the analysis. Before extraction, Output has identified 8 linear components within the data set. After extraction and rotation, the most important factor 1 explained 46.114% of total variance, factor 2 explained 9.500% of total variance, factor 3 explained 4.453% of total variance, factor 4 explained 3.965% of total variance, factor 5 explained 3.082% of total variance, factor 6 explained 2.801% of total variance, factor 7 explained 2.592% of total variance and factor 8 explained 2.235% of total variance that can be extracted. It was found that from the total 8 components, 1st factor is most important and can be extracted.

TABLE 5. Rotated Component Matrix

Rotated Component Matrix[a]								
	Component							
	1	2	3	4	5	6	7	8
Regular maintenance of air conditioning vents.	.824							
Periodic cleaning of exhausts (bathroom, kitchen, laundry etc).	.811							
Placing indoor plants instead of cut flowers in guestrooms and public areas, which act as air purifier.	.779							
Placement of indoor plants instead of cut flowers instead which act as air purifier.	.771							
Food portion control to reduce wastage and leftover.	.764							
Using star rated energy equipment and appliances.	.758							
Follow standard operating procedure prompt disposal of packaging materials.	.695							
Practices to minimise use of paper in hotel (digital systems).	.656							
Encourage business with eco- friendly suppliers /service providers.	.648							

No bathtubs in standard guest bathroom except suite rooms.	.619							
Utilising eco-friendly cleaning supplies and laundry agents.	.602							
Categorisation of smoking and non-smoking guestrooms.	.589							
Emphasis on using local /organic produce in their menu.	.588							
Maintenance of vertical /rooftop garden.	.587							
Installation of water efficient devices like dual flush toilet, aerated shower heads in the bathroom.	.572							
Donate old furniture, equipment, guestroom amenities to the needy for reuse.	.550							
Plant local species in garden for low water consumption.		.842						
Kitchen garden for growing organic herbs and vegetables.		.833						
Installation of water sprinklers for use in hotel lawn.		.815						
Visible communication on green practices to the guest (posters and signage)		.720						
Hotel pursues green certification programme / internal audits from reputed organisations.		.686						
Conducting workshops/seminars on sustainability issues.		.660						
Recycling grey water to reuse in bathrooms and watering plants.		.642						
Hotel involves managers in monitoring eco-friendly practices in the department.		.627						
Participation in voluntary activities like tree plantation drive / river cleaning etc.		.599						
Hotel tie up with NGO to donate leftover food to the needy.		.596						
Staff training on water, energy and waste management techniques.		.537						
Placement of air purifiers in the guest rooms.		.528						
Linen recycle in guestrooms and food and beverage outlets to save water in laundry.		.526						
Educate guests on sustainable policies and practices of the hotel.		.498						

Provision of rainwater harvesting system.	.456						
Placement of wet and dry bins in the guestrooms, public areas.	.407						
Installation of solar panels for lights and water heaters.		.792					
Usage of occupancy sensors in guestroom.		.734					
Automatic Dimmers in the public areas during daytime.		.658					
Installation of LED bulbs in all the areas of the hotel.		.533					
Recycling discards like linen, napkins and crockery.		.512					
Switching Alternate lighting of bulbs in corridors and back areas.		.460					
Installation of refillable dispensers for guestroom amenities (shampoo, body wash).			.825				
Refillable glass bottles instead of single use plastic water bottle.			.774				
Using washer and dryer with full load in the laundry.				.707			
Skylight windows in the public areas of the hotel for natural light.				.661			
Ideal temperature settings in the air conditioning.				.524			
Adopting eco-sustainable designs in the hotel infrastructure.					.672		
Techniques to compost kitchen and garden waste.					.595		
Provision of jute bags / wicker baskets for collecting laundry from guestrooms.						.634	
Use of non -disposable crockery in food and beverage outlets.							.777
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a]							
a. Rotation converged in 12 iterations.							

In the present study Factor Analysis exhibits the rotated factor loading for the statements (Variables) for most important factors of *Adoption of Eco-friendly practices.* Table3.exhibits the most important factors of adoption

Factor -1 includes following 16 variables

1. Regular maintenance of air conditioning vents.
2. Periodic cleaning of exhausts (bathroom, kitchen, laundry etc).
3. Placing indoor plants instead of cut flowers in guestrooms and public areas, which act as air purifier.

Eur. Chem. Bull. **2023**,*12(Special Issue 5), 3380-3402*

3392

4. Placement of indoor plants instead of cut flowers instead which act as air purifier.

5. Food portion control to reduce wastage and leftover.

6. Using star rated energy equipment and appliances.

7. Follow standard operating procedure prompt disposal of packaging materials.

8. Practices to minimise use of paper in hotel (digital systems).

9. Encourage business with eco- friendly suppliers /service providers.

10. No bathtubs in standard guest bathroom except suite rooms.

11. Utilising eco-friendly cleaning supplies and laundry agents.

12. Categorisation of smoking and non-smoking guestrooms.

13. Emphasis on using local /organic produce in their menu.

14. Maintenance of vertical /rooftop garden.

15. Installation of water efficient devices like dual flush toilet, aerated shower heads in the bathroom.

16. Donate old furniture, equipment, guestroom amenities to the needy for reuse.

Scale Development To Determine The Level Of Importance And Adoption Of Eco-Friendly Practices

The results of scale development determine the levels of importance and adoption of eco-friendly practices and resulted in 2 single variables of importance and adoption.

Regression Analysis was used to measure the impact of adoption of Ecofriendly amenities and cleaning supplies, Adoption of Water conservation practices, Adoption of Waste management Practices, Adoption of Energy saving practices, Adoption of Air pollution control practices, Adoption of Staff training programmes, Adoption of Hotel sustainable policies (Independent Variables) on EFP Adoption (dependent variable) in case of Star Category Hotels.

- Alternate Hypothesis-1 (H1): There is positive and significant Impact of Adoption of Ecofriendly amenities and cleaning supplies (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Null Hypothesis-1 (H0): There is no positive and significant Impact of Adoption of Ecofriendly amenities and cleaning supplies (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Alternate Hypothesis-2 (H1): There is positive and significant Impact of Adoption of Water conservation practices (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Null Hypothesis-2 (H0): There is no positive and significant Impact of Adoption of Water conservation practices (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Alternate Hypothesis-3 (H1): There is positive and significant Impact of Adoption of Waste Management Practices (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Null Hypothesis-3 (H0): There is no positive and significant Impact of Adoption of Waste Management Practices (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Alternate Hypothesis-4 (H1): There is positive and significant Impact of Adoption of Energy saving practices (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Null Hypothesis-4 (H0): There is no positive and significant Impact of Adoption of Energy saving practices (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Alternate Hypothesis-5 (H1): There is positive and significant Impact of Adoption of Air pollution control practices (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Null Hypothesis-5 (H0): There is no positive and significant Impact of Adoption of Air pollution control practices (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Alternate Hypothesis-6 (H1): There is positive and significant Impact of Adoption of Staff training programmes, (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Null Hypothesis-6 (H0): There is no positive and significant Impact of Adoption of Staff training programmes, (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Alternate Hypothesis-7 (H1): There is positive and significant Impact of Adoption of Hotel sustainable policies (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

- Null Hypothesis-7 (H0): There is no positive and significant Impact of Adoption of Hotel sustainable policies (Independent Variable) on EFP ADOPTION (dependent variable) in case of Star category hotels.

The objective is to measure the relationship and impact of Adoption of Eco friendly amenities and cleaning supplies, Adoption of Water conservation practices, Adoption of Waste Management Practices, Adoption of Energy saving practices, Adoption of Air pollution control practices, Adoption of Staff training programmes, Adoption of Hotel sustainable policies (Independent Variables) ON EFP ADOPTION (dependent variable) in case of Star category Hotels.

TABLE 6. Regression: Model Summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000[a]	1.000	1.000	.00002	1.000	49528204414045.940	7	100	.000
a. Predictors: (Constant), Adoption of Hotel sustainable policies, Adoption of Air pollution control practices, Adoption of Eco-friendly amenities and cleaning supplies, Adoption of Energy saving practices, Adoption of Water conservation practices, Adoption of Waste management Practices, Adoption of Staff training programmes									
b. Dependent Variable: EFP ADOPTION									

In model, the proportion of explained variance as measured by R-SQUARE was (R2=1.000) which indicates that about 100.0% of the variance in Adoption of Eco friendly amenities and cleaning supplies, Adoption of Water conservation practices, Adoption of Waste management Practices, Adoption of Energy saving practices, Adoption of Air pollution control practices, Adoption of Staff training programmes, Adoption of Hotel sustainable policies

Independent Variables) and EFP ADOPTION (dependent variable) in case of Star Category hotels.

The ANOVA results showed that p-value (0.0000) associated with F value is less than 0.05, which indicates that the independent variable reliably predict the dependent variable**.**

TABLE 7. Regression coefficients

Coefficients										
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	t	Sig.	**Correlations**			**Collinearity Statistics**	
	B	Std. Error	Beta			**Zero-order**	**Partial**	**Part**	**Tolerance**	**VIF**
1 (Constant)	4.722 E-6	.000		2.811	.006					
Adoption of Eco friendly amenities and cleaning supplies	1.000	.000	.116	133828 8.547	.000	.807	1.00 0	.072	.383	2.61 1
Adoption of Water conservation practices	1.000	.000	.157	143804 7.030	.000	.885	1.00 0	.077	.241	4.14 7
Adoption of Waste management Practices	1.000	.000	.174	162782 3.356	.000	.886	1.00 0	.087	.252	3.97 6
Adoption of Energy saving practices	1.000	.000	.211	231714 6.048	.000	.861	1.00 0	.124	.348	2.87 7
Adoption of Air pollution control practices	1.000	.000	.177	162849 9.021	.000	.873	1.00 0	.087	.243	4.11 4

Adoption of Staff training programmes	1.000	.000	.115	965078.984	.000	.869	1.000	.052	.202	4.949
Adoption of Hotel sustainable policies	1.000	.000	.197	1711860.150	.000	.894	1.000	.092	.219	4.571
a. Dependent Variable: EFP ADOPTION										

Interpretation:

• Adoption of Eco-friendly amenities and cleaning supplies: In case of Adoption of Eco-friendly amenities and cleaning supplies (Independent Variable), the value of standardised (βeta) coefficient is 0.116, it means that 1-unit positive standard deviation change in it, would result in the increase of dependent variable 'EFP ADOPTION by 0.116 unit. Hence, it can be concluded that, as the value of coefficient is significant, thus, Adoption of Eco-friendly amenities and cleaning supplies have positive and significant relationship with dependent variable. So, we can say that Alternate Hypothesis (H1) -is accepted and Null Hypothesis (H0) - is rejected.

• Adoption of Water conservation practices: In case of Adoption of Water conservation practices (Independent Variable), the value of standardised (βeta) coefficient is 0.157, it means that 1-unit positive standard deviation change in it, would result in the increase of dependent variable 'EFP ADOPTION by 0.157 unit. Hence, it can be concluded that, as the value of coefficient is significant, thus, Adoption of Water conservation practices have positive and significant relationship with dependent variable. So, we can say that Alternate Hypothesis (H1) -is accepted and Null Hypothesis (H0) - is rejected.

• Adoption of Waste Management Practices: In case of Adoption of Waste Management Practices (Independent Variable), the value of standardised (βeta) coefficient is 0.174, it means that 1-unit positive standard deviation change in it, would result in the increase of dependent variable 'EFP ADOPTION by 0.174 unit. Hence, it can be concluded that, as the value of coefficient is significant, thus, Adoption of Waste Management Practices have positive and significant relationship with dependent variable. So, we can say that Alternate Hypothesis (H1) -is accepted and Null Hypothesis (H0) - is rejected.

• Adoption of Energy saving practices: In case of Adoption of Energy saving practices (Independent Variable), the value of standardised (βeta) coefficient is 0.211, it means that 1-unit positive standard deviation change in it, would result in the increase of dependent variable 'EFP ADOPTION by 0.211 unit. Hence, it can be concluded that, as the value of coefficient is significant, thus, Adoption of Energy saving practices have positive and significant relationship with dependent variable. So, we can say that Alternate Hypothesis (H1) -is accepted and Null Hypothesis (H0) - is rejected.

• Adoption of Air pollution control practices: In case of Adoption of Air pollution control practices (Independent Variable), the value of standardised (βeta) coefficient is 0.177, it means that 1-unit positive standard deviation change in it, would result in the increase of dependent variable 'EFP ADOPTION by 0.177 unit. Hence, it can be concluded that, as the value of coefficient is significant, thus, Adoption of Air pollution control practices have positive and significant relationship with dependent variable. So, we can say that Alternate Hypothesis (H1) -is accepted and Null Hypothesis (H0) - is rejected.

• Adoption of Staff training

Eur. Chem. Bull. **2023,**12(Special Issue 5), 3380-3402

3396

programmes: In case of Adoption of Staff training programmes (Independent Variable), the value of standardised (βeta) coefficient is 0.115, it means that 1-unit positive standard deviation change in it, would result in the increase of dependent variable 'EFP ADOPTION by 0.115 unit. Hence, it can be concluded that, as the value of coefficient is significant, thus, Adoption of Staff training programmes have positive and significant relationship with dependent variable. So, we can say that Alternate Hypothesis (H1) -is accepted and Null Hypothesis (H0) - is rejected.

• Adoption of Hotel sustainable policies: In case of Adoption of Hotel sustainable policies (Independent Variable), the value of standardised (βeta) coefficient is 0.197, it means that 1-unit positive standard deviation change in it, would result in the increase of dependent variable 'EFP ADOPTION by 0.197 unit. Hence, it can be

concluded that, as the value of coefficient is significant, thus, Adoption of Hotel sustainable policies have positive and significant relationship with dependent variable. So, we can say that Alternate Hypothesis (H1) -is accepted and Null Hypothesis (H0) - is rejected.

Correlations Analysis & Regression: Hoteliers- Importance of EFP (Independent Variables) and Adoption Of EFP (Dependent Variable): Star Category Hotels

Correlations analysis has been performed to study the correlation between Importance of EFP (Independent Variables) and Adoption of EFP (dependent variable).

Null hypothesis 1 (H0): There is no significant correlations between Importance of EFP (Independent Variables) and Adoption of EFP (dependent variable).

TABLE 8. Correlations Matrix

Correlations			
		Adoption of EFP	Importance of EFP
Pearson Correlation	Adoption of EFP	1.000	.720
	Importance of EFP	.720	1.000
Sig. (1-tailed)	Adoption of EFP	.	.000
	Importance of EFP	.000	.
N	Adoption of EFP	108	108
	Importance of EFP	108	108

Interpretation:

• Importance of EFP - The correlation matrix presented above shows that there is a positive correlation (.720) between Importance of EFP (Independent Variable) and Adoption of EFP (dependent variable) in case of Star Category hotels. The correlation analysis shows that the two variables are significant at the 0.000 level,

which is lower than the 0.05 confidence level for the study. Results indicate that there was a significant and positive correlation hence, it can be concluded that the Null Hypothesis is rejected.

Regression Analysis: Hoteliers- Impact of Importance of EFP (Independent Variable) on Adoption of EFP (Dependent Variable) in Case of Star Category Hotels.

- Alternate Hypothesis-1 (H1): There is positive and significant Impact Importance of EFP (Independent Variable) on Adoption of EFP (dependent variable) in case of Star category hotels.

- Null Hypothesis-1 (H0): There is no positive and significant Impact of Importance of EFP (Independent Variable) on Adoption of EFP (dependent variable) in case of Star category hotels.

The objective is to measure the relationship and impact of Importance of EFP (Independent Variable) on Adoption of EFP (dependent variable) in case of Star category Hotels.

The value of multiple correlation coefficient (R) lies between 0 and 1. The higher is the value of multiple correlation coefficients (R) the better is the fit of regression equation. It shows a substantial correlation between dependent variable and the independent variables. R SQUARE: The square of multiple correlation coefficient is termed as coefficient of multiple determination (R2) which describes the percentage of variation in the dependent variable explained by the independent variables.

TABLE 9. Regression: Model Summary

Model Summary[b]									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.720[a]	.518	.514	.70864	.518	114.136	1	106	.000
a. Predictors: (Constant), Importance of EFP									
b. Dependent Variable: Adoption of EFP									

In model, the proportion of explained variance as measured by R-SQUARE was (R2=0.518) which indicates that about 51.8% of the variance in Importance of EFP (Independent Variable) and Adoption of EFP (dependent variable) in case of Star Category hotels.

TABLE 10. Regression coefficients

Coefficients[a]										
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-orde	Partial	Part	Tolerance	VIF

							r				
1	(Constant)	-.910	.459		-1.984	.050					
	Importance of EFP	1.064	.100	.720	10.683	.000	.720	.720	.720	1.000	1.000
a. Dependent Variable: Adoption of EFP											

Interpretation. It can be seen that in case of Importance of EFP (Independent Variable), the value of standardised (βeta) coefficient is 0.720, it means that 1-unit positive standard deviation change in it, would result in the increase of dependent variable 'Adoption of EFP by 0.720 unit. Hence, it can be concluded that, as the value of coefficient is significant, thus, Importance of EFP have positive and significant relationship with dependent variable. So, we can say that Alternate Hypothesis (H1) -is accepted and Null Hypothesis (H0) - is rejected.

CONCLUSION

The results of the above study reveals that majority of hotel respondents were men (65.7%), maximum were managerial level (46.3%), majority were from 5star hotels with major respondents from Varanasi (47.2%), Lucknow (35.2%) and Agra (17.6%). The study also indicates that out of 47 variables of eco-friendly practices,14 important variables of eco-friendly practices and 16 variables of adoption for eco-friendly practices were established using exploratory factor analysis. While comparing 14 variables of importance with 16 variables of adoption of eco-friendly practices, it was found that variables of importance were not identical with variables of adoption. Therefore, hotels must exercise the important variables of eco-friendly practices in operations with the existing adopted practices. The important variables of eco-friendly practices to be implemented are participation in planting trees local species, organic herbs and vegetables, staff training on sustainable practices through seminars, involve managers in monitoring eco-friendly practices, practise rain water harvesting, linen recycle, install water sprinklers, use washers with full load, undergo internal audits and certification programmes.

Secondly, the findings of the study also revealed that out of 7 dimensions of eco-friendly practices, three dimensions namely adoption of energy saving practices, adoption of hotel sustainable policies and adoption of air pollution control practices were found to be most important with their respective βeta coefficient values (.211), (.197) and (.177). Items with highest factor loading under the first dimension "adoption of energy saving practices'' includes regular maintenance of air conditioning (.824), periodic cleaning of exhaust (.811), placing indoor plants for air purification (.779). Similarly, items with highest factor loading under the second dimension "adoption of hotel sustainable policies" includes planting local species (.842) and organic vegetables (.833), installation of water sprinklers (.815) and finally Items with highest factor loading under the third dimension "adoption of air pollution control practices" includes installation of solar panels (.792), usage of occupancy sensors (.734) and automatic dimmers in public areas (.658).

Further it can be concluded that the findings from correlation and regression analysis determines a positive and significant correlation between (.720) importance of eco-friendly practices and adoption of eco-friendly practices in star category hotels of

Uttar Pradesh. Thus, hypothesis 2 that is "there exists a correlation between importance and level of adoption of eco-friendly practices in star category hotels" is fulfilled.

SIGNIFICANCE AND PRACTICAL IMPLICATIONS

The result of this research could give some valuable information to Uttar Pradesh state Tourism Government and hotel managers to seek the best solution to the issue by understanding the factors like tree plantation drive, organic vegetables, staff training, involve managers in monitoring eco-friendly practices etc. The findings of this research will be significant to hotel marketers in recognising the important items of eco-friendly practices in relation to the existing adopted practices in the hotel industry and implement in future to boost image and economic gain.

REFERENCES

1. Al-Aomar, R., & Hussain, M. (2017). An assessment of green practices in a hotel supply chain: A study of UAE hotels. Journal of Hospitality and Tourism Management, 32, 781.
2. Alexander, S., & Kennedy, C. (2010). Green hotels: Opportunities and resources for success
3. Alipour, H., Safaeimanesh, F., & Soosan, A. (2019). Investigating sustainable practices in hotelindustry-from employees' perspective: Evidence from a Mediterranean island. Sustainability, 11(23), 6556.
4. Al-Shourah, A.A. (2007). The Relationship between Environmental Management Practices(Imp) & Hotel Performance: Imp Drivers & the Moderating Role of Perceived Benefits, UnpublishedPhD Thesis, University Saints Malaysia, Palau Pinang.
5. Alzboun, N., Khawaldah, H., Backman, K., & Moore, D. (2016). The effect of sustainabilitypractices on financial leakage in the hotel industry in Jordan. Journal of Hospitality and Tourism Management, 27, 18-26.
6. Boye, J. I., & Arcand, Y. (2013). Current trends in green technologies in food production andprocessing. Food Engineering Reviews, 5(1), 1-17.
7. Deraman, F., Ismail, N., Mod Arifin, A. I., & Mostafa, M. I. A. (2017). Green practices in hotel industry: Factors influencing the implementation. Journal of Tourism, Hospitality&Culinary Arts (JTHCA), 9(2), 1-12.
8. Environmental Protection Agency. (2017, July 7). Indoor water use in the United States. Retrieved from http://www.epa.gov/WaterSense/pubs/indoor.html
9. Gan, A. (2006). The impact of public scrutiny on corporate philanthropy. Journal of Business Ethics, 69(3), 217-236.
10. George, J. S., & Jayakumar, K. N. (2017). Is it time to promote employee green behaviour?The need and scope. Journal of Management Research and Analysis, 4(3), 117 122.
11. Gleick, P. H. (2015). Impacts of California's ongoing drought: Hydroelectricitygeneration. Oakland, Calif.: Pacific Institute. Retrieved January, 21, 2016.
12. Goldstein, K.A. and Primiani, R. V. (2012) 'Current Trends and Opportunities in Hotel Sustainability', http://www.hospitalitynet.org/news/4054752.html
13. Green Hotels Association. (2020). What are green hotels? Retrieved January25, 2022, from http://greenhotels.com/ index.php
14. Han, H., & Hyun, S. S. (2018). What influences water conservation and towel reuse practices of hotel guests? Tourism Management, 64, 87-97.

Eur. Chem. Bull. 2023,12(Special Issue 5), 3380-3402

3400

15. Han, H., Hsu, L. T. J., Lee, J. S., & Sheu, C. (2014). Are lodging customers ready to go green?An examination of attitudes, demographics, and eco-friendly intentions. International journal of hospitality management, 30(2), 345-355.

16. Harasudha, H. H., & Subramanian, S. (2020). Exploring the Relationship between Green Human Resource Management on Employee Green Behavior: A Mediation Analysis.

17. Has COVID-19 Made Hotels More Sustainable? Zoe-Baillargeon (2021) Retrieved on January 2022 from https://www.themanual.com/travel/hotels-sustainability covid19 2021

18. Hindu business line (2021). Retrieved on January 2022 https://www.thehindubusinessline.com/economy/domestic-travel

19. Huang, K. T., Wang, J. C., & Wang, Y. C. (2015). Analysis and benchmarking of greenhouse gas emissions of luxury hotels. International Journal of HospitalityManagement, 51, 56-66.

20. India Brand Equity Foundation 2021 Retrieved on 28/8 2021 fromhttps://www.ibef.org/industry/tourism-hospitality-india.aspx

21. International Tourism Partnership [ITP] 2017.Retrieved on 22/1 /2022 fromhttps://sustainablebrands.com/industry-wide-global-commitment

22. Jain, P. (2016). Dharma and ecology of Hindu communities: sustenance and sustainability. Routledge.

23. Jones, P., Hillier, D., & Comfort, D. (2014). Sustainability in the global hotel industry. International Journal of Contemporary Hospitality Management. Deraman, F., Ismail, N., Mod Arifin, A. I., & Mostafa, M. I. A. (2017). Green practices in hotel industry: Factors influencing the implementation. Journal of Tourism,Hospitality & Culinary Arts (JTHCA), 9(2), 1-12.

24. Juholin, E. (2004). For business or the good of all? A Finnish approach to corporate social responsibility. Corporate Governance: The international journal of business in society.

25. Kasim, A., & Ismail, A. (2012). Environmentally friendly practices among restaurants: Driversand barriers to change. Journal of Sustainable Tourism, 20(4), 551-570.

26. Lee, W. H., & Cheng, C. C. (2018). Less is more: A new insight for measuring service quality of green hotels. International Journal of Hospitality Management, 68, 32-40.

27. Legrand, W., Sloan, P., & Chen, J. S. (2013). Sustainability in the hospitality industry 2nd Ed:principles of sustainable operations. Routledge.

28. Madhumathi, A., Vishnupriya, J., & Vignesh, S. (2014). Sustainability of traditional rural mudhouses in Tamilnadu, India: An analysis related to thermal comfort. Journal of Multidisciplinary Engineering Science and Technology, 1(5), 302-311

29. Manaktola, K., & Jauhari, V. (2007). Exploring consumer attitude and behaviour towards green practices in the lodging industry

30. Ministry of Tourism, Government of India., 2020.National database for accommodation units. Retrieved on July 24, 2020, from https://hotelcloud.nic.in/MOT

31. Nilashi, M., Ahani, A., Esfahani, M. D., Yadegaridehkordi, E., Samad, S., Ibrahim, O., ... &Akbari, E. (2019). Preference learning for eco-friendly hotels recommendation: A multi-criteria collaborative filtering approach. Journal of Cleaner Production, 215, 767-783.

32. Njite, D., & Schaffer, J. (2017). Revisiting attributes: How important is green in the consumer selection of hotel rooms?. International Journal of

Eur. Chem. Bull. **2023,**12(Special Issue 5), 3380-3402

3401

Hospitality & Tourism Administration, 18(2), 219-244.

33. Novacka, L., Pícha, K., Navratil, J., Topaloglu, C., & Švec, R. (2019). Adopting environmentally friendly mechanisms in the hotel industry: a perspective of hotel managers in Central and Eastern European countries. International Journal of Contemporary Hospitality Management.

34. Pham, T. N., Tučková, Z., & Phan, Q. (2019). Greening human resource management and employee commitment towards the environment: An interaction model. Journal of Business Economics and Management.

35. Pizam, A. (2009). Green hotels: A fad, ploy or fact of life?. International Journal of Hospitality Management, 1(28), 1.

36. Published by Statista Research Department, 2020.Retreived on Feb 10, 2021from https://www.statista.com/statistics/116 6112

37. Rahman, I., Reynolds, D., & Svaren, S. (2012). How "green" are North American hotels? An exploration of low-cost adoption practices. International journal of hospitality management, 31(3), 720-727.

38. Reynolds.D (2011, October 25). Chain Hotels lead the way in going green. Retrieved from the website http;//www.news.wsu.edu

39. Sharma, R., Aggarwal, N., & Kumar, S. (2014). Ecological Sustainability in India through the Ages. International Research Journal of Environment Sciences, 3(1), 70-73.

40. Singhal, S., Deepak, A., & Marwaha, V. (2018). Green Initiatives Practices in Indian Hotels. IOSRJournal of Business and Management (IOSR-JBM) e-ISSN, 10-13.

41. Singjai, K., Winata, L., & Kummer, T. F. (2018). Green initiatives and their competitive advantagefor the hotel industry in developing countries. International Journal of Hospitality Management, 75, 131-143.

42. Subbiah, K., & Kannan, S. (2011, December). The eco-friendly management of hotel industry. In International Conference on Green technology and environmental Conservation (GTEC 2011) (pp. 285-290). IEEE.

43. Supriadi, B. (2016). Investigasi Green Hotel Sebagai Alternatif Produk Ramah Lingkungan. Prosiding SENIATI, 10-A.

44. Thao, N. T. P., & Trang, B. T. Q. (2018). Characteristics of Green Hotels' Potential Customers: A Case of Vietnamese Domestic Tourists. VNU Journal of Science: Economics andBusiness, 34(5E).

45. Thorsson, M. (2018). Investigating consumer motivations for sustainable hotel practices and the effect on satisfaction and attitudinal loyalty (Doctoral dissertation, Iowa State University).

46. Tzschentke, N., Kirk, D., & Lynch, P. (2008). Ahead of their time? Barriers to action in green/tourism firms. The Service Industries Journal, 28(2), 167-178.

47. Xess, A., Bhargave, H., & Kumar, P. (2021, August). A study on influence of eco-friendly technologies in hospitality industry. In Journal of Physics: Conference Series (Vol. 1950, No. 1, p. 012024). IOP Publishing.

48. Yusof, Z. B., & Jamaludin, M. (2013). Green approaches of Malaysian green hotels and resorts. Procedia-Social and Behavioral Sciences, 85, 421-431.

Eur. Chem. Bull. 2023,12(Special Issue 5), 3380-3402

3402