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Visitors' Willingness to Support and Purchase Eco-Labeled Products and Services at Olumirin Waterfalls, Osun State, Nigeria

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Abstract

Eco-certifications (ECs) and ecolabels are essential tools for sustainable tourism because they shape travellers' habits by encouraging more environmentally friendly behaviours. However, little is known about their adoption in developing countries such as Nigeria. The present study aimed to fill this knowledge gap by investigating knowledge and appreciation perception, willingness to use and willingness to pay for eco-labelling (EL) and EC at the Olumirin Waterfalls in Nigeria.

Using the convenience sampling technique, 212 visitors were selected from the Olumirin water falls. Information on tourists' socio-demographics was obtained. The scores computed from a well-validated scale for awareness of EC and EL were used to determine the respondents' interest in eco-certified and eco-labelled products, the perceived benefits, and their willingness to use these products. The determinants of the willingness to use, and to pay for eco-certified and eco-labelled products were obtained. The data were analyzed using descriptive statistics and multiple regression at $\alpha_{0.05}$.

The majority were aged ≤ 30 years. The level of awareness was 53.3% of the respondents. Approximately 77.8% had favourable perceptions of eco-certification and ecolabelling, while 65.1% had high interest in eco-certified and eco-labelled products. Male ($\beta = 9.85$) and Christian ($\beta = 10.20$) individuals indicated greater willingness to use, whereas married individuals indicated lower willingness ($\beta = -13.16$). Males ($\beta = 9.85$) and Christians ($\beta = 10.20$) are more willing to pay for eco-certified products, while married individuals ($\beta = -13.16$) and those who perceive fewer benefits ($\beta = -1.05$) are less willing. More awareness in eco-certified and eco-labelled products is needed.

Keywords

Ecolabels, Sustainable tourism, Olumirin Water Falls

INTRODUCTION

Eco-labeled products and services are of paramount importance, particularly in the tourism sector at the Olumirin Waterfalls in Nigeria. Eco-labels are essential tools that indicate the environmental characteristics of products to consumers, thereby improving their understanding and confidence in sustainability. Previous research indicates that consumers are willing to support eco-labeled products because it signifies a commitment to environmental sustainability and responsible and ecological consumption Yusiana et al., (2021), Waris & Ahmed, (2020). In Nigeria, where the tourism sector is in full development, eco-labels can serve as a reinforcement for the conservation of ecosystems and, if possible, contribute to economic development. Furthermore, eco-labels can also serve as an economic growth driver by attracting environmentally conscious tourists from other parts of the world who are willing to pay an additional amount for sustainable experiences Sharma & Kushwaha, (2019a). This willingness to support eco-labeled products shows that consumers care about the environment. By promoting eco-labels at the Olumirin Waterfalls, stakeholders can effectively engage visitors, thereby enhancing both the economic viability of the tourism sector and the conservation of the region's natural beauty.

In the context of sustainable tourism, knowledge of ecolabels plays a crucial role in the willingness to support or purchase certified products and services. On a global scale, people are suspicious of ecolabels due to lack of understanding and greenwashing, which hampers their use as sustainable marketing tools. In Africa, and more specifically in Nigeria, this problem is intensified by insufficient awareness of the benefits of ecolabels, which leads to limited adoption of sustainable practices and consumption by tourists Ajani et al., (2019). In addition, social and economic challenges such as poverty and lack of environmental education also prevent consumers from making informed choices about eco-friendly and certified products. Thus despite the great potential of Olumirin waterfalls as a sustainable tourism site, the low level of awareness of ecolabels among visitors is a major barrier to the promotion of ecolabels and the promotion of ecotourism and protection of the local environment.

Ecolabels are becoming a more important tool in green marketing, helping to promote eco-friendly goods and services. Examining the public's understanding and perception of eco-certification and ecolabelling at Olumirin Waterfalls can add to the conversation on environmentally responsible tourist activities and the value of certifications. According to Olagunju, (2024), eco-labels can be used to close the knowledge gap between companies and customers on how environmentally friendly goods and services are. Furthermore, the study can investigate how local communities view Eco-labels and how they are involved in supporting sustainable tourism practices at the Olumirin Waterfalls. To ensure the sustainability of a tourist site, it is necessary to include locals in the management and maintenance of infrastructures, which can lead to positive outcomes that will be beneficial for both parties. Mohammed, (2022a) noted that research can also focus on studies that have analysed how eco-labels influence the tourism sector. In this context, it becomes crucial to study, element by element, how tourists visiting Olumirin waterfalls understand and appreciate eco-certifications and eco-labels.

This study addresses the critical issue of the influence of knowledge of ecolabels on the willingness of visitors to Olumirin Waterfalls to support or purchase eco-certified products and services. Although previous studies have highlighted the growing importance of ecolabels in consumer choice, there is a lack of accurate research on their impact in the Nigerian context, particularly in the tourism sector Ajani et al., (2019b). Studies have shown that awareness of ecolabels is growing, but understanding and adoption are not keeping pace with awareness, which seriously undermines their effectiveness as marketing tools according to Testa et al., (2015). In addition, studies reveal that although Nigerian consumers are beginning to understand environmental issues, they lack clear, fluid information on the meaning, importance and benefits of ecolabels and this is unfortunately a major obstacle to the adoption of environmentally friendly practices. This study aims to fill this gap by providing an in-depth analysis of visitors' perceptions of ecolabels at Olumirin Waterfalls.

The main objective of this research is to assess visitors' willingness to support and purchase eco-labeled products and services at Olumirin Waterfalls, Osun State, Nigeria.

Specifically, this research aims to:

- analyze visitors' knowledge of ecolabels and environmental certifications associated with the Olumirin Waterfalls site.
- examine their perception and interest in eco-labeled products offered at the site.
- identify factors that influence their willingness to support and purchase these products and services

METHODOLOGY

Olumirin waterfalls, commonly called Erin-Ijesha Falls, is located in Osun State in the southwestern of Nigeria. The study area has distinct natural features, and incorporates local culture, an ideal location for testing visitors' views and knowledge of environmental certification.

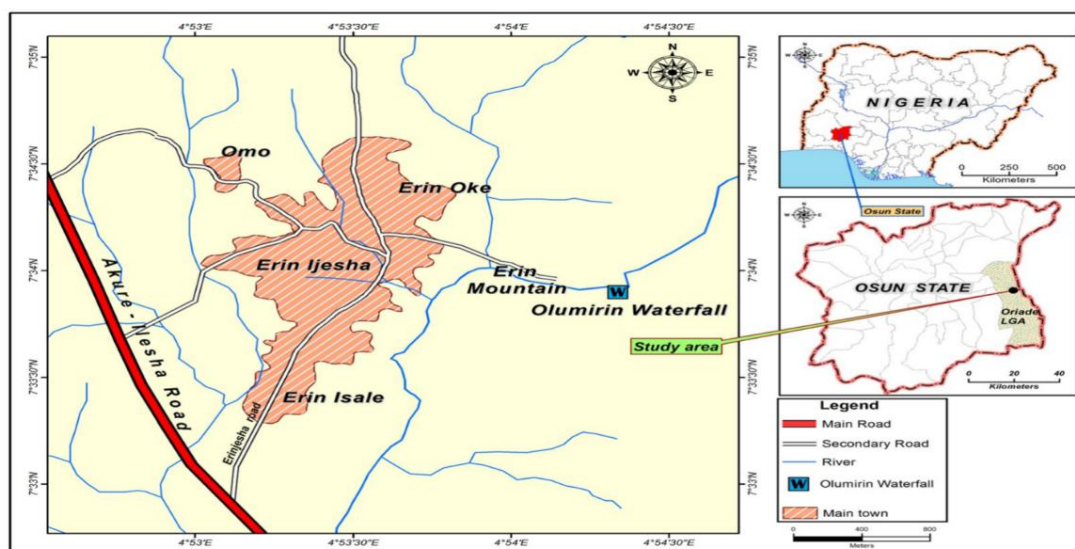


Fig. 1 Maps of study area (Source: Cartography laboratory, Department of Geology -University of Ibadan)

Data collection period

The data collection took place over 2 months from September to were collected via a structured questionnaire.

Reconnaissance survey

The site underwent a preliminary inspection to check for the presence of eco-label symbols or signs indicating environmental certification. The surveyed site had no eco-label symbols or seals; therefore, this study focused on tourists' awareness and impressions of eco-certifications.

Study population and sampling method

Cochran's formula was used to determine the number of people for the survey

Sampling procedure and sample size

For this study, the choice fell on a very busy site, known for its water-related tourist activities and incredible biodiversity. Since it attracts a lot of people, it was the ideal place to interview visitors. People aged 18 and above were targeted in order to diversify the profiles while maintaining a practical approach. In the end, 212 visitors to the Olumirin waterfalls responded to our questionnaire. They were asked questions with scales ranging from "strongly agree to strongly disagree" to better understand their opinions. Also, it was necessary to check if they knew about certified products, if they approved of them, and if they were interested..The responses are categorized into Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD), with associated percentages and means for each statement.

Mean ≥ 2.50 : The element is considered important or influential.

Mean ≤ 2.50 : The element is considered unimportant or of little influence.

Pre-test

A pretest was carried out at Olumirin waterfalls, in which 30 copies of the questionnaire were administered to visitors. This was done to determine the reliability of the questionnaire in obtaining the desired information.

Validation of questionnaire

Facial and content validation was conducted with the assistance of lecturers and experts in tourism management and statistics.

Data analysis

The data were subjected to descriptive statistics (such as frequency, percentage, mean), and inferential (multiple regression analysis).

RESULTS

The results presented in this table revealed some interesting demographic characteristics of the visitors. The table shows that 77.8% of the visitors, i.e., more than half of the visitors, are under 30 years old, with an average age of 27.42 years.

Table 1 Personal characteristics of visitors

	Variables	Freq.	%
Age	≤ 30	165	77.8
	31 – 40	35	16.5
	41-50	11	5.2
	51 above	105	0.5

Gender	Male	107	49.53
	Female		50.47
Marital status	Single	154	72.6
	Married	55	25.9
	Widowed	3	1.4
Religion	Christianity	168	79.3
	Islam	43	20.3
	Traditional	1	0.5
Profession	Contractor	19	9.0
	Artisan	30	14.1
	Teacher	20	9.4
	Student	125	59.0
Level of education	Non-formal	10	4.7
	Elementary	3	1.4
	Secondary	32	15.1
	Tertiary	152	71.7
	Postgraduate	15	7.1

Distribution of Respondents by Awareness of Eco-Certification and Eco-Labeling

The results of Table 2 show that respondents' awareness of certified products varies considerably. With respect to the products, the highest-rated product, which occupies third place in the overall ranking, with an average of 0.80, is “organic foods”. Next, for the services section, the highest-rated service that occupies second place in the overall ranking, with a mean of 0.82, is “Waste management”. Finally, for the environment section, the highest-rated service, which holds first place in the overall ranking with an average of 0.83, is “Protection of natural space”.

Table 2 Distribution of Respondents by Awareness of Eco-Certification and Eco-Labeling

	Variables	Freq	%	mean	Ranking
Products	Camping ecology	124	58.5	0.58	11 th
	Eco-friendly crafts	112	52.8	0.53	16 th
	Organic cotton clothing	114	53.8	0.54	15 th
	Organic foods	170	80.2	0.80	3 rd
	Eco-friendly souvenirs	122	57.5	0.58	12 th
	Eco-labelled wellness products	120	56.6	0.57	14 th
Services	Eco-lodge and sustainable accommodation	134	63.2	0.63	9 th
	Organic and local dining	136	64.2	0.64	8 th
	Eco-friendly transportation	130	61.3	0.61	10 th
	Educational ecotourism programs	119	56.1	0.56	13 th
	Waste management	173	81.6	0.82	2 nd
Environment	Protection of natural space	176	83	0.83	1 st
	Waste reducing of recycling	160	75.5	0.75	4 th
	Biodiversity conservation	152	71.7	0.72	5 th
	Ecosystem restoration	151	71.2	0.71	6 th
	Awareness-raising on sustainability and ecology	142	67	0.67	7 th

Levels of awareness of eco-certification and Eco-labelling

Table 3 shows that visitors have some knowledge of eco-certification and eco-labels. Just over half of the tourists (53.3%), with an average of 10.54%, had good knowledge of ecolabels and eco-certifications.

Table 3 Levels of awareness of eco-certification and Eco-labelling

Awareness level	Frequency	Percentage	Range of scores
High	113	53.3	10.5 – 16.0
Low	99	46.7	0.0 - 10.4

Mean = 10.54 SD = 4.64

Minimum = 0.0, Maximum = 16

Visitors' Perceptions of Eco-Certification and Eco-Labeling

Table 4 shows the visitors' responses to various statements regarding their perceptions of eco-labels in tourism.

From the table, the highest-rated element is “eco-labels are essential for encouraging tourist destinations to adopt sustainable practices” (mean 4.04), which are closely followed by “eco-labels are good indicators of the environmental quality of a travel destination” (mean 4.02). These results suggest that tourists have positive perceptions of ecolabels and eco-certifications overall, which corroborates the findings of Yılmaz et al., (2019) , which state that ecolabels play a very important role in sustainable tourism, as they act as guides or indicators for consumers who want to support sustainable practices.

Table 4 Visitors' perceptions of eco-certification and eco-labelling

	SA	A	U	D	SD	Mean
	%	%	%	%	%	
Eco-labels influence my decision to choose a travel destination.	33	36.8	18.4	10.4	1.4	3.90
I prefer to stay in hotels with eco-labels.	23.6	46.7	21.2	6.6	1.9	3.83
Eco-labels are important for assessing the quality of a travel destination.	25.9	52.4	14.2	7.1	0.5	3.96
Eco-labels give me confidence that a destination adheres to high environmental standards.	29.7	50.5	11.3	7.1	1.4	4.00
Eco-labels ensure better management of resources and the environment in tourist destinations.	25.9	56.1	11.8	3.3	2.8	3.99
I am more likely to choose a destination that has an eco-label.	24.5	50.5	18.4	5.2	1.4	3.92
Eco-labels are a decisive factor in my decision to purchase tourist services or participate in activities.	20.8	44.3	21.7	10.8	2.4	3.70
Eco-labels add value to the tourist services provided by a destination.	26.4	50.5	16	5.7	1.4	3.95
I prefer to visit restaurants and attractions that have eco-labels.	18.4	50.5	18.9	9.4	2.8	3.72
Eco-labels help to reduce the environmental impact of tourism activities.	25	45.3	15.1	12.7	1.9	3.79
Eco-labels are essential for encouraging tourist destinations to adopt sustainable practices.	27.8	55.2	11.3	4.7	0.9	4.04
Eco-labels are a good indicator of the environmental quality of a travel destination.	26.4	54.2	15.6	2.8	0.9	4.02
I prefer to avoid destinations that do not have eco-labels.	12.7	35.4	27.4	20.8	3.8	3.33
Eco-labels demonstrate a destination's commitment to environmental protection.	16	59.9	18.4	3.8	1.9	3.84
Eco-labels should be more widely used in the tourism sector.	27.4	53.3	14.2	3.8	1.4	4.01

Level of perception of the respondents at the Olumirin Waterfalls

The results in Table 5 reveal that 77.8% and 22.1% of the respondents had favourable opinions, respectively, whereas 22.1% had unfavourable opinions.

Table 5 Level of perception of the respondents at the Olumirin Waterfalls

Perception category	Frequency	Percentage	Range of scores
Favourable	165	77.8	32.0 – 61.0
Unfavourable	47	22.1	15 - 31.9/

Mean = 31.99 SD = 8.72 Minimum = 15, Maximum = 61

Visitors' Interest in Eco-Certified and Eco-Labeled Products

The overall results in Table 6 show that a very large majority of tourists have a positive interest in eco-certified and eco-labelled products.

Table 6 Visitors' interest in eco-certified and eco-labelled products

	SA	A	U	D	SD	Mean
	%	%	%	%	%	
I'm willing to pay more for eco-friendly products instead of regular ones	25	46.2	20.3	8.5	0	3.88
I look for eco-labels when choosing tourist products	17.5	38.7	27.8	14.6	1.4	3.56
Eco-labels can help with the world's water problems	18.9	48.6	25.5	5.2	1.9	3.77
I can always find eco-labelled products at tourist spots	13.2	37.3	30.2	16.5	2.8	3.42
I will choose eco-labelled products when I visit tourist destinations	20.8	47.6	23.1	4.7	3.8	3.77
I think eco-labelled products help the environment and meet standards	26.9	49.1	16.5	7.1	0.5	3.95
I believe eco-labelled products are good for the environment	33.5	50.9	10.4	2.8	2.4	4.10
Eco-labels should not be required for tourist spots	9	27.8	20.8	32.1	10.4	3.07
Eco-labelled products are too expensive for me	10.8	24.1	31.1	26.9	7.1	2.95
Tourists don't care if a tourist destination is eco-certified	10.8	25.5	24.1	27.4	12.3	3.05
I'm not interested in eco-labelled products because they're not popular in Nigeria	8.5	17.9	20.8	39.2	13.7	3.32
I prefer tourist spots without eco-labels because they cost less	7.5	20.3	24.5	37.7	9.9	3.22
Eco-labels help teach tourists about protecting the environment	22.2	51.4	14.2	8	4.2	2.21
All water-based tourist spots should have eco-labels and certifications	21.2	55.2	12.7	7.5	3.3	2.17
Eco-labels should be used for other places like hotels, restaurants, and conference venues	27.4	48.1	16	5.2	3.3	2.09

Levels of interest in eco-certified and eco-labelled products

Table 7 indicates that a high percentage (65.1%) of the respondents expressed favourable interest in eco-certified products.

Table 7 Levels of interest in eco-certified and eco-labelled products

Interest level	Frequency	Percentage	Range of score
High	138	65.1	37.7 – 56.0
Low	74	34.9	18 – 37.6
Mean = 37.72		SD = 7.45	Minimum = 18, Maximum = 56

Visitors' Perceived benefits

The results of the analyses presented in Table 8 show the benefits perceived by respondents with respect to eco-certified products and services. Among the products, organic food was the most appreciated, with an average of 2.49 respondents indicating the highest interest, followed by ecological gardening services, with an average of 2.30. In terms of environmental concerns, the protection of natural areas is also perceived as an important benefit, with an average of (mean 2.46) respondents expressing a high level of interest. The fact that the total results were all less than 2.50 means that respondents do not consider eco-certified products and services to be very important or influential.

Table 8 Visitors' Perceived benefits

Table 8: Visitors' Perceived Benefits							
Items	High		Moderate		Low		Mean
	Freq	%	Freq	%	Freq	%	
Products							
Organic food	118	55.7	80	37.7	14	6.6	2.49
Ethical clothing	75	35.4	98	46.2	39	18.4	2.17
Certified wood furniture	78	36.8	100	47.2	34	16	2.21
Renewable energy (solar Panels, wind turbines)	103	48.6	84	39.6	25	11.8	2.37
Services							
Sustainable transportation services	93	43.9	75	35.4	44	20.8	2.23
Eco-friendly gardening services	101	47.6	74	34.9	37	17.5	2.30
Sustainable lodging	80	37.7	102	48.1	30	14.2	2.24
Eco-friendly office cleaning	79	37.3	84	39.6	49	23.1	2.15
Environment							
Protection of natural spaces	119	56.1	72	34	21	9.9	2.46
Eco-friendly walking paths	102	48.1	80	37.7	30	14.2	2.34

Level of perceived benefits from eco-labels and eco-certification

The level of benefits perceived from eco-labels and eco-certifications reveals that 31.6% of the respondents reported a high level of benefits, whereas 68.3% reported a low level of benefits received. The figures showed a dominance of low perceptions. This finding corroborates the study by (Camilleri et al., 2023), who reported that although tourists are more familiar with eco-labels, they do not see many advantages for these products.

Table 9 Level of perceived benefits from eco-labels and eco-certification

Benefit level	Frequency	Percentage	Range of score
High	67	31.6	34.1 – 60.0
Low	145	68.3	20 - 34.0
Mean = 34.1		SD = 9.81	Minimum = 20, Maximum = 60

Willingness to use eco-labelled and eco-certified products

The data recorded highlight the willingness of consumers to adopt or include eco-labelled products and services in their purchasing habits across different categories, which provides important insights into consumer habits and preferences. The results outlined in the table indicate “a strong preference among consumers for biological foods (72.5%) and meat (50.86%)”.

Table 10 Willingness to use eco-labelled and eco-certified products

Table 10: Willingness to use eco-labelled and eco-certified products				
Items		Frequency	Percentage	Mean
Products	Camping ecology	122	57.5	48.26
	Eco-friendly crafts	105	49.5	43.40
	Organic cotton clothing	106	50.2	43.03
	Organic foods	153	72.5	54.87
	Eco-friendly souvenirs	97	46	38.79
	Eco-labelled wellness products	148	69.8	42.05
	Eco-lodge and sustainable accommodation	127	59.9	49.71
	Organic and local dining	134	63.2	50.84

Services	Eco- friendly transportation	132	62.3	49.52
	Educational ecotourism programs	129	60.8	52.50
	Waste management	151	71.2	49.84
	Protection of natural space	152	71.7	50.90
	Waste reducing of recycling	157	74.1	55.87
Environment	Biodiversity conservation	153	72.2	54.87
	Ecosystem restoration	151	71.2	55.50
	Awareness-raising on sustainability and ecology	158	74.5	56.50

Determinants of willingness to use eco-certified and eco-labelled products

The regression analysis in Table 11 examines the factors influencing willingness to use eco-certified and eco-labeled products. The model explains approximately 22.89% of the variation in willingness (Adjusted $R^2 = 18.99\%$), indicating a modest explanatory power. Significant determinants include gender, marital status, religion, and perceived benefits. Being male ($\beta = 9.8467$, $p = 0.0123$) and identifying as Christian ($\beta = 10.2010$, $p = 0.0332$) are associated with greater willingness, while being married ($\beta = -13.1620$, $p = 0.0104$) and perceiving higher benefits ($\beta = -1.0527$, $p < 0.001$) reduce willingness. Surprisingly, awareness and interest scores are not significant predictors, suggesting that knowledge alone may not drive adoption. The negative coefficient for perceived benefits challenges assumptions that higher perceived advantages necessarily translate into increased willingness, warranting further exploration into potential barriers such as cost or skepticism. Overall, these findings indicate that demographic and psychological factors interplay in shaping eco-product adoption, with potential implications for targeted marketing and policy interventions. This study corroborates that of Chima et al.,(2020) , This study shows how socio-demographic factors, such as gender and marital status, can impact different aspects of life satisfaction.

Table 10 Determinants of willingness to use eco-certified and eco-labelled products

Model	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	59.7072	28.1891	2.1181	0.0354
Age	-0.2884	0.3171	-0.9096	0.3642
Being male	9.8467	3.8957	2.5276	0.0123
Being married	-13.1620	5.0904	-2.5857	0.0104
Education	-3.6432	4.3704	-0.8336	0.4055
Christianity	10.2010	4.7575	2.1442	0.0332
Awareness score	-0.5584	0.4722	-1.1825	0.2384
Benefits score	-1.0527	0.2396	-4.3929	0.0000
Perception score	0.3224	0.2636	1.2234	0.2226
Interest score	0.4575	0.3888	1.1766	0.2408

Multiple R-squared: 0.2289,
Adjusted R-squared: 0.1899
F-statistic: 5.876
p-value: 0.000

Determinant of willingness to pay for eco-certified and eco-labelled products

Table 12 explores the factors influencing willingness to pay for eco-certified and eco-labeled products, with the model explaining approximately 24.21% of the variation (Adjusted $R^2 = 20.38\%$), indicating moderate explanatory power. Significant positive predictors include being male ($\beta = 9.1813$, $p = 0.0146$) and interest score ($\beta = 0.6119$, $p = 0.0490$), suggesting that men and those with higher interest levels are more willing to pay. Conversely, being married ($\beta = -10.4616$, $p = 0.0131$), benefits score ($\beta = -1.0867$, $p < 0.001$), and perception score ($\beta = -0.6600$, $p = 0.0184$) negatively affect willingness to pay, indicating that married individuals and those perceiving more benefits or holding certain perceptions may be less inclined to pay. Christianity ($\beta = 8.6740$, $p = 0.0710$) approaches significance, hinting at a possible religious influence. The lack of significance for age, education, and awareness suggests that socio-demographic factors and knowledge may not be primary determinants of Willingness to pay. The negative effect of perceived benefits, as seen in Table 4.11, raises questions about potential trade-offs or skepticism regarding eco-labels. These result points at the importance of addressing psychological barriers and tailoring messaging to different consumer segments to enhance Willingness to pay. This finding corroborates the study by Galati et al., (2022a) which highlights that factors such as age, marital status, and how each person perceives certified products can influence consumer choices.

Table 11 Determinant of willingness to pay for eco-certified and eco-labelled products

Model	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	89.0976	15.4395	5.7708	0.0000
Age	-0.0195	0.0136	-1.4338	0.1532
Being male	9.1813	3.7283	2.4626	0.0146

Being married	-10.4616	4.1790	-2.5034	0.0131
At least secondary education	-3.9038	4.3247	-0.9027	0.3678
Christianity	8.6740	4.7783	1.8153	0.0710
Awareness score	-0.3308	0.4793	-0.6903	0.4908
Benefits score	-1.0867	0.2344	-4.6360	0.0000
Perception score	-0.6600	0.2775	-2.3779	0.0184
Interest score	0.6119	0.3089	1.9809	0.0490

R-squared: 0.2421,
Adjusted R-squared: 0.2038
F-statistic: 6.324
p-value: 0.000

DISCUSSION

Concerning demographics, the results of this study are in agreement with those of Nwachukwu et al., (2022), who reported that young adults are often inclined to travel; they enjoy tourism to discover new attractions and explore new tourist sites that promote their personal and cultural development. With tourist sites such as Olumirin, Ikogosi, and others, they go not only to have fun but also to clear their minds, connect with nature, and in the same vein, they learn about sustainable practices. The predominance of Christians in the area can be explained by the fact that gatherings such as pilgrimages and other collective ceremonies play a decisive role in the construction of a strong religious identity, helping to spread and perpetuate Christian values in the region, as highlighted by Sela (2021). According to the results of this research, most visitors have a high level of education, which is consistent with the findings of Balogun, (2019) who highlights that people with a higher level of education find it easier to understand the role, objectives, and necessity of adopting sustainable practices than do those with a lower level of education. He further added that people with a higher level of education are much more concerned about the environment, which drives them to make informed choices when they want to travel. However, there are also differing opinions. For example, 72.6% are single, whereas the study conducted by Olubunmi-Ojo et al., (2022b) revealed that couples are often inclined to travel together, make new discoveries, and share moments together, to create memories, and especially spend time together at a tourist site in contact with nature. This experience can find its justification in terms of cultural differences.

The results show that respondents are familiar with certified and environmentally friendly products, though their familiarity is only slightly above average. Notably, the protection of natural spaces was the most recognized aspect (first), reflecting their concern for the environment according to (Castellini et al., 2021). Interestingly, respondents were more familiar with eco-labeled services, such as low-impact transportation, than with non-labeled ones. However, a lack of understanding persists regarding the advantages of certified products over services, highlighting the need for better education and awareness efforts. This aligns with Sharma & Kushwaha, (2019a) who emphasize that eco-labels effectively communicate with environmentally conscious consumers but require clear explanations to enhance understanding. Without this, misconceptions may hinder responsible consumption. Next, "waste management," which is the most appreciated service by visitors and holds the second place in the overall ranking after the protection of natural spaces. This preference may be due to the fact that waste management, for example, is an observable action where we can immediately see cleanliness, hygiene, and the reduction of pollution. For example, people perceive the protection of natural spaces as an obvious measure to preserve ecosystems. These products are therefore opposed to other products, such as eco-friendly clothing, which may seem less related to environmental preservation, as their ecological impact is less visible to consumers. Pajtinková Bartáková et al., (2024) emphasized that eco-labels are a very good way to communicate with consumers looking for products that meet environmental standards, but they still insist on the need to help consumers understand the labels. This observation is very relevant in the context of our study, where 53.3% of the respondents had good knowledge of eco-labels and certifications, whereas 46.7% had at least weak knowledge of eco-labels and eco-certifications. The results also revealed that products such as organic food were more popular with visitors. These results are in line with the research of Galati et al., (2022), who found that consumers pay much more attention to food labels than to those of other product types. This could explain why organic foods occupy third place in the overall ranking.

The study shows that the majority of visitors have a high level of awareness of eco-certification and eco-labelling, but the almost equal scores raise some concerns. Some elements can influence consumers' choices, such as the following: consumers trust ecological ecolabels with a good reputation much more, and when a brand is well known and has a good reputation, it can encourage purchases even if it holds an ecolabel. These elements can therefore impact the consumer's purchasing decision. Moreover, Waris & Ahmed, (2020a) posited that knowledge of eco-labels is an important predictor of consumer trust in sustainable products. This finding reinforces the idea that targeted awareness campaigns, tailored to the cultural and social specifics of consumers, are necessary to improve the understanding of eco-labels.

Visitors have a positive perception of eco-labels and eco-certifications, with averages above 2.50, suggesting their influence on destination choices. Eco-labeling plays a key role in tourism by encouraging sites to adopt responsible practices. With an average score of 4.04, it is perceived as an indicator of environmental quality, confirming tourists' interest in nature conservation. These results align with those of Duke Omayio Gekonge et al., (2021) highlighting the impact of eco-labels on visitors' purchasing behavior. The statement "I prefer to avoid destinations without eco-labels"

(average of 3.33) indicates that eco-labeling is becoming a selection criterion for some visitors, as stated by Sewwandi & Dinesha, (2022a). More than just a marketing tool, eco-labels encourage responsible behavior and influence tourism consumption according to Yilmaz et al., (2019). However, some studies, such as Baniya et al. (2023), denounce greenwashing, where companies claim to be eco-friendly without genuinely adhering to sustainable practices. This skepticism, particularly in Africa, highlights the need for trustworthy and transparent labels.

The opinion results reveal favourable opinions (77.8%) regarding tourists' perceptions of eco-labels and eco-certifications. This suggests a growing recognition of their value, offering hope for the development of ecotourism in Nigeria, specifically in Olumirin. The findings align with those of Akindele et al. (2021), who highlight that more Nigerians are becoming aware of the need to preserve biodiversity. This awareness is a crucial step toward appreciating eco-labels and eco-certifications. Additionally, young Nigerians are particularly conscious of environmental issues, providing a solid foundation for promoting eco-labels. However, some divergent opinions exist. Eco-labels can encourage or even compel tourist sites to engage in environmentally friendly practices, as certification requires compliance with ecological standards. For example, Ilesanmi, (2024), emphasized that entrepreneurship can play a significant role in promoting eco-labels in Nigeria simply by helping consumers understand sustainable practices, making them see the advantages and disadvantages of both bad and good sustainable practices for themselves and our planet. The adoption of eco-labels in the tourism industry in Nigeria presents a significant opportunity for this country to become a leader in sustainability in Africa and globally.

The results shows that visitors are strongly interested in eco-labelled and certified products. As the highest-rated elements in this category, "I believe that eco-labelled products are good for the environment", this indicates that the majority of visitors recognize eco-labels when they want to make a purchase or travel decision. This aligns with the study by (Abbas et al., 2024a) who highlights how eco-labels help tourists choose environmentally - friendly products or services, or that eco-labels are a choice indicator. However, some negative opinions also emerge, such as "Eco-labelled products are too expensive for me" and "Eco-labels should not be mandatory for tourist sites", indicating that respondents are concerned about the price and accessibility of eco-labelled products. The high average for the statement "I am willing to pay more for eco-friendly products" (average 3.88) indicates that many tourists are willing to pay the necessary price to purchase environmentally friendly products, a development that is encouraging for the tourism industry in Nigeria. However, some results were unexpected, such as "Eco labels help teach tourists how to protect the environment" (average 2.21). This low average suggests a lack of education on the role of eco-labels. This implies that tourist sites should organize educational sessions on eco-labels and their importance. The results of this study align with those of Akindele et al., (2021), who reported a trend toward increased awareness among young Nigerians regarding environmental conservation and biodiversity. Indeed, this is already a very positive point, as it can have a positive influence on their perceptions of eco-labels and ecological certifications. Furthermore, the research by Ukeh et al., (2019b) aligns with the same line of thought, but this time, Nigerian youth are increasingly inclined to adopt ecological practices, as they are much more concerned about the well-being of the environment. This could be the reason for the positive results we observed. This affinity shows that, fundamentally, there is a solid foundation that would allow for the promotion of eco-labels, particularly in the tourism sector. It is true that the majority of respondents have favourable opinions of eco-labels, but the price factor can slow the adoption of these products and services. Indeed, a product or service that is too expensive is not accessible to everyone, especially in a country such as Nigeria where sometimes the monthly salary does not even last until the end of the month. For example, the statement "Eco-labelled products are too expensive for me" (average 2.95) once again reinforces the argument that price constitutes a major obstacle to the adoption of certified products and services, pushing consumers towards noncertified products that are cheaper because they fit within their budget according to Iregbu et al., (2021).

The more people are informed, the more they buy certified products and choose eco-friendly destinations. They also become ambassadors by talking about eco-labels to others and passing this habit on to future generations. From a business perspective, Shehu & Bello (2024), explained that companies that adopt sustainable practices attract more customers and improve their brand image. Eco-labels are not only good for the environment but also a powerful marketing tool. Businesses with certifications stand out from competitors and attract environmentally conscious customers. This effect can even encourage other companies to follow the trend. However, despite a strong interest, some tourists remain hesitant. Ukeh et al., (2019b) highlight that a lack of information makes it harder for people to adopt sustainable practices. Yet, these products are often more durable and save money in the long run. For example, an eco-labelled product may cost more at first, but it lasts longer and consumes less energy. In contrast, a non-eco-friendly product needs to be replaced frequently, which ends up costing more over time. Finally, some consumers reject these products due to prejudice, believing they are only for wealthy people Nche, (2023). Adequate education of the public about their economic and ecological benefits could help overcome these barriers. Understanding how perceived benefits influence eco-friendly behaviors can aid in developing targeted strategies that foster greater commitment to sustainable practices. Studies indicate that attitudes toward eco-friendly options positively impact consumers' intentions (Zuriyati Mohamad et al., 2019).

However, to fully realize eco-friendly initiatives, particularly in the tourism sector, stakeholders must not only believe in the economic and ethical advantages but also witness tangible benefits. Indeed, education and awareness are pivotal in shaping consumer perceptions and behaviors towards eco-friendly products. Many consumers may be aware of eco-labels however, this awareness does not necessarily translate into valuing these labels or making sustainable choices

(Acampora et al., 2022). The need for robust environmental education programs is underscored by findings that demonstrate how perceived environmental responsibility can significantly enhance consumer engagement. In Nigeria, integrating environmental education at all levels can concurrently address the infrastructure and economic impediments that inhibit the widespread adoption of sustainable practices. With respect to consumers' willingness to use products and services with eco-labels, the results revealed a strong preference for organic products. This indicates that respondents are concerned about the health of our environment, which in turn influences their willingness to use eco-labelled products. In the service category, ecotourism programs are the most appreciated, which proves that visitors are interested in sustainability education programs, which helps them understand why it is imperative to adopt environmentally friendly behaviors. The stakeholders involved in tourism ecotourism include local communities, tourism site managers, the government, and business owners. When everyone contributes actively and fulfils their assigned mission, the situation improves. The results of this research demonstrate a willingness among consumers to use environmentally labelled products, but this diverges from the study by Philip,(2024) which highlights that even if the parties come together, socioeconomic issues can pose a problem, namely, the unequal distribution of benefits. For example, a high product cost can discourage consumers from buying even if they want to adopt sustainable practices. A study conducted by Obayelu et al., (2022) examined consumer preferences for rice in Ibadan. This study revealed that most consumers preferred imported rice over local rice. They perceived the imported rice as being of much better quality than the local rice. This idea can also be applied to eco-certified products. If people believe that eco-labelled products are less accessible and of lower quality, they will not adopt them, even if these products are good for the environment. Gender plays a significant role in the willingness to pay for eco-labeled products. However, the findings of this study reveal that men are more likely to adopt these products compared to women which contradicts some previous studies. This could be due to the specific context in which the study was conducted, where men's greater willingness to use eco-labelled products might be linked to their perceived environmental responsibility. In contrast, women, who are often the primary family buyers, may face more constraints due to household responsibilities, influencing their decision to prioritize practical and economic products over eco-friendly ones. This aligns with (Yusiana et al., 2021), who mention that purchasing decisions are heavily influenced by household dynamics, where married individuals are more focused on family needs and cost-effectiveness. Regarding marital status, the study indicates that being married is associated with a reduced willingness to use eco-labeled products. This is consistent with the idea that married individuals often manage household finances together and prioritize essential needs over quality or sustainability, which could explain why they are less inclined to adopt eco-labelled products. Married couples face additional financial burdens, leading them to make more pragmatic purchasing decisions. Unlike singles, who have more flexibility in managing their own finances, married individuals may be less likely to prioritize eco-friendly options due to financial constraints. Religion also influences the willingness to use eco-labeled products, with those who identify as Christian showing a higher willingness to adopt these products. This finding aligns with the argument that religious teachings can play a role in promoting environmental stewardship. In Nigeria, many people are influenced by religious values, which often emphasize caring for nature and the environment. However, further research is needed to explore how different religious beliefs might shape consumer attitudes toward eco-labelled products, as seen in other religions like Hinduism, Jainism, and Buddhism, where followers are more likely to adopt environmentally friendly practices (Majeed et al., 2022). The perceived benefits of eco-labeled products, such as economic, environmental, or health-related advantages, significantly influence consumer behavior. The study revealed that higher perceived benefits are associated with a decrease in willingness to use eco-labeled products. This finding challenges previous assumptions that higher perceived benefits would lead to greater adoption of eco-labelled products. This negative relationship might suggest that consumers may view the higher perceived benefits as leading to higher costs, which could deter them from making a purchase. This contrasts with previous research, such as (Abbas et al., 2024b) , which suggested that when consumers perceive tangible benefits from eco-labeled products, they are more likely to purchase them, regardless of the price. Finally, the accessibility of eco-labeled products remains an important factor in their adoption. The lack of availability in certain areas, particularly rural regions, can act as a significant barrier to the adoption of eco-labeled products. If consumers are unable to find eco-friendly products in their local markets, it reduces their ability to make environmentally conscious purchases. Improving supply chains and ensuring product availability in all regions could encourage more widespread adoption of eco-labeled products, as suggested by (Galati et al., 2022b).

The study reveals a moderate willingness among consumers to pay for eco-labelled products, rather than a strong willingness, indicating a growing awareness of environmental preservation. This aligns with Siraj et al., (2022), research, which suggests environmental concerns positively influence purchasing certified products. Men are more inclined to pay for eco-labelled products and married individuals are less willing to pay for eco-labelled products, due to the cost of their family's well-being and environmental reasons. This difference may be due to cultural and economic differences, as many Nigerians struggle to make ends meet with their monthly salaries. Large families, particularly those with 5 to 15 members, also make it difficult to afford eco-labelled products. Although Christianity approaches significance as a predictor of willingness to pay, it is not a decisive factor. This suggests that while religious beliefs may encourage environmental responsibility, they do not necessarily translate into financial commitment toward eco-labelled products. One of the major results from this research is that the desire in eco-labelled products is a notable positive predictor of willingness to pay. This implies that those who already show interest and involvement with sustainable products are more likely to spend money in them. So, focused awareness initiatives that raise interest and involvement might improve buying intentions Al Mamun et al., (2018). Surprisingly, perceived benefits and perceptions negatively affect willingness

to pay, which contradicts the expectation that higher perceived advantages would encourage adoption. This result may indicate skepticism regarding the effectiveness of eco-labels or concerns about additional costs. Yahya et al., (2022) suggested that consumers may doubt whether eco-labelled products truly offer superior quality or environmental benefits, leading to hesitation in paying a premium. This contradiction emphasizes the importance of open communication regarding the real benefits of eco-certified products and enhanced customer confidence in labelling systems. Finally, age, education level, and awareness are not good indicators of willingness to pay. This shows that information alone is not enough to encourage people to adopt these products. This finding aligns with the study Donato & D'Aniello, (2022) , which explains that social factors, pressure from close ones, and money often have a greater influence on consumer behavior than education or general knowledge. To encourage the purchase of eco-labeled products, policymakers and businesses should not only inform the public but also offer financial support or use strategies based on the opinions of others.

CONCLUSION

The study on evaluating visitors' willingness to support or purchase eco-labeled products and services offered at Olumirin waterfalls highlights the willingness of visitors to the Olumirin waterfalls to pay for eco-labeled products and services, which underscores the significant influence of gender, marital status, religion, and perceived benefits. The results of this study show a growing awareness of environmental issues, although there are still barriers such as lack of information and some economic constraints. The comparison with other studies revealed convergences, particularly with the impact on demographic characteristics, but also divergences related to the cultural and economic context. To facilitate the acceptance of eco-labeled products, it would therefore be necessary to strengthen awareness campaigns, adopt different communication strategies to reach all consumer categories, and above all, make the products accessible to consumers. Finally, we can conclude that the combination of a growing environmental consciousness, the importance of social responsibility, and a positive perception of products bearing an eco-label makes Olumirin's water chutes a vital point of reference capable of capitalizing on these trends to encourage a base of visitors who value sustainable practices.

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DECLARATION OF CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Data are available upon request from the corresponding author.

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