

# THE ROLE OF AI IN PERSONALIZING TRAVEL EXPERIENCES AND ENHANCING SATISFACTION AMONG ECO-CONSCIOUS TOURISTS IN ALGERIA

Abdelaziz Djamaa 

Doctor of Economics, University of Tlemcen, Algeria

 [dr.djamaabelaziz@gmail.com](mailto:dr.djamaabelaziz@gmail.com)

## ARTICLE HISTORY

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**Abstract.** This study examines the impact of AI-Driven Personalisation on traveller satisfaction and eco-conscious behavior among Algerian tourists. Data was collected from 160 Algerian travellers through a survey to understand how AI influences their travel experiences and environmental awareness. The results show a significant positive relationship between AI-Driven Personalisation and both traveller satisfaction and eco-conscious behavior. Personalization enhances travellers' enjoyment by offering more relevant experiences and encourages more sustainable choices, such as eco-friendly accommodations and transportation. The study also identifies demographic factors that influence the effectiveness of AI personalization, including age and the use of specialized travel platforms. Younger travellers, who are more familiar with digital technologies, tend to benefit more from AI-driven recommendations compared to older tourists. These findings suggest that AI-Driven Personalisation can effectively promote sustainable tourism by improving traveller experiences and encouraging eco-friendly behaviors. Tourism providers can use AI to tailor suggestions to individual preferences, enhancing both the quality of the travel experience and the environmental impact. Future research should focus on the long-term effects of AI-Driven Personalisation, exploring its potential to shape future tourism trends and its broader impact on the industry.

**KEYWORDS:** AI-DRIVEN PERSONALISATION, ECO-CONSCIOUS BEHAVIOUR, TRAVELER SATISFACTION, ALGERIA.

## INTRODUCTION

The tourism industry is one of the industry sectors affected by artificial intelligence.<sup>1</sup> This field is expected to transform various sectors and promoting both environmental sustainability and business success.<sup>2</sup>

According to the United Nations Environment Programme (UNEP) and the World Tourism Organization (WTO), sustainable tourism is the “Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities”.<sup>3</sup> Madjid et al. Emphasize that sustainable tourism requires a harmonious balance between environmental, economic, and social dimensions.<sup>4</sup> It also requires responsible behaviours from individuals.<sup>5</sup>

The International Ecotourism Society (TIES) considers ecotourism as responsible travel to natural areas that protects the environment, improves the well-being of local residents, including interpretation and education. Education is meant to be inclusive of both staff and guests.<sup>6</sup> Eco-tourism, also known as responsible tourism, attempts to limit negative effects on the environment, sup-

port local people, and encourage cultural preservation.<sup>7</sup> Both statements highlight responsible tourism, which aims to reduce environmental damage, help local people, and protect cultural heritage. Education and active engagement from all stakeholders are critical for developing sustainability and cultural awareness in tourist activities.

AI is rapidly being used across several service industries, such as travel and tourism, due to its great learning capacity, flexibility, and connectivity.<sup>8</sup>

Several studies have explored the potential of AI in the travel industry. For instance, Vecchia et al. Investigated the use of AI-powered recommendation systems (RSs) where one or more attractions must be recommended to users based on preferences, contextual aspects, and various other limitations in a sustainable way.<sup>9</sup> Their findings demonstrated the effectiveness of AI in matching travellers with eco-friendly recommended systems that align with their interests. Similarly, Milton (2024)<sup>10</sup> investigated the role of AI in improving energy usage and waste management in hotels, demonstrating the potential for AI-driven solutions for reducing the environmental effects of the tourist industry. AI-driven solutions for enhancing energy efficiency and waste management

- 1 Malik, S., Muhammad, K., Waheed, Y. (2024). Artificial intelligence and industrial applications – A revolution in modern industries. *Ain Shams Engineering Journal*, 15(9), 102886. Available at: <https://doi.org/10.1016/j.asej.2024.102886>.
- 2 Jorzik, P., Antonio, J. L., Kanbach, D. K., Kallmuenzer, A., Kraus, S. (2024). Sowing the seeds for sustainability: A business model innovation perspective on artificial intelligence in green technology startups. *Technological Forecasting and Social Change*, 208, 123653. Available at: <https://doi.org/10.1016/j.techfore.2024.123653>.
- 3 UNEP & WTO. (2005). *Making Tourism more Sustainable* (United Nations).
- 4 Majid, G. M., Tussyadiah, I., Kim, Y. R., Pal, A. (2023). Intelligent automation for sustainable tourism: A systematic review. *Journal of Sustainable Tourism*, 31(11), 2421–2440. Available at: <https://doi.org/10.1080/09669582.2023.2246681>.
- 5 Chen, G., Peng, J. (2023). Promoting sustainable tourism destinations: Support and its role in tourist environmentally responsible behaviour. *Environment, Development and Sustainability*. Available at: <https://doi.org/10.1007/s10668-023-04095-y>.
- 6 TIES. (2015). *What Is Ecotourism*. The International Ecotourism Society. Available at: <https://ecotourism.org/what-is-ecotourism/>.

- 7 Kumar, P., Aggarwal, B., Kumar, V., Saini, H. (2024). Sustainable tourism progress: A 10-year bibliometric analysis. *Cogent Social Sciences*, 10(1), 2299614. Available at: <https://doi.org/10.1080/23311886.2023.2299614>.
- 8 Akter, S., Babu, M. M., Hani, U., Sultana, S., Bandara, R., Grant, D. (2024). Unleashing the power of artificial intelligence for climate action in industrial markets.
- 9 Dalla Vecchia, A., Migliorini, S., Quintarelli, E., Gambini, M., Belussi, A. (2024). Promoting sustainable tourism by recommending sequences of attractions with deep reinforcement learning. *Information Technology & Tourism*, 26(3), 449–484. Available at: <https://doi.org/10.1007/s40558-024-00288-x>.
- 10 Milton, D. T. (2024). Artificial Intelligence Transforming Hotel Gastronomy: An In-depth Review of AI-driven Innovations in Menu Design, Food Preparation, and Customer Interaction, with a Focus on Sustainability and Future Trends in the Hospitality Industry. *International Journal for Multidimensional Research Perspectives*, 2(3), Article 3. Available at: <https://doi.org/10.61877/ijmrp.v2i3.126>.

in hotels directly contribute to the aims of sustainable tourism. AI promotes resource efficiency and minimizes waste, which aligns with sustainability values. This promotes an eco-friendly tourist company by preserving natural resources and limiting tourism's negative environmental consequences, both of which are critical for the sector's long-term sustainability.

This study focuses on the use of AI-Driven Personalisation to improve the eco-conscious travel experience. The research will examine the possible benefits, challenges, and future trends of AI in this context. The main objective is to build a more sustainable and responsible tourism industry. Understanding AI's role in supporting sustainable tourism and increasing visitor pleasure allows us to build ways for delivering personalized experiences that are consistent with environmental values.

## RESEARCH PROBLEMATIC

Based on the literature, we propose the following research question: How does AI-Driven Personalisation impact the satisfaction of the Algerian eco-conscious travellers? And if there is a significant impact, does this impact significantly vary across different demographic groups of Using Specialized platforms, Age, and Educational

Level? Lastly, do the Daily green behaviours and public self-awareness moderate the relationship between AI-Driven Personalisation and traveller Eco-Consciousness Behaviour?

To investigate these questions, we propose our conceptual framework:

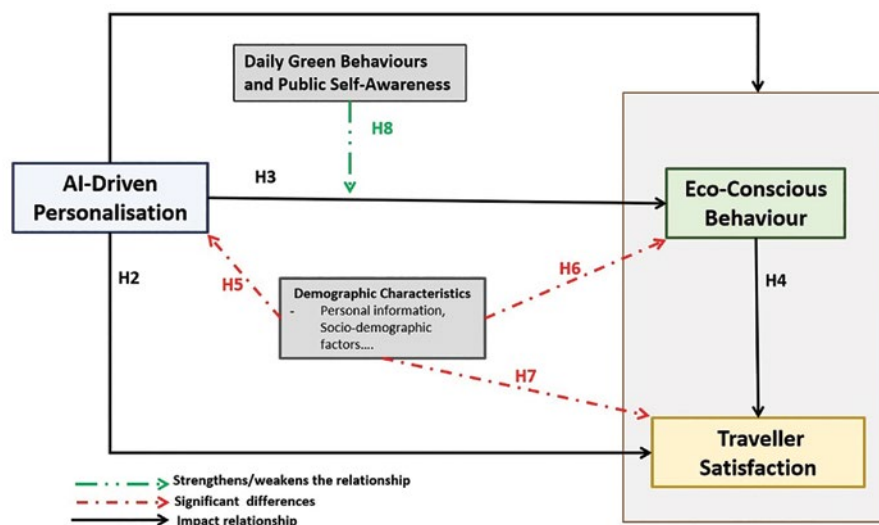
## Conceptual framework

The main objective in the Figure 1 research is to examine the potential for AI-Driven Personalisation to improve environmentally conscious travel experiences. This includes looking into the benefits, limitations, ethical concerns, and practical uses of AI in this context. The study's focus is to provide a deep insight into how AI may be effectively utilized to promote sustainable tourism and develop customized experiences that are linked to traveller values and environmental objectives.

## Literature review and hypothesis development

**Understanding Eco-Conscious Travel:** Eco-conscious travel, also known as green travel or eco-tourism, focuses specifically on the environmental sustainability of tourism within a desti-

FIGURE 1: CONCEPTUAL FRAMEWORK OF THE STUDY



Source: Proposed by the author

nation landscape.<sup>11</sup> Thus, Eco-conscious travel is a form of tourism that strives to minimize the negative environmental effects of travel. In other words, it is a conscious effort to travel and take into consideration to preserve natural resources, protect cultural heritage, and support sustainable development.

In their study by Sahabuddin et al. (2024),<sup>12</sup> they identify tourist satisfaction as a key factor influencing loyalty, environmentally responsible behaviour (ERB), and environmental commitment. The findings show that environmental value has a substantial effect on tourist satisfaction. Furthermore, visitor satisfaction is strongly correlated with tourist loyalty, ERB, and environmental commitment to the place or destination. Chen et al. (2023)<sup>13</sup> recommend that tourism destinations should maintain a conducive environment to develop tourist ERB, particularly when tourists exhibit a high level of public self-awareness. Previous studies have also shown that satisfactory AI services provide visitors with an exceptional trip experience and influence the benefits of tourism products.<sup>14</sup> In their study, Escobar-Farfán et al. (2024)<sup>15</sup> demonstrated that customers prefer

brands relevant to their identity and enhance credibility and trust, favouring attitudes and behaviours that increase consumption. Travellers, like customers in general, like travel brands that reflect their character, values, and beliefs. When a brand shows relevance to a Traveller's eco-conscious values, it increases confidence and credibility. This connection generates good sentiments toward the brand, resulting in improved pleasure with the travel experience, as Travellers feel understood and valued, which can lead to repeat bookings and loyalty.

An Eco-conscious behaviour or Pro-environmental also known as the Eco-friendly tourist behaviour, happens when an individual tries to limit his/her negative effects on the natural environment and contribute to environmental conservation.<sup>16</sup> This behaviour is positively influenced by five emotions, as the Kvasova (2015) study found: extroversion, agreeableness, conscientiousness, neuroticism, openness. Other studies found that the Ecoconscious behaviour or Pro-environmental behaviour is positively influenced by situational factors such as tourism types or activities, personal emotions like awe and guilt, and individual motivation.<sup>17</sup> This individual motivation, as we supposed in our study it's the Daily Green Behaviours and Public Self-Awareness as a mediator variable (DGB&PSA); these are the main supposed as a bridge between environmental attitude and eco-friendly behaviour.

Studies investigated which generation is more widely known as the most eco-conscious generation, and they found that Generation Z is more accepting of eco-friendly travel.<sup>18</sup> In our study, we

- 11 Ozcan, B., Bozoklu, S., Khan, D. (2021). Tourism Sector and Environmental Quality: Evidence from Top 20 Tourist Destinations. In D. Balsalobre-Lorente, O. M. Driha, & M. Shahbaz (Eds.), *Strategies in Sustainable Tourism, Economic Growth and Clean Energy*. Springer International Publishing, 39–66. Available at: [https://doi.org/10.1007/978-3-030-596750\\_3](https://doi.org/10.1007/978-3-030-596750_3).
- 12 Sahabuddin, M., Alam, Md. S., Nekmahmud, Md. (2024). How do perceived and environmental values influence tourist satisfaction, loyalty, and environmental awareness? *Environment, Development and Sustainability*. Available at: <https://doi.org/10.1007/s10668-024-050943>.
- 13 Chen, G., Peng, J. (2023). Promoting sustainable tourism destinations: Support and its role in tourist environmentally responsible behaviour. *Environment, Development and Sustainability*. Available at: <https://doi.org/10.1007/s10668-023-04095-y>.
- 14 Ku, E. C. S., Chen, C.-D. (2024). Artificial intelligence innovation of tourism businesses: From satisfied tourists to continued service usage intention. *International Journal of Information Management*, 76, 102757, Available at: <https://doi.org/10.1016/j.ijinfomgt.2024.102757>.
- 15 Escobar-Farfán, M., Cervera-Taulet, A., Schlesinger, W. (2024). Destination brand identity: Challenges, opportunities, and future research agenda. *Cogent Social Sciences*, 10(1), 2302803. Available at:

- <https://doi.org/10.1080/23311886.2024.2302803>.
- 16 Kvasova, O. (2015). The Big Five personality traits as antecedents of eco-friendly tourist behavior. *Personality and Individual Differences*, 83, 111–116. Available at: <https://doi.org/10.1016/j.paid.2015.04.011>.
- 17 Su, L., Li, M., Wen, J., He, X. 2024. How do tourism activities and induced awe affect tourists' pro-environmental behavior? *Tourism Management*, 106, 105002. Available at: <https://doi.org/10.1016/j.tourman.2024.105002>.
- 18 Ribeiro, M. A., Seyfi, S., Elhoushy, S., Woosnam, K. M., Patwardhan, V. (2023). Determinants of Generation Z pro-environmental travel behaviour: The moderating role of green consumption values. *Journal of Sustainable Tourism*. Scopus Available at: <https://>

will focus on multiple generations from boomers to Generation Z, to know how age affects the eco-conscious behaviour of tourists. Also, the eco-friendly behaviour is affected positively by environmental and health concerns and service quality.<sup>19</sup>

### Successful AI-Driven Personalisation Initiatives in Eco-Tourism:

- **Booking Platform (Netherlands 1996):** With more than 610.9 million visits to its website,<sup>20</sup> the platform takes into consideration factors such as energy efficiency, waste reduction, and local impact to identify eco-friendly options. In October 2023, Booking.com announced its new initiatives around Sustainability.<sup>21</sup> Booking.com has integrated AI into its platform to recommend sustainable accommodations based on traveller preferences and location. These initiatives enhance the travellers' experiences with AI-powered recommendations that help to find and book sustainable accommodations, contributing to increased demand for eco-friendly tourism.
- **UK-based Skyscanner (UK 2003):** this is a travel search engine that provides flights to hotels, and car hire and plan booking to many tourism destinations. Its main mission is to adopt the global transformation to modern and sustainable travel.<sup>22</sup> As a premier travel search platform with a 70 million monthly active user base and ex-

tensive global partnerships with about 1200 global partners. Skyscanner offers comprehensive flight data that closely aligns with booking trends.<sup>23</sup> Skyscanner has launched its app-exclusive Savvy Search tool, powered by OpenAI's Chat GPT technology, to provide travellers with an easier way to plan their customized trips.

**Eco Tourism and AI status in Algeria:** in the Strategic Tourism Development Plan (SDAT) 2025 for Algeria, this strategic plan aims to make tourism a pillar of the Algerian economy by capitalizing on the country's diverse assets (cultural, natural, historical) and developing tourism products tailored to the expectations of domestic and international markets.<sup>24</sup> It aims essentially to make tourism a driving force of economic growth for Algeria by developing both domestic and international tourism, preserving the environment and cultural heritage, and improving the country's international image.

Furthermore, with more than 2 million km<sup>2</sup> of surface and a rich relief made up of three major ensembles: the Tell in the north, the highlands and the Saharan Atlas in the centre, and the Sahara in the south.<sup>25</sup> Thus, ecotourism in Algeria offers a variety of activities, from exploring the Mediterranean coastline to venturing into the Saharan Atlas Mountains. Popular destinations include Tassili n'Ajjer National Park, Al Qal'a of Beni Hammad, Djémila, M'Zab Valley, Timgad, Tipasa, and Kasbah of Algiers, a UNESCO World Heritage Site known for its stunning historical and cultural places and diverse ecosystems.<sup>26</sup>

[doi.org/10.1080/09669582.2023.2230389](https://doi.org/10.1080/09669582.2023.2230389).

- 19 Sadiq, M., Adil, M., Paul, J. (2022). Eco-friendly hotel stay and environmental attitude: A value-attitude-behaviour perspective. *International Journal of Hospitality Management*, 100, 103094. Available at: <https://doi.org/10.1016/j.ijhm.2021.103094>.
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TABLE 1: RELIABILITY STATISTICS.

Dimension	Cronbach's Alpha	No. of Items	No of questionnaires
Scale all variables	0.916	18	160
DB_PS	0.680	4	
AIDriven_Personalization	0.797	3	
EcoConscious_Behaviour	0.795	5	
Traveller_Satisfaction	0.876	6	

Source: Author's explanation

## MATERIAL AND METHODOLOGY

This study uses a quantitative research methodology to investigate and analyse the relationship between AI-Driven Personalisation and satisfaction among the Eco-Conscious Travellers in Algeria.

A structured questionnaire was developed to collect data from tourists who have visited the different tourism destinations. The questionnaire included items measuring AI-Driven Personalisation (e.g., Destination Recommendations, Accommodation Recommendations, Activity Recommendations, etc.), Eco-Conscious Behaviour and Satisfaction of the travellers (e.g., Sustainable Travel Choices, Environmental Awareness, Responsible Consumption, etc.), and sociodemographic information (e.g., age, gender, monthly income).

A convenience sampling method was used to recruit participants from tourists visiting the destination. A total of 160 respondents completed the survey and are ready to analysis.

**The target population** for this study consists of Algerian tourists who have travelled inside and outside the country in the past 6 months. A convenience sampling method will be used to recruit participants from various regions across Algeria.

**Timeframe:** The survey was open for replies from 12<sup>th</sup> August 2024 to 13<sup>th</sup> September 2024, which provided enough time for data collection.

To investigate the relationships between the study variables, the obtained data were analysed using descriptive statistics and inferential statistics using SPSS Statistics 26.

Firstly, we have to calculate and analyse the

Cronbach's Alpha. This is a measure of internal consistency; how closely related a number of items are as a group.<sup>27</sup> The coefficient has a range of 0 to 1. When an item's alpha value is high, it suggests that it measures an underlying factor. That is a reliability/consistency test, not a statistical test, though. For our study, we found the results mentioned in **Table 1**.

The reliability test refers to the consistency and accuracy of measurement. In this case, Cronbach's alpha is used as a measure of internal consistency, indicating how well the items within each scale measure the same underlying construct Almquist et al., (2020). Therefore, the provided reliability statistics (Cronbach's alpha over 0.60) in Table 1 indicate that the scales used to measure these constructs are generally reliable and provide a solid foundation for further analysis and interpretation of the research findings.

**Findings and Discussion:** This part of the study included the results of the questionnaire forms distributed on the internet on Facebook, online Google Drive, email, and phone calls. To find out what the tourists' satisfaction is regarding the role of AI-Driven Personalisation as a factor to enhance the EcoConsciousness of Algerian travellers.

**Respondent's Demographics:** The given data comprises 160 respondents' demographic details. Table 2 provides a breakdown of the demographic and career characteristics of the respondents (n=160) involved in the study.

From the table above, the majority of re-

at: <https://whc.unesco.org/en/list/> (Last access: 16.09.2024).

27 Almquist, Y. B., Signild K., Brännström, L. (2020). A practical guide to quantitative methods with SPSS. 3787995 Bytes. Available at: <https://doi.org/10.17045/STHLMUNI.10321829>.

TABLE 2: THE RESPONDENTS ACCORDING TO DEMOGRAPHIC AND CAREER DATA (N =160)

	CLASS	FREQUENCY	PERCENT
Destination	Outside the country	67	41,9
Gender	More than 55	15	9,4
	Male	67	41,9
	Female	93	58,1
EducationLevel	High School	43	26,9
	University Level	78	48,8
	Doctoral Degree	39	24,4
IncomeLevel	Less than 20,000	31	19,4
	21,000-35,000	27	16,9
	36,000-45,000	17	10,6
	46,000-55,000	30	18,8
	More than 56,000	55	34,4
Occupation	Student	16	10,0
	Employed part-time	14	8,8
	Employed full-time	63	39,4
	Selfemployed	37	23,1
	Other	30	18,8
AiUsing	No	133	83,1
	Yes	27	16,9
Type	Inside the country	93	58,1
Age	18-24	45	28,1
	25-34	17	10,6
	35-44	62	38,8
	45-54	21	13,1

Source: Author's explanation

spondents (58.1%) chose to travel within the country, while 41.9% travelled outside Algeria. The largest age group was 35-44 (38.8%), followed by 18-24 (28.1%). The sample was relatively balanced, with 41.9% male and 58.1% female respondents. A significant portion (48.8%) had a university-level education, followed by doctoral degrees (24.4%) and high school (26.9%). The most common income bracket was "more than 56,000" (34.4%), indicating a relatively high-income sample. The largest occupational group was "employed full-time" (39.4%), followed by self-employed (23.1%). A smaller proportion of respondents (16.9%) reported using specialized apps integrated with AI in their travels, while the majority (83.1%) did not; they use their recommendations from notifications generated based on their research.

### Descriptive statistics of factors

The provided descriptive statistics we get from SPSS calculations summarize the responses to the questionnaire items across four dimensions: Daily green behaviours and public self-awareness, AI-Driven Personalisation, Eco-Conscious Behaviour, and Traveller Satisfaction. The statistics include the number of valid responses (N), mean values, and standard deviation for each item (see Table 3).

Table 3 presents the results of a survey measuring traveller satisfaction and eco-conscious behaviour concerning AI-Driven Personalisation. The data is based on responses from 160 participants.

The results in **Table 4**, the mean values for all variables are relatively high, suggesting generally positive perceptions. And the standard deviation for all variables is moderate, indicating some

**TABLE 3: MEASURING THE TRAVELLER SATISFACTION AND ECO-CONSCIOUSNESS BEHAVIOUR REGARDING THE USE OF AI-DRIVEN PERSONALISATION**

N	Mean	Std. Deviation
<b>1- Daily green behaviours and public self-awareness</b>		
Q01: I always participate in green activities (gardening, recycling, homemade resources...etc.).	160 4,0313	0,95445
Q02: I talk to my friends about environmental issues	160 4,0000	0,93835
Q03: In my daily life, I prefer to use renewable energy sources (solar energy, biofuels. etc. )	160 3,9375	0,90204
Q04: I am highly aware about my own image while visiting at my tourism destination	160 4,4375	0,79057
<b>2- AI-Driven Personalisation</b>		
Q05: I am satisfied with the services AI recommendations provide me	160 3,9375	0,79057
Q06: I received relevant AI personalization to my eco-friendly preferences	160 4,0000	0,75235
Q07: AI-powered features facilitated my eco-friendly travel options	160 4,0938	0,80718
<b>3- Eco-Conscious Behaviour</b>		
Q08: I am considerate of and preserve the environment at the destinations I visit	160 4,5938	0,60705
Q09: I will talk about the environmental protection concerns of the destination with my travel companions	160 4,3438	0,99082
Q10: I consistently encourage my family and fellow travellers to embrace environmentally friendly practices	160 4,4375	0,86648
Q11: As a tourist, I avoid buying goods with unnecessary packaging material	160 4,0313	0,95445
Q12: As a tourist, I choose transportation that is most eco-friendly	160 4,0625	0,79057
<b>4- Traveller Satisfaction</b>		
Q13: I believe that my travel choices have positively affected the environment	160 3,9375	0,79057
Q14: I would recommend my travel destination or provider to others	160 3,9063	0,76723
Q15: Overall, I am satisfied with my travel experience	160 4,2500	0,75235
Q16: The AI-Driven Personalisation significantly enhanced my satisfaction with the trip	160 3,8125	0,84814
Q17: I would recommend this travel experience to other eco-conscious tourists	160 3,9688	0,88610
Q18: I'm preferred to utilize AI-powered customisation on future eco-friendly travels	160 4,2500	1,00314

Source: Author's explanation

**TABLE 4: DESCRIPTIVE ANALYSIS OF THE RESPONDENTS' OPINIONS ACCORDING TO THE IMPACT OF AI-DRIVEN PERSONALISATION AS FACTOR IMPACT TRAVELLER SATISFACTION AND ECO-CONSCIOUSNESS BEHAVIOUR**

	N	Mean	Std. Deviation	Rank
AIDriven_Personalization	160	4,0104	0,66079	5
DB_PS	160	4,1016	0,64201	3
EcoConscious_Behaviour	160	4,2938	0,63242	1
Traveller_Satisfaction	160	4,0208	0,66450	4
Scale_All_Variables	160	4,1128	0,54630	2
Valid N (listwise)	160			

Source: Author's explanation



variability in responses. Results also indicate that Eco-Conscious Behaviour is ranked highest, meaning that participants perceive it as having the greatest impact. And unlike Eco-Conscious Behaviour, AI-Driven Personalisation is ranked lowest, indicating a perceived lesser impact.

Based on these results, we conclude that Eco-Conscious Behaviour is a crucial factor influencing traveller satisfaction. This highlights the importance of incorporating sustainability into travel experiences. On the other hand, while AI-Driven Personalisation is ranked lower, it still has a positive impact on traveller satisfaction. This suggests that personalized experiences can contribute to a more enjoyable trip, even if they are not the primary driver of satisfaction. Finally, the scale All Variables ranking suggests that the combination of all factors, including AI-Driven Personalisation, destination-based preferences, eco-conscious behaviour, and traveller satisfaction, has a significant impact on the overall travel experience.

### Hypotheses of the study test

**Hypothesis 1:** There is a significant positive relationship between AI-Driven Personalisation and traveller Satisfaction and Eco-Consciousness Behaviour.

**Table 5** provides correlation coefficients between the main variables of the study: AI-Driven Personalisation, Eco-Conscious Behaviour, Traveller Satisfaction, and Scale All Variables. These coefficients indicate the strength and direction of the relationships between these variables.

Results found that A strong positive correlation of **0.831** exists between these two variables, supporting **Hypothesis 1**. This suggests that AI-Driven Personalisation is significantly associated with higher levels of traveller satisfaction. There is also a moderately strong positive correlation of **0.494** between AI-Driven Personalisation and Eco-Conscious Behaviour, further supporting **Hypothesis 1**. This indicates that personalized experiences can positively influence travellers' eco-conscious behaviour. Also, we found a significant positive correlation of **0.669** observed between these two variables, suggesting that engaging in EcoConscious Behaviour can enhance traveller satisfaction.

Overall, the results in **Table 5** strongly support Hypothesis 1. "There is a significant positive relationship between AI-Driven Personalisation and traveller Satisfaction and EcoConsciousness Behaviour".

**Hypothesis 2:** Higher levels of AI-Driven Personalisation have a significant impact on traveller Satisfaction.

**TABLE 5: THE RELATIONSHIPS BETWEEN THE MAIN VARIABLES OF THE STUDY**

		AIDriven_Person alization	EcoConscious_B ehaviour	Traveller_Satis faction	Scale_All_Va riables
AIDriven_Person alization	Pearson Correlation	1	,494**	,831**	,873**
	Sig. (2-tailed)		0,000	0,000	0,000
	N	160	160	160	160
EcoConscious_Be haviour	Pearson Correlation	,494**	1	,669**	,806**
	Sig. (2-tailed)	0,000		0,000	0,000
	N	160	160	160	160
Traveller_Satisfac tion	Pearson Correlation	,831**	,669**	1	,918**
	Sig. (2-tailed)	0,000	0,000		0,000
	N	160	160	160	160

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: Author's explanation

**Table 6: ANOVA Table**

ANOVA <sup>a</sup>						
Model	Sum of	Squares	df	Mean Square	F	Sig.
1	Regression	48,489	1	48,489	352,728	,000 <sup>b</sup>
	Residual	21,720	158	0,137		
	Total	70,208	159			
a. Dependent Variable: Traveller_Satisfaction						
b. Predictors: (Constant), AIDriven_Personalization						

Source: Author's explanation

**Table 6** presents the results of an ANOVA (Analysis of Variance) test, which is used to determine whether there are significant differences between groups or models. In this case, the ANOVA is examining the relationship between AI-Driven Personalisation and Traveller Satisfaction.

The ANOVA results in **Table 6** provide strong evidence that AI-Driven Personalisation is a significant predictor of Traveller Satisfaction. The large F-statistic and highly significant p-value

confirm that the model (including AI-Driven Personalisation) explains a significant amount of the variation in Traveller Satisfaction. This supports the findings from previous analyses and reinforces the importance of AI-Driven Personalisation in enhancing traveller experiences.

**Table 7** presents the coefficients for the regression model predicting Traveller Satisfaction based on AI-Driven Personalisation. These coefficients represent the standardized beta weights

**Table 7: Table of Coefficients**

Model		Standardized Coefficients		t	Sig.
		Beta			
1	(Constant)	0,669	0,181	3,701	0,000
	AIDriven_Personalization	0,836	0,044	0,831	18,781
a. Dependent Variable: Traveller_Satisfaction					

Source: Author's explanation

**Table 8: Model summary**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15,537	1	15,537	51,084	,000 <sup>b</sup>
	Residual	48,056	158	0,304		
	Total	63,594	159			
a. Dependent Variable: EcoConscious_Behaviour						
b. Predictors: (Constant), AIDriven_Personalization						

Source: Author's explanation

Table 9: Table of Coefficients				
Model	Unstandardized Coefficients		Standardized Coefficients	t Sig
	B	Std. Error	Beta	
1	(Constant) 2,397	0,269		8,909 0,000
	AI Driven_PERSONALIZATION 0,473	0,0660,494	7,147	0,000
a. Dependent Variable: EcoConscious_Behaviour				

Source: Author's explanation

and their associated t-statistics and significance levels.

The results provide a standardized beta coefficient of **0.836** for AI-Driven Personalisation is relatively high, suggesting a strong positive relationship with Traveller Satisfaction. And, the t-statistic of **18,781** is extremely large, indicating that AI-Driven Personalisation is a highly significant predictor of Traveller Satisfaction. In conclusion, the results in **Table 7** provide strong evidence that AI-Driven Personalisation is a significant and influential predictor of Traveller Satisfaction. The high beta coefficient and significant t-statistic demonstrate the substantial impact of personalized experiences on enhancing traveller satisfaction.

Finally, the results from **Table 6**, and **Table 7** consistently indicate a strong positive relationship between AI-Driven Personalisation and Traveller Satisfaction. The high correlation coefficient, significant F-statistic, and significant beta coefficient all point to the conclusion that higher levels of AI-Driven Personalisation are indeed significantly associated with increased traveller satisfaction. And, the hypothesis

**Hypothesis 2:** Higher levels of AI-Driven personalization significantly impact traveller Satisfaction" is supported.

**Hypothesis 3:** Higher levels of AI-Driven Personalisation have a significant impact on Tourist Eco-Consciousness Behaviour

**Table 8** presents the model summary for a regression analysis where AI-Driven Personalisation is the predictor variable and Eco-Conscious Behavior is the outcome variable.

Results shown in **Table 8** provide strong evidence that AI-Driven Personalisation is a significant predictor of Eco-Conscious Behaviour. The large F-statistic and highly significant p-value

confirm that the model (including AI-Driven Personalisation) explains a significant amount of the variation in Eco-Conscious Behaviour. This suggests that personalized experiences can play a role in influencing travellers' eco-conscious behaviour.

**Table 9** presents the coefficients for the regression model predicting EcoConscious\_Behaviour based on AI-Driven Personalisation. These coefficients represent the unstandardized and standardized beta weights, along with their associated t-statistics and significance levels.

The coefficient of **0.473** indicates that for every one-unit increase in AI-Driven Personalisation, Eco-Conscious Behaviour increases by **0.473** units, holding other variables constant. And, the t-statistic of **7.147** is significantly large, indicating that AI-Driven Personalisation is a highly significant predictor of Eco-Conscious Behaviour, with the p-value of **0.000** being significantly less than **0.05**, confirming the significance of AI-Driven Personalisation as a predictor. Hence, the results in **Table 9** provide strong evidence that AI-Driven Personalization is a significant and influential predictor of Eco-Conscious Behaviour.

The positive coefficient and significant t-statistic demonstrate that personalized experiences can effectively encourage travellers to adopt more Eco-Conscious Behaviours.

Finally, based on the results from **Table 8** and **Table 9**, **Hypothesis 3:** Higher levels of AI-Driven Personalisation significantly impact Tourist Eco-Consciousness Behaviour **is supported**.

**Hypothesis 4:** Higher levels of Eco-Consciousness Behaviour personalisation have a significant impact on Traveller Satisfaction.

**Table 10** presents the coefficients for a regression model predicting Traveler Satisfaction

**Table 10: Table of Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,004	0,270		3,721	0,000
	EcoConscious_Behaviour	0,703	0,062	0,669	11,307	0,000

a. Dependent Variable: Traveller\_Satisfaction

Source: Author's explanation

**Table 11: The One-Way ANOVA with AI-Driven Personalisation**

AIDriven\_Personalization: Using Specialized platforms groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7,208	1	7,208	18,303	0,000
Within Groups	62,219	158	0,394		
Total	69,427	159			

**AIDriven\_Personalization: Age groups**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11,385	4	2,846	7,601	0,000
Within Groups	58,042	155	0,374		
Total	69,427	159			

**AIDriven\_Personalization: Educational Level**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0,255	2	0,127	0,289	0,749
Within Groups	69,172	157	0,441		
Total	69,427	159			

Source: Author's explanation

using Eco-Conscious Behaviour as the predictor variable. The coefficient of **0.703** indicates that for every one-unit increase in Eco-Conscious Behaviour, Traveler Satisfaction increases by **0.703** units, holding other variables constant. The beta coefficient of **0.669** suggests a moderately strong positive relationship between Eco-Conscious Behaviour and Traveler Satisfaction. The t-statistic of **11.307** is significantly large, indicating that Eco-Conscious Behaviour is a highly significant predictor of Traveler Satisfaction. While the p-value of **0.000** is significantly less than 0.05, confirming the significance of EcoConscious\_Behaviour as a predictor.

The results in **Table 10** provide strong evidence that Eco-Conscious Behaviour is a significant and influential predictor of Traveler Satisfaction. The positive coefficient and significant t-statistic demonstrate that engaging in eco-conscious behaviour can significantly enhance the overall travel experience.

**Table 10** presents the coefficients for a regression model predicting Traveler Satisfaction using Eco-Conscious Behaviour as the predictor variable. The coefficient of **0.703** indicates that for every one-unit increase in Eco-Conscious Behaviour, Traveler Satisfaction increases by **0.703** units, holding other variables constant. The t-statistic of **11.307** is significantly large, indicating that Eco-Conscious Behaviour is a highly significant predictor of Traveler Satisfaction. And, the p-value of **0.000** is significantly less than **0.05**, confirming the significance of EcoConscious\_Behaviour as a predictor.

The results in **Table 10** provide strong evidence that Eco-Conscious Behaviour is a significant and influential predictor of Traveler Satisfaction. The positive coefficient and significant t-statistic demonstrate that engaging in eco-conscious behaviour can significantly enhance the overall travel experience.

Therefore, the hypothesis “**Hypothesis 4:** High-

**Table 12: The One-Way ANOVA with Eco-Conscious Behaviour variable**

<b>EcoConscious_Behaviour : Age groups</b>					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19,564	4	4,891	17,218	0,000
Within Groups	44,030	155	0,284		
Total	63,594	159			
<b>EcoConscious_Behaviour : Educational Level</b>					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6,899	2	3,450	9,553	0,000
Within Groups	56,694	157	0,361		
Total	63,594	159			
<b>EcoConscious_Behaviour : Gender groups</b>					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,301	1	1,301	3,301	0,071
Within Groups	62,292	158	0,394		
Total	63,594	159			

Source: Author's explanation



er levels of Eco-Consciousness Behaviour significantly impact Traveler Satisfaction" can be supported based on the provided results.

**Hypothesis 5:** The impact of AI-Driven Personalisation significantly varies across different demographic groups of Using Specialized platforms, Age, and Educational Level.

**Table 11** presents the results of one-way ANOVAs to examine whether the impact of AIDriven Personalization varies across different demographic groups: Using Specialized Platforms, Age, and Educational Level.

The F-statistic is **18,303** with a p-value of **0.000**, indicating a significant difference in the impact of AI-Driven Personalisation across different groups using specialized platforms. The F-statistic is **7,601** with a p-value of **0.000**, suggesting a significant

difference in the impact of AI-Driven Personalisation across different age groups. Also, the F-statistic is **0.289** with a p-value of **0.749**. This indicates that there is no significant difference in the impact of AIDriven Personalization across different educational levels.

Accordingly, and based on the results, **Hypothesis 5 is partially supported**. The impact of AI-Driven Personalisation **significantly varies** across different groups using specialized platforms and different age groups, but **does not vary** significantly across different educational levels.

**Hypothesis 6:** The impact of Eco-Consciousness significantly varies across different demographic groups of Age, Educational Level, and Gender.

**Table 12** presents the results of one-way

**Table 13: The One-Way ANOVA with Traveller Satisfaction variable**

<b>Traveller_Satisfaction : Age groups</b>					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16,809	4	4,202	12,198	0,000
Within Groups	53,399	155	0,345		
Total	70,208	159			
<b>Traveller_Satisfaction : Educational Level groups</b>					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0,233	2	0,117	0,262	0,770
Within Groups	69,975	157	0,446		
Total	70,208	159			
<b>Traveller_Satisfaction : Gender groups</b>					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2,709	1	2,709	6,341	0,013
Within Groups	67,500	158	0,427		
Total	70,208	159			

Source: Author's explanation

**Table 14: Table of coefficients**

		<b>Coefficients<sup>a</sup></b>				
<b>Model</b>		<b>Unstandardized Coefficients</b>	<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>	
		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
1	(Constant)	2,234	0,299		7,460	0,000
	AIDriven_Personalization	0,376	0,088	0,392	4,273	0,000
	DB_PS	0,149	0,091	0,152	1,637	0,104
	moderator	-0,087	0,040	-0,150	-2,192	0,030

**a. Dependent Variable: EcoConscious\_Behaviour**

*Source: Author's explanation*

ANOVAs to examine whether the impact of Eco-Conscious Behaviour varies across different demographic groups: Age, Educational Level, and Gender. The F-statistic is **17,218** with a p-value of **0.000**, indicating a significant difference in the impact of Eco-Conscious Behaviour across different age groups. The F-statistic is **9,553** with a p-value of **0.000**, suggesting a significant difference in the impact of Eco-Conscious Behaviour across different educational levels. The F-statistic is **3,301** with a p-value of **0.071**. While this is marginally significant, it suggests a possible trend towards a difference in the impact of Eco-Conscious Behaviour across different gender groups.

Based on the results, **Hypothesis 6 is partially supported**. The impact of Eco-Conscious Behaviour **significantly varies** across different **age groups** and **educational levels**, but there is only **marginal evidence** for a difference across **gender groups**.

**Hypothesis 7:** The impact of Traveller Satisfaction significantly varies across different demographic groups of Age, Educational Level, and Gender.

**Table 13** presents the results of one-way ANOVAs to examine whether the impact of Traveler Satisfaction varies across different demographic groups: Age, Educational Level, and Gender. The F-statistic is **12,198** with a p-value of **0.000**, in-

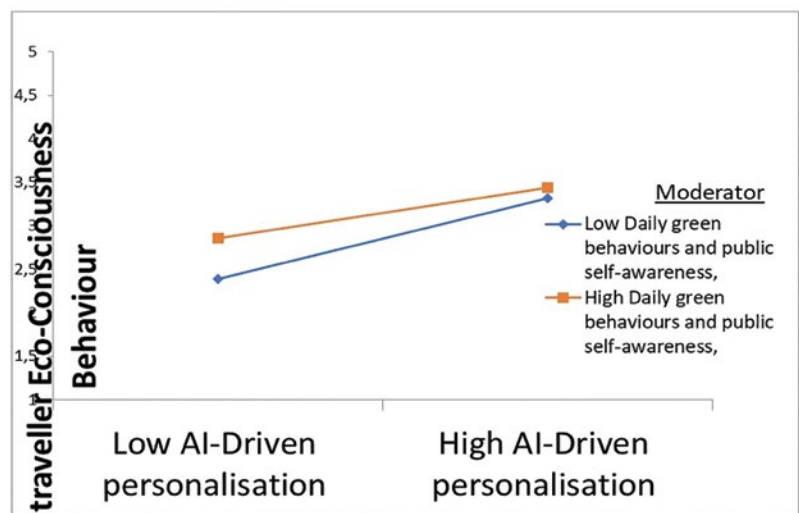
dicating a significant difference in the impact of Traveler Satisfaction across different age groups. The F-statistic is **0.262** with a p-value of **0.770**, suggesting **no significant difference** in the impact of Traveler Satisfaction across different educational levels. The F-statistic is **6,341** with a p-value of **0.013**, indicating a **significant difference** in the impact of Traveler Satisfaction across different gender groups.

Consequently, **Hypothesis 7** is partially supported. The impact of Traveler Satisfaction significantly varies across different age groups and gender groups, but does not vary significantly across different educational levels.

**Hypothesis 8:** The Daily green behaviours and public self-awareness will moderate the relationship between AI-Driven Personalisation and traveller Eco-Consciousness Behaviour.

**Table 14** presents the coefficients for a regression model predicting Eco-Conscious Behaviour, including AI-Driven Personalisation, DB\_PS (a construct related to destination-based preferences and services), and their interaction term as predictors. The standardized beta coefficient of **0.392** for AI-Driven Personalisation is positive and significant, suggesting a direct positive relationship with Eco-Conscious Behaviour. The standardized beta coefficient of **0.152** for DB\_PS is positive but not significant, indicating that while it has

FIGURE 2: INTERACTIONS BETWEEN AI-DRIVEN PERSONALISATION, DAILY GREEN BEHAVIOURS, AND PUBLIC SELF-AWARENESS.

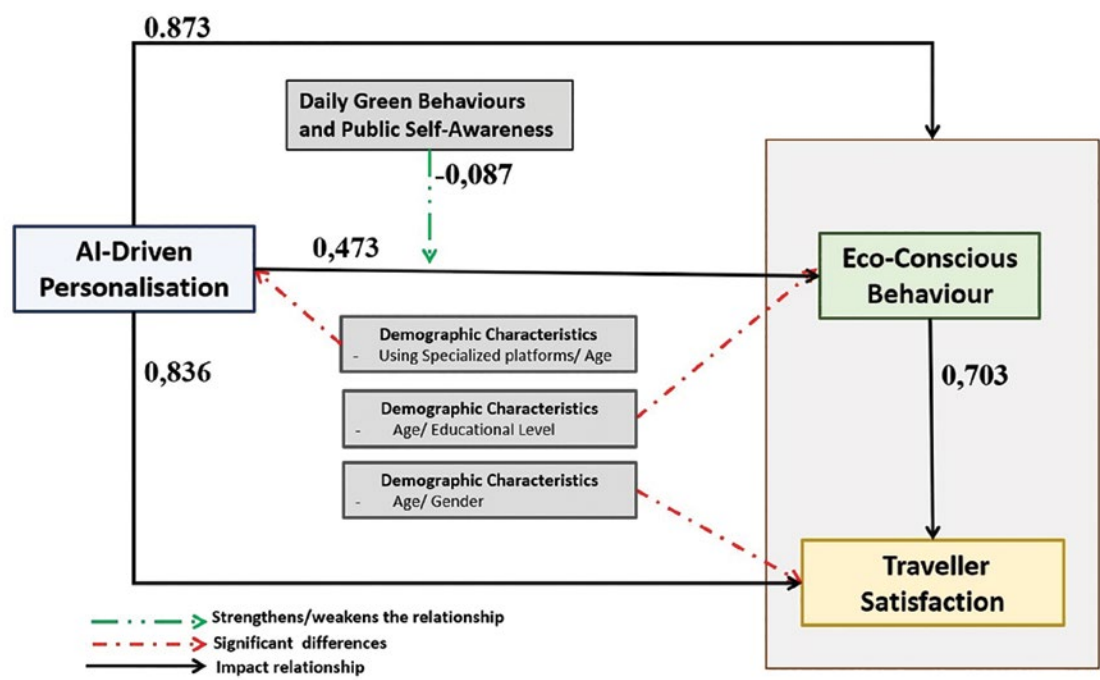


Source: Slope visual analysis is generated using James Gaskin’s Excel StatTool (StatWiki, 2024)

some influence on Eco-Conscious Behaviour, it’s not a strong predictor. Furthermore, the standardized beta coefficient of  $-0.150$  for the interaction term (AI-Driven Personalisation \* DB\_PS) is negative and significant. This suggests that the relationship between AI-Driven Personalisation and Eco-Conscious Behaviour is moderated by DB\_PS. Then, **Hypothesis 8** is supported. The results

indicate that the relationship between AI-Driven Personalization and Eco-Conscious Behaviour is indeed moderated by DB\_PS. Specifically, the positive impact of AI-Driven Personalisation on Eco-Conscious Behaviour is likely to be stronger when DB\_PS is lower. **Hypothesis 8 is supported.** The results indicate that the relationship between AI-Driven

FIGURE 3: FINAL CONCEPTUAL FRAMEWORK.



Source: The author based on SPSS results

Personalisation and Eco-Conscious Behaviour is indeed moderated by DB\_PS. Specifically, the positive impact of AI-Driven Personalisation on Eco-Conscious Behaviour is likely to be stronger when DB\_PS is lower.

The moderation plot shown in **Figure 2** confirms that Daily Green Behaviours and Public Self-Awareness indeed moderate the relationship between AI-Driven Personalisation and Traveler Eco-Consciousness Behaviour. This suggests that the effectiveness of AI-Driven Personalisation in promoting eco-conscious behaviour may depend on the individual traveller's existing level of environmental awareness and engagement.

## CONCLUSION

This study aimed to investigate the impact of AI-Driven Personalisation on Traveler Satisfaction and Eco-Conscious Behaviour among Algerian travellers. Through a comprehensive analysis of survey data, several key findings have emerged.

**AI-Driven Personalisation and Traveler Satisfaction:** Research indicates that AI-Driven Personalisation has a significant positive impact on traveller satisfaction. This indicates that personalized experiences enhance the overall travel experience for Algerian travellers.

**AI-Driven Personalisation and Eco-Conscious Behaviour:** AI-Driven Personalisation was also shown to have a positive impact on Eco-Conscious Behaviour among travellers. This indicates that personalized experiences can support travellers to adopt more sustainable attitudes.

**Moderating Effects:** The relationship between AI-Driven Personalisation and Eco-Conscious

Behaviour was found to be moderated by Daily Green Behaviours and Public Self-awareness. The travellers with higher levels of environmental awareness and involvement exhibit eco-conscious behaviour when faced with personalized experiences.

**Demographic Variations:** The impact of AI-Driven Personalisation and Eco-Conscious Behaviour varied through different demographic groups. Age and platform usage were found to influence the effectiveness of these factors.

Finally, the findings of our study show that

AI-Driven Personalisation can be a valuable tool to promote sustainable tourism and enhance traveller satisfaction. By personalizing experiences to travellers' preferences and needs, tourism service providers can encourage travellers to adopt more eco-conscious behaviours and attitudes to ensure a positive and memorable journey.

## CHALLENGES AND CONSIDERATIONS

While AI-Driven Personalisation offers significant potential impact on travellers' satisfaction and eco-consciousness attitudes, it's important to address several challenges, and tourism providers must take into account data privacy, ethical implications, technical limitations, and user acceptance. And the travel industry can harness the power of AI to promote sustainable tourism and create memorable experiences for travellers.

## FUTURE SCOPE OF RESEARCH

The provided recommendations advocate for a comprehensive approach to AI-Driven Personalisation in eco-conscious travel. They suggest conducting long-term studies to assess its impact, developing ethical frameworks, ensuring scalability and affordability, considering cross-cultural perspectives, integrating with emerging technologies, fostering collaboration, and establishing global governance. By addressing these areas, the tourism industry can effectively leverage AI to promote sustainable practices while ensuring ethical and responsible travel experiences.

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