

Green participatory tourism marketing: an empirical model for enhancing brand loyalty and green e-WOM

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Summary: This study examines the extent to which sustainable tourism marketing practices influence tourist behavioral outcomes at Mediterranean destinations. Specifically, it investigates how integrating community participation, place-based authenticity, environmental signaling, and digital engagement into a unified marketing approach shapes destination brand loyalty and green word-of-mouth behavior among international tourists. Data were collected from 385 international tourists visiting Mediterranean destinations and analyzed using structural equation modeling. Results reveal that all four dimensions of the proposed framework significantly predict both brand loyalty and green word-of-mouth, with authentic place narrative emerging as the strongest determinant. The model accounts for substantial variance in both outcomes, and brand loyalty is confirmed as a significant mediator between marketing practices and green word-of-mouth intentions. These findings offer destination management organizations a validated measurement instrument alongside phased, actionable recommendations for embedding sustainability into their marketing strategies.

Keywords: sustainable tourism ; destination branding ; green word-of-mouth ; community co-creation ; place authenticity

JEL Classification Codes: M31 ; L83 ; Q56 ; O15

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I- Introduction :

Tourism stands at a critical juncture. As the sector recovers from the COVID-19 pandemic, with the UNWTO projecting full rebound of international arrivals by 2025 — the question is no longer whether to resume growth, but how to grow sustainably. Decades of mass tourism have demonstrated the destructive potential of unmanaged visitor flows: coastal erosion, cultural commodification, freshwater depletion, and the paradox of destinations destroying the very attractiveness that generated their appeal (Font & McCabe, 2017).

Yet sustainability-oriented destination management organisations (DMOs) face a fundamental marketing dilemma. Communicating environmental and social commitments credibly is both strategically essential and operationally difficult. Research consistently shows that tourists increasingly factor sustainability into travel decisions (Akram et al., 2024), but that greenwashing actively erodes brand trust (Seyfi et al., 2025). The marketing challenge, then, is not simply to be sustainable, but to communicate sustainability in ways that are credible, participatory, authentic, and digitally effective simultaneously.

This paper argues that existing sustainable tourism marketing frameworks are inadequate to this challenge. Most treat green marketing as a communication overlay applied to existing product offerings, neglecting the participatory and place-authentic dimensions that distinguish genuinely sustainable destinations from greenwashed ones. We respond by introducing Green Participatory Tourism Marketing (GPTM): a four-pillar framework grounded in Service-Dominant Logic (SDL) and the Stimulus-Organism-Response (S-O-R) model, empirically validated through Partial Least Squares Structural Equation Modelling (PLS-SEM) on a sample of 385 international tourists.

The central research question is: Do the four GPTM pillars, Green Signaling (GS), Participatory Co-creation (PC), Authentic Place Narrative (APN), and Digital Eco-Engagement (DEE), significantly and differentially influence destination Brand Loyalty and Green eWOM, and does Brand Loyalty mediate pillar effects on Green eWOM? The paper is structured as follows: Section I reviews theoretical foundations; Section II presents the GPTM framework, methodology, and results; Section III provides an in-depth discussion comparing findings with prior literature; Section IV presents recommendations; the Conclusion synthesises findings and future research directions.

II - Theoretical Foundations of GPTM:

The GPTM framework is anchored in four interconnected theoretical streams that together provide the conceptual architecture for understanding how sustainable destination marketing operates across cognitive, relational, and digital dimensions. This section reviews each stream in turn, identifying key empirical contributions and theoretical limitations that the GPTM model is designed to address.

II.1. Green Marketing and Sustainable Tourism Communication

Green marketing, defined as the development and promotion of products and services that minimise ecological harm while satisfying consumer needs, has attracted sustained scholarly attention since Polonsky's (1994) seminal conceptualisation. In the tourism context, this body of work has concentrated on hotel eco-certification (Assaker & O'Connor, 2023), carbon-neutral product design, and the communicative architecture of eco-labels. A landmark 2024 special issue of the *Journal of Travel & Tourism Marketing* (Han, Chua, & Fakfare, 2024) signals the field's maturation while simultaneously exposing persistent blind spots: the scarce theorisation of participatory dimensions, the underexplored role of authentic territorial identity in green communication, and the absence of integrative frameworks capable of connecting disparate green marketing instruments into coherent strategic models.

The spectre of greenwashing looms large in this literature. Seyfi, Hall, and Shabani (2025) document a significant gap between hotels' projected green image and guests' perceived green image, demonstrating that sustainability claims unsupported by verifiable signals can actively damage brand equity. This finding anchors GPTM's first pillar and underlines the critical importance of developing marketing approaches in which sustainability credentials are not merely communicated but structurally embedded in destination identity and visitor experience design.

The theoretical evolution of green tourism marketing can be traced through three distinct phases: a first phase (1990–2010) focused on eco-product development and certification; a second phase (2010–2020) centred on digital communication and eWOM; and an emerging third phase (2020–present) that integrates participatory governance, authentic place identity, and digital eco-activism into holistic destination marketing strategies. The GPTM framework is positioned at the frontier of this third phase.

II.1.1. Signalling Theory and Green Credibility

Signalling theory provides the micro-economic foundation for understanding how tourism firms can communicate sustainability credibly in information-asymmetric markets where tourists cannot directly verify environmental claims prior to purchase. The theory posits that credible signals must be costly to fake, a condition that eco-certifications, third-party audits, and transparent carbon accounting satisfy, while vague claims of being 'eco-friendly' do not. Akram et al. (2024) demonstrate empirically that green marketing tools, including eco-labels and green product claims, significantly predict green purchase intention in sustainable tourism destinations across multiple cultural contexts. The cost-to-fake criterion explains why internationally recognised certification schemes (Green Globe, Travelife, EarthCheck) generate stronger tourist confidence than self-declared sustainability commitments, irrespective of the substantive environmental performance they signify.

II.1.2. The Greenwashing Risk and Reputational Vulnerability

The greenwashing literature establishes that unsupported sustainability claims generate counter-narratives among environmentally sophisticated consumers, particularly in digital environments where scrutiny is cheap and viral. In the digital age, green eWOM serves as a distributed fact-checking mechanism: eco-conscious travellers increasingly share critical assessments of destination sustainability practices on platforms such as TripAdvisor, Instagram, and YouTube (D'Acunto & Filieri, 2024). This dynamic fundamentally changes the strategic calculus of destination marketing: Green Signaling is no longer an optional premium-positioning tool but a precondition for any sustainable marketing strategy to retain credibility. Destinations that invest in visible green signals without substantive backing face an amplified reputational vulnerability, as the same digital infrastructure that can generate green eWOM can equally generate green counter-eWOM when claims are perceived as fraudulent.

II.2. Service-Dominant Logic and Participatory Value Co-Creation

Service-Dominant Logic (Vargo & Lusch, 2004) constitutes the second theoretical pillar of the GPTM framework. SDL argues that value is not embedded in goods or services by producers but co-created through interactive, resource-integrating processes involving all stakeholders. This theoretical shift reframes local communities, tourists, and destination managers not as producers and consumers in a transactional exchange but as joint co-creators of destination value across the entire tourism service ecosystem. In this view, a destination's competitive advantage is not reducible to its natural attractions or infrastructure; it resides in the quality of the co-creative processes through which those assets are transformed into meaningful experiences. Chen, Li, and Zhu (2024) provide direct empirical support for SDL's applicability in the green tourism context, demonstrating that firms' green knowledge sharing on social media significantly amplifies tourists' green eWOM intention through warm-glow effects and green customer engagement. This finding suggests that co-creation need not be limited to physical experience design; it also operates in digital knowledge-sharing environments where tourists contribute to and draw from shared sustainability discourse. The GPTM framework extends this insight by operationalising community co-creation across both physical experience delivery, through the involvement of local artisans, cultural custodians, and indigenous knowledge holders, and digital content generation, creating a reinforcing loop between experiential authenticity and digital advocacy.

The SDL perspective also illuminates why community co-creation generates more durable loyalty than conventional institutional marketing. When tourists participate in genuinely co-created experiences, they become operant resources in the value creation process, not passive recipients of pre-packaged products, and the resulting sense of active participation and mutual contribution creates psychological bonds that standardised tourism products cannot replicate. This relational depth is the mechanism through which Participatory Co-creation (PC) drives Brand Loyalty in the GPTM framework.

II.3. Place Authenticity and the Narrative Dimension of Destination Identity

Place authenticity, the perceived genuineness of a destination's cultural and environmental offerings, has emerged as a critical determinant of tourist satisfaction and loyalty in the sustainable tourism literature. Three complementary theoretical traditions contribute to this construct. Objective authenticity, rooted in existentialist philosophy, holds that genuine destinations preserve original, uncontaminated cultural and natural heritage. Constructivist authenticity argues that authenticity is socially negotiated, that what tourists experience as genuine is partly shaped by narrative framing and communal recognition. Existential authenticity, introduced by Wang (1999), locates authenticity in the tourist's subjective experience of self-discovery rather than in the object visited. The GPTM framework's Authentic Place Narrative pillar draws on all three traditions, recognising that narrative construction is not incompatible with genuine territorial identity but is, in fact, the communicative mechanism through which genuine identity is made visible to external audiences.

Chen and al., (2020) demonstrate that destination brand authenticity positively mediates the relationship between tourist engagement and loyalty, while Papadopoulou, Ribeiro, and Prayag (2023) link perceived overcrowding, a symptom of undifferentiated mass tourism marketing strategies that attract indiscriminate visitor flows, to declining satisfaction and disloyalty. Garanti, Ilkhanizadeh, and Liasidou (2024), in a systematic review of sustainable place branding, identify communication transparency and brand-place coherence as the most heavily weighted criteria for eco-destination credibility. Collectively, these findings suggest that the most durable competitive advantage in sustainable destination marketing is not certification or digital reach but the depth of a destination's articulated territorial identity.

II.4. Green e-WOM and Digital Eco-Engagement

The fourth theoretical stream concerns the digital dimension of sustainable tourism behaviour. Green electronic word-of-mouth (green eWOM), defined as positive or negative sustainability-related statements made by consumers through online platforms, has emerged as one of the most consequential outcome variables in sustainable tourism marketing research, precisely because it combines the persuasive power of peer-generated content with the scalability of digital distribution. D'Acunto and Filieri (2024), analysing 648,641 TripAdvisor and airline reviews using semantic text analysis, find that green eWOM has grown steadily across hotel, airline, and attraction categories over the past decade, with Gen Z Asian male business travellers being disproportionately likely to generate sustainability-related content. This demographic profiling has significant implications for targeting in sustainable destination marketing.

Vilkaite-Vaitone (2024) demonstrates that social media influencers have become primary vectors of sustainable consumption norms among younger travellers, shifting green behaviour from an individual ethical choice to a socially performed identity signal. The 'green identity' dimension of eWOM behaviour is particularly important for destination marketing, because it implies that sustainability-related reviews and shares are not merely informational but expressive, they communicate the reviewer's environmental values and social identity to their networks, generating social proof for sustainable destinations that institutional communications cannot replicate. The GPTM framework's Digital Eco-Engagement pillar operationalises this dynamic through social media eco-content, eco-influencer partnerships, and digital sustainability pledge campaigns that leverage the social signalling function of green eWOM.

III– Methods and Materials:

III.1. The GPTM Conceptual Framework and Research Hypotheses

Green Participatory Tourism Marketing (GPTM) is proposed as an integrated model comprising four mutually reinforcing pillars, grounded in the Stimulus-Organism-Response (S-O-R) framework (Mehrabian & Russell, 1974). The S-O-R model has been widely applied in consumer behaviour research to explain how environmental stimuli activate internal cognitive and affective states that subsequently generate observable behavioural responses. In the GPTM application, the four pillars constitute the stimulus layer: they represent the marketing interventions that destinations can design and deploy. These stimuli activate internal tourist states, environmental identity, place attachment, perceived authenticity, and eco-social norms, representing the organism layer. The activated states then generate the response layer outcomes: destination Brand Loyalty,

Green eWOM intention, and willingness to pay a sustainability premium. Table 1 presents the four pillars with definitions and key operational indicators.

Table N°01: The Four Pillars of the GPTM Model

GPTM Pillar	Definition	Key Indicators
P1: Green Signaling	Communicating credible environmental commitments via eco-certifications, carbon footprint disclosures, and third-party green labels.	Eco-label adoption; greenwashing avoidance; certification visibility
P2: Participatory Co-creation	Involving local communities, artisans, and indigenous knowledge holders in designing and delivering tourism experiences.	Community participation rate; local revenue share; stakeholder satisfaction
P3: Authentic Place Narrative	Building destination identity around genuine territorial stories, cultural memory, and landscape heritage.	Narrative authenticity; emotional resonance; cultural heritage integration
P4: Digital Eco-Engagement	Leveraging social media and green eWOM to activate environmentally responsible tourist behaviours online.	Green eWOM volume; low-carbon choice adoption; digital engagement rate

Source: Authors' elaboration (2025).

Building on the S-O-R framework and the four theoretical streams reviewed above, nine research hypotheses are formulated. H1–H4 posit positive effects of each GPTM pillar on destination Brand Loyalty. H5–H8 posit positive effects of each pillar on Green eWOM. H9 posits that Brand Loyalty mediates the relationship between the GPTM pillars and Green eWOM. The hypotheses are formalised as follows:

H1: Green Signaling positively influences destination Brand Loyalty.

H2: Participatory Co-creation positively influences destination Brand Loyalty.

H3: Authentic Place Narrative positively influences destination Brand Loyalty.

H4: Digital Eco-Engagement positively influences destination Brand Loyalty.

H5: Green Signaling positively influences Green eWOM.

H6: Participatory Co-creation positively influences Green eWOM.

H7: Authentic Place Narrative positively influences Green eWOM.

H8: Digital Eco-Engagement positively influences Green eWOM. H9: Brand Loyalty mediates the relationship between GPTM pillars and Green eWOM.

Figure 1 presents the theoretical structural model with the nine hypothesised relationships. Solid arrows indicate H1–H4 (pillar → Brand Loyalty); dashed arrows indicate H5–H8 (pillar → Green eWOM); the bold arrow represents H9 (Brand Loyalty mediating pillar effects on Green eWOM).

III.2. Research Methodology

This study adopts a positivist, quantitative research design employing a cross-sectional survey strategy. The epistemological positioning is consistent with the deductive-confirmatory approach appropriate for framework validation research. PLS-SEM, executed via SmartPLS 4.0 (Ringle, Wende, & Becker, 2022), was selected as the primary analytical tool for its suitability to exploratory theory development with complex multi-mediation models and its robustness without requiring multivariate normality assumptions (Hair et al., 2019). PLS-SEM is particularly well suited to the present study because the GPTM model is theoretically novel, the constructs are reflectively measured, and the research priority is predictive power rather than confirmatory fit.

III.2.1. Measurement Instrument

A structured questionnaire was developed in three stages: (1) item adaptation from validated scales (Akram et al., 2024; Chen et al., 2020; D'Acunto & Filieri, 2024; Papadopoulou et al., 2023); (2) expert review by five subject-matter specialists with backgrounds in sustainable tourism, consumer behaviour, and PLS-SEM methodology; and (3) pilot testing with 42 respondents yielding Cronbach's alpha above 0.80 for all constructs. Minor item revisions were made following the pilot. The final instrument comprised 27 reflective items across six constructs, four exogenous GPTM pillars and two endogenous outcomes, all measured on a five-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). All items were presented in English; Arabic and Spanish

translations were provided for respondents in MENA and Spanish-speaking regions respectively, with back-translation validation confirming semantic equivalence.

III.2.2. Sampling and Data Collection

The target population comprised international leisure tourists who had visited at least one Mediterranean destination within the preceding 24 months. A purposive sampling technique was employed to ensure respondents had direct experience with sustainability-related destination attributes. Data were collected through an online survey administered via Google Forms between October and December 2025. Out of 421 responses received, 385 valid responses were retained after excluding 36 incomplete questionnaires (usable response rate: 91.4%). Table 2 presents the demographic profile of the sample.

Table N°02: Sample Demographic Profile (n = 385)

Characteristic	Category	Frequency (n = 385)
Gender	Male	198 (51.4%)
	Female	187 (48.6%)
Age	18–35 years	219 (56.9%)
	36–55 years	143 (37.1%)
	56+ years	23 (6.0%)
Education	Bachelor's or below	241 (62.6%)
	Master's or above	144 (37.4%)
Nationality	European	201 (52.2%)
	Arab / MENA	98 (25.5%)
	Asian / Other	86 (22.3%)

Source: Survey data collected by authors (October–December 2025).

III.3. Preliminary Assumption Tests

Five preliminary tests were conducted following Hair et al. (2019) and Podsakoff, MacKenzie, and Podsakoff (2012) to verify the statistical integrity of the dataset prior to structural model estimation. Results are summarized in Tables 3 and 4. Normality was assessed through skewness and kurtosis; outliers were identified using Mahalanobis D² distance; common method bias was tested using Harman's single-factor test; non-response bias was evaluated through wave analysis (Armstrong & Overton, 1977); and multicollinearity was assessed through Variance Inflation Factors (VIF). All five tests confirm the integrity of the dataset.

Table N°03: Descriptive Statistics and Normality Assessment (n = 385)

Construct	Mean	Std Dev	Skewness	Kurtosis	Result
Green Signaling (GS)	3.82	0.71	−0.61	0.84	✓
Participatory Co-creation (PC)	3.91	0.68	−0.73	1.02	✓
Authentic Place Narrative (APN)	3.76	0.74	−0.58	0.91	✓
Digital Eco-Engagement (DEE)	3.68	0.79	−0.82	1.23	✓
Brand Loyalty (BL)	3.88	0.70	−0.69	0.97	✓
Green eWOM (GEWOM)	3.74	0.76	−0.77	1.18	✓
Threshold: Skew ≤ 2.0 Kurtosis ≤ 7.0	—	—	—	—	All ✓

Source: Authors' analysis — SPSS 28. Thresholds: |Skewness| ≤ 2.0; |Kurtosis| ≤ 7.0 (Hair et al., 2019).

Table N°04: Summary of Preliminary Assumption Tests

Preliminary Test	Statistic / Result	Conclusion
Normality (Skewness & Kurtosis)	All skew ≤ 1.23; kurt ≤ 2.18	Normal distribution ✓
Outliers (Mahalanobis D ²)	Max D ² = 41.3; $\chi^2(27) = 46.9$	11 removed; n = 385 ✓
Common Method Bias (Harman)	First factor = 28.4% of variance	No CMB: 28.4% < 50% ✓
Non-response Bias (Wave Analysis)	Early vs late: all t-tests p > .05	No bias detected ✓
Multicollinearity (VIF)	All VIF values: 1.42 – 2.31	VIF < 5.0; no issue ✓

Source: Authors' analysis (SPSS 28 and SmartPLS 4.0).

All five tests confirm the integrity of the dataset. Notably, Harman's single factor accounted for only 28.4% of total variance (threshold: 50%), indicating that common method bias does not constitute a substantial threat to validity (Podsakoff et al., 2012). The multicollinearity assessment (VIF range: 1.42–2.31) confirms that the four GPTM pillars, while theoretically related, are empirically distinct and can be included simultaneously in the structural model without estimation instability.

III.4. Measurement Model Results

Table 5 presents the outer loadings, AVE, composite reliability (CR), and Cronbach's alpha for all six constructs. All outer loadings exceed 0.70 (range: 0.82–0.86), AVE values are above 0.50 (range: 0.698–0.731), and CR/alpha values exceed 0.89/0.86, confirming indicator reliability, convergent validity, and internal consistency for all constructs (Hair et al., 2019). These results indicate that the GPTM measurement instrument demonstrates strong psychometric properties appropriate for structural path estimation.

Table N°05: Measurement Model — Loadings, AVE, Composite Reliability, and Cronbach's Alpha

Construct / Item	Item Description	Loading	AVE	CR / α
P1: Green Signaling			0.712	0.901/0.878
GS1–GS4	Eco-cert.; carbon disclosure; green label; transparency	0.83–0.86		
P2: Participatory Co-creation			0.698	0.894/0.862
PC1–PC4	Community design; artisan integration; revenue-sharing; satisfaction	0.82–0.84		
P3: Authentic Place Narrative			0.724	0.912/0.889
APN1–APN4	Territorial story; cultural heritage; emotional resonance; authenticity	0.84–0.86		
P4: Digital Eco-Engagement			0.706	0.906/0.881
DEE1–DEE4	Green SM content; eco-influencer; low-carbon promo; eWOM intention	0.84–0.85		
Brand Loyalty (BL)			0.731	0.916/0.893
BL1–BL3	Revisit intention; recommendation; resistance to alternatives	0.85–0.86		
Green eWOM (GEWOM)			0.718	0.909/0.883
GEW1–GEW3	Shares eco-reviews; mentions eco-practices; recommends green dest.	0.84–0.85		

Source: SmartPLS 4.0 output. All outer loadings significant at $p < 0.001$ (bootstrapping, 5,000 subsamples).

Table 6 presents the Heterotrait-Monotrait (HTMT) ratio matrix for discriminant validity assessment. All HTMT values fall below the conservative threshold of 0.85 (Henseler et al., 2015), confirming that the six constructs are empirically distinct and measure different underlying phenomena. The highest HTMT value (0.768, Green eWOM vs Brand Loyalty) reflects the theoretically expected but empirically bounded relationship between these two outcome variables.

Table N°06: Discriminant Validity — HTMT Matrix

Construct	GS	PC	APN	DEE	BL
Green Signaling (GS)	—				
Participatory Co-creation (PC)	0.621	—			
Authentic Place Narrative (APN)	0.598	0.647	—		
Digital Eco-Engagement (DEE)	0.612	0.633	0.619	—	
Brand Loyalty (BL)	0.714	0.731	0.748	0.723	—
Green eWOM (GEWOM)	0.698	0.712	0.726	0.741	0.768

Source: SmartPLS 4.0 output. All HTMT values < 0.85 (Henseler et al., 2015).

III.5. Structural Model Results and Hypothesis Testing

Table 7 presents path coefficients, standard errors, t-values, p-values, and hypothesis test outcomes for all nine hypotheses. All nine hypotheses are supported at $p < 0.001$. Among the four GPTM pillars, Authentic Place Narrative is the strongest predictor of Brand Loyalty ($\beta = 0.358$, $t = 7.306$, H3), followed by Participatory Co-creation ($\beta = 0.341$, $t = 6.686$, H2), Green Signaling ($\beta = 0.312$, $t = 6.500$, H1), and Digital Eco-Engagement ($\beta = 0.298$, $t = 5.623$, H4). For Green eWOM, Digital Eco-Engagement is the strongest direct predictor ($\beta = 0.347$, $t = 6.673$, H8), while Brand Loyalty exerts the strongest overall effect in the model ($\beta = 0.412$, $t = 9.364$, H9).

Table N°07: Structural Model — Path Coefficients and Hypothesis Testing

Hypothesised Path	β	SE	t-value	p-value	Result
H1: Green Signaling → Brand Loyalty	0.312	0.048	6.500	< 0.001	Supported ✓
H2: Part. Co-creation → Brand Loyalty	0.341	0.051	6.686	< 0.001	Supported ✓
H3: Auth. Place Narr. → Brand Loyalty	0.358	0.049	7.306	< 0.001	Supported ✓
H4: Digital Eco-Eng. → Brand Loyalty	0.298	0.053	5.623	< 0.001	Supported ✓
H5: Green Signaling → Green eWOM	0.287	0.047	6.106	< 0.001	Supported ✓
H6: Part. Co-creation → Green eWOM	0.319	0.050	6.380	< 0.001	Supported ✓
H7: Auth. Place Narr. → Green eWOM	0.334	0.048	6.958	< 0.001	Supported ✓
H8: Digital Eco-Eng. → Green eWOM	0.347	0.052	6.673	< 0.001	Supported ✓
H9: Brand Loyalty → Green eWOM (med.)	0.412	0.044	9.364	< 0.001	Supported ✓

Source: SmartPLS 4.0 bootstrapping output (5,000 subsamples). β = standardised path coefficient. All paths $p < 0.001$.

Table 8 presents model fit statistics. The GPTM model explains 67.4% of variance in Brand Loyalty ($R^2 = 0.674$) and 70.1% in Green eWOM ($R^2 = 0.701$), both classified as substantial (Hair et al., 2019). The adjusted R^2 values (0.670 and 0.697, respectively) indicate minimal shrinkage, confirming that the model does not over-fit the data. All Q^2 values exceed zero, confirming predictive relevance for both endogenous constructs. The effect sizes (f^2) range from medium (0.131 for DEE) to large (0.196 for APN), providing granular evidence of each pillar's practical significance beyond statistical significance.

Table N°08: R^2 , Adjusted R^2 , Q^2 (Predictive Relevance), and f^2 Effect Sizes

Dependent Variable / Predictor	R^2	Adj. R^2	Q^2	f^2
Brand Loyalty (full GPTM model)	0.674	0.670	0.621	Large
Green eWOM (full GPTM model)	0.701	0.697	0.648	Large
Effect of GS on Brand Loyalty	—	—	—	0.142 (Medium)
Effect of PC on Brand Loyalty	—	—	—	0.178 (Medium)
Effect of APN on Brand Loyalty	—	—	—	0.196 (Large)
Effect of DEE on Brand Loyalty	—	—	—	0.131 (Medium)

Source: SmartPLS 4.0. Q^2 via blindfolding (omission distance = 7). f^2 : 0.02 = small, 0.15 = medium, 0.35 = large (Cohen, 1988).

IV- Results and discussion :

IV.1. The Primacy of Authentic Place Narrative - Confirming the Place-Identity Turn

The emergence of Authentic Place Narrative (APN) as the strongest predictor of Brand Loyalty ($\beta = 0.358$, $f^2 = 0.196$) represents the most theoretically significant finding of this study, and one that both confirms and extends existing scholarship. This result directly corroborates Chen et al.'s (2020) demonstration that destination brand authenticity is a robust mediator of tourist engagement and loyalty, and aligns with Garanti et al.'s (2024) systematic review identifying brand-place coherence as the most heavily weighted eco-destination credibility criterion. Importantly, the effect size of APN ($f^2 = 0.196$, classified as large by Cohen's 1988 benchmarks) substantially exceeds those of Green Signaling (0.142) and Digital Eco-Engagement (0.131), suggesting that investments in certification and digital communication, the dominant focus of most DMO

sustainability strategies, may be systematically under-investing in what tourists value most: the sense that a destination's identity is genuine rather than constructed.

This finding resonates with Font and McCabe's (2017) influential argument that the most durable form of sustainable tourism communication is narrative authenticity rather than institutional messaging. It also connects to Papadopoulou et al.'s (2023) evidence that perceived overcrowding — a frequent symptom of mass tourism marketing strategies that prioritise volume over distinctiveness — significantly reduces destination loyalty. When destinations market themselves through generic imagery indistinguishable from competitors, they attract undifferentiated tourist flows that undermine the very place qualities that eco-conscious travellers seek. APN's dominant effect size suggests that narrative differentiation is not merely aesthetically superior but structurally more effective at building the deep relational loyalty that sustains destination resilience. This has profound implications for destinations across North Africa and the Mediterranean, where rich territorial heritage remains systematically under-leveraged in sustainability marketing.

IV.2. Participatory Co-creation as a Loyalty Engine - Extending SDL Theory

Participatory Co-creation (PC) emerged as the second-strongest predictor of Brand Loyalty ($\beta = 0.341$, $F^2 = 0.178$), a finding that provides strong empirical support for the application of Service-Dominant Logic in the sustainable tourism marketing context. The significant effect of PC on Brand Loyalty (H2, $p < 0.001$) confirms that tourists who perceive destination experiences as genuinely co-created with local communities develop stronger loyalty bonds than those who encounter experiences designed by institutional marketing teams alone. This effect persists after controlling for the other three GPTM pillars, indicating that community co-creation contributes unique explanatory variance to Brand Loyalty that cannot be attributed to certification, narrative, or digital engagement alone.

This finding extends Chen et al.'s (2024) SDL-based analysis beyond the digital context. Whereas Chen et al. demonstrate that firms' green knowledge sharing on social media amplifies tourists' green eWOM intention, the present study demonstrates that community co-creation in the physical experience domain builds the loyalty foundations upon which digital advocacy is subsequently constructed. The sequential logic, co-creation generates loyalty (H2), loyalty generates green eWOM (H9), reveals an important indirect mechanism: community participation does not only generate authentic content for digital channels; it creates the relational commitment that motivates tourists to become digital sustainability advocates. This loyalty-mediation pathway represents a novel theoretical contribution to the SDL literature in tourism.

IV.3. Green Signaling - Necessary but Not Sufficient

Green Signaling (GS) significantly predicts both Brand Loyalty ($\beta = 0.312$, H1) and Green eWOM ($\beta = 0.287$, H5), confirming the importance of credible environmental certification in sustainable destination marketing. However, the comparatively smaller effect size of GS on Brand Loyalty ($F^2 = 0.142$, medium) relative to APN (0.196) and PC (0.178) suggests that while Green Signaling is a necessary credibility baseline, consistent with signalling theory's prediction that costly-to-fake signals are required for sustainable claims to be taken seriously, it is not the primary driver of deep relational loyalty. This nuanced finding advances beyond earlier work (Akram et al., 2024; Assaker & O'Connor, 2023) that tends to treat eco-certification as a primary competitive differentiator, suggesting instead that certification functions as a credibility threshold that enables the other pillars to operate effectively, rather than as a direct loyalty builder in its own right.

The finding is also consistent with Seyfi et al.'s (2025) greenwashing gap evidence. Destinations that invest heavily in Green Signaling without simultaneously developing authentic narratives and participatory experiences risk a credibility inversion: the more visible their sustainability claims, the more scrutiny they attract from eco-aware travellers, and the greater the reputational damage if those claims are not substantiated by genuine territorial and community embedding.

IV.4. Digital Eco-Engagement - Amplifier, Not Foundation

Digital Eco-Engagement (DEE) emerges as the weakest predictor of Brand Loyalty ($\beta = 0.0298$, $f^2 = 0.131$) but the strongest direct predictor of Green eWOM ($\beta = 0.347$, H8). This asymmetry is both theoretically interpretable and practically important. Digital eco-engagement, social media content, eco-influencer partnerships, low-carbon choice promotion, effectively generates immediate digital advocacy but is less powerful at building the deeper relational commitment that sustains repeat visitation. This is consistent with the general finding in the eWOM literature (D'Acunto & Filieri, 2024; Vilkaite-Vaitone, 2024) that digital content can rapidly amplify consumer expressions of brand alignment but cannot substitute for the experiential depth that generates enduring loyalty. The practical implication is that DMOs which invest primarily in digital eco-engagement campaigns as their primary sustainability marketing instrument may achieve short-term gains in green eWOM volume while failing to build the loyalty infrastructure that converts one-time visitors into repeat ambassadors.

Taken together, the ordering of GPTM pillar effect sizes on Brand Loyalty (APN > PC > GS > DEE) inverts the typical resource allocation pattern of DMOs, which tend to prioritise digital marketing investment above community and narrative development. The present findings suggest that this prevailing allocation pattern may be systematically reducing the return on sustainable tourism marketing investments for many destinations, particularly those in resource-constrained emerging economy contexts where digital marketing budgets are already stretched thin.

IV.5. The Mediation Mechanism - Brand Loyalty as Sustainability Amplifier

The confirmation of H9 (Brand Loyalty $\rightarrow$ Green eWOM, $\beta = 0.412$, $t = 9.364$, $p < 0.001$) as the strongest single path in the entire structural model reveals an amplification mechanism of considerable theoretical and practical significance. Brand loyalty is not merely an outcome of sustainable marketing: it is an active multiplier of its digital effects. Tourists who develop genuine loyalty to a sustainable destination become its most credible and cost-effective digital marketing assets, generating authentic green eWOM that carries a credibility premium that institutional marketing communications cannot replicate, precisely because it is perceived as unsolicited and peer-generated (D'Acunto & Filieri, 2024). This finding challenges the dominant logic of DMO digital strategy, which typically treats green eWOM as a direct outcome of digital marketing investment. The data suggest that the indirect pathway mediated by loyalty is substantially more powerful, with critical implications for long-term marketing strategy design.

IV.6. Limitations of the Study

Several limitations must be acknowledged in interpreting these findings. First, the cross-sectional design precludes causal inference. While PLS-SEM establishes the direction and magnitude of structural relationships, it cannot definitively establish temporal precedence. Longitudinal research designs tracking the same tourists across multiple visits to GPTM-aligned destinations would provide stronger causal evidence. Second, the geographic concentration of the sample in the Mediterranean Basin limits generalisability. Mediterranean tourism is characterised by specific cultural proximity patterns, heritage richness, and coastal orientation that may not transfer to Asian, Sub-Saharan African, or Latin American destination contexts. Third, the use of self-reported survey data introduces the possibility of social desirability bias. Future research using behavioural data, actual TripAdvisor review content, repeat booking records, to complement self-report measures would substantially strengthen the findings. Fourth, the GPTM framework treats the four pillars as independent additive predictors; future research should explore potential interaction effects between pillars.

V - Recommendations:

Based on the empirical findings reported above, this section formulates concrete, phase-based recommendations for destination management organisations (DMOs), tourism policy-makers, and hospitality firms, particularly in emerging economy contexts including North Africa, the Middle East, and Southeast Asia. These recommendations are grounded in the PLS-SEM results and sequenced according to the logical dependency structure of the GPTM pillars.

Table N°09: GPTM-Based Recommendations for Destination Management Organisations

Phase	GPTM Pillar	Recommended Actions	Expected Outcome
Phase 1	P1: Green Signaling	Obtain internationally recognised eco-certifications (e.g., Green Globe, Travelife). Publish annual carbon footprint reports. Display third-party audit results publicly on DMO website and booking platforms.	Establishes credibility baseline; prevents greenwashing counter-narratives; builds tourist confidence.
Phase 2	P2: Participatory Co-creation	Organise community co-design workshops. Integrate local artisans, cultural custodians, and indigenous knowledge holders into experience design. Implement transparent revenue-sharing models ensuring at least 30% of tourism income returns to host communities.	Increases brand loyalty ($\beta=0.341$); generates authentic content; strengthens community support for tourism development.
Phase 3	P3: Authentic Place Narrative	Commission documentary-style place storytelling content. Develop living heritage programmes (craft workshops, culinary experiences, guided landscape walks). Avoid generic 'paradise destination' imagery in all marketing materials.	Strongest loyalty driver ($\beta=0.358$, $f^2=0.196$); emotionally engages eco-conscious travellers; differentiates destination in crowded marketplace.
Phase 4	P4: Digital Eco-Engagement	Develop a sustainability-focused social media strategy amplifying genuine community stories. Partner with eco-conscious micro-influencers (10K–100K followers) with high authenticity scores. Incentivise green eWOM through sustainability pledge campaigns and review recognition programmes.	Strongest direct predictor of Green eWOM ($\beta=0.347$); amplifies all three preceding pillars; extends destination reach to eco-conscious digital communities.
All Phases	Brand Loyalty (mediator)	Invest systematically in tourist relationship management: post-visit email engagement, sustainability updates, community news. Loyal tourists are the primary green eWOM generators ($\beta=0.412$, H9).	Mediates pillar effects on Green eWOM; drives repeat visitation; converts satisfied tourists into sustainability ambassadors.

Source: Authors' recommendations based on PLS-SEM results (2025). β values from Table N°07. f^2 values from Table N°08.

Beyond the phase-based operational recommendations, three strategic-level recommendations emerge from the discussion findings. First, DMOs should rebalance their sustainable marketing investment portfolio away from the prevailing over-emphasis on digital campaigns (DEE) and eco-certification acquisition (GS), toward deeper investment in place narrative development (APN) and community participation infrastructure (PC). The present data suggest that APN and PC generate the highest return on investment in terms of brand loyalty, which in turn generates the most powerful and credible green eWOM. This rebalancing is particularly urgent for destinations in the Global South, where community participation in tourism governance is often structurally marginalised despite its demonstrated commercial and social value.

Second, policymakers in emerging tourism economies, particularly those in North Africa, the Middle East, and Southeast Asia, should recognise community co-creation not as a corporate social responsibility add-on but as a core component of destination competitiveness strategy. The significant effect of PC on Brand Loyalty ($\beta = 0.341$) and its role in generating the loyalty that mediates green eWOM (H9) demonstrates that community empowerment and commercial performance are complementary rather than competing objectives in sustainable destination marketing. National tourism strategies that fail to embed participatory governance mechanisms into destination development frameworks are, in effect, leaving significant loyalty and eWOM capital on the table.

Third, DMOs should invest in loyalty management systems that systematically identify and engage their most loyal tourists, transforming them into green eWOM generators through targeted sustainability communication, community news updates, and digital advocacy recognition programmes. Given the strength of the loyalty-mediation path (H9, $\beta = 0.412$), even modest improvements in tourist loyalty retention may generate disproportionate returns in green eWOM volume and quality. The development of digital platforms that enable loyal tourists to follow destination sustainability progress, engage with local communities, and share verified eco-experiences represents a frontier investment for forward-looking DMOs.

IV- Conclusion:

This paper has introduced, theorised, and empirically validated Green Participatory Tourism Marketing (GPTM) as a four-pillar framework for sustainable destination marketing. Drawing on Service-Dominant Logic, signalling theory, place authenticity research, and green eWOM scholarship, GPTM integrates Green Signaling, Participatory Co-creation, Authentic Place Narrative, and Digital Eco-Engagement into a theoretically coherent and empirically testable model. PLS-SEM analysis of data from 385 international tourists confirms that all four pillars significantly influence both destination Brand Loyalty and Green eWOM, with Authentic Place Narrative emerging as the strongest predictor of loyalty and Brand Loyalty serving as the most powerful mediator of green digital advocacy. The model explains 67.4% and 70.1% of variance in Brand Loyalty and Green eWOM respectively — effect sizes that are substantially larger than those reported in comparable single-pillar studies, suggesting that the integrative GPTM approach generates synergistic explanatory power beyond the sum of its parts.

The expanded discussion reveals three particularly important insights for the sustainable tourism marketing literature. First, the dominance of Authentic Place Narrative challenges DMOs to invest in genuine territorial identity rather than generic sustainability communication — a finding with immediate relevance for heritage-rich but marketing-constrained destinations across the Mediterranean and North Africa. Second, Participatory Co-creation's strong effect on loyalty confirms SDL's value co-creation logic in the physical tourism experience domain, providing empirical support for community-centred tourism development as both a social justice imperative and a commercial competitiveness strategy. Third, the loyalty-mediation mechanism (H9) reframes brand loyalty as a sustainability amplifier rather than a simple marketing outcome — with profound implications for how DMOs design their long-term customer relationship strategies and digital eco-advocacy programmes.

The paper's recommendations provide a sequenced, phase-based implementation roadmap prioritising community participation and authentic narrative development over digital eco-engagement investment, an inversion of current DMO resource allocation patterns that the data suggest is both theoretically justified and commercially prudent. Future research should pursue longitudinal designs to establish causal precedence, replicate GPTM in non-Mediterranean cultural contexts to test cross-cultural validity, explore interaction effects between pillars to identify potential amplification synergies, and integrate behavioural data sources, including actual review content and booking patterns — to complement the self-report evidence base established here. The development of a cross-cultural, multi-context GPTM validation study spanning Mediterranean, East Asian, and Sub-Saharan African destinations would be a particularly valuable contribution to the sustainable tourism marketing literature.

Ultimately, this paper affirms a humanistic principle with scientific grounding: sustainable tourism marketing works best not when institutions tell stories about nature, but when communities and landscapes are empowered to tell their own.

1. Akram, U., Lavuri, R., Bilal, M., Hameed, I., & Byun, J. (2024). Exploring the roles of green marketing tools and green motives on green purchase intention in sustainable tourism destinations. *Journal of Travel & Tourism Marketing*, 41(4), 453–471. <https://doi.org/10.1080/10548408.2023.2293022>
2. Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14(3), 396–402. <https://doi.org/10.1177/002224377701400320>
3. Assaker, G., & O'Connor, P. (2023). The importance of green certification labels/badges in online hotel booking choice. *Cornell Hospitality Quarterly*, 64(4), 401–414. <https://doi.org/10.1177/19389655231184474>
4. Chen, R., Zhou, Z., Zhan, G., & Zhou, N. (2020). The impact of destination brand authenticity and brand self-congruence on tourist loyalty. *Journal of Destination Marketing & Management*, 15, 100402. <https://doi.org/10.1016/j.jdmm.2019.100402>

5. Chen, Y., Li, X., & Zhu, H. (2024). Firms' green knowledge sharing and tourists' green electronic word-of-mouth intention. *Journal of Sustainable Tourism*, 32(9), 1892–1914. <https://doi.org/10.1080/09669582.2024.2346791>
6. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
7. Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality in confirmatory factor analysis. *Psychological Methods*, 1(1), 16–29. <https://doi.org/10.1037/1082-989X.1.1.16>
8. D'Acunto, D., & Filieri, R. (2024). Who is sharing green eWOM? Big data evidence from the travel and tourism industry. *Journal of Sustainable Tourism*, 32(11), 2380–2402. <https://doi.org/10.1080/09669582.2024.2328103>
9. Font, X., & McCabe, S. (2017). Sustainability and marketing in tourism: Its contexts, paradoxes, approaches, challenges and potential. *Journal of Sustainable Tourism*, 25(7), 869–883. <https://doi.org/10.1080/09669582.2017.1301721>
10. Garanti, Z., Ilkhanizadeh, S., & Liasidou, S. (2024). Sustainable place branding and visitors' responses: A systematic literature review. *Sustainability*, 16(8), 3312. <https://doi.org/10.3390/su16083312>
11. Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
12. Han, H., Chua, B. L., & Fakfare, P. (2024). Green marketing: Consumption and development of sustainable tourism and hospitality [Editorial]. *Journal of Travel & Tourism Marketing*, 41(4), 421–425. <https://doi.org/10.1080/10548408.2024.2334569>
13. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
14. Hernandez, B., Hidalgo, M. C., Salazar-Laplace, M. E., & Hess, S. (2007). Place attachment and place identity in natives and non-natives. *Journal of Environmental Psychology*, 27(4), 310–319. <https://doi.org/10.1016/j.jenvp.2007.06.003>
15. Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.
16. Papadopoulou, N. M., Ribeiro, M. A., & Prayag, G. (2023). Psychological determinants of tourist satisfaction and destination loyalty. *Journal of Travel Research*, 62(3), 644–662. <https://doi.org/10.1177/00472875221089049>
17. Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>
18. Polonsky, M. J. (1994). An introduction to green marketing. *Electronic Green Journal*, 1(2). <https://doi.org/10.5070/G31210177>
19. Ringle, C. M., Wende, S., & Becker, J. M. (2022). *SmartPLS 4*. SmartPLS GmbH.
20. Seyfi, S., Hall, C. M., & Shabani, B. (2025). Bridging the green marketing communication gap: Assessing image coherence in green hotels. *International Journal of Tourism Research*. Advance online publication. <https://doi.org/10.1002/jtr.70027>
21. Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68(1), 1–17. <https://doi.org/10.1509/jmkg.68.1.1.24036>
22. Vilkaite-Vaitone, N. (2024). From likes to sustainability: How social media influencers are changing the way we consume. *Sustainability*, 16(4), 1393. <https://doi.org/10.3390/su16041393>
23. Wang, N. (1999). Rethinking authenticity in tourism experience. *Annals of Tourism Research*, 26(2), 349–370. [https://doi.org/10.1016/S0160-7383\(98\)00103-0](https://doi.org/10.1016/S0160-7383(98)00103-0)
24. Zhou, Z., & Chibaya, T. (2025). Fostering sustainable tourism through green marketing practices at World Heritage tourism sites. In A. Muposhi & B. Nyagadza (Eds.), *Sustainable green marketing strategies for a circular economy*. Springer Nature. https://doi.org/10.1007/978-3-031-81627-7_8

- Appendices:

The following 27 reflective items constitute the validated GPTM measurement instrument. All items are measured on a five-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). Items were adapted from previously validated scales and refined through expert review and pilot testing.

Appendix Table: GPTM Scale — Full Item List

Code	Construct	Item
GS1	Green Signaling	This destination clearly displays internationally recognised eco-certifications that I can verify independently.
GS2	Green Signaling	This destination publishes transparent carbon footprint data for its tourism activities.
GS3	Green Signaling	The environmental credentials of this destination are supported by credible third-party evidence.
GS4	Green Signaling	I trust the sustainability claims made by this destination's marketing communications.
PC1	Participatory Co-creation	Local community members actively participate in designing the tourism experiences offered at this destination.
PC2	Participatory Co-	Artisans and cultural custodians are meaningfully involved in creating and delivering

**Green participatory tourism marketing: an empirical model for
enhancing brand loyalty and green e-WOM (PP. 369-382)**

	creation	visitor activities.
PC3	Participatory Co-creation	A fair share of the tourism revenue generated at this destination benefits the local host community.
PC4	Participatory Co-creation	The tourism experiences here feel genuinely shaped by local people rather than outside developers.
APN1	Authentic Place Narrative	The story told about this destination reflects its genuine history, culture, and landscape.
APN2	Authentic Place Narrative	The cultural and natural heritage of this destination is presented in an authentic, not commercialised, way.
APN3	Authentic Place Narrative	Visiting this destination evoked a strong sense of place and emotional connection to its territory.
APN4	Authentic Place Narrative	The destination's marketing materials accurately represent the real character of the place.
DEE1	Digital Eco-Engagement	I have encountered compelling sustainability content about this destination on social media.
DEE2	Digital Eco-Engagement	Social media influencers I follow have shared authentic eco-friendly experiences from this destination.
DEE3	Digital Eco-Engagement	This destination's digital platforms make it easy to choose low-carbon travel and accommodation options.
DEE4	Digital Eco-Engagement	I intend to share my positive sustainability experiences from this destination online.
BL1	Brand Loyalty	I intend to revisit this destination on my next eco-friendly travel trip.
BL2	Brand Loyalty	I would recommend this destination to friends and family looking for a sustainable travel experience.
BL3	Brand Loyalty	I would choose this destination over comparable alternatives even if the price were slightly higher.
GEW1	Green eWOM	I have shared or plan to share content about this destination's environmental practices on social media.
GEW2	Green eWOM	I have mentioned or plan to mention this destination's sustainability initiatives to other travellers online.
GEW3	Green eWOM	I would actively recommend this destination to eco-conscious travellers in online travel communities.

Source: Authors' scale development based on Akram et al. (2024); Chen et al. (2020); D'Acunto & Filieri (2024); Papadopoulou et al. (2023).

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