

Tourist-Side Value Transformation and Sustainable Destination Competitiveness in Dong Thap Muoi, Vietnam

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Abstract. This study examines how sustainable destination competitiveness is formed in Dong Thap Muoi, Vietnam, from the tourist perspective. Responding to the need to position destination competitiveness within technology-enabled tourism service systems, the study conceptualizes sustainable competitiveness as a value transformation process in which destination resources, service quality, environmental commitment, destination marketing effectiveness, and smart tourism technology are converted into perceived destination attractiveness, tourist loyalty, and sustainable competitiveness. The model also tests whether perceived local community support strengthens the relationship between destination attractiveness and tourist loyalty. Data were collected from 720 tourists who had direct experience with Dong Thap Muoi and were analyzed using partial least squares structural equation modeling. The findings support all eight hypotheses. Perceived destination resources have the strongest effect on destination attractiveness ($\beta = 0.298$), followed by perceived smart tourism technology ($\beta = 0.239$), destination service quality ($\beta = 0.222$), environmental commitment ($\beta = 0.201$), and perceived destination marketing effectiveness ($\beta = 0.179$). Destination attractiveness strongly predicts tourist loyalty ($\beta = 0.517$), while local community support significantly moderates this relationship ($\beta = 0.239$). Tourist loyalty is the strongest predictor of sustainable destination competitiveness ($\beta = 0.553$). The study contributes to destination competitiveness research by empirically specifying a tourist-side value transformation pathway within technology-enabled tourism service systems and by suggesting that perceived smart tourism technology can support information accessibility and visitor convenience within that pathway. For destination managers, the findings suggest that destination managers may need to consider wetland resources, service delivery, digital visitor information, and community participation as mutually reinforcing development domains rather than as separate initiatives.

Keywords: destination attractiveness; digital service system; local community support; PLS-SEM; tourist loyalty; smart tourism technology.

1. Introduction

Tourism destinations increasingly compete not merely through the possession of attractions, but through their capacity to organize resources, services, information, and visitor interactions into experiences that tourists can access, evaluate, remember, and recommend. This shift is particularly important for sustainable destination competitiveness because competitive performance can no longer be reduced to growth in arrivals or short-term revenue. A destination must also preserve ecological assets, sustain community legitimacy, improve visitor experience, and develop service capabilities that remain viable over time (Ritchie & Crouch, 2003; Dwyer & Kim, 2003; Goffi et al., 2019).

Recent research on smart tourism, e-tourism quality, digital service systems, and service-oriented tourism management suggests that this transformation is increasingly shaped by technology-enabled service interfaces. In tourism, smart technologies, digital platforms, e-tourism quality, real-time information, and service coordination systems shape how tourists search for information, navigate the destination, evaluate service encounters, and maintain post-visit engagement (Buhalis & Amaranggana, 2014; Gretzel et al., 2015; Huang et al., 2017; Jeong & Shin, 2020; Li et al., 2025; Mendrofa et al., 2025). From this perspective, destination competitiveness can be interpreted as the result of an integrated tourism service system in which physical resources, service quality, information accessibility, digital interfaces, and community support jointly create perceived value.

Dong Thap Muoi provides a meaningful empirical setting for examining this issue. The region is associated with wetland ecosystems, flood-season landscapes, rice-based agro-environments, local cultural resources, and interprovincial tourism routes (Dong Thap Provincial People's Committee, 2024; Vietnam National Authority of Tourism, 2025). Official planning documents show that Dong Thap tourism served more than 4 million visitors and generated VND 1,925 billion in tourism revenue in 2023, while recent tourism reports indicate continuing growth in 2025 (Dong Thap Provincial People's Committee, 2024; Vietnam National Authority of Tourism, 2025). However, growth in visitor numbers does not automatically imply sustainable competitiveness. These official documents and the destination context suggest several strategic issues that deserve closer academic examination, including product diversification, service depth, visitor retention, digital promotion, regional coordination, and the conversion of ecological and cultural advantages into higher-value tourism experiences.

This context is theoretically and practically important. Vietnam-based studies have provided useful but partial evidence on related tourism issues. Vu and Turner (2011) examined Vietnam's arrival competitiveness through shift-share analysis, while Mai et al. (2020) focused on factors influencing sustainable tourism development. Su et al. (2020) analyzed travel motivation, visitor engagement, visitor experience, and heritage destination image, whereas Nguyen et al. (2022) examined pro-environmental behavior in sustainable tourism. Taken together, these studies offer valuable insights into competitiveness, sustainability, motivation, experience, image, and environmental behavior, but they mainly address separate constructs or specific empirical settings. They do not yet provide an integrated tourist-side explanation of how destination attributes are transformed into attractiveness, how attractiveness becomes loyalty, and how loyalty contributes to sustainable destination competitiveness within a regional destination context. In addition, smart tourism technology has often been treated as a supporting operational condition rather than as a digital service interface through which information access, service convenience, and destination experience may be improved.

Against this background, the present study develops and tests an integrated model of sustainable destination competitiveness in Dong Thap Muoi from the tourist perspective. The model examines five antecedents of perceived destination attractiveness: perceived destination resources, destination service quality, environmental commitment, perceived destination marketing effectiveness, and perceived smart tourism technology. It then tests the effect of destination attractiveness on tourist loyalty, the moderating role of perceived local community support, and the effect of tourist loyalty on sustainable destination competitiveness. The research question guiding the study is: How do destination attributes, smart tourism technology, local community support, and tourist loyalty jointly form sustainable

destination competitiveness in Dong Thap Muoi?

The study contributes in three ways. First, it extends destination competitiveness theory by empirically specifying a tourist-side value transformation pathway from destination attributes to attractiveness, loyalty, and sustainable competitiveness. Second, it strengthens the digital service-system orientation of destination research by positioning perceived smart tourism technology as a digital service interface rather than a peripheral technological variable. Third, it provides destination-specific evidence for Dong Thap Muoi, a wetland-based regional destination whose sustainable competitiveness depends on aligning resources, service delivery, digital information, and community participation.

2. Theoretical Background and Hypotheses Development

2.1. Theoretical background

Destination competitiveness research has been shaped by several foundational frameworks. Ritchie and Crouch (2003) conceptualize competitiveness as a system of core resources, supporting factors, destination management, policy, planning, and qualifying determinants. Dwyer and Kim (2003) similarly emphasize endowed resources, created resources, supporting conditions, demand conditions, destination management, and market performance. These frameworks explain what makes destinations competitive, but they do not fully specify how tourists convert destination attributes into attractiveness and loyalty-oriented behavior. Hu and Ritchie (1993) provide a clearer tourist-evaluation perspective by treating destination attractiveness as a contextual assessment of destination attributes, while Yoon and Uysal (2005) explain destination loyalty as a behavioral consequence of favorable tourism evaluations. However, these streams have often remained analytically separate.

The present study integrates these streams through a tourism service-system value transformation logic. In this logic, destination attributes are not assumed to generate competitiveness directly. Instead, they become competitively meaningful when tourists perceive the destination as attractive, when that attractiveness is converted into loyalty, and when loyalty supports sustainable competitive outcomes. This interpretation is consistent with tourism service-system research, which views tourism value as co-produced through information, service processes, destination encounters, and tourist evaluation rather than through tangible resources alone (Li et al., 2025).

The role of smart tourism technology is central to this repositioning. Smart tourism does not simply digitize tourism promotion; it can change the service interface between tourists and destinations. Destination applications, online booking systems, digital maps, QR-code interpretation, smart signage, AI-based recommendation tools, social media engagement, and real-time visitor information platforms may reduce uncertainty, improve accessibility, support route planning, and enhance the perceived convenience of the trip. Prior research shows that smart tourism technologies are commonly evaluated through information quality, accessibility, interactivity, personalization, and security-related experience, and that digital transformation and e-tourism quality can strengthen visitor experience, revisitation, and sustainable tourism outcomes (Huang et al., 2017; Jeong & Shin, 2020; Do et al., 2025; Tran et al., 2025; Mendrofa et al., 2025). Therefore, in a wetland destination such as Dong Thap Muoi, smart tourism technology is interpreted in this study as a digital service pathway that may help translate dispersed ecological and cultural resources into accessible and interpretable experiences.

Sustainable destination competitiveness is also treated here as a multidimensional second-order construct. It is reflected by five first-order dimensions: environmental competitiveness, economic competitiveness, sociocultural competitiveness, sustainable policy and management, and tourist satisfaction and positive behavior. This specification follows the logic that sustainable competitiveness cannot be captured by a single market indicator; rather, it reflects the combined ability of a destination to generate economic value, protect environmental resources, sustain sociocultural legitimacy, maintain responsible governance, and generate positive tourist responses (Mihalic, 2000; Nadalipour et al., 2019). In the empirical tables and appendices, sustainable destination competitiveness is abbreviated as DSC.

2.2. Research rationale and hypotheses development

2.2.1. Perceived destination resources and destination attractiveness

Destination resources constitute the substantive basis of destination differentiation because they define what a place can uniquely offer to tourists. Destination competitiveness frameworks regard endowed and created resources as core conditions of competitiveness, while attraction research shows that resources become valuable only when tourists interpret them as distinctive, meaningful, accessible, and worth experiencing (Lew, 1987; Hu & Ritchie, 1993; Ritchie & Crouch, 2003; Dwyer & Kim, 2003). In Dong Thap Muoi, wetland landscapes, flood-season scenery, agro-ecological settings, local cuisine, cultural attractions, and regional identity are not merely physical endowments; they are experiential cues through which tourists judge the destination's appeal. Therefore, when tourists perceive these resources as distinctive and experience-worthy, their overall perception of destination attractiveness should increase.

H1: Perceived destination resources have a positive effect on tourists' perceived destination attractiveness.

2.2.2. Destination service quality and destination attractiveness

Resources alone do not secure competitiveness unless they are organized into reliable, convenient, and coherent service encounters. Service-quality theory argues that tourists' behavioral responses are shaped by the quality of service delivery, while destination-competitiveness research emphasizes supporting services, infrastructure, management capability, and the effectiveness of service processes (Zeithaml et al., 1996; Ritchie & Crouch, 2003; Dwyer & Kim, 2003). From a service-oriented perspective, service quality is the operational layer that connects destination resources with tourists' lived experiences through reception, guidance, safety, cleanliness, transportation support, and responsiveness. In a regionally dispersed wetland destination such as Dong Thap Muoi, higher service quality should reduce friction during the visit, improve experiential consistency, and strengthen tourists' perceived attractiveness of the destination.

H2: Destination service quality has a positive effect on tourists' perceived destination attractiveness.

2.2.3. Environmental commitment and destination attractiveness

For a wetland-based destination, environmental commitment is not a peripheral sustainability claim; it is an essential component of both experiential value and long-term competitiveness. Environmental management has long been treated as a factor of destination competitiveness because environmental degradation can weaken the resource base on which tourism depends (Mihalic, 2000). More recent sustainable competitiveness research similarly suggests that destinations are evaluated not only by their economic performance but also by their ability to protect natural resources, preserve ecological integrity, and maintain responsible development practices (Goffi et al., 2019; Nadalipour et al., 2019). In Dong Thap Muoi, tourists are therefore likely to perceive the destination as more attractive when they observe or believe that tourism development is accompanied by environmental care, resource preservation, waste control, and responsible ecological management.

H3: Environmental commitment has a positive effect on tourists' perceived destination attractiveness.

2.2.4. Perceived destination marketing effectiveness and destination attractiveness

Destination marketing does more than communicate promotional messages; it interprets destination value, builds destination meaning, and makes latent resources more recognizable to target markets. Destination marketing organizations shape how tourists become aware of a destination, how they understand its distinctiveness, and how they form expectations before and during the visit (Pike & Page, 2014). Within competitiveness frameworks, marketing and destination management help transform resources and services into market-recognized value (Ritchie & Crouch, 2003; Dwyer & Kim, 2003). This role is particularly important for Dong Thap Muoi because many of its values are ecological, seasonal, community-based, and experiential rather than immediately visible to first-time visitors. When tourists perceive destination marketing as frequent, credible, attractive, and informative, they are more likely to evaluate the destination as appealing and worth visiting.

H4: Perceived destination marketing effectiveness has a positive effect on tourists' perceived destination attractiveness.

2.2.5. Perceived smart tourism technology and destination attractiveness

Smart tourism technology shapes the tourist's digital access to the destination and increasingly functions as a service interface between tourists, information, service providers, and place-based resources. Smart tourism technologies are commonly evaluated through information usefulness, accessibility, interactivity, personalization, and security/privacy, and these dimensions influence tourists' experience formation and behavioral intentions (Huang et al., 2017; Jeong & Shin, 2020). In tourism service-system terms, destination apps, online booking systems, digital maps, smart interpretation systems, QR-code guides, AI recommendation tools, social media interfaces, and real-time visitor information platforms can reduce uncertainty, improve information accuracy, facilitate travel planning, personalize experience, and make dispersed attractions easier to navigate. Recent evidence from JLISS and related service-innovation research also shows that e-tourism quality, tourism service coordination, and digital transformation can strengthen visitor satisfaction, revisitation, and sustainable tourism outcomes (Li et al., 2025; Mendrofa et al., 2025; Do et al., 2025; Tran et al., 2025). Thus, perceived smart tourism technology is expected to enhance destination attractiveness by making Dong Thap Muoi easier to access, understand, experience, and share.

H5: Perceived smart tourism technology has a positive effect on tourists' perceived destination attractiveness.

2.2.6. Destination attractiveness and tourist loyalty

Destination attractiveness represents tourists' integrative evaluation of whether a place is appealing, distinctive, and worth experiencing. Attraction research suggests that tourists assess destinations by interpreting multiple attributes within a specific travel context, while loyalty research shows that favorable evaluations can translate into revisit intention, recommendation, and positive word-of-mouth (Hu & Ritchie, 1993; Yoon & Uysal, 2005). In the present model, attractiveness is therefore not treated as a terminal perception but as a cognitive bridge between destination attributes and loyalty-oriented behavior. When tourists perceive Dong Thap Muoi as attractive, meaningful, and experientially valuable, they are more likely to develop behavioral commitment toward the destination.

H6: Tourists' perceived destination attractiveness has a positive effect on tourist loyalty.

2.2.7. The moderating role of perceived local community support

The local community forms part of the social service environment in which tourism experiences are produced and evaluated. Residents' support for tourism influences the perceived hospitality, authenticity, safety, and social legitimacy of destination experiences, and prior tourism research shows that resident attitudes and support are important conditions for sustainable destination development (Stylidis et al., 2014). From a service value perspective, local communities co-produce the destination experience through everyday interactions, local knowledge, cultural expression, and willingness to support visitors. Consequently, the positive effect of destination attractiveness on loyalty should become stronger when tourists perceive the local community as welcoming, cooperative, and supportive. Under weak perceived community support, attractiveness may remain a favorable perception but may be less likely to develop into durable loyalty.

H7: Perceived local community support positively moderates the relationship between tourists' perceived destination attractiveness and tourist loyalty.

2.2.8. Tourist loyalty and sustainable destination competitiveness

Tourist loyalty contributes to sustainable destination competitiveness because loyal tourists revisit, recommend, share favorable evaluations, and reinforce the destination's market reputation over time. Loyalty research treats revisit intention and positive word-of-mouth as important behavioral outcomes of favorable destination evaluations (Yoon & Uysal, 2005). Sustainable competitiveness research further suggests that competitive performance cannot be reduced to short-term arrivals; it must also reflect the destination's capacity to generate economic value, protect resources, sustain social legitimacy,

and maintain positive tourist responses (Mihalic, 2000; Nadalipour et al., 2019). In this study, loyalty is therefore conceptualized as a strategic behavioral resource that links tourists' positive evaluations with longer-term sustainable competitiveness. When tourists are willing to return and recommend Dong Thap Muoi, they help create repeat demand, reputation capital, and advocacy that support sustainable destination competitiveness.

H8: Tourist loyalty has a positive effect on sustainable destination competitiveness.

2.3. Proposed research model

Based on these hypotheses, the model explains sustainable destination competitiveness through a sequential tourist-side value transformation process within a tourism service system. Five destination attributes shape tourists' perceived destination attractiveness. Destination attractiveness then affects tourist loyalty, while perceived local community support moderates this relationship. Tourist loyalty subsequently predicts sustainable destination competitiveness, which is specified as a second-order construct reflected by environmental, economic, sociocultural, governance, and tourist-behavior dimensions.

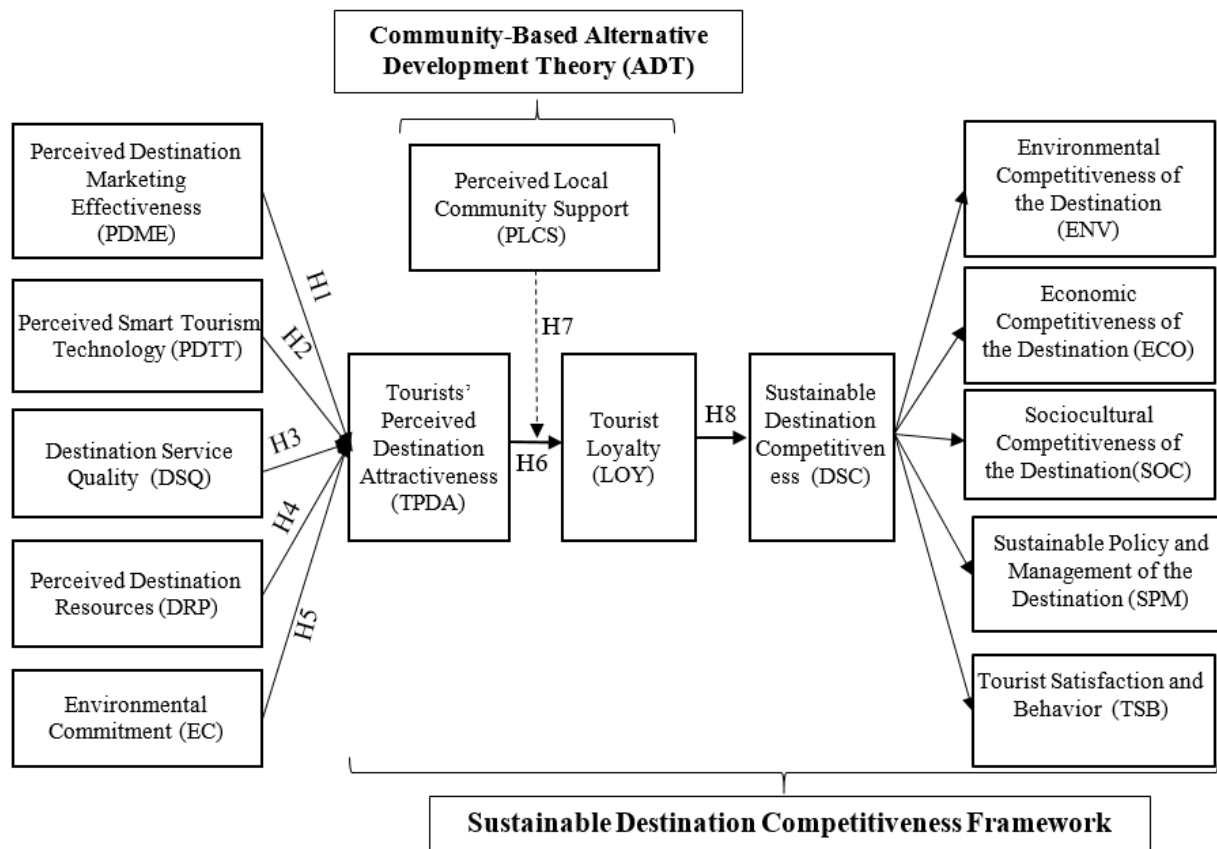


Fig.1: Proposed research model

Source: Proposed by the author.

3. Research Methods

This research was designed as a quantitative survey supported by preliminary expert review and pilot testing for scale refinement. The preliminary stage was used to adapt the measurement items to the Dong Thap Muoi context, while the main quantitative stage was used to test the proposed model.

The expert review involved 12 specialists from tourism, business administration, and destination-management practice. The experts included university lecturers and tourism practitioners with professional experience ranging from 10 to 20 years. Their comments were used to refine item wording,

reduce context ambiguity, and ensure that the questionnaire was understandable to tourists. Pilot testing was then conducted with a preliminary group of tourist respondents to examine item clarity, questionnaire sequence, response burden, and preliminary scale reliability. The pilot stage was used as scale-refinement support rather than as an independent inferential sample. No item was removed after the pilot and preliminary reliability assessment; all 13 constructs and 69 observed variables were retained for the main survey.

The main fieldwork was conducted from August 2024 to March 2025 at representative tourist sites, tourism routes, and experiential service points within the Dong Thap Muoi tourism area. Respondents were screened before participation. To be included, they had to have direct travel experience in Dong Thap Muoi and sufficient ability to understand and evaluate the questionnaire items. The study did not use nationality as a segmentation variable; therefore, the achieved sample is interpreted as an on-site tourist sample with actual destination experience rather than as a separate domestic-versus-international comparative dataset. Because tourists are dispersed across space, time, and travel purposes, the study used criterion-based convenience sampling with on-site screening. This approach is appropriate for perception-based tourism research when a complete probability sampling frame is unavailable.

A total of 900 questionnaires were distributed. After data cleaning, 720 valid responses were retained for analysis. The questionnaire included two parts: screening and demographic information, and measurement items for the latent constructs. All substantive items were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Data were processed using SPSS 26.0 for descriptive statistics and preliminary checks and SmartPLS 4.0 for PLS-SEM analysis.

PLS-SEM was selected because the model includes multiple antecedents, a mediating construct, a moderating relationship, and a second-order dependent construct. The analysis followed the two-step procedure recommended by Hair et al. (2019, 2022): measurement model assessment followed by structural model assessment. Reliability was evaluated using Cronbach's alpha, rho_a, composite reliability, and AVE. Discriminant validity was assessed using Fornell-Larcker and HTMT criteria (Fornell & Larcker, 1981; Henseler et al., 2015). Common method bias was examined using Harman's single-factor test and full collinearity VIFs, following Podsakoff et al. (2003).

Table 1. Summary of measurement scales.

Research construct	Code	No. of items	Main source / adaptation and conceptual basis
Perceived destination marketing effectiveness	PDME	6	Pike and Page (2014); destination marketing effectiveness literature
Perceived smart tourism technology	PDTT	6	Jeong and Shin (2020); Mendrofa et al. (2025)
Destination service quality	DSQ	7	Zeithaml et al. (1996); destination service-quality literature
Perceived destination resources	DRP	5	Ritchie and Crouch (2003); Dwyer and Kim (2003); attraction-resource literature
Environmental commitment	EC	5	Goffi et al. (2019); sustainable destination management literature
Tourists' perceived destination attractiveness	TPDA	5	Hu and Ritchie (1993)
Perceived local community support	PLCS	5	Stylidis et al. (2014); community-support literature
Tourist loyalty	LOY	5	Yoon and Uysal (2005); Zeithaml et al. (1996)
Environmental competitiveness of the destination	ENV	5	Nadalipour et al. (2019); sustainable competitiveness literature
Economic competitiveness of the destination	ECO	5	Nadalipour et al. (2019); sustainable competitiveness literature

Research construct	Code	No. of items	Main source / adaptation and conceptual basis
Sociocultural competitiveness of the destination	SOC	5	Nadalipour et al. (2019); sustainable competitiveness literature
Sustainable policy and management of the destination	SPM	5	Nadalipour et al. (2019); sustainable competitiveness literature
Tourist satisfaction and positive behavior	TSB	5	Nadalipour et al. (2019); destination performance and tourist-behavior literature

Source: Compiled and adapted by the author based on the cited literature.

Note: In all empirical tables and appendices, DSC denotes sustainable destination competitiveness.

4. Results

4.1. Sample profile

The sample profile shows a reasonably diverse respondent structure. Female respondents represented 53.61% of the sample, while male respondents accounted for 46.39%. Most respondents were between 20 and 45 years old, which is consistent with active domestic tourism participation. The education, occupation, income, residence, and visit-frequency profiles indicate that the sample included tourists with sufficient experience and capacity to evaluate the destination.

Table 2. Sample profile

Criterion	Category	Frequency	Percentage (%)
Gender	Male	334	46.39
	Female	386	53.61
Age	20-25	186	25.83
	26-35	238	33.06
	36-45	178	24.72
	46-55	86	11.94
	Above 55	32	4.44
Educational level	High school	122	16.94
	Vocational/college	164	22.78
	Undergraduate	338	46.94
	Postgraduate	96	13.33
Occupation	Office employee	336	46.67
	Business/self-employed	178	24.72
	Public sector employee	144	20.00
	Other	62	8.61
Monthly income	Below VND 10 million	65	9.03
	VND 10-15 million	214	29.72
	VND 15-20 million	258	35.83
	VND 20-25 million	118	16.39
	Above VND 25 million	65	9.03
Residence	Ho Chi Minh City	248	34.44
	Mekong Delta provinces	272	37.78
	Southeast Vietnam	112	15.56
	Central Vietnam	56	7.78
	Northern Vietnam	32	4.44
Number of visits	First visit	286	39.72
	2-3 visits	302	41.94
	More than 3 visits	132	18.33

Source: Author's data analysis using SPSS 26.0.

4.2. Common method bias and measurement model

Common method bias was assessed before model estimation. Harman's single-factor test indicated that the first factor explained 21.325% of the variance, below the 50% threshold. Full collinearity VIFs ranged from 1.000 to 1.259, below the 3.3 threshold. These results suggest that common method bias is unlikely to threaten the interpretation of the model.

Table 3. Common method bias assessment

Test	Indicator	Result	Threshold	Conclusion
Harman's single-factor test	Variance explained by the first factor	21.325%	< 50%	No serious common method bias detected
Full collinearity assessment	Minimum inner VIF	1.000	< 3.3	Acceptable
Full collinearity assessment	Maximum inner VIF	1.259	< 3.3	Acceptable

Source: Author's data analysis.

The measurement model satisfied reliability and validity requirements. Cronbach's alpha values ranged from 0.811 to 0.891, rho_a from 0.813 to 0.898, composite reliability from 0.869 to 0.917, and AVE from 0.570 to 0.666. All values exceeded recommended thresholds (Nunnally & Bernstein, 1994; Hair et al., 2019). As an additional cross-loading check, item-loading patterns were inspected to verify that indicators were aligned with their assigned constructs. In line with contemporary PLS-SEM reporting, discriminant validity was primarily evaluated through HTMT and Fornell-Larcker criteria rather than relying only on cross-loadings (Henseler et al., 2015; Hair et al., 2019). Full outer loadings, HTMT values, and Fornell-Larcker results are provided in Appendices B and C, while additional structural diagnostics are reported in Appendix D to improve reporting transparency.

Table 4. Reliability and convergent validity

Construct	Cronbach's alpha	rho_a	rho_c	AVE
DRP	0.851	0.855	0.894	0.628
DSC	0.811	0.813	0.869	0.570
DSQ	0.879	0.881	0.906	0.581
EC	0.855	0.863	0.896	0.633
LOY	0.846	0.848	0.890	0.619
PDME	0.891	0.895	0.917	0.648
PDTT	0.859	0.862	0.895	0.586
PLCS	0.876	0.898	0.909	0.666
TPDA	0.855	0.856	0.896	0.633

Source: Author's data analysis using SmartPLS 4.0.

4.3. Structural model assessment

The structural model showed acceptable explanatory and predictive power. The model explained 58.0% of the variance in tourists' perceived destination attractiveness, 37.4% of the variance in tourist loyalty, and 30.5% of the variance in sustainable destination competitiveness. These values are interpreted as moderate explanatory power rather than substantial explanatory power. Q² values were positive for all endogenous constructs, confirming the model's predictive relevance.

Table 5. Explanatory and predictive power

Endogenous construct	R ²	Adjusted R ²	Q ²
TPDA	0.580	0.577	0.363
LOY	0.374	0.371	0.228
DSC	0.305	0.304	0.172

Source: Author's data analysis using SmartPLS 4.0.

The hypothesis testing results supported all eight hypotheses at the 1% significance level. Among

the five antecedents of destination attractiveness, perceived destination resources had the strongest effect (beta = 0.298), followed by perceived smart tourism technology (beta = 0.239), destination service quality (beta = 0.222), environmental commitment (beta = 0.201), and perceived destination marketing effectiveness (beta = 0.179). Destination attractiveness had a strong effect on tourist loyalty (beta = 0.517), and tourist loyalty had the strongest direct effect on sustainable destination competitiveness (beta = 0.553).

Table 6. Hypothesis testing results

Hypothesis	Relationship	β	S.D.	T	p	Decision
H1	DRP -> TPDA	0.298	0.024	12.254	0.000	Supported
H2	DSQ -> TPDA	0.222	0.030	7.475	0.000	Supported
H3	EC -> TPDA	0.201	0.031	6.475	0.000	Supported
H4	PDME -> TPDA	0.179	0.029	6.218	0.000	Supported
H5	PDTT -> TPDA	0.239	0.035	6.746	0.000	Supported
H6	TPDA -> LOY	0.517	0.027	19.285	0.000	Supported
H7	PLCS x TPDA -> LOY	0.239	0.032	7.423	0.000	Supported
H8	LOY -> DSC	0.553	0.027	20.430	0.000	Supported

Source: Author's data analysis using SmartPLS 4.0.

Note: DSC = sustainable destination competitiveness; TPDA = tourists' perceived destination attractiveness; LOY = tourist loyalty.

The standardized PLS-SEM results are visually summarized in Figure 2. This figure should present the complete tested model, including the standardized coefficients from the five destination attributes to tourists' perceived destination attractiveness, the path from destination attractiveness to tourist loyalty, the moderating effect of perceived local community support, and the path from tourist loyalty to sustainable destination competitiveness. By displaying the relative magnitude and significance of the supported paths, the figure complements Table 6 and helps readers interpret the empirical structure of the model more clearly.

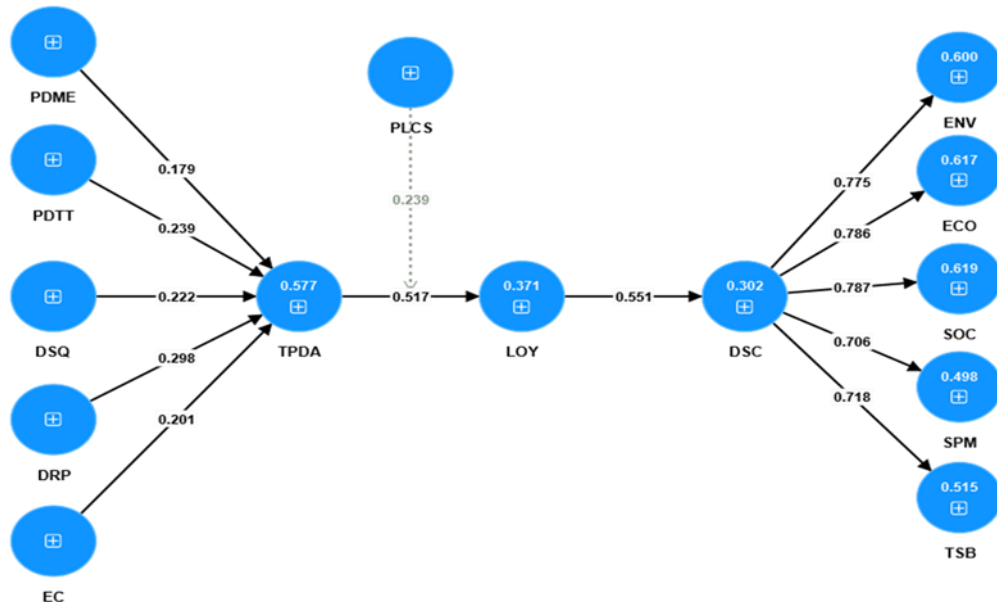


Fig.2: Results of the PLS-SEM structural model

Source: Author's data analysis using SmartPLS 4.0.

4.4. Moderation analysis

The moderation result was also significant. The interaction between perceived local community support and destination attractiveness had a positive effect on tourist loyalty (beta = 0.239, $t = 7.423$, $p < 0.001$). The simple-slope plot in Figure 3 shows that the attractiveness-loyalty relationship is steepest when perceived local community support is high and weakest when perceived local community support is low. This means that an attractive destination generates stronger loyalty when tourists also perceive the local community as welcoming, supportive, and cooperative.

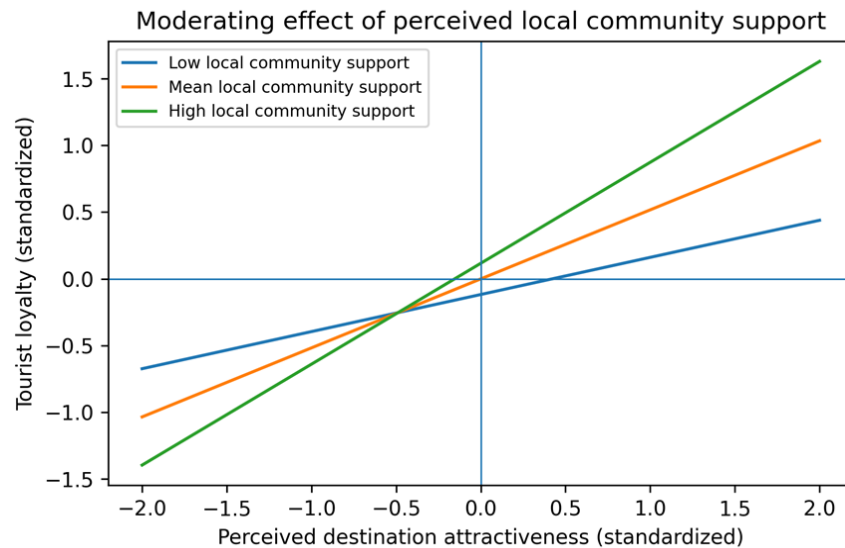


Fig.3: Simple slopes of the moderating effect of perceived local community support

Source: Calculated from standardized PLS-SEM coefficients

5. Discussion

The findings help clarify a tourist-side value transformation pathway within a tourism service-system perspective through which sustainable destination competitiveness is formed in Dong Thap Muoi. The model shows that sustainable competitiveness is not created directly by destination attributes alone. Rather, those attributes first shape tourists' perceived destination attractiveness, which then strengthens tourist loyalty and subsequently contributes to sustainable competitiveness. This result extends established destination competitiveness frameworks by specifying a tourist-side conversion process that links resource, service, environmental, marketing, and technology conditions with sustainable competitive outcomes.

Perceived destination resources exert the strongest effect on destination attractiveness. This pattern is theoretically meaningful because Dong Thap Muoi is primarily a resource-driven destination. Its wetland landscapes, seasonal water-based scenery, agro-ecological environments, cuisine, and cultural features form the most visible basis of tourist evaluation. The finding implies that destination resources remain the core source of attractiveness, but their value must be organized through service quality, interpretation, marketing, digital access, and sustainable management if they are to become long-term competitiveness.

Perceived destination marketing effectiveness has the weakest effect among the five antecedents, although it remains statistically significant. This does not mean that marketing is unimportant. Instead, it suggests that marketing has not yet become the strongest value-conversion driver in Dong Thap Muoi. In a resource-rich but less internationally branded destination, tourists may rely more strongly on direct resource perception, service experience, and digital information than on formal promotional communication. As a managerial interpretation, this result suggests that destination marketing may need to move beyond broad promotion and place greater emphasis on clearer storytelling, more targeted digital segmentation, and experience-based communication.

The positive effect of smart tourism technology is especially important for the digital tourism service-system contribution of this study. Its effect is stronger than environmental commitment and marketing effectiveness, suggesting that perceived digital information and technology-enabled services are relevant to tourists' attractiveness evaluations. Interpreted together with smart-tourism literature, this result suggests that perceived smart tourism technology may serve as a digital service interface through which tourists obtain route information, booking support, digital interpretation, real-time updates, and post-visit sharing opportunities. This interpretation should be understood as a theoretical and managerial inference from the model result rather than as a direct empirical audit of Dong Thap Muoi's current digital infrastructure. It is consistent with recent evidence that e-tourism quality, digital transformation, and tourism service coordination and digital service systems influence visitor experience, revisitation, satisfaction, and sustainable growth (Do et al., 2025; Tran et al., 2025; Li et al., 2025; Mendrofa et al., 2025).

The strong effect of destination attractiveness on tourist loyalty confirms that attractiveness functions as a cognitive bridge rather than a terminal evaluation. Tourists who perceive Dong Thap Muoi as attractive are more willing to revisit, recommend, and speak positively about the destination. More importantly, loyalty is confirmed as the strongest predictor of sustainable destination competitiveness. This finding suggests that sustainable competitiveness may be partly supported by repeat demand, favorable word-of-mouth, and tourist advocacy, not only through destination supply conditions. The moderation result also adds a social dimension to the tourist-side value transformation pathway. Specifically, it suggests that when tourists perceive local communities as friendly, helpful, and supportive, the relationship between destination attractiveness and loyalty becomes stronger. Conversely, even an attractive destination may not fully generate loyalty if tourists perceive weak community support. This finding is important for sustainable tourism because local communities are not simply beneficiaries of tourism development; they are active participants in the service environment and co-producers of destination competitiveness.

6. Practical Implications

The study offers several practical implications. Because the empirical model measures perceived smart tourism technology as a broad construct, the specific digital actions proposed below should be read as managerial implications inferred from the findings rather than as separately tested technological interventions. First, destination managers in Dong Thap Muoi should consider prioritizing resource interpretation rather than relying only on resource display. Wetland landscapes, seasonal flooding, rice-based agriculture, cuisine, lotus culture, and local community life may be translated into guided experiences, thematic routes, digital storytelling, and educational interpretation. Such an approach may help tourists understand why the destination is distinctive and worth revisiting.

Second, the destination should consider upgrading technology-enabled service systems. Possible managerial actions include developing an integrated digital visitor guide, QR-code interpretation at attractions, smart signage, digital maps, online booking links, real-time information on routes and seasonal conditions, and a shared tourism information platform connecting attractions, service providers, and local authorities. These tools are proposed as practical extensions of the broader finding that perceived smart tourism technology is associated with higher destination attractiveness.

Third, service quality may be strengthened at the touchpoint level. Destination managers may consider standardizing basic service information, cleanliness, visitor reception, safety guidance, local transportation support, and service responsiveness across attractions. The aim is not to replace the authenticity of Dong Thap Muoi, but to help ensure that ecological and community-based experiences are delivered with reliability and comfort.

Fourth, destination marketing may be strengthened by moving beyond general promotion. Communication may emphasize the resource identity of Dong Thap Muoi, such as wetland ecology, flood-season experience, agro-cultural routes, local food, and community stories. Digital marketing

may be targeted by tourist segment and linked to actual service information, booking options, maps, itineraries, and post-visit engagement.

Fifth, community participation may also be treated as a potential competitiveness asset. Local residents and community-based tourism providers may benefit from training in visitor communication, environmental awareness, basic service standards, storytelling, and digital platform use. Such support may make perceived attractiveness more likely to become tourist loyalty.

7. Limitations and Future Research

This study has limitations that should be acknowledged. First, the data were collected from a single regional destination, so the findings should be generalized cautiously to other types of destinations. Second, the study used self-reported data, which may be affected by individual perception, memory, and response tendencies, although common method bias diagnostics were acceptable. Third, the cross-sectional design limits causal inference because the relationships were tested at one point in time. Longitudinal designs could better capture how attractiveness, loyalty, and competitiveness evolve over repeated visits. In addition, the study did not model domestic and international tourist segments separately because the empirical objective was to explain tourists' perception-based evaluation of Dong Thap Muoi rather than to compare market segments by nationality.

Fourth, the criterion-based convenience sampling strategy was appropriate for on-site tourist research but may still involve sampling bias because respondents were not selected from a complete probability sampling frame. Fifth, although the model includes several major antecedents, it does not test all possible drivers of sustainable competitiveness, such as transportation accessibility, destination governance capacity, climate adaptation, or investment quality. Finally, potential endogeneity cannot be ruled out completely in a cross-sectional PLS-SEM design. Future studies may use longitudinal data, multi-source indicators, or alternative estimation strategies to strengthen causal robustness.

8. Conclusion

This study examined sustainable destination competitiveness in Dong Thap Muoi from the tourist perspective and interpreted the issue within a technology-enabled tourism service-system logic. The findings show that destination resources, service quality, environmental commitment, marketing effectiveness, and smart tourism technology all contribute to perceived destination attractiveness. Attractiveness, in turn, strengthens tourist loyalty, while perceived local community support intensifies this transformation. Tourist loyalty then becomes a major driver of sustainable destination competitiveness.

The study suggests that Dong Thap Muoi's sustainable competitiveness cannot be built by relying on resources alone. The findings suggest that strengthening sustainable competitiveness would require more coordinated development of ecological and cultural resources, service quality, digital tourism infrastructure, effective marketing, and community support. By indicating how these elements are linked to attractiveness, loyalty, and sustainable competitiveness, the study offers theoretical insight and cautiously framed practical guidance for building a more resilient and service-oriented destination.

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Appendix A. Measurement items

All items were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

Code	Construct	Item wording
PDME1	Perceived destination marketing effectiveness	This destination is widely promoted through different communication channels.
PDME2		The promotional campaigns for this destination appear more professional than those of similar destinations.
PDME3		Promotional campaigns for this destination appear frequently.
PDME4		Most information and descriptions about this destination are positive and attractive.
PDME5		People who have visited this destination tend to rate it highly and recommend it to me.
PDME6		My friends often introduce this destination to me.
PDTT1	Perceived smart tourism technology	When experiencing this destination, smart tourism technology provides useful information about the destination and the trip.
PDTT2		I can easily use smart tourism technology at this destination.
PDTT3		Smart tourism technology at this destination responds quickly when I need it.
PDTT4		I can easily share travel content and tourism information through smart tourism technology at this destination.
PDTT5		The tourism information provided by smart tourism technology at this destination meets my needs well.
PDTT6		I feel that smart tourism technology at this destination is sufficiently safe to protect my personal information.
DSQ1	Destination service quality	This destination provides good tourism services.
DSQ2		Services at this destination are relatively well organized.
DSQ3		The environment and tourism service spaces at this destination create a pleasant feeling.
DSQ4		The social and cultural environment at this destination supports the tourism experience well.
DSQ5		Services at this destination meet my needs fairly well.
DSQ6		Using services at this destination makes me feel comfortable.
DSQ7		The service system at this destination leaves a positive impression on me.
DRP1	Perceived destination resources	Dong Thap Muoi has attractive landscapes.
DRP2		Dong Thap Muoi has many beautiful natural places worth experiencing.
DRP3		Dong Thap Muoi has many cultural attractions.
DRP4		The cuisine in Dong Thap Muoi is rich and diverse.
DRP5		I feel that Dong Thap Muoi is a safe destination.
EC1	Environmental commitment	This destination clearly shows concern for protecting the natural environment.
EC2		This destination makes efforts to preserve natural resources.
EC3		This destination pays attention to limiting the negative environmental impacts of tourism.
EC4		This destination values ecological conservation in tourism development.
EC5		I perceive that this destination develops tourism in an environmentally responsible manner.
TPDA1	Tourists' perceived destination attractiveness	Dong Thap Muoi is an attractive destination to me.
TPDA2		Dong Thap Muoi is an appealing travel choice.
TPDA3		I consider Dong Thap Muoi a destination worth experiencing.
TPDA4		Dong Thap Muoi stands out to me compared with many other destinations.
TPDA5		Dong Thap Muoi leaves me with an overall positive and appealing impression.
PLCS1	Perceived local community support	Local residents are friendly and hospitable to tourists.
PLCS2		I feel welcomed by the local community at this destination.
PLCS3		Local residents are willing to help tourists when assistance is needed.
PLCS4		I feel safe because of the positive attitudes and support of local residents.
PLCS5		The cooperation of the local community improves my overall experience at the destination.
LOY1	Tourist loyalty	I will say positive things about this destination to others.
LOY2		I will recommend this destination to people looking for travel suggestions.
LOY3		I will encourage my friends and relatives to visit this destination.
LOY4		This destination will be one of my preferred choices in the future.
LOY5		I intend to revisit this destination in the future.
ENV1	Environmental competitiveness of the destination	The natural environment is a distinctive strength of this destination.
ENV2		I perceive that the ecosystem at this destination is relatively well preserved.
ENV3		This destination develops tourism while still paying attention to environmental protection.
ENV4		Environmental factors make this destination more competitive than many others.
ENV5		I believe this destination can maintain its environmental advantage over the long term.
ECO1		Tourism activities at this destination create clear economic value for the local area.

Code	Construct	Item wording
ECO2	Economic competitiveness of the destination	I perceive tourism activities at this destination to have fairly good economic vitality.
ECO3		Tourism at this destination contributes to livelihoods and employment opportunities for local residents.
ECO4		This destination has good prospects for economic development through tourism.
ECO5		Tourism at this destination generates clear economic benefits for the local area, such as jobs and income.
SOC1	Sociocultural competitiveness of the destination	Cultural identity is an important strength of this destination.
SOC2		This destination preserves and promotes local cultural values fairly well.
SOC3		I perceive the social environment at this destination to be relatively positive and pleasant.
SOC4		Tourism development at this destination is relatively harmonious with local community life.
SOC5		Social and cultural values help this destination maintain long-term competitiveness.
SPM1	Sustainable policy and management of the destination	Tourism at this destination is relatively well organized and coordinated.
SPM2		I perceive tourism activities at this destination to be developed in a fairly coherent manner.
SPM3		This destination shows clear concern for sustainable tourism development.
SPM4		I believe this destination is managed in a long-term and responsible way.
SPM5		Current policies and management practices help this destination maintain long-term competitiveness.
TSB1	Tourist satisfaction and positive behavior	I am satisfied with my tourism experience at this destination.
TSB2		The experience at this destination leaves me with positive feelings.
TSB3		I am willing to share positive feelings about my experience at this destination.
TSB4		After the trip, I have a favorable attitude and support this destination.
TSB5		I am willing to engage in positive behaviors that contribute to improving the image of this destination.

Appendix B. Outer loadings

Table B1 reports the first-stage outer loadings for all observed variables. Table B2 reports the second-stage outer loadings after modeling sustainable destination competitiveness as a second-order construct.

Table B1. First-stage outer loadings

Item	Construct	Outer loading
DRP1	DRP	0.796
DRP2	DRP	0.774
DRP3	DRP	0.803
DRP4	DRP	0.848
DRP5	DRP	0.737
DSQ1	DSQ	0.778
DSQ2	DSQ	0.766
DSQ3	DSQ	0.721
DSQ4	DSQ	0.785
DSQ5	DSQ	0.799
DSQ6	DSQ	0.765
DSQ7	DSQ	0.717
EC1	EC	0.754
EC2	EC	0.815
EC3	EC	0.743
EC4	EC	0.804
EC5	EC	0.857
ECO1	ECO	0.738
ECO2	ECO	0.823
ECO3	ECO	0.775
ECO4	ECO	0.768
ECO5	ECO	0.767
ENV1	ENV	0.831
ENV2	ENV	0.834
ENV3	ENV	0.833
ENV4	ENV	0.836
ENV5	ENV	0.772
LOY1	LOY	0.816
LOY2	LOY	0.814
LOY3	LOY	0.790
LOY4	LOY	0.762
LOY5	LOY	0.751
PDME1	PDME	0.768
PDME2	PDME	0.792
PDME3	PDME	0.827

Item	Construct	Outer loading
PDME4	PDME	0.854
PDME5	PDME	0.847
PDME6	PDME	0.736
PDTT1	PDTT	0.781
PDTT2	PDTT	0.759
PDTT3	PDTT	0.734
PDTT4	PDTT	0.815
PDTT5	PDTT	0.758
PDTT6	PDTT	0.743
PLCS1	PLCS	0.843
PLCS2	PLCS	0.826
PLCS3	PLCS	0.762
PLCS4	PLCS	0.817
PLCS5	PLCS	0.830
SOC1	SOC	0.779
SOC2	SOC	0.816
SOC3	SOC	0.805
SOC4	SOC	0.823
SOC5	SOC	0.745
SPM1	SPM	0.814
SPM2	SPM	0.813
SPM3	SPM	0.825
SPM4	SPM	0.715
SPM5	SPM	0.739
TPDA1	TPDA	0.825
TPDA2	TPDA	0.773
TPDA3	TPDA	0.773
TPDA4	TPDA	0.824
TPDA5	TPDA	0.781
TSB1	TSB	0.752
TSB2	TSB	0.827
TSB3	TSB	0.829
TSB4	TSB	0.834
TSB5	TSB	0.714

Table B2. Second-stage outer loadings

Item	Construct	Outer loading	Item	Construct	Outer loading
DRP1	DRP	0.796	PDME4	PDME	0.854
DRP2	DRP	0.774	PDME5	PDME	0.847
DRP3	DRP	0.803	PDME6	PDME	0.736
DRP4	DRP	0.848	PDTT1	PDTT	0.781
DRP5	DRP	0.737	PDTT2	PDTT	0.759
DSQ1	DSQ	0.778	PDTT3	PDTT	0.734
DSQ2	DSQ	0.766	PDTT4	PDTT	0.815
DSQ3	DSQ	0.721	PDTT5	PDTT	0.758
DSQ4	DSQ	0.785	PDTT6	PDTT	0.743
DSQ5	DSQ	0.799	PLCS1	PLCS	0.843
DSQ6	DSQ	0.765	PLCS2	PLCS	0.826
DSQ7	DSQ	0.717	PLCS3	PLCS	0.762
EC1	EC	0.754	PLCS4	PLCS	0.817
EC2	EC	0.815	PLCS5	PLCS	0.830
EC3	EC	0.743	ECO	DSC	0.783
EC4	EC	0.804	ENV	DSC	0.756
EC5	EC	0.857	TSB	DSC	0.733
LOY1	LOY	0.815	SOC	DSC	0.790
LOY2	LOY	0.814	SPM	DSC	0.712
LOY3	LOY	0.790	TPDA1	TPDA	0.825
LOY4	LOY	0.762	TPDA2	TPDA	0.773
LOY5	LOY	0.751	TPDA3	TPDA	0.773
PDME1	PDME	0.768	TPDA4	TPDA	0.824
PDME2	PDME	0.792	TPDA5	TPDA	0.781
PDME3	PDME	0.827			

Appendix C. Discriminant validity: HTMT and Fornell-Larcker

Table C1. HTMT matrix

Construct	DRP	DSC	DSQ	EC	LOY	PDME	PDTT	PLCS	TPDA
DRP									
DSC	0.288								
DSQ	0.349	0.327							
EC	0.343	0.254	0.391						
LOY	0.399	0.664	0.404	0.367					
PDME	0.379	0.251	0.351	0.297	0.276				
PDTT	0.365	0.305	0.326	0.329	0.383	0.349			
PLCS	0.059	0.230	0.052	0.059	0.155	0.064	0.069		
TPDA	0.653	0.441	0.579	0.557	0.651	0.542	0.589	0.038	

Table C2. Fornell-Larcker matrix

Construct	DRP	DSC	DSQ	EC	LOY	PDME	PDTT	PLCS	TPDA
DRP	0.792								
DSC	0.241	0.755							
DSQ	0.302	0.276	0.762						
EC	0.296	0.214	0.342	0.796					
LOY	0.340	0.553	0.348	0.316	0.787				
PDME	0.333	0.215	0.312	0.264	0.241	0.805			
PDTT	0.313	0.253	0.283	0.285	0.327	0.308	0.766		
PLCS	0.051	0.196	0.037	0.023	0.141	0.028	0.053	0.816	
TPDA	0.558	0.368	0.504	0.480	0.553	0.474	0.507	0.020	0.796

Appendix D. Additional structural model diagnostics

Table D1. Collinearity assessment

Relationship	VIF
DRP -> TPDA	1.258
DSQ -> TPDA	1.259
EC -> TPDA	1.232
PDME -> TPDA	1.246
PDTT -> TPDA	1.227
TPDA -> LOY	1.023
PLCS -> LOY	1.004
PLCS x TPDA -> LOY	1.026
LOY -> DSC	1.000

Table D2. Effect size assessment

Relationship	f ²	Interpretation
DRP -> TPDA	0.168	Medium
DSQ -> TPDA	0.093	Small
EC -> TPDA	0.078	Small
PDME -> TPDA	0.061	Small
PDTT -> TPDA	0.111	Small-to-medium
TPDA -> LOY	0.418	Large
PLCS -> LOY	0.022	Small
PLCS x TPDA -> LOY	0.081	Small
LOY -> DSC	0.440	Large