

The Impact of Sustainable Tourism Practices on the Brand Image of Tourism Institutions: The Case of Rusica Park Complex

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Abstract:

This study aims to analyze the impact of sustainable tourism practices across environmental, economic, social, and cultural dimensions on the brand image of tourism institutions, using the case of the “Rusica Park” tourist complex in Skikda, Algeria. The study adopts a descriptive and analytical approach. Data were collected through a structured questionnaire from a sample of 402 visitors and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS.

The findings revealed statistically significant effects of all examined dimensions on building a positive brand image, with the environmental and economic dimensions showing the strongest influence. These results highlight the importance of integrating sustainability practices into tourism management strategies to enhance competitiveness and strengthen tourism branding.

Keywords: Sustainable tourism, Brand image, Tourism branding, Tourism institutions.

JEL Classification: L83, Q56, M31, Q01.

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1. Introduction

In recent decades, the global tourism industry has undergone a profound transformation driven by increasing environmental awareness, social responsibility, and the pursuit of long-term economic viability. The growing recognition of the negative consequences of mass tourism such as environmental degradation, cultural homogenization, and socioeconomic disparities has prompted both policymakers and industry stakeholders to rethink conventional tourism models. This shift has led to the emergence of sustainable tourism, a multidimensional approach that aims to harmonize economic growth with ecological preservation, cultural authenticity, and community well-being.

Sustainable tourism is not merely an ethical or ecological imperative; it has become a strategic necessity in enhancing the competitiveness and resilience of tourism destinations. By integrating environmental conservation, efficient resource management, and respect for local cultures, tourism institutions can generate added value while meeting the expectations of increasingly conscious travelers. In this sense, sustainability functions as both a market differentiator and a value proposition, shaping how destinations and institutions are perceived in the global marketplace.

A key outcome of adopting sustainable practices lies in their capacity to improve brand image, which represents the set of associations and perceptions that consumers hold toward a tourism entity. A positive brand image grounded in sustainability values fosters trust, loyalty, and emotional connection with visitors. Previous studies have shown that sustainability initiatives such as the use of renewable energy, waste reduction, community engagement, and the promotion of local heritage can significantly strengthen the reputation and credibility of tourism institutions, thereby influencing tourists' behavioral intentions.

In the context of developing economies, particularly in North Africa, sustainable tourism offers an opportunity to combine economic diversification with environmental stewardship and cultural preservation. Algeria, endowed with rich natural and cultural assets, is increasingly embracing this paradigm to position itself as a responsible and competitive destination. Within this framework, the Rusica Park Complex serves as an illustrative case for examining how sustainable tourism practices can shape and enhance brand image. Understanding this relationship provides valuable insights for tourism policymakers, managers, and entrepreneurs seeking to align growth strategies with sustainability principles and global best practices.

1.1. Research Problem

In light of the growing global interest in sustainable tourism, tourism institutions are increasingly striving to adopt responsible environmental, economic, socio-cultural, and functional practices. However, the extent to which these practices influence customers' perception of brand image remains unclear—especially in the Algerian context. Based on this, the research problem can be formulated as follows: **"To what extent do sustainable tourism practices impact the brand image of tourism institutions at the Rusica Park tourist complex ?"**

1.2. Research Sub-questions

To provide a more detailed understanding of the research problem, the following sub-questions are formulated :

- To what extent do environmental practices influence the brand image of tourism institutions at the Rusica Park tourist complex ?
- To what extent do economic practices influence the brand image of tourism institutions at the Rusica Park tourist complex ?
- To what extent do social practices influence the brand image of tourism institutions at the Rusica Park tourist complex ?
- To what extent do cultural practices influence the brand image of tourism institutions at the Rusica Park tourist complex ?

1.3. Research Hypotheses

In line with the research problem and sub-questions, the following null hypotheses have been proposed:

Main Hypothesis

H₀ : There is no statistically significant effect of sustainable tourism practices in their various dimensions on the brand image of tourism institutions at the Rusica Park tourist complex.

Sub-Hypotheses

H₀₁ : There is no statistically significant effect of environmental practices on the brand image of tourism institutions at the Rusica Park tourist complex.

H₀₂ : There is no statistically significant effect of economic practices on the brand image of tourism institutions at the Rusica Park tourist complex.

H₀₃ : There is no statistically significant effect of social practices on the brand image of tourism institutions at the Rusica Park tourist complex.

H₀₄ : There is no statistically significant effect of cultural practices on the brand image of tourism institutions at the Rusica Park tourist complex.

1.4. Research Significance

The significance of this study lies in its alignment with global transformations in the tourism sector, particularly amidst growing calls to adopt the sustainable tourism model as a necessary alternative to traditional tourism, which has led to various negative environmental, economic, and social consequences in many tourist destinations. In this context, the study draws its importance from its attempt to shed light on sustainable tourism practices in their various dimensions and to assess their impact on the brand image of tourism institutions, considering it a strategic tool to enhance the competitiveness of these institutions in the market.

Moreover, the study holds important practical value as it provides a scientific perspective on the extent to which the adoption of sustainable tourism practices contributes to improving customer perceptions of tourism institutions. This enables sector stakeholders to develop sustainability-based marketing strategies that enhance the attractiveness of these institutions and support their positive positioning in customers' minds.

1.5. Research Objectives

This study aims to analyze the impact of sustainable tourism practices on the brand image of tourism institutions, using the Rusica Park Complex as a case study. More specifically, it seeks to :

- Identify the main sustainable tourism practices adopted by tourism institutions.
- Examine the extent to which environmental, economic, social, and cultural practices influence brand image.
- Provide insights that help tourism managers and policymakers integrate sustainability into their branding strategies.
- Highlight the strategic role of sustainability in strengthening the competitiveness and reputation of tourism institutions.

1.6. Research Methodology

This study adopts a descriptive-analytical approach to examine the impact of sustainable tourism practices on the brand image of tourism institutions. Data were collected through a questionnaire distributed to visitors of Roussyka Park Tourism Complex. A total of 402 valid responses were obtained. The data were analyzed using SmartPLS software based on the SEM-PLS method to assess the relationships between study variables.

1.5. Research Structure

The structure of this study comprises two essential components. The first part is theoretical in nature, addressing the conceptual frameworks related to the study variables, reviewing relevant previous studies, and highlighting the identified research gap. The second part is empirical, focusing on the practical aspect of the study through statistical analysis based on the SEM-PLS method.

2. Theoretical and Empirical Literature Review

2.1. Theoretical Background of the Study

2.1.1 Sustainable Tourism

2.1.1.1 Definition

Sustainable tourism refers to a form of tourism that seeks to balance economic development, environmental preservation, and respect for socio-cultural specificities. It aims to ensure the long-term sustainability of natural and human resources for future generations. This approach distinguishes itself from conventional tourism by integrating principles of responsibility, inclusivity, and long-term viability into all stages of tourism planning and management. (Peng, et al., 2025)

2.1.1.2 Dimensions

Sustainable tourism is characterized by four main dimensions : (Mihalic, 2016)

- **Environmental Dimension:** Focuses on the protection of natural resources, minimizing pollution, and mitigating the negative environmental impacts of tourism activities.
- **Economic Dimension:** Aims to generate long-term economic benefits for local communities by supporting local businesses, creating employment opportunities, and promoting equitable income distribution.
- **Social Dimension:** Seeks to enhance the quality of life for local residents by encouraging community participation, fostering social cohesion, and ensuring fair access

to tourism-related benefits.

- **Cultural Dimension:** Emphasizes the preservation of cultural identity, promotion of heritage richness, and respect for the diversity and authenticity of host communities.

2.1.2 Brand Image

2.1.2.1 Definition

Brand image refers to the set of perceptions, beliefs, emotions, and associations that individuals hold regarding a particular brand, product, or destination. It is shaped by personal experiences, marketing communications, word-of-mouth, and socio-cultural influences. A strong and positive brand image plays a crucial role in influencing consumer attitudes, enhancing brand loyalty, and driving decision-making behavior. In the context of tourism, brand image represents how tourists perceive a destination in terms of its attractiveness, reliability, emotional appeal, and symbolic meaning. (Keller, 1993)

2.1.2.2 Dimensions

The brand image is a multidimensional construct that includes the following key dimensions : (Echtner & Ritchie, 2003)

- **Cognitive Dimension:** Refers to tourists' beliefs and knowledge about a destination, including perceived attributes such as quality of infrastructure, safety, cleanliness, and accessibility.
- **Emotional Dimension:** Relates to the feelings and emotional responses that a destination evokes in visitors, such as relaxation, excitement, nostalgia, or sense of belonging.
- **Functional Dimension:** Concerns the practical and utilitarian aspects of the destination, such as the effectiveness of services, availability of facilities, and the efficiency of transportation and accommodation systems.
- **Symbolic Dimension:** Represents the symbolic meanings and values attached to a destination, often linked to personal identity, social status, or cultural significance. It reflects how tourists use the destination to express themselves or align with certain lifestyles.

2.1.3. The Relationship Between Sustainable Tourism Practices and Brand Image

Sustainable tourism practices play a pivotal role in shaping the brand image of tourism institutions by influencing how visitors perceive their responsibility, credibility, and value orientation. Each dimension of sustainability contributes uniquely to building a strong and trustworthy brand image. (Purvis, et al., 2019)

- Environmental practices enhance the credibility and ethical appeal of tourism institutions. When tourists observe eco-friendly actions such as waste reduction, energy efficiency, and biodiversity protection they associate the institution with responsibility and care for the environment, which fosters trust and strengthens brand reputation.
- Economic practices contribute to a positive brand image through fair pricing, support for local entrepreneurship, and the creation of sustainable employment opportunities. These initiatives reflect the institution's commitment to equitable growth and social responsibility, thereby improving customer loyalty and satisfaction.
- Social practices enhance tourists' emotional connection with the destination. By

engaging local communities, ensuring fair treatment of employees, and promoting inclusive tourism, institutions build authenticity and human warmth into their brand identity elements that increase tourists' trust and attachment to the brand.

- Cultural practices reinforce the symbolic and emotional dimensions of brand image. By preserving local traditions, valuing heritage, and respecting cultural diversity, tourism institutions create a sense of uniqueness and authenticity that distinguishes their brand in a competitive market.

In summary, sustainable tourism practices act as a strategic lever for strengthening brand image by promoting values of responsibility, transparency, and authenticity. These values not only attract environmentally and socially conscious tourists but also foster long-term loyalty and positive word-of-mouth that sustain the institution's reputation in the tourism market. (Freeman, et al., 2010)

2.2. Empirical Literature Related to the Study

2.2.1 Previous Studies

Alfdool et al. (2024), in their study titled *"The Brand Image Influence on the Relationship Between Social Media Advertising and Sustainable Tourism Practices in Petra (Jordan)"*, conducted a questionnaire survey among 332 tourists. The data were analyzed using SmartPLS (SEM-PLS). The results revealed that brand image plays a positive mediating role in the relationship between sustainable tourism practices and social media advertising in Petra. This study highlights the importance of brand image as a key influencing factor connecting organizational behavior and tourists' perceptions.

Triharyo (2025), in a study entitled *"Sustainable Tourism and Destination Brand Loyalty: Exploring the Roles of Brand Equity and Tourist Satisfaction in Bali"*, also employed the SEM-PLS method to analyze data collected from tourists in Bali. The research examined the impact of the four dimensions of sustainable tourism practices (environmental, economic, social, and cultural) on brand loyalty, mediated by perceived value and satisfaction. The findings indicated that brand image and tourist satisfaction have a significant mediating effect in strengthening brand loyalty, with the socio-cultural dimension exerting the strongest influence.

Zanete et al. (2024), through their systematic literature review *"Sustainable Place Branding and Visitors' Responses"*, analyzed the most prominent studies addressing the impact of sustainable branding efforts in tourism on visitor perceptions and attitudes. Their review demonstrated that sustainable branding practices enhance the cognitive, emotional, and symbolic values of destinations, thereby improving the overall brand image and fostering greater trust and loyalty among tourists.

2.2.2 Research Gap and Added Value

Despite the abundance of studies addressing the relationship between sustainable tourism and the brand image of tourist destinations, most existing research has primarily focused either on the direct role of sustainable tourism practices in enhancing tourist loyalty (Triharyo, 2025), or on the role of brand image as a general mediating variable between various marketing factors and tourist behavior (Alfdool et al., 2025). Furthermore, analytical and systematic studies (Zanete et al., 2024) have confirmed the positive

association between sustainable branding and the emotional and symbolic perception of the destination, without delving into modeling the relationship based on the different dimensions of brand image, nor within Arab contexts.

Moreover, the tourism environment in Arab countries, particularly Algeria, has not received adequate academic attention in this regard, despite increasing national efforts to integrate sustainable tourism practices into tourism development strategies.

Accordingly, this study aims to propose an original research model that integrates the four dimensions of sustainable tourism (environmental, economic, social, and cultural) with the four dimensions of brand image (cognitive, emotional, functional, and symbolic). The study adopts a quantitative approach using Structural Equation Modeling (SEM) via Smart PLS version 4.1.1.1, thereby offering both scientific and practical added value.

3. Methodology

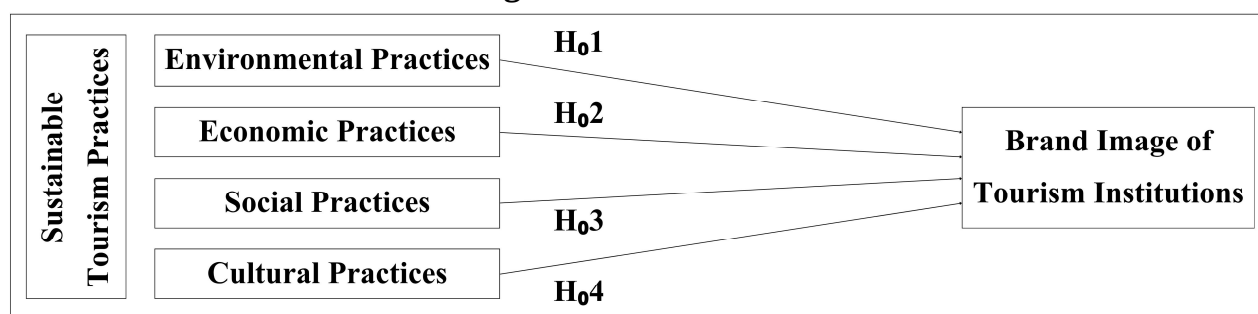
3.1. Research Design

This study adopts a quantitative explanatory causal design aimed at analyzing the relationship between the dimensions of sustainable tourism and the perceived image of visitors to tourism establishments. It seeks to develop a research model that illustrates the impact of the four dimensions of sustainable tourism (environmental, economic, social, and cultural) on the four components of the perceived image (cognitive, emotional, functional, and symbolic).

The field study was conducted at the Rusica Park tourist complex in Skikda Province, the largest foreign-invested tourism facility in Algeria and North Africa, officially inaugurated in 2023.

A descriptive and analytical approach was adopted to explore the structural relationships among the main variables. Data were collected through a structured questionnaire administered to a random sample of visitors.

Fig.1. Research Model



Source: Prepared by the researchers.

3.2. Population and Sample

The study population consisted of visitors to the Rusica Park tourist complex during the summer season of 2025. A simple random sampling technique was employed to ensure proper representation of the visitor population. The final dataset included 402 valid responses, which is considered sufficient to meet the statistical requirements for applying structural equation modeling.

3.3. Data Collection Procedure

Data were collected using an electronic questionnaire designed specifically for the study and

distributed via QR codes placed at strategic locations within the Rusica Park tourist complex. The process was carried out in coordination with the park's departments and spanned from July 15 to August 15, 2025, with on-site supervision by the research team to ensure data quality. A total of 413 questionnaires were received, 11 of which were excluded for being invalid, resulting in 402 valid questionnaires used for final statistical analysis

3.4. Measurement Scale

The questionnaire was developed based on validated scales from recent literature in sustainable tourism and brand image, treating all constructs as multidimensional. Sustainable tourism included environmental, economic, social, and cultural dimensions, while brand image was assessed through cognitive, emotional, functional, and symbolic dimensions. A five-point Likert scale was used, and the instrument was reviewed by academic experts and pretested to ensure clarity and reliability.

3.5. Data Analysis Techniques

The data were analyzed using SmartPLS 4.1.1.1 through PLS-SEM. The process involved evaluating the measurement model (reliability and validity) and then the structural model (path coefficients, R^2 , f^2 , Q^2). Hypotheses were tested using t-values and p-values via bootstrapping.

3.6. Descriptive Statistics of the Sample

To provide a comprehensive overview of the respondents' demographic and behavioral characteristics, descriptive statistics were computed based on gender, age group, monthly income, number of visits, and country of residence. The distribution of the sample is presented in the following table :

Table 1. Demographic Profile of the Sample (N = 402)

Variable	Categories	Frequency (n)	Percentage (%)	Total
Gender	Male	284	70.6%	100%
	Female	118	29.4%	
Age Group	Less than 35 years	102	25.4%	100%
	35 to 50 years	214	53.2%	
	Over 50 years	86	21.4%	
Monthly Income	Less than 100,000 DZD	213	53.0%	100%
	100,000 – 200,000 DZD	138	34.3%	
	More than 200,000 DZD	51	12.7%	
Number of Visits	First Visit	92	22.9%	100%
	Second Visit	251	62.4%	
	Third Visit	59	14.7%	
Country of Residence	Algeria	276	68.7%	100%
	Europe	101	25.1%	
	Middle East	16	4.0%	
	Other	9	2.2%	

Source: Authors' own elaboration based on survey data.

The sample was predominantly male (70.6%), with females representing 29.4%. Most respondents (53.2%) were aged between 35 and 50 years, followed by those under 35 (25.4%) and over 50 (21.4%). In terms of income, 53.0% earned less than 100,000 DZD monthly, while 34.3% earned between 100,000 and 200,000 DZD, and only 12.7% exceeded 200,000 DZD. Regarding visit frequency, 62.4% were on their second visit, 22.9%

on their first, and 14.7% had visited three times or more. Most participants resided in Algeria (68.7%), with others coming from Europe (25.1%), the Middle East (4.0%), and other regions (2.2%).

4. Empirical Results

4.1. Measurement Model Evaluation

4.1.1 Indicator Reliability and Construct Validity

The quality of the measurement model was tested in terms of indicator reliability and construct validity. Indicator reliability was assessed with the outer loadings values (higher than 0.70 is acceptable). (Hair et al., 2021) The reliability of the construct was tested using Composite Reliability (CR) and Cronbach's Alpha, and for which 0.70 value or above refers good internal consistency. Convergent validity was examined with the Average Variance Extracted (AVE), which should exceed the 0.50 criterion to be acceptable. Results for all latent constructs and their dimensions are summarized in the Table below :

Table 2. Results of the Measurement Model Assessment

variable		Item Indicators	Type of Measure	Item Loadings	Composite Reliability	Cronbach Alpha	AVE
Sustainable Tourism Practices	Environmental Dimension	ST-EvD 1	Reflective	0.781	0.741	0.763	0.734
		ST-EvD 2		0.768			
		ST-EvD 3		0.726			
		ST-EvD 4		0.732			
	Economic Dimension	ST-EcD 1	Reflective	0.764	0.719	0.779	0.751
		ST-EcD 2		0.743			
		ST-EcD 3		0.726			
		ST-EcD 4		0.739			
	Social Dimension	ST-ScD 1	Reflective	0.742	0.703	0.745	0.729
		ST-ScD 2		0.739			
		ST-ScD 3		0.711			
		ST-ScD 4		0.722			
	Cultural Dimension	ST-CrD 1	Reflective	0.756	0.752	0.772	0.746
		ST-CrD 2		0.776			
		ST-CrD 3		0.715			
		ST-CrD 4		0.737			
Brand Image of Tourism Institutions	Cognitive Dimension	BI-CgD 1	Reflective	0.790	0.733	0.762	0.741
		BI-CgD 2		0.768			
		BI-CgD 3		0.721			
		BI-CgD 4		0.727			
	Emotional Dimension	BI-EmD 1	Reflective	0.746	0.709	0.726	0.711
		BI-EmD 2		0.732			
		BI-EmD 3		0.708			
		BI-EmD 4		0.718			
	Functional Dimension	BI-FcD 1	Reflective	0.734	0.744	0.767	0.753
		BI-FcD 2		0.752			
		BI-FcD 3		0.717			
		BI-FcD 4		0.732			
	Symbolic Dimension	BI-SyD 1	Reflective	0.739	0.724	0.749	0.736
		BI-SyD 2		0.758			
		BI-SyD 3		0.707			
		BI-SyD 4		0.729			

Source: Outputs of statistical analysis using Smart PLS software.

These results demonstrate that all constructs meet the recommended thresholds for reliability and validity. Cronbach's Alpha and Composite Reliability (CR) values exceed the accepted threshold of 0.70 for all constructs, confirming internal consistency. Additionally, the Average Variance Extracted (AVE) for each construct surpasses the 0.50 benchmark, indicating satisfactory convergent validity. Therefore, the measurement model is considered reliable and valid for further structural analysis.

4.1.2 Discriminant Validity

Discriminant validity was assessed using the Fornell-Larcker criterion, which confirms that each construct is distinct when the square root of its AVE exceeds its correlations with other constructs.

Table 3. Fornell-Larcker Discriminant Validity

	ST-EvD	ST-EcD	ST-ScD	ST-CrD	BI-CgD	BI-EmD	BI-FcD	BI-SyD
ST-EvD	0.821							
ST-EcD	0.502	0.804						
ST-ScD	0.476	0.601	0.775					
ST-CrD	0.513	0.619	0.593	0.821				
BI-CgD	0.504	0.527	0.488	0.511	0.812			
BI-EmD	0.489	0.501	0.466	0.482	0.592	0.741		
BI-FcD	0.474	0.492	0.456	0.479	0.561	0.549	0.811	
BI-SyD	0.491	0.509	0.487	0.498	0.578	0.566	0.595	0.808

Source: Outputs of statistical analysis using Smart PLS software.

The square root of the average variance extracted for each variable is greater than its correlations with other variables. This confirms that each construct is distinct and that discriminant validity is established.

4.2. Structural Model Evaluation

4.2.1 Path Coefficients

To examine the hypothesized relationships between the variables, a path analysis was performed. The table below summarizes the path coefficients (β), t-values, p-values, and 95% confidence intervals.

Table 4. Results of Path Analysis

Path Relationship	Path Coefficient (β)	t-value	p-value	Confidence Interval
Environmental Dimension → Brand Image	0.428	5.276	0.000	[0.298; 0.562]
Economic Dimension → Brand Image	0.391	4.943	0.000	[0.257; 0.518]
Social Dimension → Brand Image	0.274	3.705	0.000	[0.136; 0.403]
Cultural Dimension → Brand Image	0.302	4.218	0.000	[0.175; 0.442]

Source: Outputs of statistical analysis using Smart PLS software.

The results of the path analysis indicate statistically significant and positive effects of sustainable dimensions on brand image. The environmental dimension shows the strongest influence, followed by the economic and cultural dimensions, while the social dimension has a relatively weaker but still statistically significant impact. These findings highlight the

importance of integrating environmental, economic, and institutional factors in brand image development strategies.

4.2.2 R² Coefficient of Determination

To assess the explanatory power of the model, the coefficient of determination (R²) was examined for the endogenous construct.

Table 5. R² and Adjusted R² Values

Endogenous Variable	R ²	Adjusted R ²	Effect Size
Brand Image	0.412	0.403	Moderate

Source: Outputs of statistical analysis using Smart PLS software.

The R² value of 0.412 indicates that approximately 41.2% of the variance in brand image is explained by the independent variables in the model. This represents a moderate level of explanatory power, suggesting that the proposed model captures a reasonable proportion of the variation in the dependent variable.

4.2.3 f² Effect Size

To evaluate the individual contribution of each predictor to the endogenous construct, the effect size (f²) was calculated for all structural paths.

Table 6. Effect Size (f²) for Structural Paths

Structural Path	f ² Value	Effect Size
Environmental Dimension → Brand Image	0.513	Large
Economic Dimension → Brand Image	0.384	Large
Social Dimension → Brand Image	0.384	Large
Cultural Dimension → Brand Image	0.178	Medium

Source: Outputs of statistical analysis using Smart PLS software.

The effect size (f²) values indicate that the environmental, economic, and social dimensions have a large impact on brand image, while the cultural dimension shows a medium effect. These results highlight the varying degrees of influence that each factor exerts on the dependent variable.

4.2.4 Q² Predictive Relevance

To evaluate the predictive capability of the model, the Stone-Geisser's Q² values were calculated using the blindfolding procedure.

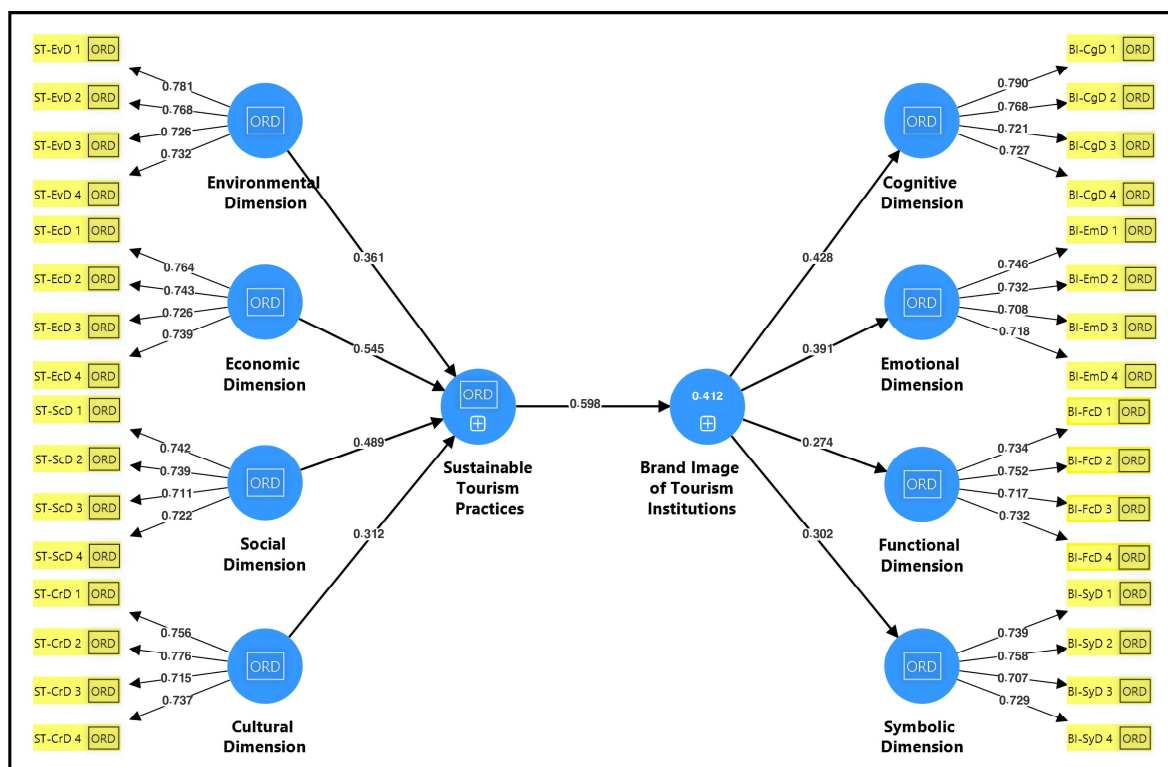
Table 7. Predictive Relevance (Q²)

Endogenous Construct	Q ² Value	Predictive Relevance
Brand Image	0.430	High

Source: Outputs of statistical analysis using Smart PLS software.

The Q² value for the endogenous construct (Brand Image) is 0.430, which exceeds the threshold of 0, indicating that the model has predictive relevance. According to Cohen (Cohen, 2013) a Q² value above 0.35 suggests a substantial level of predictive relevance. This confirms that the model is capable of accurately predicting variations in the brand image construct.

Fig.2. Final Structural Model of the Study



Source: Outputs of statistical analysis using Smart PLS software.

4.2.5 Hypotheses Testing

Sub-Hypotheses

To assess the validity of the research hypotheses, path coefficients (β), t-values, and p-values were calculated for each sub-hypothesis using the Smart PLS software, as presented in the following table :

Table 8. Sub-Hypotheses Testing

Hypothesis	Path	Path Coefficient (β)	T-value	P-value	Decision
H ₀₁	Environmental Dimension → Brand Image	0.361	5.217	0.000	Not Supported
H ₀₂	Economic Dimension → Brand Image	0.545	6.931	0.000	Not Supported
H ₀₃	Social Dimension → Brand Image	0.489	6.112	0.000	Not Supported
H ₀₄	Cultural Dimension → Brand Image	0.312	4.879	0.000	Not Supported

Source: Outputs of statistical analysis using Smart PLS software.

The results in Table 8 demonstrate that all four dimensions of sustainable tourism practices have a statistically significant positive effect on the brand image of the Rusica Park tourist complex, as indicated by p-values less than 0.05 for each path. The economic dimension shows the strongest effect ($\beta = 0.545$), followed by the social ($\beta = 0.489$), environmental ($\beta = 0.361$), and cultural ($\beta = 0.312$) dimensions. Given the significant t-values and low p-values, the null sub-hypotheses (H₀₁ to H₀₄) are rejected, confirming that each of the specified sustainable practices contributes meaningfully to enhancing brand image.

Main Hypothesis

The following table summarizes the results of testing the main hypothesis, which examines the overall effect of sustainable tourism practices on brand image :

Table 9. Main Hypothesis Testing

Hypothesis	Path	Path Coefficient (β)	T-value	P-value	Decision
H_0	sustainable tourism practices → Brand Image	0.598	7.283	0.000	Not Supported

Source: Outputs of statistical analysis using Smart PLS software.

As shown in Table 9, the aggregated effect of sustainable tourism practices on the brand image is statistically significant, with a path coefficient (β) of 0.598, a t-value of 7.283, and a p-value of 0.000. These results lead to the rejection of the main null hypothesis (H_0), thereby affirming that sustainable tourism practices in their collective form significantly enhance the brand image of the Rusica Park tourist complex. This underscores the strategic importance of integrated sustainability efforts in shaping a strong and favorable brand perception.

5. Discussion of Results

The study results revealed a significant effect of all dimensions of sustainable tourism on the brand image of tourism institutions, with the environmental dimension emerging as one of the strongest influences. This can be attributed to visitors' awareness of tangible environmental practices within the tourist complex, such as the use of renewable energy, attention to cleanliness, preservation of green spaces, and protection of biodiversity. These environmental efforts contributed to visitors' appreciation of the place and reinforced their perception of the institution as environmentally responsible, thereby enhancing both the cognitive and functional aspects of its brand image.

This result is consistent with the findings of (Zanete, et al., 2024), who indicated that sustainable branding practices strengthen the cognitive and functional components of brand image by fostering perceptions of responsibility and ethical behavior.

The economic dimension also played a substantial role in shaping the brand image. Visitors perceived positive impacts related to job creation, support for local products, and fair pricing relative to the quality of services. This economic contribution strengthened both functional and emotional impressions, as visitors were convinced that the institution contributes to local development and considers the purchasing power of various tourist segments, leading them to view it as a responsible and economically stable destination.

This aligns with (Triharyo, 2025), who found that sustainable economic initiatives enhance tourists' perceived value and satisfaction, thereby reinforcing brand credibility and loyalty.

As for the social dimension, it had a notable effect on the emotional aspect of the brand image. This is reflected in practices that demonstrate respect for the rights of local communities and the institution's efforts to engage them in service delivery and activities. This social engagement allowed visitors to interact positively with the local human and cultural environment, fostering a sense of belonging and safety, and building an emotional connection between the visitor and the destination.

These findings are consistent with (Alfdool, et al., 2024), who demonstrated that social sustainability practices strengthen brand image by improving tourists' perceptions of organizational responsibility and ethical behavior.

The cultural dimension also showed a moderate but meaningful effect. Visitors noted the institution's attention to preserving heritage, supporting traditional crafts, and organizing activities that promote local cultural identity. These cultural efforts enhanced the symbolic aspect of the brand image, as visitors felt they were experiencing an authentic tourism product that went beyond material services to offer a deeper cultural encounter. This gave the place a unique and meaningful character.

This observation is also in line with (Triharyo, 2025), who reported that the socio-cultural dimension of sustainability exerts the strongest influence on tourists' emotional attachment and brand loyalty.

Overall, the findings confirm that visitors evaluate tourism institutions not only based on service quality but also on their environmental, economic, social, and cultural commitments. Each sustainability dimension contributed, to varying degrees, to shaping a positive perception of the tourist complex fostering trust, satisfaction, and the intention to revisit. These results are in harmony with previous studies that emphasized the strategic role of sustainable practices in reinforcing brand image and enhancing destination competitiveness (Zanete et al., 2024; Triharyo, 2025; Alfdool et al., 2024). Thus, implementing comprehensive and integrated sustainable tourism practices emerges as a powerful mechanism for building a strong, credible, and enduring brand image among customers.

6. Conclusion

This study aimed to analyze the impact of sustainable tourism practices across environmental, economic, social, and cultural dimensions on the brand image of tourism institutions, using the case of the "Rusica Park" tourist complex in Algeria. The empirical results revealed significant effects of all examined dimensions in shaping a positive brand image, with the environmental and economic dimensions emerging as the most influential. These findings further indicate that integrating sustainability principles into the management strategies of tourism institutions not only enhances service quality but also strengthens the cognitive, emotional, functional, and symbolic aspects of their brand image.

Moreover, this study provides a valuable contribution to the existing literature by proposing an applied model that links sustainable tourism practices with brand image building in the Algerian context. In addition, it highlights the necessity for tourism institutions to adopt comprehensive sustainability practices that meet visitor expectations while supporting long-term competitiveness.

Consequently, the results offer practical implications for policymakers and destination managers, particularly in terms of investing in eco-friendly infrastructure, supporting the local economy, promoting community engagement, and preserving cultural heritage as part of a coherent brand-building strategy.

Based on these findings, the following recommendations are proposed to enhance sustainable tourism practices and strengthen the brand image of tourism institutions :

- Invest in environmental sustainability initiatives such as waste management, the use of renewable energy, and the preservation of natural landscapes.
- Support the local economy through local hiring, partnerships with local suppliers, and encouragement of community-based entrepreneurship.
- Integrate elements of local culture, traditional values, and handicrafts into the visitor experience.
- Provide continuous staff training on sustainable practices and raise visitor awareness of their importance.
- Leverage digital tools and smart marketing to promote sustainability initiatives and reinforce the institution's brand image.

At the policy level, the study suggests that the Algerian Ministry of Tourism should :

- Develop a national framework for sustainable tourism that sets measurable goals and standards for environmental, social, and cultural performance across tourist destinations.
- Introduce financial incentives and certification programs for institutions that adopt eco-friendly and socially responsible practices.
- Promote public-private partnerships to support the modernization of tourism infrastructure and the development of green technologies.
- Encourage regional tourism clusters that integrate local communities, small businesses, and artisans into the tourism value chain.
- Enhance international promotion of Algeria's sustainable destinations to strengthen their competitiveness and visibility in global markets.

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