

PERCEIVED DIGITALIZATION AND TOURIST LOYALTY: THE MEDIATING ROLE OF PERSONALIZED EXPERIENCE IN POST-PANDEMIC TOURISM

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Abstract:

The accelerated digitalization of tourism services after the COVID-19 pandemic has reshaped the tourist journey, but the presence of digital tools does not automatically generate loyalty. This cross-sectional study examines whether a personalized tourism experience statistically mediates the association between perceived digitalization and revisit intention and recommendation behavior in the Romanian post-pandemic tourism context. The analysis used a non-probabilistic convenience and snowball sample of 419 Romanian adults with recent travel experience. The constructs were assessed with reflective multi-item measures refined through a focus group, cognitive pretesting, and pilot testing. Confirmatory factor analysis, structural equation modeling, and bias-corrected bootstrapping with 5,000 resamples were conducted in AMOS. Perceived digitalization was positively associated with a personalized tourism experience ($\beta = 0.630, p < 0.001$), which was positively associated with loyalty intentions ($\beta = 0.485, p < 0.001$). The direct association between digitalization and loyalty intentions remained significant ($\beta = 0.228, p < 0.001$), while the standardized indirect effect was $\beta = 0.305$, 95% BC CI [0.221, 0.414] ($B = 0.379$), supporting partial mediation. The indirect effect was numerically larger than the direct effect, although the difference between them was not formally tested. The model explained 39.7% of the variance in personalization and 42.6% of the variance in loyalty intentions. The findings indicate that digitalization is more strongly associated with loyalty when tourists perceive it as personally relevant, convenient, and adaptive; causal conclusions remain limited by the cross-sectional, self-report design.

Keywords: *perceived digitalization; personalized tourism experience; behavioral loyalty intentions; revisit intention; recommendation behavior; post-pandemic tourism; Romania.*

JEL Classification: M31; L83; O33.

1. Introduction

The COVID-19 pandemic accelerated the digital transformation of tourism services and altered how tourists search for information, compare alternatives, make reservations, interact with providers, and evaluate experiences. Contactless interfaces, online communication, and technology-enabled service delivery became especially salient because they were associated with convenience, flexibility, safety, and perceived control [1–4].

In the post-pandemic tourism market, digitalization is part of the overall customer journey rather than a peripheral operational feature. Nevertheless, digital booking, automated procedures, or mobile communication may simplify transactions without necessarily producing a relevant, trusted, or memorable experience. Digitalization should therefore be evaluated not only by the presence of technology, but by the experiential value tourists perceive across digital and physical touchpoints [5, 6].

Prior studies have linked digital transformation with customer experience and behavioral intentions, and recent hospitality research has clarified how service design can generate perceived personalization [5–9]. However, the specific mechanism by which tourists' perceptions of digitalization translate into revisit and recommendation intentions has been insufficiently tested within an integrated post-pandemic mediation model. This gap is relevant because positive digitalization-loyalty associations may depend on whether technology reduces effort and enables individualized relevance rather than merely automating service delivery.

The proposed mechanism is organized through the Stimulus-Organism-Response framework. Perceived digitalization represents an external service stimulus; personalized tourism experience represents the tourist's internal experiential evaluation of fit, recognition, and relevance; and revisit intention and recommendation behavior represent the response [10]. This specification

complements service-dominant logic and customer-journey theory by explaining how technology-enabled resources may become relational value through the tourist's experience [6, 11].

The purpose of this study is to examine the statistical mediating role of personalized tourism experience in the association between perceived digitalization and tourists' revisit intention and recommendation behavior. The study addresses the following research question: To what extent is the association between perceived digitalization and behavioral loyalty intentions transmitted through personalized tourism experience among Romanian tourists with post-pandemic travel experience?

The study makes three delimited contributions. Theoretically, it shifts the explanation from a direct technology-loyalty logic to an S-O-R-compatible experience mechanism. Empirically, it tests the direct, indirect, and total associations in a focused latent-variable model using data from an emerging European tourism market. Managerially, it distinguishes technology adoption from experience-oriented digitalization and identifies personalization as a pathway through which digital investments may become loyalty-relevant. These contributions concern behavioral intentions and perceived service characteristics; they do not establish actual repeat behavior or causal temporal ordering.

2. Literature Review and Hypotheses

Digitalization in tourism refers to the integration of digital technologies into the promotion, purchase, delivery, experience and evaluation of tourism services. It encompasses platforms, mobile applications, booking and payment systems, customer relationship management, artificial intelligence, online reviews, self-service technologies and contactless interfaces. These systems can increase information availability, reduce transaction costs and connect pre-consumption, on-site and post-consumption touchpoints [5, 7, 12–14].

The pandemic strengthened the role of technology because remote and contact-minimized interactions could reduce uncertainty while preserving access to services. Post-pandemic tourists may consequently evaluate digital touchpoints through both functional criteria, such as speed and accessibility, and experiential criteria, such as control, continuity, and perceived safety [2–4].

Digitalization is not inherently beneficial. Poorly designed systems can generate complexity, service failure, distrust, or exclusion. Their value depends on usefulness, ease of use, reliability, fulfillment, privacy protection, and compatibility with tourists' technology readiness [15, 16]. Moreover, personalization based on opaque data practices may be experienced as intrusive rather than helpful [17].

In tourism marketing, digitalization can function as both an operational and a relational resource. Digital systems enable providers to collect preference information, coordinate touchpoints, recommend alternatives, and adapt service interactions. Smart-service and personalization research therefore suggests that perceived digitalization should be positively related to the extent to which tourists experience the service as individually relevant and responsive [7–9].

H1. Perceived digitalization is positively associated with personalized tourism experience.

Personalized tourism experience refers to the degree to which tourists perceive that offers, communication, and service delivery are adapted to their preferences, needs, motivations, and situational expectations. In services marketing, personalization is associated with recognition, relevance, convenience, and customer-specific value [18].

In digital environments, personalization can be enabled by customer data, recommender systems, customer relationship management, and adaptive interfaces. These mechanisms may reduce search effort and improve decision quality by presenting alternatives that better match individual preferences [19, 20]. Recent tourism research further shows that perceived personalization depends on the configuration of service-design elements rather than on a single technological feature [8, 9].

Personalization is particularly relevant in tourism because consumption is experiential, heterogeneous and context-dependent. Tourists differ in motivations, budget constraints, risk

tolerance, preferred activities, desired autonomy and cultural interests. Relevant recommendations, flexible packages, tailored communication, and preference-sensitive service delivery can strengthen functional and emotional fit while reducing procedural effort.

When tourists perceive that a provider recognizes and accommodates their needs, the service may be evaluated as more valuable and less uncertain. This can support revisit intention and recommendation behavior, although these outcomes remain intentions rather than observed loyalty. Contemporary personalization studies and a meta-analysis of tourist loyalty identify experiential relevance, satisfaction-related evaluations, and relationship quality as important correlates of favorable behavioral intentions [8, 9, 21].

H2. Personalized tourism experience is positively associated with tourists' revisit intention and recommendation behavior.

Tourist loyalty is frequently operationalized through revisit intention and willingness to recommend a destination or provider [22, 23]. These indicators are strategically important because they anticipate repeat patronage and positive word-of-mouth, but they should be interpreted as behavioral loyalty intentions rather than as actual repeat behavior [21].

Perceived digitalization may also be directly associated with loyalty intentions by reducing effort, increasing access to information, and improving perceived control. Digital booking, rapid communication, contactless procedures, and real-time updates can support a coherent customer journey when technological and human service elements are integrated [4, 6, 16].

Nevertheless, prior theory does not imply that more technology automatically produces stronger loyalty. Direct benefits may arise from efficiency and procedural simplicity, while negative reactions may emerge from unreliability, low technology readiness, privacy concerns, or the loss of valued human contact [4, 16, 17]. A positive direct association is therefore expected, but its magnitude may depend on the experiential meaning generated by the technology.

H3. Perceived digitalization is positively associated with tourists' revisit intention and recommendation behavior.

The mediating role of personalized tourism experience provides the central explanatory mechanism. Within S-O-R, digitalized service features operate as stimuli, personalization reflects an organism-level evaluation of personal fit and relevance, and loyalty intentions represent the response [10]. Service-dominant logic similarly locates value in interaction and resource integration, while customer-journey theory emphasizes cumulative evaluations across touchpoints [6, 11].

Digitalization can thus be related to loyalty both directly, through convenience and control, and indirectly, through the tourist's perception that the experience is adapted to individual expectations. The indirect pathway is theoretically distinct because it specifies how a technological service infrastructure acquires experiential and relational meaning [7–9].

The post-pandemic context reinforces the relevance of this mechanism. Tourists may simultaneously seek low-effort interaction, clarity, flexibility, and personal meaning. Generic digital tools may satisfy functional requirements without creating relationship value, whereas transparent and preference-sensitive digital touchpoints may support stronger loyalty intentions. This benefit remains conditional on respectful and controllable data use [2, 3, 17].

H4. Personalized tourism experience statistically mediates the association between perceived digitalization and tourists' revisit intention and recommendation behavior.

The focused model specifies perceived digitalization as the predictor, personalized tourism experience as the mediator, and revisit intention and recommendation behavior as the outcome. The direct path is retained to determine whether the estimated indirect association is compatible with partial or full mediation. Because the data are cross-sectional, the directional specification is theory-based and should not be interpreted as proof of temporal causality.

3. Data and Methodology

The study uses a quantitative, explanatory, and cross-sectional design embedded in a broader mixed-method doctoral project on post-pandemic consumer behavior in tourism services. The present article reports a focused latent-variable analysis of the digitalization-personalization-loyalty mechanism. The directional paths are grounded in theory, but the single-wave design supports statistical association and indirect-effect estimation rather than causal inference.

Measurement development preceded the main survey. A 90-minute online focus group conducted in January 2025 with seven Romanian travelers (four women and three men, aged 23-45 years) was used to examine preliminary content and face relevance and to adapt the terminology to accommodation, food-service, and leisure contexts. The discussion was analyzed through the six-stage thematic procedure proposed by Braun and Clarke [24]. It was followed by cognitive pretesting with five respondents and a pilot study with 30 recent travelers, which informed wording, examples, and the removal of redundant items.

3.1. Data, sample and ethical safeguards

The target population consisted of Romanian adults with direct post-pandemic tourism experience. Eligibility required a minimum age of 18 years and at least one tourism trip after the lifting of the main pandemic restrictions. These criteria ensured that the constructs referred to evaluations of actual tourism-service encounters rather than hypothetical preferences.

The final sample consisted of 419 respondents. Data were collected between April and June 2025. The questionnaire was implemented mainly in Google Forms and distributed through digital travel communities, thematic groups, and professional networks. A non-probabilistic convenience strategy combined with snowball recruitment facilitated access to eligible travelers but does not provide population-representative estimates; generalization is therefore analytical and contextual rather than statistical.

Ten paper questionnaires were additionally administered face-to-face, seven in urban areas and three in rural areas, using the same wording and response format as the online instrument. Participation was voluntary, informed and anonymous. The opening page described the study purpose, confidentiality, data use and the right to withdraw. No personal identifiers were collected; files were stored securely, accessed only by the research team, and analyzed at the aggregate level.

3.2. Scale development and measurement

The empirical model includes three reflective latent constructs: perceived digitalization (DIGI) as predictor, personalized tourism experience (PET) as mediator, and revisit intention and recommendation behavior (IRR) as the indicator of behavioral loyalty intentions (Table 1).

Table No. 1. Scale development and measurement framework

Construct	Role	Items	Measured content	Development basis
Perceived digitalization (DIGI)	Predictor	26 initial / 9 retained	Digital access, information, payment and service interaction	Contextual adaptation; focus group, cognitive pretest and pilot [5, 7].
Personalized tourism experience (PET)	Mediator	15 initial / 10 retained	Preference recognition and adapted offers, communication and service	Personalization literature plus qualitative and pilot refinement [8, 9].
Revisit intention and recommendation behavior (IRR)	Outcome	12 initial / 8 retained	Intended return and recommendation	Tourism-loyalty literature plus qualitative and pilot refinement [22, 23].

Source: Author's elaboration based on the research instrument and the cited scale-development literature.

Perceived digitalization refers to tourists' evaluations of technology-enabled access, information, payment, communication, and service processes. The initial 26 items were literature-

derived and adapted to accommodation, food-service and leisure settings [5, 7]. Nine indicators were retained after psychometric purification.

Personalized tourism experience refers to the perceived adaptation of the tourism offer and service interaction to individual preferences, needs and expectations. The initial 15 items were informed by service-design and hotel-personalization research [8, 9]; ten indicators were retained.

Revisit intention and recommendation behavior capture willingness to return to and recommend tourism services, destinations, or providers. The initial 12 items were adapted from tourism loyalty research [22, 23]; eight indicators were retained. The construct represents self-reported intentions, not observed repeat behavior.

All items used a five-point Likert response format from 1 (strongly disagree) to 5 (strongly agree). Reflective specification was used because the observed indicators were treated as manifestations of each latent perception. Focus-group refinement, cognitive pretesting and pilot testing supported contextual clarity, while final item retention was based jointly on factor loadings, cross-loadings, communalities, internal consistency and theoretical coherence.

3.3. Data screening and measurement assessment

The analytical fields in the online questionnaire were mandatory, resulting in no missing item-level values. Univariate outliers were screened through standardized scores (orientation threshold $|z| > 3.29$) and boxplots; flagged responses were rare and plausible. Multivariate outliers were examined through Mahalanobis distance at $p < 0.001$. Forty-seven cases (11.2%) exceeded the $\chi^2(27)$ critical value of 55.48 at $p < 0.001$. Sensitivity checks showed no substantive change in loadings or structural coefficients, so the cases were retained.

Univariate distributions were generally compatible with Maximum Likelihood estimation (approximately $|\text{skewness}| < 2$ and $|\text{kurtosis}| < 7$), although substantial multivariate non-normality was detected (Mardia's multivariate kurtosis = 482.257, critical ratio = 124.727). Bootstrap estimation was therefore used for indirect effects and confidence intervals. Collinearity checks in the broader structural model produced VIF values between 2.40 and 4.16 and tolerances above 0.20.

Potential common-method variance was addressed procedurally through anonymity, neutral wording, and the separation of items into thematic blocks. The exploratory solution yielded eight theoretically distinct factors without problematic cross-loadings, with KMO = 0.971 initially and KMO = 0.963 after purification; Bartlett's test was significant ($p < 0.001$). This pattern does not indicate a dominant single method factor, although common-method bias cannot be ruled out completely in a single-source design. Item purification combined exploratory analysis with conceptual review. From the original instrument, DIGI was reduced from 26 to 9 items, PET from 15 to 10 items, and IRR from 12 to 8 items. Retained standardized loading ranges were 0.709–0.874 for DIGI, 0.751–0.909 for PET, and 0.776–0.872 for IRR. Reliability was assessed through Cronbach's alpha, composite reliability, and omega; convergent validity through average variance extracted; and discriminant validity through the Fornell-Larcker criterion and HTMT [25–29].

3.4. Structural model and mediation testing

The focused three-construct mediation model was estimated in AMOS v. 20 using Maximum Likelihood. It included the DIGI→PET path, the PET→IRR path, the direct DIGI→IRR path, and the indirect DIGI→PET→IRR effect. Model evaluation considered χ^2/df , CFI, TLI and RMSEA, standardized and unstandardized coefficients, statistical significance and explained variance (R^2).

The indirect effect was tested with 5,000 bootstrap resamples and a bias-corrected 95% confidence interval; mediation was supported when the interval excluded zero [27, 30]. Because direct and indirect effects were estimated from cross-sectional observations, terms such as predictor, pathway and mediation describe the specified statistical model and do not demonstrate temporal causation.

4. Results

4.1. Sample characteristics and measurement quality

The sample was demographically heterogeneous but not population-representative. Women constituted 75.2% of respondents ($n = 315$) and men 24.8% ($n = 104$). Most respondents lived in urban areas (79.7%) and had university or postgraduate education (83.5%). The distributions also indicate substantial participation by travelers aged 60 years or older (26.3%), those under 30 years (23.6%), and those aged 40-49 years (21.5%). These characteristics, especially the gender, residence, and education concentrations, should be considered when interpreting external validity.

Table 2 presents selected sociodemographic and tourism-behavior characteristics reported in the database. The categories are descriptive and should not be interpreted as representative estimates of the Romanian tourist population.

Table No. 2. Selected characteristics of the sample ($N = 419$)

Characteristic	Category/distribution	%	Note
Gender	Women; men	75.2%; 24.8%	Female majority
Age (selected groups)	< 30; 40-49; ≥ 60 years	23.6%; 21.5%; 26.3%	Broad age coverage
Residence	Urban	79.7%	Urban majority
Education	University or postgraduate	83.5%	High education
Occupational status	Employees; entrepreneurs/freelancers	77.8%; 13.6%	Economically active
Monthly income per household member	RON 3,001-7,000; above RON 7,001	57.1%; 14.1%	Mid-to-high income
Main travel purpose	Recreation; business	70.6%; 12.2%	Leisure majority
Travel companions	Family	64.7%	Family travel
Annual travel frequency	1-2 trips; 3-5 trips	55.8%; 35.6%	One to five trips typical
Accommodation preference	3-5-star hotels; serviced apartments; guesthouses	40.3%; 22.0%; 20.8%	Mixed accommodation

Source: Author's calculations based on the survey database, 2025.

The three focal constructs showed high internal consistency and adequate convergent validity. The standardized indicator loadings were substantial; the lowest loading for PET was 0.751. All AVE values exceeded 0.50, and all reliability coefficients exceeded 0.70 (Table 3).

Table No. 3. Reliability and convergent validity of the focal constructs

Construct	n	Loadings	AVE	CR	α	ω
Perceived digitalization	9	0.709–0.874	0.636	0.940	0.939	0.940
Personalized tourism experience	10	0.751–0.909	0.719	0.962	0.962	0.962
Revisit intention and recommendation behavior	8	0.776–0.872	0.716	0.953	0.948	0.950

Source: Author's calculations based on the survey database, 2025.

Note: Loading ranges are standardized; AVE = Average Variance Extracted.

Fornell–Larcker comparisons supported discriminant validity: the square roots of AVE were 0.797 for DIGI, 0.848 for PET, and 0.846 for IRR, each exceeding the corresponding latent correlations (table 4). HTMT values ranged from 0.538 to 0.643 and remained below the conservative threshold of 0.85 [25, 28].

Table No. 4. Discriminant validity of the focal constructs

Construct	DIGI	PET	IRR
DIGI	0.797	0.638	0.538
PET	0.631	0.848	0.643
IRR	0.534	0.629	0.846

Source: Author's calculations. Note: Bold diagonal values are $\sqrt{AVE}$; values below the diagonal are latent correlations; values above the diagonal are HTMT coefficients.

4.2. Structural paths and mediation estimates

The focused mediation model showed mixed, marginal-to-acceptable fit: $\chi^2(321) = 1271.405$, $p < 0.001$, $\chi^2/df = 3.961$, CFI = 0.914, TLI = 0.906, RMSEA = 0.084, 90% CI [0.079, 0.089], PCLOSE < 0.001. The model explained 39.7% of the variance in PET ($R^2 = 0.397$) and 42.6% of the variance in IRR ($R^2 = 0.426$). Figure 1 presents the standardized path estimates.

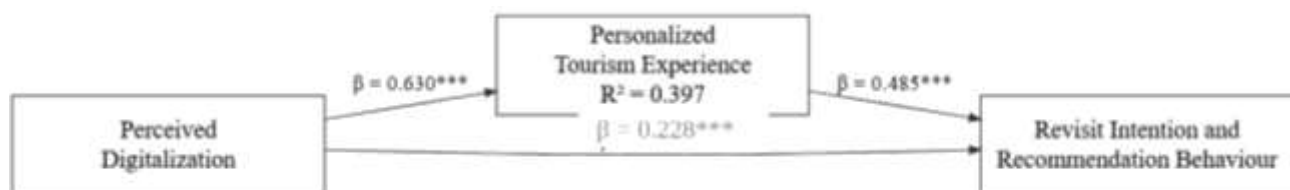


Figure 1. Estimated mediation model linking perceived digitalization, personalized tourism experience, and behavioral loyalty intentions

Source: Author's calculations based on AMOS v. 20 output.

Note. Standardized coefficients reported: $R^2_{PET} = 0.397$; $R^2_{IRR} = 0.426$. *** $p < 0.001$.

Consistent with H1, perceived digitalization was positively associated with personalized tourism experience ($\beta = 0.630$, 95% BC CI [0.545, 0.710], $B = 0.611$, $p < 0.001$). Within the specified model, higher evaluations of digitalized tourism services corresponded to higher perceived personalization.

Consistent with H2, personalized tourism experience was positively associated with revisit intention and recommendation behavior ($\beta = 0.485$, 95% BC CI [0.347, 0.624], $B = 0.620$, $p < 0.001$). Personalization therefore represented a substantial correlate of behavioral loyalty intentions.

Consistent with H3, the direct path from perceived digitalization to revisit intention and recommendation behavior remained positive and statistically significant after PET was included ($\beta = 0.228$, 95% BC CI [0.094, 0.366], $B = 0.283$, $p < 0.001$). This coefficient represents an association conditional on PET, not an autonomous causal effect.

Table 5 presents the direct structural paths in the mediation model.

Table No. 5. Direct structural paths in the mediation model

H	Path	β	B	p	95% BC CI (β)	Result
H1	Perceived digitalization → Personalized tourism experience	0.630	0.611	< 0.001	[0.545; 0.710]	Supported
H2	Personalized tourism experience → Revisit intention and recommendation behavior	0.485	0.620	< 0.001	[0.347; 0.624]	Supported
H3	Perceived digitalization → Revisit intention and recommendation behavior	0.228	0.283	< 0.001	[0.094; 0.366]	Supported

Source: Author's calculations based on AMOS v. 20 bootstrap output.

The bootstrap analysis supported H4. The standardized indirect association between perceived digitalization and IRR through PET was positive and statistically significant ($\beta = 0.305$, 95% BC CI [0.221, 0.414], $B = 0.379$, $p < 0.001$). Because the interval excluded zero and the conditional direct path also remained significant, the estimated pattern was compatible with partial mediation. The standardized total association was $\beta = 0.533$, 95% BC CI [0.427, 0.622] ($B = 0.662$, $p < 0.001$).

Table 6 separates the direct, indirect and total components. Confidence intervals refer to standardized effects (β).

Table No. 6. Direct, indirect and total effects

Effect	β	B	p	95% BC CI (β)	Interpretation
DIGI $\rightarrow$ PET	0.630	0.611	< 0.001	[0.545; 0.710]	Positive direct association
PET $\rightarrow$ IRR	0.485	0.620	< 0.001	[0.347; 0.624]	Positive direct association
DIGI $\rightarrow$ IRR, conditional on PET	0.228	0.283	< 0.001	[0.094; 0.366]	Positive conditional direct association
DIGI $\rightarrow$ PET $\rightarrow$ IRR	0.305	0.379	< 0.001	[0.221; 0.414]	Significant indirect association; partial mediation
Total DIGI $\rightarrow$ IRR association	0.533	0.662	< 0.001	[0.427; 0.622]	Positive total association

Source: Author's calculations based on AMOS v. 20 bootstrap estimates.

The results support H4. Both the indirect pathway and the conditional direct path were statistically significant, consistent with partial mediation. The standardized indirect estimate ($\beta = 0.305$) was numerically larger than the conditional direct estimate ($\beta = 0.228$), but no inferential test of the difference between these two coefficients was conducted.

The standardized structural equations are:

$$PET = 0.630 \times DIGI + \zeta_1 \quad (1)$$

$$IRR = 0.485 \times PET + 0.228 \times DIGI + \zeta_2 \quad (2)$$

where DIGI represents perceived digitalization, PET represents personalized tourism experience, IRR represents revisit intention and recommendation behavior, and ζ_1 and ζ_2 are structural disturbance terms.

Overall, the observed covariance structure is consistent with the proposed mechanism: perceived digitalization is related to loyalty intentions both directly and through tourists' perceptions of personalization. The evidence supports the theoretical ordering of the model but, because all variables were measured at one time, it does not exclude alternative temporal or reciprocal explanations.

5. Discussion

The study examined whether personalized tourism experience statistically mediates the association between perceived digitalization and revisit intention and recommendation behavior. The results were consistent with all four hypotheses: DIGI was positively related to PET, PET was positively related to IRR, the conditional direct DIGI-IRR path remained significant, and the bootstrapped indirect effect excluded zero. These findings concern associations among perceptions and intentions and should not be read as experimental evidence that digitalization causes loyalty.

For H1, the statistical result indicates that tourists who evaluated technology-enabled tourism processes more positively also perceived a greater degree of personalization. Substantively, this pattern is compatible with the view that digital systems generate value when they reduce search and procedural effort, coordinate information across touchpoints, and enable preference-sensitive

service design. It converges with digital-transformation, smart-service, and personalization research emphasizing integrated, data-informed, and adaptive interactions [5–9].

For H2, personalized tourism experience showed a substantial positive association with behavioral loyalty intentions. This suggests that recognition, relevance, and adaptation may lower uncertainty and increase the perceived fit between tourist and provider. The result is consistent with service-design evidence on perceived personalization and with broader tourism-loyalty findings showing that favorable experience evaluations and relationship quality are linked with revisit and recommendation intentions [8, 9, 21].

For H3, perceived digitalization retained a smaller but significant conditional direct association with IRR. A plausible substantive interpretation is that convenience, transparency, rapid access to information and perceived control have loyalty-relevant value even when personalization is held constant. This interpretation is consistent with e-service quality and customer-journey research [6, 16]. However, it does not imply that every digital intervention improves loyalty; high-tech and no-touch services can also create friction or reduce valued human interaction when they are poorly integrated [4].

The H4 mediation result provides the principal theoretical contribution. Under the S-O-R interpretation, digitalization functions as the stimulus, perceived personalization captures an organism-level appraisal of relevance and fit, and loyalty intentions represent the response [10]. The significant indirect effect clarifies a mechanism that is not visible in a simple technology-outcome association. Its standardized magnitude was numerically greater than the conditional direct path, but the study did not test whether that numerical difference was statistically significant.

The findings therefore converge with research that treats technology as an enabler of seamless and personalized experiences [6–9], while qualifying deterministic interpretations of digital transformation. Digitalization may remain generic, unreliable or intrusive, and these conditions can weaken trust or perceived value [16, 17]. The present results support a contingent interpretation: technology is more strongly connected with loyalty intentions when tourists experience it as useful, adaptive and personally relevant.

The theoretical contribution is threefold. First, the study operationalizes an S-O-R-compatible sequence from a perceived technological stimulus to an experiential appraisal and then to behavioral intentions. Second, it identifies personalization as a statistically supported, but not exclusively explanatory, pathway because the direct association remains significant. Third, it distinguishes perceived digitalization from objective technological sophistication; the model explains tourists' evaluations of technology rather than the technical capabilities of providers.

Managerially, tourism organizations should assess digital initiatives by the customer outcomes they support rather than by adoption alone. Booking and communication systems should reduce effort, preserve continuity across touchpoints and allow tourists to express relevant preferences. Recommendations and service adaptations should be timely and intelligible. These implications are directly aligned with the measured perceptions; more specific prescriptions regarding artificial intelligence or algorithmic optimization require additional evidence because those technologies were not separately tested.

Personalization also requires transparent and proportionate data practices. Providers should explain why information is requested, offer meaningful preference controls and preserve access to human assistance. This boundary condition matters because excessive or opaque personalization can be interpreted as surveillance or intrusion [17]. Experience-oriented digital strategy therefore combines relevance with privacy, controllability and service recovery.

Methodologically, the study benefits from multi-stage instrument refinement, a sample of 419 respondents, bootstrap inference and convergent evidence from reliability and discriminant-validity indicators. At the same time, the sample was non-probabilistic and demographically concentrated, and all focal variables were self-reported in one session. These constraints warrant cautious interpretation and prevent strong causal or population-level claims.

Taken together, the results provide evidence for an experience-based explanation of post-pandemic loyalty intentions. Perceived digitalization matters in its own right, but a meaningful share

of its association with revisit and recommendation intentions is transmitted through personalized tourism experience.

6. Conclusions

This study examined the statistical mediating role of personalized tourism experience in the association between perceived digitalization and revisit intention and recommendation behavior among 419 Romanian adults with post-pandemic travel experience. The direct, mediator-outcome and indirect paths were positive and statistically significant, producing a pattern compatible with partial mediation.

The findings indicate that tourists' evaluations of digitalized service processes are connected with loyalty intentions not only through convenience and control, but also through perceived adaptation to individual preferences. Personalization therefore provides an experiential pathway through which perceived technological value is associated with behavioral intentions.

The theoretical contribution consists in specifying and testing an S-O-R-compatible technology-experience-response sequence. The model advances beyond a simple direct-effect formulation while retaining the possibility that digitalization is related to loyalty through mechanisms other than personalization. It also clarifies that the dependent construct represents intended return and recommendation, not observed behavioral loyalty.

For tourism providers, the results support experience-oriented digital strategy. Digital touchpoints should simplify decisions, preserve transparency, permit preference expression and remain integrated with the relational dimension of service. Technology adoption should be evaluated by perceived usefulness, relevance and controllability rather than by the number of digital features deployed.

Destination management organizations may support smaller providers through shared platforms, training and privacy-compliant data practices. Such initiatives should prioritize interoperable, low-effort and accessible systems that improve tourists' experience without forcing exclusively digital interaction.

The study has several limitations. Its cross-sectional design does not establish temporal causality or exclude reciprocal relationships. Convenience and snowball recruitment limit population generalization, while the predominance of women, urban residents and highly educated respondents may influence estimates. Self-report data collected in one session remain vulnerable to common-method effects despite procedural and statistical controls. IRR measures intentions rather than actual revisits or recommendations, and DIGI and PET capture perceptions rather than objective technological sophistication.

Future research should use longitudinal or experimental designs to establish temporal ordering and examine actual repeat behavior. Probability-based or stratified samples could improve external validity, while cross-country and service-type comparisons could test contextual stability. Alternative models should include digital literacy, technology readiness, privacy concern, perceived risk and preference for human interaction as moderators. Objective indicators of technology deployment and qualitative inquiry into the boundary between useful personalization and intrusiveness would further strengthen explanation.

In conclusion, the data are consistent with the proposition that perceived digitalization is more strongly connected with post-pandemic loyalty intentions when it is experienced as personalized, relevant and low effort. Technology matters not simply because it is present, but because tourists perceive that it improves the fit and usability of the service experience.

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