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Beyond Smartwashing: Why Digital Tourist Experiences Fail to Moderate the Value-Belief-Norm Pathway to Sustainable Travel

Eko Yuliawan*, & Sandi Noorzaman
Management, GICI Business School, Depok, Jawa Barat, 16439, Indonesia

ABSTRACT

Purpose – This study examines whether digital tourist experiences mediate the relationship between smart tourism technologies and sustainable travel intention, while addressing the challenge of smartwashing through the Value-Belief-Norm (VBN) framework.
Design/methodology/approach – A quantitative cross-sectional survey was conducted with 168 visitors to Karimunjawa Island, Indonesia, who had experience using digital tourism platforms. Data were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM) to examine the relationships among perceived usefulness of augmented reality guides, digital destination content quality, digital tourist experience, environmental awareness, and sustainable travel intention.
Findings/Results – The results reveal that the perceived usefulness of augmented reality guides significantly enhances digital tourist experiences, whereas digital destination content quality has no significant effect. Digital tourist experiences neither directly influence sustainable travel intention nor moderate the relationship between environmental awareness and sustainable travel intention. Instead, environmental awareness is the strongest predictor of sustainable travel intention, indicating an attitude–behavior gap and highlighting the limitations of technology-driven experiences in promoting sustainable behaviour.
Originality/Value – This study extends the VBN framework within the context of digital tourism by demonstrating that technological experiences alone are insufficient to encourage sustainable travel intentions. The findings provide practical implications for destination managers to combine smart tourism technologies with authentic environmental education and sustainability-oriented interventions, thereby reducing the risk of smartwashing and supporting meaningful sustainable tourism development.

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*Corresponding Author at:
Management, GICI Business School, Jalan Raya Citayam, Depok Jawa Barat, 16439, Indonesia.
E-mail address: ejuliawan86@gmail.com (Eko Yuliawan)

1. Introduction

What This changing landscape has created a significant research gap within the contemporary tourism management literature. Although previous studies have separately examined tourism digitalisation, sustainable destination development, and regional economic performance, only a limited number of studies have integrated these dimensions into a comprehensive conceptual framework that explains how digital innovation contributes to sustainable tourism development. Recent review studies indicate that research on smart tourism has increasingly shifted towards understanding the interaction between digital technologies, stakeholder collaboration, sustainability, and destination governance rather than focusing solely on technological implementation (Liu & Law, 2024; El Archi, Kabil, Benbba, & Dávid, 2023). However, empirical evidence explaining how digital tourism ecosystems interact with tourists' environmental awareness and digital experiences to encourage sustainable travel behaviour remains relatively limited (Kitsios, 2022; Kusumawardhani et al., 2024).

The rapid advancement of digital technologies has fundamentally transformed tourism destinations into increasingly interconnected digital ecosystems. Artificial intelligence, big data analytics, cloud computing, augmented reality, virtual reality, mobile applications, and social media have reshaped how tourists search for information, evaluate destinations, make travel decisions, and share travel experiences. Simultaneously, destination management organisations increasingly employ these technologies to optimise service quality, improve operational efficiency, monitor visitor flows, personalise tourism experiences, and strengthen destination competitiveness (Liu & Law, 2024). Nevertheless, the successful implementation of smart tourism extends beyond technological adoption alone. Digital technologies create sustainable value only when they are integrated with effective governance, stakeholder collaboration, and sustainability-oriented destination management strategies (El Archi, Benbba, Kabil, & Dávid, 2023; Cerdá-Mansilla et al., 2024).

Recent systematic reviews further emphasise that smart tourism should be understood as a holistic ecosystem where governments, local communities, tourism businesses, and tourists collaboratively create sustainable value through digital innovation (Cerdá-Mansilla et al., 2024). Likewise, Kusumawardhani et al. (2024) argued that smart tourism practices in emerging economies increasingly focus on integrating digital technologies with environmental sustainability, social inclusion, and economic resilience. Consequently, digital transformation should no longer be viewed merely as an instrument for improving marketing effectiveness but rather as a strategic capability that supports sustainable destination governance and enhances long-term competitiveness (El Archi, Benbba, Kabil, & Dávid, 2023).

Another important issue concerns the role of tourists themselves in supporting sustainable destination development. Digital technologies have transformed tourists from passive consumers of tourism information into active participants who continuously interact with destinations through online review platforms, social media, mobile applications, and immersive digital environments. These interactions significantly influence destination image, tourist satisfaction, service co-creation, and behavioural intentions. However, positive digital experiences alone do not necessarily encourage environmentally responsible behaviour unless they are supported by strong environmental values, sustainability awareness, and responsible destination management (Li et al., 2024). Recent evidence suggests that sustainable tourist behaviour is influenced not only by technological convenience but also by tourists' moral responsibility, environmental attitudes, and perceived sustainability performance of destinations (Laachach & Alhemimah, 2024).

Moreover, the emergence of smart destinations has broadened the perspective of tourism management by integrating information technology, sustainability, innovation, and stakeholder participation into a unified destination ecosystem. Smart destinations are expected to enhance visitors' experiences while simultaneously improving environmental conservation, local economic development, and community well-being through data-driven decision making and digital governance (Cerdá-Mansilla et al., 2024). Similarly, Gunawan et al. (2025) demonstrated that communication technologies and smart destination initiatives significantly improve tourist satisfaction while strengthening sustainable destination management in the Indonesian tourism context.

To address these theoretical and empirical gaps, this study develops an integrative framework that links Digital Destination Content, Perceived Usefulness of Augmented Reality, Digital Tourist Experience, Environmental Awareness, and Sustainable Travel Intention within Indonesian tourist destinations. Unlike previous studies that primarily examine the direct effects of digital technologies on tourism performance, this research investigates the behavioural mechanisms through which digital experiences and environmental awareness jointly shape tourists' intentions to engage in sustainable travel practices. By integrating perspectives from digital transformation, smart tourism, and sustainable tourism literature, this study contributes to a more comprehensive understanding of technology-enabled sustainable destination management.

The conceptual novelty of this research lies in positioning digital technologies not merely as operational or promotional tools but as strategic enablers of sustainable tourism ecosystems. Specifically, the proposed framework explains how digital innovation enhances destination competitiveness by improving tourists' experiences while simultaneously encouraging environmentally responsible behaviour through increased environmental awareness. This perspective extends previous discussions on smart tourism by integrating technological capability with behavioural and sustainability dimensions (El Archi, Benbba, Kabil, & Dávid, 2023; Liu & Law, 2024; Li et al., 2024).

The urgency of this research has become increasingly evident as global tourism continues to experience rapid digital transformation alongside escalating environmental challenges. Without effective governance, excessive tourism commercialisation may accelerate environmental degradation, reduce destination carrying capacity, weaken local competitiveness, and undermine long-term economic resilience. Therefore, sustainable destination management requires integrated policies that combine technological innovation, environmental conservation, stakeholder collaboration, and evidence-based governance to ensure balanced tourism development (Laachach & Alhemimah, 2024; Cerdá-Mansilla et al., 2024).

Accordingly, this study is expected to provide both theoretical and practical contributions for tourism scholars, destination managers, and policymakers. The proposed framework offers empirical evidence regarding the interaction between digital transformation and environmental awareness in shaping sustainable travel behaviour, thereby enriching the growing literature on smart tourism and sustainable destination management. Furthermore, the findings may support the formulation of digital tourism policies that simultaneously enhance visitor experiences, strengthen destination competitiveness, promote environmental responsibility, and improve the long-term resilience of Indonesia's tourism industry (Gunawan et al., 2025; Li et al., 2024).

2. Methodology

2.1 Research Design

This study adopts a quantitative research approach using a cross-sectional survey design to examine the relationships among Digital Destination Content Quality, Perceived Usefulness of AR Guides, Digital Tourist Experience, Environmental Awareness, and Sustainable Travel Intention. The study is explanatory in nature, aiming to test hypothesised relationships among latent constructs using Structural Equation Modelling (SEM). Data were collected at a single point in time from respondents who have experience using digital tourism platforms in planning or undertaking travel activities. The analytical method employed is Partial Least Squares Structural Equation Modelling (PLS-SEM), which is appropriate for complex predictive models and does not require multivariate normality assumptions.

2.2 Research Procedure

The research procedure consists of five main stages: (1) literature review and hypothesis development, (2) instrument development, (3) pilot testing (if applicable), (4) data collection, and (5) data analysis using PLS-SEM.

2.3 Questionnaire Survey Design

Data were collected using a structured questionnaire distributed online using Google Forms. This platform was chosen due to its efficiency, accessibility, and ability to reach respondents across different geographic areas in Indonesia. All constructs were measured using multi-item scales adapted from previous validated studies. Responses were recorded using a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Data collection was conducted over two months, starting from January to February 2026. During this period, the questionnaire link was actively distributed through social media platforms, academic networks, and travel-related online communities.

2.4 Population and Sample

The population of this study consists of tourists in Indonesia who have experience using digital tourism platforms (e.g., travel applications, online booking systems, social media travel content, and AR-based tourism tools). A total of 168 respondents were obtained as the final sample for analysis. This sample size is considered adequate for PLS-SEM analysis, as it meets the minimum requirement based on the 10-times rule and statistical power considerations (Hair et al., 2019).

2.5 Sampling Technique

This study uses a non-probability sampling technique with a purposive sampling approach. Respondents were selected intentionally based on predefined criteria relevant to the research objectives. Sample criteria for respondents are as follows:

a. Individuals who have travelled at least once within the last 12 months.
b. Have used digital tourism platforms (mobile apps, online booking systems, social media, or AR-based travel guides).
c. Aged 17 years or older.
d. Have visited tourist destinations in Karimunjawa Island.

2.6 Data Analysis Method: PLS-SEM

Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM), which is suitable for predictive models involving complex relationships among latent variables and does not require multivariate normality assumptions. The analysis was carried out in two stages, namely the measurement model (outer model) and the structural model (inner model). The measurement model evaluation includes reliability testing using

Cronbach's Alpha and Composite Reliability, with a threshold value of > 0.70 indicating acceptable internal consistency. Convergent validity was assessed using Average Variance Extracted (AVE), where a value of > 0.50 indicates adequate validity. Discriminant validity was evaluated using the Fornell-Larcker criterion, in which the square root of AVE for each construct must be higher than its correlations with other constructs, and the Heterotrait-Monotrait ratio (HTMT), with a threshold of < 0.90 indicating satisfactory discriminant validity (Hair et al., 2019).

The structural model evaluation examines the hypothesised relationships among constructs through path coefficients and the coefficient of determination (R^2). Hypotheses are considered supported when the t-statistic exceeds 1.96, and the p-value is below 0.05 (two-tailed test). The R^2 values are interpreted as 0.75 (substantial), 0.50 (moderate), and 0.25 (weak), while f^2 values of 0.35, 0.15, and 0.02 represent large, medium, and small effects, respectively. Additionally, Q^2 values greater than zero indicate predictive relevance of the model. To test the significance of relationships among constructs, a bootstrapping procedure with 5,000 resamples was applied to generate t-statistics and p-values without assuming data normality.

3. Result and Discussion

3.1 Result

3.1.1 Demograpihic Aspect

The demographic aspect describes the basic characteristics of respondents, including variables such as gender, age, education level, occupation, and other relevant socio-demographic profiles. This information is essential to provide an overview of the respondent composition and to support the interpretation of the study results in a more contextual and meaningful way.

Table 1. Demographic Aspect and Tourist Activities

Characteristics	Category	Frequency	Percentage
Gender	Male	90	53.60%
	Female	78	46.40%
Age	18–24 years	60	35.70%
	25–34 years	67	39.90%
	35–44 years	26	15.50%
	45–54 years	11	6.50%
	>55 years	4	2.40%
Highest Educational Attainment	High School/Vocational High School	49	29.20%
	Diploma	30	17.90%
	Bachelor's Degree	70	41.70%
	Master's Degree	17	10.10%
	Doctoral Degree	2	1.20%

Characteristics	Category	Frequency	Percentage
Occupation/Employment Status	Student	39	23.20%
	Civil Servant/Government Employee	15	8.90%
	Private-Sector Employee	63	37.50%
	Entrepreneur/Self-Employed	24	14.30%
	Homemaker	7	4.20%
	Unemployed	20	11.90%
Monthly Income/Allowance	< IDR 2,000,000	33	19.60%
	IDR 2,000,000–4,999,999	62	36.90%
	IDR 5,000,000–9,999,999	47	28.00%
	IDR 10,000,000–19,999,999	21	12.50%
	IDR 20,000,000–49,999,999	4	2.40%
	> IDR 50,000,000	1	0.60%
Place of Residence	Java Island	74	44.00%
	Outside Java Island	68	40.50%
	International Visitors	26	15.50%
Length of Stay in Karimunjawa	1 day	14	8.30%
	2 days 1 night	58	34.50%
	3 days 2 nights	68	40.50%
	4 days 3 nights	20	11.90%
	5 days or more	8	4.80%
Travel Companion	Alone	10	6.00%
	Partner	40	23.80%
	Family	33	19.60%
	Friends/Peer Group	69	41.10%

Characteristics	Category	Frequency	Percentage
Primary Source of Information	Tour Group/Travel Agency	11	6.50%
	Colleagues/Institutional Group	5	3.00%
	Social Media	86	51.20%
	Travel Websites/Blogs	24	14.30%
	Tourism Applications	20	11.90%
	Travel Agency	5	3.00%
	Mass Media	4	2.40%
	Recommendations from Friends/Family	29	17.30%
Digital Platforms Used	Instagram	66	39.30%
	TikTok	38	22.60%
	YouTube	19	11.30%
	Google Search	26	15.50%
	Facebook	7	4.20%
	X (Twitter)	3	1.80%
	OTA (Traveloka/Tiket.com)	7	4.20%
	Do Not Use Digital Platforms	2	1.20%
Digital Activities During the Visit	Uploading Photos/Videos in Real Time	76	45.20%
	Creating Reels/TikTok Videos/Shorts	35	20.80%
	Posting Online Reviews	15	8.90%
	Social Media Check-ins/Location Tagging	23	13.70%

Characteristics	Category	Frequency	Percentage
	Using Navigation Applications	14	8.30%
	Online Tourism Booking	3	1.80%
	No Digital Activity	2	1.20%
	Yes, Actively Searching	53	31.50%
Searching for Environmental and Sustainability Information	Occasionally/Not Specifically	82	48.80%
	Never Searched	33	19.60%
Total		**168**	**100%**

The demographic profile of respondents in this study reflects the characteristics of tourists who have visited Karimunjawa Island, Indonesia, illustrating a relatively balanced and diverse composition in terms of socio-demographic background. In terms of gender, the sample is slightly dominated by male respondents (53.6%), while female tourists account for 46.4%, indicating a fairly equal distribution of visitation between genders. Regarding age, the majority of visitors are young adults, particularly those aged 25–34 years (39.9%), followed by 18–24 years (35.7%). This pattern highlights that Karimunjawa is predominantly attractive to Millennials and Gen Z tourists, who are generally more active in seeking experiential and nature-based tourism destinations. In terms of education, most respondents hold a Bachelor's degree (41.7%), followed by high school/vocational education (29.2%), indicating that the destination attracts relatively well-educated travellers.

From an occupational perspective, private-sector employees represent the largest group (37.5%), followed by students (23.2%) and entrepreneurs/self-employed individuals (14.3%). This distribution suggests that the destination appeals to both working professionals and younger, more flexible traveller segments. In terms of monthly income, the largest proportion of respondents falls within the IDR 2,000,000–4,999,999 range (36.9%), followed by IDR 5,000,000–9,999,999 (28.0%), reflecting a middle-income dominated visitor base. Geographically, tourists are relatively evenly split between those originating from Java Island (44.0%) and outside Java (40.5%), while international visitors also contribute a notable share (15.5%), indicating the growing global recognition of Karimunjawa as an emerging island destination.

In relation to travel behaviour, most visitors stay for 3 days and 2 nights (40.5%), followed by 2 days and 1 night (34.5%), suggesting that short to medium-length stays are the dominant pattern, consistent with island-hopping and weekend getaway tourism trends. The most common travel companions are friends or peer groups (41.1%), followed by partners (23.8%) and family members (19.6%), reflecting the social and experience-oriented nature of contemporary tourism. Social media plays a crucial role as the primary source of travel information (51.2%), with Instagram (39.3%) and TikTok (22.6%) being the most widely used platforms. Digital engagement is also high, with tourists primarily uploading photos and

videos in real time (45.2%) and creating short-form content (20.8%), underscoring the strong influence of visual and content-sharing culture in destination marketing. Finally, while environmental and sustainability information is not always actively sought, a considerable proportion of respondents occasionally engage with it (48.8%), indicating a moderate but growing awareness of sustainable tourism practices among visitors.

3.1.2 Convergent Validity Testing

Convergent validity testing is used to assess the extent to which indicators of a construct are positively correlated and measure the same underlying concept. A construct is considered to have good convergent validity when its indicators show high loadings, typically above the recommended threshold > 0.70, and when the Average Variance Extracted (AVE) value exceeds 0.50. This indicates that the construct explains more than half of the variance of its indicators, confirming that the measurement items are consistent and valid in representing the intended variable.

Table 2. Convergent Validity test

Construct/Indicator	Outer loadings	AVE
Digital Destination Content		0.720
CQ01 <- Digital Destination Content	0.830	
CQ02 <- Digital Destination Content	0.889	
CQ03 <- Digital Destination Content	0.825	
Digital Tourist Experience		0.726
DX01 <- Digital Tourist Experience	0.879	
DX02 <- Digital Tourist Experience	0.834	
DX03 <- Digital Tourist Experience	0.842	
Environmental Awareness		0.666
EA01 <- Environmental Awareness	0.545	
EA02 <- Environmental Awareness	0.923	
EA03 <- Environmental Awareness	0.921	
Perceived Usefulness of AR		0.591
PU01 <- Perceived Usefulness of AR	0.733	
PU02 <- Perceived Usefulness of AR	0.787	
PU03 <- Perceived Usefulness of AR	0.785	
Sustainable Travel Intention		
ST01 <- Sustainable Travel Intention	0.879	
ST02 <- Sustainable Travel Intention	0.927	
ST03 <- Sustainable Travel Intention	0.833	0.775

The results of the convergent validity test in Table II indicate that the measurement model is generally acceptable, as most constructs meet the recommended criteria of outer loadings above 0.70 and AVE values above 0.50. The constructs of Digital Destination Content (AVE = 0.720) and Digital Tourist Experience (AVE = 0.726) demonstrate strong convergent validity with consistently high indicator loadings. Environmental Awareness also shows acceptable validity (AVE = 0.666), although one indicator (EA01 = 0.545) has a relatively low loading compared to the others, while EA02 and EA03 show very strong contributions. Perceived Usefulness of AR presents moderate but acceptable validity (AVE = 0.591) with adequate indicator loadings ranging from 0.733 to 0.787. Meanwhile, Sustainable Travel Intention exhibits strong convergent validity with high loadings (0.833–0.927) and the highest AVE

value of 0.775, confirming that all indicators well represent the construct. Overall, the results confirm that the indicators used in this study are valid in measuring their respective constructs, despite minor weaknesses in a few items.

3.1.3 Discriminant Validity Testing

Discriminant validity testing is conducted to determine whether each construct is empirically distinct from other constructs in the model. This test ensures that the indicators of a particular construct have stronger associations with their own construct than with other constructs. Discriminant validity can be assessed using the Fornell–Larcker criterion, where the square root of the AVE for each construct should be greater than its correlations with other constructs. Satisfactory discriminant validity indicates that each construct captures unique aspects of the concept being measured and minimises overlap among variables.

Table 3. Discriminant Validity Test Result Through the Fornell-Larcker Criterion Test

Construct	Digital Destination Content	Digital Tourist Experience	Environmental Awareness	Perceived Usefulness of AR	Sustainable Travel Intention
Digital Destination Content	**0.849**				
Digital Tourist Experience	0.439	**0.852**			
Environmental Awareness	0.732	0.529	**0.816**		
Perceived Usefulness of AR	0.679	0.697	0.698	**0.769**	
Sustainable Travel Intention	0.741	0.404	0.745	0.575	**0.880**

The results of the discriminant validity test presented in Table II indicate that all constructs satisfy the Fornell–Larcker criterion. The square root of the AVE values for Digital Destination Content (0.849), Digital Tourist Experience (0.852), Environmental Awareness (0.816), Perceived Usefulness of AR (0.769), and Sustainable Travel Intention (0.880) are greater than their corresponding correlations with other constructs. These findings demonstrate that each construct is empirically distinct and captures a unique aspect of the phenomenon being studied. Therefore, the measurement model exhibits adequate discriminant validity, confirming that the constructs are sufficiently differentiated from one another and appropriately represent their respective concepts.

3.1.4 Reliability Testing

Reliability testing is conducted to assess the consistency and stability of the measurement instruments used in the study. A construct is considered reliable when its indicators consistently measure the same underlying concept. Reliability is commonly evaluated using Cronbach's Alpha and Composite Reliability (CR), with values above 0.70 indicating satisfactory internal consistency. Higher reliability values suggest that the indicators are dependable and capable of producing consistent measurement results.

Table 4. Reliability Testing

Construct	Cronbach's Alpha	Composite Reliability
Digital Destination Content	0.808	0.833
Digital Tourist Experience	0.812	0.820
Environmental Awareness	0.742	0.861
Perceived Usefulness of AR	0.654	0.658
Sustainable Travel Intention	0.855	0.871

The reliability test results presented in Table IV indicate that most constructs demonstrate satisfactory internal consistency. Digital Destination Content (Cronbach's Alpha = 0.808; Composite Reliability = 0.833), Digital Tourist Experience (0.812; 0.820), Environmental Awareness (0.742; 0.861), and Sustainable Travel Intention (0.855; 0.871) all exceed the recommended threshold of 0.70, indicating good reliability and consistent measurement of their respective constructs. In contrast, Perceived Usefulness of AR shows relatively lower values for both Cronbach's Alpha (0.654) and Composite Reliability (0.658), which are slightly below the recommended level, suggesting moderate reliability. Nevertheless, the overall results indicate that the measurement model possesses acceptable reliability, with most constructs exhibiting adequate internal consistency.

3.1.5 Structural Model Evaluation

Structural model evaluation is conducted to examine the relationships among the latent constructs and to assess the predictive capability of the proposed model. This evaluation determines whether the hypothesised relationships are supported by the empirical data. The structural model is commonly assessed using path coefficients, coefficient of determination (R^2), significance values obtained through bootstrapping procedures, and the Standardised Root Mean Square Residual (SRMR) as an indicator of overall model fit. An SRMR value below 0.08 generally indicates that the model has a good fit with the observed data. The results of these assessments provide insights into the strength, direction, explanatory power, and overall adequacy of the relationships among the variables in the model.

Table 5. Standardised Root Mean Square Residual (SRMR)

Criteria	Saturated Model	Estimated Model
SRMR	0.028	0.035

The results presented in Table IV show that the Standardised Root Mean Square Residual (SRMR) values for both the saturated model (0.028) and the estimated model (0.035) are well below the recommended threshold of 0.08. These findings indicate a good level of model fit, suggesting that the discrepancy between the observed and predicted correlations is minimal. Therefore, the structural model demonstrates an adequate fit to the empirical data, confirming that the proposed model is suitable for explaining the relationships among the constructs and can be used for further hypothesis testing.

3.1.6 Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to evaluate the explanatory power of the structural model by measuring the proportion of variance in the endogenous constructs that can be explained by their predictor variables. Higher R^2 values indicate greater predictive accuracy and stronger explanatory capability of the model. Generally, R^2 values of 0.75, 0.50, and 0.25 are interpreted as substantial, moderate, and weak levels of explanatory power, respectively the R^2

results provide insights into how well the independent variables explain the variation in the dependent variables within the proposed model.

Table 6. R Square (R^2)

Constuct	R-Square	R-Square Adjusted
Digital Tourist Experience	0.488	0.482
Sustainable Travel Intention	0.563	0.555

The results presented in Table VI indicate that the model has moderate explanatory power. The R^2 value for Digital Tourist Experience is 0.488, with an adjusted R^2 of 0.482, indicating that 48.8% of the variance in Digital Tourist Experience can be explained by its predictor variables, while the remaining 51.2% is influenced by other factors outside the model. Meanwhile, Sustainable Travel Intention has an R^2 value of 0.563 and an adjusted R^2 of 0.555, suggesting that 56.3% of the variance in Sustainable Travel Intention is explained by the variables included in the model, with the remaining 43.7% attributed to other unexplained factors. Overall, these results indicate that the proposed model possesses moderate predictive and explanatory capabilities.

3.1.7 Research Hypothesis Test Results

The research hypothesis testing is conducted using the bootstrapping method to examine the significance of the relationships between variables in the structural model. Bootstrapping is a non-parametric resampling technique that generates repeated samples to estimate standard errors and assess the stability of path coefficients. The significance of the hypotheses is determined based on t-statistics and p-values, where a relationship is considered significant if the p-value is below 0.05 (or the t-statistic exceeds 1.96 at a 5% significance level). This approach provides robust evidence regarding the acceptance or rejection of the proposed hypotheses in the research model.

Table 7. Hypothesis Test Results

Relationships Between Variables	Original Sample	T Statistics	P Values	Result
Digital Destination Content -> Digital Tourist Experience	-0.064	0.741	0.459	Rejected
Digital Tourist Experience -> Sustainable Travel Intention	0.007	0.115	0.908	Rejected
Environmental Awareness -> Sustainable Travel Intention	0.684	9.434	0.000	Accepted
Perceived Usefulness of AR -> Digital Tourist Experience	0.740	7.394	0.000	Accepted

Data analysis indicates that Digital Destination Content has no significant effect on Digital Tourist Experience. This is evidenced by a negative path coefficient (Original Sample) of -0.064, a T-statistic of 0.741 (below the 1.96 threshold), and a P-value of 0.459 (above 0.05). Consequently, the first hypothesis is rejected, indicating that the quality or availability of digital destination content does not substantially shape or alter the digital experiences perceived by tourists.

Statistical testing for the relationship between Digital Tourist Experience and Sustainable Travel Intention yields a negligible path coefficient of 0.007. The resulting T-statistic is only 0.115, with a P-value of 0.908. Since the P-value vastly exceeds the 0.05 significance threshold, this hypothesis is rejected. This implies that the digital experiences gained by tourists during

their visit do not contribute significantly to or stimulate their intention to engage in sustainable travel.

Environmental Awareness is proven to have a positive and significant effect on Sustainable Travel Intention. This relationship is substantiated by a strong path coefficient of 0.684, a highly significant T-statistic of 9.434, and a P-value of 0.000. Therefore, this hypothesis is accepted.

3.2 Discussion

The findings reveal that Digital Destination Content does not significantly influence Digital Tourist Experience ($\beta = -0.064$, $t = 0.741$, $p = 0.459$), resulting in the rejection of the proposed hypothesis. This finding indicates that the availability of destination-related digital information alone is insufficient to create meaningful digital tourism experiences. Although digital content facilitates tourists in accessing travel information before and during their trips, it does not necessarily foster immersion, engagement, or memorable experiences. The negative coefficient further suggests that an excessive amount of digital information may create information overload, reducing rather than enhancing users' experiences. This finding supports the argument that digital transformation is not achieved merely through the adoption of digital technologies but through their strategic integration into value-creating activities (Vial, 2021). Likewise, digital technologies only generate value when they are aligned with organizational strategies and user needs rather than functioning as standalone technological solutions (Kane, 2019; Rogers, 2016). Therefore, destination management organizations should move beyond static information delivery by adopting interactive storytelling, personalized recommendations, user-generated content, and intelligent digital services that actively engage tourists throughout their travel experiences.

The analysis also demonstrates that Digital Tourist Experience has no significant effect on Sustainable Travel Intention ($\beta = 0.007$, $t = 0.115$, $p = 0.908$), leading to the rejection of the proposed hypothesis. This result suggests that positive digital experiences alone are insufficient to encourage tourists to adopt environmentally responsible travel behavior. Although digital technologies improve convenience, accessibility, and travel satisfaction, they do not automatically influence tourists' environmental values or ethical decision-making. Previous studies on digital transformation emphasize that technology contributes to organizational and societal outcomes only when accompanied by appropriate strategic capabilities, organizational culture, and behavioral change (Mollah et al., 2023; Wang et al., 2022). Similarly, digital transformation initiatives require complementary managerial strategies to generate sustainable outcomes rather than relying solely on technological innovation (Westerman et al., 2014; Kane et al., 2015). Accordingly, tourism platforms should incorporate sustainability-oriented features, including environmental impact indicators, carbon footprint estimators, eco-feedback mechanisms, and reward systems that encourage environmentally responsible behavior.

In contrast, Environmental Awareness exerts a strong positive influence on Sustainable Travel Intention ($\beta = 0.684$, $t = 9.434$, $p = 0.000$), indicating support for the proposed hypothesis. This finding confirms that tourists with higher levels of environmental awareness are significantly more likely to engage in sustainable travel practices. Individuals who recognize the environmental consequences of tourism are more likely to choose environmentally friendly destinations, minimize waste generation, and participate in conservation initiatives. These findings indicate that environmental values remain fundamental determinants of sustainable behavioral intentions. They also reinforce the importance of strengthening sustainability

awareness through education, transparent communication, and conservation-oriented policies. From the perspective of organizational sustainability, successful digital transformation should be aligned with sustainability objectives and organizational learning to generate long-term value (Mollah et al., 2023; Khaw et al., 2022). Consequently, destination managers and policymakers should prioritize environmental education, sustainability campaigns, and transparent sustainability communication to cultivate responsible tourist behavior.

The results further indicate that the Perceived Usefulness of Augmented Reality (AR) significantly enhances Digital Tourist Experience ($\beta = 0.740$, $t = 7.394$, $p = 0.000$). This finding confirms that tourists who perceive AR applications as useful experience higher levels of satisfaction and engagement throughout their travel. AR technologies provide practical benefits by supporting navigation, delivering contextual information, facilitating multilingual communication, and enriching destination interpretation, thereby improving tourists' overall experiences. This finding is consistent with the Technology Acceptance Model, which identifies perceived usefulness as one of the strongest determinants of technology acceptance. Furthermore, previous studies argue that digital technologies create organizational and user value when they improve interactions, support innovation, and strengthen users' capabilities (Yoo et al., 2012; Rogers, 2016; Ahmad et al., 2026; Khoiruman et al., 2026)). Likewise, digital innovation is most effective when technological capabilities are integrated with strategic objectives and user-centered service design (Teece, 2018; Vial, 2021). Therefore, tourism stakeholders should prioritize the functional benefits of AR applications by developing practical features that directly address tourists' informational and experiential needs.

Finally, the moderation analysis reveals that Digital Tourist Experience does not significantly moderate the relationship between Environmental Awareness and Sustainable Travel Intention ($\beta = -0.080$, $t = 1.714$, $p = 0.087$), resulting in the rejection of the moderation hypothesis. This finding indicates that digital tourist experiences neither strengthen nor weaken the positive influence of environmental awareness on sustainable travel intention. Environmental awareness represents a relatively stable psychological value, whereas digital experiences are temporary and context-dependent. Consequently, both constructs independently contribute to tourists' behavioral intentions. Tourists with strong environmental values are likely to maintain responsible travel intentions regardless of the quality of their digital experiences. This finding also supports the broader digital transformation literature, which argues that sustainable organizational outcomes depend primarily on strategic leadership, organizational capabilities, and long-term cultural development rather than technological adoption alone (Tigre et al., 2023; Karakose et al., 2024). Therefore, destination managers should complement digital innovation with environmental education, sustainability communication, conservation programs, and responsible destination governance to achieve long-term sustainable tourism development.

4. Conclusion and Suggestion

This study identified the current digital leadership practices in private universities in Palembang and developed a proposed model to support strategic digital transformation. The findings indicate that existing digital leadership remains predominantly operational, focusing on administrative efficiency and technology utilization rather than long-term institutional transformation. To address this gap, the study proposes a comprehensive digital leadership model that integrates internal and external factors, emphasizes strategic planning, data-driven

decision-making, innovation culture, and multi-stakeholder collaboration. The proposed model contributes to the higher education leadership literature by offering a contextual framework tailored to Indonesian private universities, while also incorporating Sharia values into the digital transformation process. Methodologically, the study demonstrates the usefulness of NVivo-based qualitative visualization techniques in identifying and mapping digital leadership dimensions.

Given the limitations of the study, future research should expand the scope beyond private universities in Palembang to improve the generalizability of findings across different regions and institutional contexts in Indonesia. Researchers are also encouraged to adopt mixed-methods approaches and longitudinal designs to gain a more comprehensive understanding of how digital leadership evolves over time. Furthermore, future studies should examine the influence of digital leadership on institutional outcomes such as academic innovation, organizational performance, quality of tridharma implementation, and global competitiveness by employing quantitative analytical techniques such as SEM-PLS. These efforts will help strengthen the empirical foundation of digital leadership research and provide more robust guidance for higher education institutions undergoing digital transformation.

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