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Dr. D Vijayalakshmi
Assistant Professor,
Department of Commerce,
PSGR Krishnammal College
for Women, Coimbatore, Tamil
Nadu, India

D Divya
Research Scholar, Department
of Commerce, PSGR
Krishnammal College for
Women, Coimbatore, Tamil
Nadu, India

Corresponding Author:
Dr. D Vijayalakshmi
Assistant Professor,
Department of Commerce,
PSGR Krishnammal College
for Women, Coimbatore, Tamil
Nadu, India

The impact of AI -Driven transformation on customer decision-making in hotel selection

D Vijayalakshmi and D Divya

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Abstract

The study examines the impact of AI-driven transformation on customer decision-making in hotel selection. It investigates the role of AI in improving customer experience in selecting the hotels, focusing on AI-driven tools such as dynamic pricing, smart reviews and sentiment analysis, voice search and booking, fraud detection and secure payments, enhanced personalization and recommendation, convenience & time-saving and AI-driven virtual assistants & Chatbots. The study also explores the challenges customers face, including a lack of personalization accuracy, trust issues, data privacy and security concerns, limited human interaction, and internet and technical constraints. The primary data was collected through a structured questionnaire from 200 customers using a convenient sampling method. Tools used for this study are Percentage analysis, Descriptive Statistics, Independent t-test, One Way ANOVA and Exploratory factor analysis. The findings provide valuable insights into the effectiveness of AI in hotel selection and help the customer to know the role, challenges and satisfaction level associated with the adoption of AI in the hospitality sector.

Keywords: Artificial intelligence, customer experience, benefits, challenges.

Introduction

Artificial Intelligence (AI) significantly transformed the hospitality industry by providing both opportunities and challenges for various stakeholders such as hotel professionals, restaurants, travel agencies and other sectors. It has the capacity not only to improve streamline business operations and customer experiences but also positively influence the hospitality industry by enhancing innovative approaches to business growth and customer engagement ^[1]. Artificial intelligence, through data analysis, machine learning, and automation, provides new ways solutions to improve various stages of the customer journey. From the beginning booking process to post-visit interactions, AI technology transforms traditional hospitality practices into advanced, customer-centric experiences. Tools such as AI chatbots, voice assistants, and predictive analytics offer real-time support, personalized recommendation, while smart room features and dynamic pricing models enhance operational efficiency and increase revenue management ^[2].

Artificial Intelligence (AI) refers to a group of technologies that can recognize patterns, analyze data, act, learn, and solve the problem by emulating human intelligence. As tourism undergoes digital transformation, initially AI impacts many areas of the industry. Recent advancements in generative conversational AI have highlighted the benefit, challenges and adoptions of AI across all aspects of life and it also transforming marketing strategies and operational efficiency for tourist destinations and organizations. AI systems support personalization service and robotics, conversational systems like chatbots and voice assistants, forecasting tools, smart travel assistants, language translation applications and smart tourism infrastructure ^[3]. It relies on big data, powered processing capacities and advance algorithms. Each of these three components has experienced significant advancements recently, as several trends have coincided: first, the refinement and progression of AI algorithms; second, substantial enhancements in processing capacities; and third, in the context of big data, the development of innovative and more powerful information sources and architectures that allow for the store and process of massive amounts of information. Fourth Industrial Revolution, collectively fueled the progress of AI systems and robotics.

Currently, across all areas of the tourism and travel industry AI applications are being developed and tested. These include personalized recommendation, travel assistants, robots, prediction analysis and forecasting tools, language translation app, voice recognition, and natural language processing systems. Artificial intelligence holds particular relevance to travel and tourism for several reasons. It helps tourists to make decisions about future trips, for example, choosing a destination, transportation, accommodation and other activities. These decisions will influence tourists' overall satisfaction with their trip [4].

2. Review of Literature

Abu Daqar and Smoudy (2019) [5] have conducted a study on how AI Improve Customer Experience. The main aim of the study is to identify how AI improves in customer experience in Palestine across different sectors such as banks and telecommunication companies. The data was collected from 90 respondent through interview and structured questionnaire method. Descriptive Statistics, Pearson Correlation and One-Way ANOVA are the statistical tool applied to analyze the data. The study concludes that there is positive relationship between AI and Customer Experience, particularly in customer service and after-sale support. Throughout the buying journey AI-driven personalized customer service improves overall customer experience. AI particularly in call centers increase service efficiency and reduce waiting time. Additionally, in adoption of AI in Palestine face challenges like high implementation cost and lack of skilled employees and the study emphasizes that AI should be used to support human not to replace human role.

Sunny Vinnakota and Mohan Dass Mohan et., al., (2023) [6] researched Leveraging Artificial Intelligence in the Hospitality Industry: Opportunities and Challenges. The main objective of the study is to know the challenges and benefit correlated with AI in the hotel industry. The qualitative literature review methodology is used for research design to explore the digital transformation within the hospitality industry. The finding reveals that AI improves personalized service, operational efficiency, revenue management, pricing strategies. It also supports sustainability initiatives by optimizing resource management and promoting eco-friendly practices. Additionally, face challenges like more implementation cost, lack of skilled workers and data privacy and security concerns.

Shweta Batra and Abhishek Chatterji (2024) [2] have conducted a study on enhancing customer experience in the hospitality industry through artificial intelligence. The purpose of the study is to identify how AI improves

operational efficiency and customer experience in the hospitality sector. It also focuses on key AI technologies include ML algorithms, voice assistants, chatbots and Internet of Things - enabled smart rooms. The qualitative literature review methodology is used for research design to explore the customer experience in the Hospitality Industry through Artificial Intelligence. The study conclude that implementation of AI not only improves customer loyalty and satisfaction but also enable hospitality businesses to enhance personalized recommendations, data-driven insights, operational efficiency and gain a competitive advantage in the modern digital market.

3. Statement of the problem

The use of Artificial Intelligence (AI) in the hotel industry affects the customer decision-making process. AI-based tools such as recommendation engines, chatbots, and virtual assistants are used by the hotel industry to make the booking process easier and more comfortable. However, the real impact on these tools are not clearly understood. Many customer face problems like transparency, trust issues and also find difficult to interact with AI features. There are limited studies of impact of AI in customer satisfaction and decision-making process in booking hotel. This study aims to identify the role of AI in enhancing customer experience and the challenges faced by them in hotel selection.

4. Objective of the study

- To identify the role of AI in enhancing customer experience during the hotel booking process.
- To explore the challenges faced by the customer in using AI for hotel selection.

5. Research methodology

5.1 Source of data

The study is based on primary data. It has been collected through a structured questionnaire from 200 customers in and around Coimbatore. Additionally, secondary data required for the study was collected from journals and magazines. Convenient sampling technique has been used for selecting the respondent.

5.2 Statistical tools

- Percentage analysis
- Descriptive Statistics
- Independent t-test
- One Way ANOVA and
- Exploratory factor analysis

6. Analysis and Interpretation

Table 6.1: Profile of the Customers

Profile of the Customers	Particular	No of Respondent	Per cent
Gender	Male	132	66.0
	Female	68	34.0
Age group	16 to 25	57	28.5
	26 to 35	80	40.0
	36 to 45	50	25.0
	46 to 55	10	5.0
	Above 55	3	1.5
	Up to school level	0	0
Educational Qualification	Graduate	107	53.5
	Post Graduate	87	43.5
	Professional Qualification	6	3.0

Current occupation	Government Sector	31	15.5
	Corporate Sector	92	46.0
	Self-employment	24	12.0
	Household	23	11.5
	Unemployed	27	13.5
	Retired	3	1.5
Type of hotel	Three star	78	39.0
	Four star	76	38.0
	Five star	46	23.0
	Total	200	100.0
Types of Rooms	Single	3	1.5
	Double	104	52.0
	Deluxe	54	27.0
	Suite	39	19.5
	Total	200	100.0
Hotel stay	Once a year or less	65	32.5
	2-4 times a year	116	58.0
	5-10 times a year	19	9.5
	More than 10 times a year	0	0
	Total	200	100.0
AI powered tools usage	Rarely	40	20.0
	Sometimes	103	51.5
	Often	49	24.5
	Always	8	4.0
	Total	200	100.0
AI powered tools booking	Booking.com	49	24.5
	Google Travel	41	20.5
	Expedia	18	9.0
	Make my trip	49	24.5
	Others	43	21.5
	Total	200	100.0
Purpose of trip	Business	45	22.5
	Education	4	2.0
	Family	90	45.0
	Vacation	61	30.5
	Total	200	100.0

Source: Primary data

The table 6.1 shows that 66.0 per cent of the respondents are male customers, 40.0 per cent of the respondents are between the age group of 26 to 35 years, 53.5 per cent of the respondents are graduates, 46.0 per cent of the respondents are from the corporate sector, 39.0 per cent of the respondents prefer three-star hotel. 52.0 per cent of the

respondents choose double bed rooms type, 58.0 per cent of the respondents stay in hotel 2-4 times a year, 51.5 per cent of the respondents sometimes use AI powered tools, 24.5 per cent of the respondents book hotels through AI powered tools like Booking.com and Make my trip, 45.0 per cent of the respondents are family visitors.

Table 6.2: Exploratory Factor Analysis-KMO and Bartlett's Test- Role of AI in enhancing customer experience during booking hotels.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.931
Bartlett's Test of Sphericity	Approx. Chi-Square	2951.239
	df	351
	Sig.	<0.001

In the above Table 6.2, Kaiser-Meyer-Olkin Measure is an index which defines sampling Adequacy. The KMO test value is .931 which is more than 0.5, can be considered acceptable and the value to conduct data reduction techniques.

The Bartlett's Test of Sphericity helps a researcher to decide,

whether the results of factor analysis are worth considering and whether we should continue analyzing the research work. Bartlett's Test of Sphericity to a level of significance is <0.001 which shows that there is a high level of correlation between variable, which make it adequate to apply factor analysis.

Table 6.3: Communalities - Role of AI in enhancing customer experience during booking hotels.

Variables	Variables Name	Initial	Extraction
1	Based on current demand, booking patterns and local events room rates are updated automatically.	1.000	.512
2	AI compares different hotel prices and gives you a fair price without more searching.	1.000	.518
3	Based on your past bookings and preferences, AI offers special prices and discounts.	1.000	.523
4	Through price prediction, AI helps you to book the hotel at the right time with a good deal.	1.000	.638
5	AI analyzes every review related to cleanliness, service quality, amenities and facilities etc. to provide you with the exact information you want.	1.000	.588
6	AI detects and filters fake reviews and provides you accurate and trustworthy feedback about the hotel.	1.000	.704

7	AI updates the recent feedback, so you can know exactly what to expect before you book.	1.000	.649
8	Provide quick information related to queries like check-in time, amenities and location.	1.000	.548
9	Recognizes your voice and preferences, providing you with the relevant information that matches your specific needs.	1.000	.617
10	Allows you to search and book hotels effortlessly by using assistants like Alexa, Google Assistant, or Siri.	1.000	.625
11	AI understands and replies to your queries with natural and everyday language.	1.000	.597
12	AI detects suspicious activity like too many bookings from the same device to keep your reservations safe.	1.000	.581
13	Payment and personal details are protected safely with the help of AI secured systems.	1.000	.555
14	Payment details can be verified using facial recognition or fingerprint scans for added security.	1.000	.713
15	AI sends real time alerts and block transactions immediately if any fraud occurs.	1.000	.731
16	AI algorithms analyze the preferences, such as pricing, location and amenities to recommend the best hotels for you.	1.000	.609
17	AI with past search and booking history provides personalized experience.	1.000	.597
18	AI driven personalized price tracking helps to know the discount, special offer and price drop in the hotel.	1.000	.524
19	AI remembers the preference, suggests suitable room type, hotel chain and makes your future booking quicker.	1.000	.561
20	AI platforms simplify the search by filtering options and save your time compared to the manual.	1.000	.607
21	AI tools such as chatbot assistance and automated booking enhance the overall booking experience	1.000	.691
22	AI simplifies the reservation and payment process in a quick and secured manner.	1.000	.660
23	AI provides the exact room availability and saves time in search of different websites.	1.000	.683
24	AI chatbots provide 24/7 assistance, resolving queries instantly, which builds confidence in the booking process.	1.000	.689
25	Quick and relevant answers from AI tend to have a positive perception of AI-driven platforms.	1.000	.583
26	AI chatbots assist you in multiple language and make communication easier in booking	1.000	.685
27	AI detects reservation issues like overbooking, payment problems and alerts in advance.	1.000	.637
Extraction Method: Principal Component Analysis.			

In the above Table 6.3, every variable in the communality initially is expected to share 100% variance. Hence, initially every item is having value 1.00 which means 100% variance share by each item. The extraction value is ranging from .512 to .731 which shows that minimum variance share of item after extraction is 51.2% and maximum variance share of item is 73.1%.

Table 6.4: Total Variance Explained- Role of AI in improving customer experience during booking hotels.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.522	42.673	42.673	11.522	42.673	42.673	4.804	17.792	17.792
2	1.537	5.693	48.366	1.537	5.693	48.366	3.787	14.028	31.82
3	1.441	5.337	53.702	1.441	5.337	53.702	3.643	13.491	45.311
4	1.082	4.009	57.711	1.082	4.009	57.711	3.197	11.842	57.154
5	1.044	3.866	61.577	1.044	3.866	61.577	1.194	4.423	61.577
6	0.96	3.555	65.131						
7	0.893	3.307	68.438						
8	0.798	2.957	71.395						
9	0.739	2.736	74.131						
10	0.654	2.421	76.552						
11	0.59	2.187	78.739						
12	0.56	2.073	80.812						
13	0.527	1.952	82.764						
14	0.49	1.816	84.58						
15	0.464	1.719	86.299						
16	0.452	1.674	87.973						
17	0.439	1.625	89.598						
18	0.421	1.561	91.159						
19	0.345	1.279	92.438						
20	0.339	1.255	93.693						
21	0.301	1.114	94.807						
22	0.281	1.04	95.847						
23	0.27	0.999	96.845						
24	0.247	0.914	97.76						
25	0.227	0.84	98.6						
26	0.199	0.739	99.338						
27	0.179	0.662	100						
Extraction Method: Principal Component Analysis.									

In the above Table 6.4, Total variance contributed by the first component is 42.673, by the second component 5.693, by the third component 5.337, by the fourth component is 4.009, by the fifth component is 3.866. The Eigenvalue for a given factor measures the variance in all the variables which is accounted for by the factor. There are a total five distinct components

having Eigen values greater than 1 from the given set of variables. Eigenvalue for factor 1 is 11.522 for factor 2 is 1.537, factor 3 is 1.441, factor 4 is 1.082, factor 5 is 1.044.

Table 6.5: Rotated Component Matrix - Role of AI in improving customer experience during booking hotels.

Factors	Components	Item Description	Rotated Loading	% of Variance	Eigenvalue
I	AI-Driven Personalization and Security	AI chatbots assist you in multiple language and make communication easier in booking	0.719	42.673	11.522
		AI chatbots provide 24/7 assistance, resolving queries instantly, which builds confidence in the booking process.	0.694		
		AI algorithms analyze the preferences, such as pricing, location and amenities to recommend the best hotels for you.	0.652		
		AI sends real time alerts and block transactions immediately if any fraud occurs.	0.64		
		AI detects reservation issues like overbooking, payment problems and alerts in advance.	0.63		
		AI with past search and booking history provides personalized experience.	0.561		
		Quick and relevant answers from AI tend to have a positive perception of AI-driven platforms.	0.532		
		Payment details can be verified using facial recognition or fingerprint scans for added security.	0.507		
II	Voice Recognition and Intelligent Booking	Recognizes your voice and preferences, providing you with the relevant information that matches your specific needs.	0.705	5.693	1.537
		AI understands and replies to your queries with natural and everyday language.	0.692		
		AI provides the exact room availability and saves time in search of different websites.	0.587		
		AI remembers the preference, suggests suitable room type, hotel chain and makes your future booking quicker.	0.564		
		Payment and personal details are protected safely with the help of AI secured systems	0.558		
		Based on current demand, booking patterns and local events room rates are updated automatically.	0.505		
		AI compares different hotel prices and gives you a fair price without more searching.	0.501		
		AI tools such as chatbot assistance and automated booking enhance the overall booking experience	0.445		
III	Convenience and Smart Assistance	Allows you to search and book hotels effortlessly by using assistants like Alexa, Google Assistant, or Siri.	0.726	5.337	1.441
		AI platforms simplify the search by filtering options and save your time compared to the manual.	0.697		
		AI detects suspicious activity like too many bookings from the same device to keep your reservations safe.	0.635		
		AI simplifies the reservation and payment process in a quick and secured manner.	0.544		
		Based on your past bookings and preferences, AI offers special prices and discounts.	0.501		
		AI driven personalized price tracking helps to know the discount, special offer and price drop in the hotel.	0.46		
VI	Accurate Reviews and Real-Time Insights	AI detects and filters fake reviews and provides you accurate and trustworthy feedback about the hotel.	0.722	4.009	1.082
		Through price prediction, AI helps you to book the hotel at the right time with a good deal.	0.688		
		Provide quick information related to queries like check-in time, amenities and location.	0.538		
		AI analyzes every review related to cleanliness, service quality, amenities and facilities etc to provide you with the exact information you want.	0.526		
V	Updated Hotel Experience Feedback	AI updates the recent feedback, so you can know exactly what to expect before you book.	0.614	3.866	1.044

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

In the above Table 6.5, Eigenvalue of factor 1 is 11.522 with 42.673% of variance. The variables are related to AI-Driven Personalization and Security. Factor 1 has very high significant loading on the variable “AI chatbots assist you in multiple language and make communication easier in

booking” (0.719). Eigenvalue of factor 2 is 1.537 with 5.693% of variance. The variables are related to Voice Recognition and Intelligent Booking. Factor 2 has very high significant loading on the variable “Recognizes your voice and preferences, providing you with the relevant

information that matches your specific needs” (0.705), Eigenvalue of factor 3 is 1.441 with 5.337% of variance. The variables are related to Convenience and Smart Assistance. Factor 3 has very high significant loading on the variable “Allows you to search and book hotels effortlessly by using assistants like Alexa, Google Assistant, or Siri” (0.726). Eigenvalue of factor 4 is 1.082 with 4.009% of variance. The variables are related to Accurate Reviews and Real-Time Insights. Factor 4 has very high significant loading on the variable “AI detects and filters fake reviews and provides you accurate and trustworthy feedback about the hotel” (0.722). The Eigenvalue of factor 5 is 1.044 with

3.866% of variance. The variables are related to Updated Hotel Experience Feedback. Factor 5 has significant loading on the variable “AI updates the recent feedback, so you can know exactly what to expect before you book” (0.614).

Descriptive Statistics

Hotel Customers were asked to rate the challenges faced by them in choosing an AI powered hotel for booking. The ratings have been assigned as 5 for ‘Strongly Agree’, 4 for ‘Agree’, 3 for ‘Neutral’, 2 for ‘Disagree’ and 1 for ‘Strongly Disagree’.

Table 6.6: Challenges faced by customers in choosing an AI powered hotel for booking.

Factor	Mean	Std. Deviation
Lack of Personalization Accuracy		
AI recommendations through historical data and algorithms always do not match the guest preference.	3.97	.792
AI suggestions may not fully match your personal travel style and expectation	4.03	.736
AI may take time to understand and align with your preference and need when selecting the hotel.	3.98	.802
AI recommendations may overlook special requirements like accessibility requirements, or unique amenities.	3.96	.752
Trust Issues		
Customers may not fully trust AI generated hotel suggestions until they know about the selection process work.	3.96	.870
Concerns about unfair recommendations and influence by advertising can reduce trust in AI platforms.	4.04	.811
Customers are worried about AI suggested hotels because of paid promotion and partnership rather than quality.	3.97	.820
Data Privacy and Security Concerns		
Customers are uncomfortable in sharing personal details with AI, fearing misuse of their data.	3.96	.715
Customers feel that AI might share their personal data without their permission.	3.94	.883
AI platforms are sometimes unclear about protecting customer information.	3.94	.840
Customers may feel that AI tracks their preference without their concern.	3.92	.802
Limited Human Interaction		
Tourists often prefer communicating with hotel staff and travel agencies who can better understand their needs than AI.	3.98	.820
AI may not provide the same level of information like human experts can offer.	3.99	.824
AI cannot provide the travelers special requests like dietary needs or specific room preferences like humans.	3.95	.797
AI may not handle unexpected issues like last minute cancellation and complicated travel plan adjustments as efficiently as a human agent.	3.90	.802
Internet and Technical Constraints		
AI -based hotel selection needs internet sources, which may not have worked well in the poor network areas	3.88	.846
Customers who are poor in handling technology may find it difficult to use AI driven hotel selection.	3.92	.878
Technical issues like app crashes or inaccurate suggestions can make AI tools less reliable.	4.02	.882
AI driven platforms may not work properly with old devices or outdated software.	4.02	.868

Source: Compute data

The table 6.6 reveals the result of the descriptive statistics regarding the challenges faced by customers in choosing an AI powered hotel for booking. The highest mean score (4.04) has been found for “Concerns about unfair recommendations and influence by advertising can reduce trust in AI platforms” with the standard deviation (.811) and the lowest mean score (3.88) has been found for “AI -based hotel selection needs internet sources, which may not have worked well in the poor network areas” with the standard deviation (.846).

Profile of the Customers Vs Challenges faced by customers in choosing an AI powered hotel for booking.

The following null hypothesis has been framed to find whether there is any significant difference between the profile of the customers and the challenges faced by customers in choosing an AI powered hotel for booking.

H₀-There is no significant difference between Profile of the Customers and Challenges faced by customers in choosing an AI powered hotel for booking.

H₁-There exists significant difference between Profile of the Customers and Challenges faced by customers in choosing an AI powered hotel for booking.

Table 6.7: Profile of the Customers Vs Challenges faced by customers in choosing an AI powered hotel for booking.

Factor		N	Mean	Standard Deviation	F Value	T Value	P Value	S/NS
Gender	Male	132	3.9988	.49584	-	2.071	.215	NS
	Female	68	3.8994	.60549				
Age group	16 to 25	57	3.7535	.61525	4.253	-	.003	**
	26 to 35	80	3.9914	.49567				
	36 to 45	50	4.1484	.37769				
	46 to 55	10	3.9474	.73809				
	Above 55	3	4.2807	.24873				
Educational	Up to school level	-	-	-	.054	-	.947	NS

Qualification	Graduation	107	3.9606	.53499				
	Post-Graduation	87	3.9655	.54554				
	Professional Qualification	6	4.0351	.50005				
Occupation	Government Sector	31	4.0000	.52877	1.930	-	.091	**
	Corporate Sector	92	3.9491	.56532				
	Self-employment	24	4.1623	.40499				
	Household	23	3.7071	.59224				
	Unemployed	27	3.9981	.46033				
	Retired	3	4.1930	.13245				
Type of hotel	Three star	46	3.8902	.58648	.866	-	.422	NS
	Four star	76	3.9543	.42108				
	Five star	78	4.0196	.60237				
Types of Rooms	Single	3	4.1930	.18484	1.225	-	.302	NS
	Double	104	3.9291	.48961				
	Deluxe	54	3.9259	.62814				
	Suite	39	4.0972	.52542				
Hotel stay	Once a year or less	65	3.7579	.69555	7.747	-	.001	**
	2-4 times a year	116	4.0576	.42208				
	5-10 times a year	19	4.1080	.29746				
	More than 10 times a year	-	-	-				
AI powered tools usage	Rarely	40	3.8066	.66407	2.205	-	.089	NS
	Sometimes	103	3.9586	.54550				
	Often	49	4.0859	.36931				
	Always	8	4.0987	.42240				
AI powered tools booking	Booking.com	49	3.8625	.54175	.668	-	.615	NS
	Google Travel	41	4.0026	.34891				
	Expedia	18	4.0205	.40894				
	Make my trip	49	4.0193	.51374				
	Others	43	3.9608	.72330				
Purpose of trip	Business	45	3.9602	.67803	.973	-	.406	NS
	Education	4	3.7895	.26140				
	Family	90	3.9146	.50164				
	Vacation	61	4.0544	.47514				

Source: Compute data NS- Not Significant

*- Significant at 5%level **- Significant at 1%level

The independent t-test confirms that gender has no significant impact on the challenges faced by customers in choosing an AI powered hotel for booking. Hence, the null hypothesis is accepted.

ANOVA result shows that age group, occupation and hotel stay have a significant difference with the challenges faced by customers in choosing an AI powered hotel for booking. Hence, the null hypothesis has been rejected with respect to age group, occupation and hotel stay. Educational qualification, type of hotel, type of room, AI powered tools usage, AI powered tools booking, purpose of trip has no significant difference with the challenges faced by customers in choosing an AI powered hotel for booking. Hence, the null hypothesis has been accepted with respect to educational qualification, type of hotel, type of room, AI powered tools usage, AI powered tools booking, purpose of trip.

7. Finding of the study

Profile of the Customers

- 66.0 per cent of the customers are male.
- 40.0 per cent of the customers are between the age group of 26 to 35
- 53.5 per cent of the customers are graduates
- 46.0 per cent of the customers are from the corporate sector
- 39.0 per cent of the customers prefer three-star hotel
- 52.0 per cent of the customers choose double bed rooms
- 58.0 per cent of the customers stay in hotels 2-4 times a year

- 51.5 per cent of the customers sometimes use AI powered tools
- 24.5 per cent of the customers book hotels through AI powered tools like Booking.com and Make my trip
- 45.0 per cent of the customers are family visitors.

Role of AI in improving customer experience during booking hotels.

- The KMO test value is .931 which is more than 0.5, can be considered acceptable and the value to conduct data reduction techniques.
- Bartlett's Test of Sphericity shows that the level of significance is <0.001 which has a high level of correlation between variables, which makes it adequate to apply factor analysis.
- The communality extraction values range from .512 to .731 which shows that minimum variance share of item after extractions 51.2% and maximum variance share of item is 73.1%.
- Total variance contributed by the first component is 42.673, by the second component 5.693, by the third component 5.337, by the fourth component is 4.009, by the fifth component is 3.866. A total five distinct components having Eigenvalues greater than 1 from the given set of variables. Eigenvalue for factor 1 is 11.522 for factor 2 is 1.537, factor 3 is 1.441, factor 4 is 1.082, factor 5 is 1.044.
- Eigenvalue of factor 1 is 11.522 has a strong loading on the variable "AI chatbots assist you in multiple language and make communication easier in booking"

(0.719). Eigenvalue of factor 2 (1.537) has a high loading on the “Recognizes your voice and preferences, providing you with the relevant information that matches your specific needs” (0.705). Eigenvalue of factor 3 is 1.441 has a significant loading on the variable “Allows you to search and book hotels effortlessly by using assistants like Alexa, Google Assistant, or Siri”(0.726) .Eigenvalue of factor 4 is 1.082 has a strong loading on the variable “AI detects and filters fake reviews and provides you accurate and trustworthy feedback about the hotel ”(0.722)..Eigenvalue of factor 5 is 1.044 has a strong loading on the variable “AI updates the recent feedback, so you can know exactly what to expect before you book”(0.614).

Challenges faced by customers in choosing an AI powered hotel for booking.

- The highest mean score (4.04) has been found for “Concerns about unfair recommendations and influence by advertising can reduce trust in AI platforms” with the standard deviation (.811) and the lowest mean score (3.88) has been found for “AI -based hotel selection needs internet sources, which may not have worked well in the poor network areas” with the standard deviation (.846).
- Gender has no significant impact on the challenges faced by customers in choosing an AI powered hotel for booking.
- The factor namely age group, occupation and hotel stay have a significant difference with the challenges faced by customers in choosing an AI powered hotel for booking. Educational qualification, type of hotel, type of room, AI powered tools usage, AI powered tools booking, and purpose of trip have no significant difference with the challenges faced by customers in choosing an AI powered hotel for booking.

8. Suggestions of the study

- AI-based hotel systems should improve to work better in areas with poor networks and include features to work without the internet.
- Hotels should include human support options in the AI system to handle unexpected issues like last minute cancellation and complex travel plan adjustments.
- Hotels should help customers who find it difficult to use AI driven hotel selection and especially those who are poor in handling technology.
- Hotels should adopt biometric verification methods like facial recognition or fingerprint scans to improve security payment methods for the guest.
- Hotels should integrate AI tools such as chatbot assistance and automated booking to enhance the overall booking experience of the customers.
- Hotels should use AI driven personalized price tracking to inform customers about discounts, special offers and price drops.
- Hotels should use AI to analyze every review related to cleanliness, service quality, amenities and facilities to provide customers with the exact information they want.

9. Conclusion

The impact of AI -driven transformation is playing a significant role in improving customer decision-making in

hotel selection. AI-based tools such as recommendation engines, chatbots, and virtual assistants are used to make the booking process easier and more comfortable. While these technologies provide predominant benefits like dynamic pricing, smart reviews and sentiment analysis, fraud detection and secure payments, customers still face problems such as transparency, trust issues, data privacy and security concerns and technical constraints. The study highlights that hotels should not only focus on adoption of AI but also should concentrate on the effectiveness and user-friendliness. Addressing these issues can improve customers satisfaction and help customers to make better decisions when booking hotels.

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