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Research Article

From empowerment to advocacy: A serial mediation model of women's support for rural tourism development in Saty village, Kazakhstan

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Abstract

Rural tourism is often promoted as a means of advancing gender equality, yet little is known about how women's empowerment translates into lasting behavioral support for tourism, particularly outside a few well-studied regions. Drawing on Empowerment Theory, Social Exchange Theory and the Capability Approach, this study tests a model in which women's economic, social and political empowerment shape their satisfaction with tourism, which influences participation and long-term support for tourism development, both directly and through participation. A census survey covered 194 female residents of Saty village, Kazakhstan, recognized as a UN Tourism Best Tourism Village (initial response rate 87.8%; effective rate 81.5%). Structural equation modelling with 5,000 bias-corrected bootstrap resamples confirmed a six-factor measurement model and supported all ten hypothesized paths. Social empowerment was the strongest predictor of satisfaction (β = 0.332), followed by economic (β = 0.262) and political empowerment (β = 0.215). Satisfaction predicted participation (β = 0.377), and support was predicted by both participation (β = 0.243) and satisfaction (β = 0.286). Participation partially mediated the effect of satisfaction on support (indirect β = 0.091; total β = 0.378). Satisfaction also carried the effects of economic (β = 0.099), social (β = 0.125) and political empowerment (β = 0.081) to participation. The results show that satisfaction acts both as a direct driver of advocacy and as an indirect route to support. Social empowerment, understood as recognition, skill development and access to networks, emerges as the main lever for gender-responsive tourism policy in Central Asia.

Key words: Capability approach, Central Asia, community participation, gender equality, gender-responsive policy, resident satisfaction, social exchange theory

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1. Introduction

Rural tourism holds a prominent position in the global sustainable development framework, serving as a catalyst for inclusive growth and structural transfor-

mation within peripheral regions (Singh et al. 2023; Vujko et al. 2024). International organizations increasingly advocate for rural tourism to advance the Sustainable Development Goals (SDGs), placing a strong emphasis on gender equity across low- and middle-income nations (UNWTO 2017). Beyond its immediate capacity to generate local income, scholarly literature conceptualizes rural tourism as a key driver for dismantling systemic barriers to female empowerment (Scheyvens 2000; Guo et al. 2023). This perspective directly aligns with the broader priorities of SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth).

A robust body of empirical research reinforces this perspective. Direct involvement in tourism activities has been consistently associated with independent revenue generation, broader livelihood diversification, and enhanced agency in domestic decision-making (Tolkach and King 2015; Westley 2022). Small-scale entrepreneurial ventures, including homestay operations, handicraft manufacturing, and hospitality service delivery, routinely foster individual self-esteem and personal self-efficacy (Hampton and Jeyacheya 2020). Concurrently, community-based tourism frameworks offer women elevated social visibility and structured avenues for participation in local governance structures (Dolezal and Novelli 2022). Synthesizing these developments, recent scholarly reviews emphasize that female empowerment in tourism extends far beyond basic financial gains, operating instead as a nuanced, context-bound phenomenon that encompasses economic, cultural, and personal dimensions of transformation (Efthymiadou and Farmaki 2024).

Notwithstanding these advances, the existing literature exhibits significant geographic concentration. The vast majority of empirical investigations center on Southeast Asia, Africa, and Latin America (Bhan 2014; Tervo-Kankare et al. 2018; Sulaj and Themelko 2024). Consequently, Central Asia, and Kazakhstan in particular, remains largely under-examined despite the region's explicit strategic push toward ecotourism, alongside a socio-cultural landscape where entrenched patriarchal traditions intersect with swift post-Soviet economic restructuring (Yousafzai et al. 2023; Cytlak and Mamadaminova 2024). Relevant regional insights are nevertheless beginning to surface. Empirical evidence from Kazakhstan's protected areas provides direct support for this perspective: within destinations such as the Aksu-Zhabagly Nature Reserve, community acceptance of ecotourism (especially among female residents) has been identified as a critical catalyst for advancing Sustainable Development Goals 5 and 8 (Akbar et al. 2022), suggesting that women's engagement in ecotourism is deeply tied to broader community transformation rather than simple household income generation.

A comparable dynamic is evident in Kyrgyzstan's community-based tourism (CBT) sector, where female micro-entrepreneurs leverage collective enterprise both to advance their economic interests and to quietly renegotiate patriarchal gender expectations (Young 2021; Yousafzai et al. 2023; Yousafzai and Aljanova 2025). Similarly, qualitative inquiry in the Aral Sea basin demonstrates that women across Uzbekistan and Kazakhstan mobilize social capital, including family, peer, and institutional networks, to leverage livelihood resilience and sustain tourism ventures through periods of severe ecological and economic hardship (Filimonau et al. 2024). Cross-cultural evaluations further indicate that gender-responsive tourism enterprises demonstrate greater resilience

when aligned with local cultural norms rather than operating in direct opposition to them (Kutlu and Ngoasong 2024).

Across Central Asia, female tourism entrepreneurship operates at the intersection of cultural heritage and economic necessity (Cytlak and Mamadaminova 2024; Yousafzai et al. 2025). Existing regional literature identifies three interconnected mechanisms driving this dynamic: socio-economic transformation, as women monetize traditional domestic hospitality and artisanal craft skills to elevate their agency in household decision-making; eco-ethical standing, as women align local environmental stewardship with national heritage conservation to enhance their public visibility and perceived social contribution; and political and civic agency, as economic and social gains translate into greater representation within village councils and local tourism governance bodies, the political empowerment dimension evaluated in this study. Collectively, these regional findings position ecotourism not merely as a supplementary source of revenue, but as an essential driver of social, economic, and civic revitalization for women in Central Asia.

Despite these preliminary findings, no research to date has quantitatively modeled the complex, sequential pathway linking tourism engagement to multidimensional empowerment, and subsequently to long-term behavioral support for the sector, among rural women in Kazakhstan.

This gap is also an opportunity to connect the present study more explicitly with tourism scholarship already published in this journal. Journal of the Bulgarian Geographical Society has examined how local residents evaluate and are affected by tourism development (Vodenska 2018) and how heritage-based tourism products can be built from the ground up in post-socialist Balkan settings (Petrevska and Andreeski 2024); the present study extends this line of inquiry by foregrounding the specifically gendered mechanisms through which rural residents translate tourism engagement into sustained community support.

This study addresses these gaps by testing a mixed direct and serial (double) mediation model in which women's economic, social, and political empowerment shape satisfaction with tourism, which in turn drives participation and, both directly and through participation, long-term support for tourism development, using adapted and expert-reviewed measurement items administered to a census sample of women in Saty village, Almaty Region, a UN Tourism (UNWTO) Best Tourism Village recognized in 2023. In doing so, the study provides the first systematic empirical evidence to inform gender-responsive tourism governance in this setting, extending the literature beyond restrictive financial indicators to reveal whether, and through what specific sequential mechanisms, tourism fosters genuine empowerment for rural women in Kazakhstan.

2. Materials and methods

2.1. Theoretical framework and hypothesis development

2.1.1. Integration of theoretical perspectives

To explain rural women's engagement with tourism and their continued support for its development, this study integrates three complementary theoretical

perspectives: Empowerment Theory (Scheyvens 1999), Social Exchange Theory (Blau 1964), and the Capability Approach (Nussbaum 2000). Empowerment Theory provides the initial typology for categorizing the diverse benefits women gain from tourism activities. The Capability Approach deepens this perspective by conceptualizing empowerment not merely as resource accumulation, but as the expansion of women's substantive freedoms to achieve outcomes they value. Finally, Social Exchange Theory introduces the underlying behavioral mechanism, illustrating how these perceived gains in agency generate positive evaluative assessments (satisfaction) that ultimately foster active support for ongoing tourism initiatives, but only once that satisfaction has been converted into concrete behavioral engagement. Although complementary, each theory performs a distinct explanatory function that is not reducible to the others: Empowerment Theory specifies which domains constitute women's empowerment (economic, social, and political); the Capability Approach explains why these domains matter, by reframing empowerment as an expansion of substantive freedoms rather than mere resource accumulation; and Social Exchange Theory explains how perceived gains in these domains are converted into behavioral reciprocity, through the sequential pathway running from satisfaction to participation and support. Their integration therefore generates a more specific set of testable propositions than any single theory could produce in isolation.

2.1.2. Social Exchange Theory and the empowerment connection

Social Exchange Theory (SET) posits that social interactions are governed by an exchange process in which individuals evaluate outcomes by weighing perceived benefits against associated costs (Cropanzano and Mitchell 2005). Within destination contexts, local residents' willingness to endorse and participate in tourism development generally mirrors their perceived balance of these net exchanges (Ap 1992; Blau 1964; Nunkoo and Gursoy 2012). For rural women, these outcomes extend beyond simple financial return to encompass multidimensional gains across economic, social, and political spheres.

While traditional tourism impact frameworks tend to prioritize financial metrics, SET suggests that for an exchange to be evaluated as equitable, non-material assets such as social recognition, elevated community status, and political agency must also be considered. When women perceive these non-economic returns to be substantial, they demonstrate stronger evaluative responses toward local tourism development. Within this framework, satisfaction serves as the core cognitive-affective link connecting benefit acquisition (empowerment) to positive evaluative judgements (Yoon and Uysal 2005).

Central to SET is the norm of reciprocity, which asserts that satisfied stakeholders are intrinsically motivated to engage in behaviors that sustain the system providing their benefits (Homans 1974). In sustainable tourism research, community satisfaction consistently outperforms basic demographic variables in predicting local support (Han et al. 2023; Gautam and Bhalla 2024). Consequently, women who report higher satisfaction with their involvement in tourism are anticipated to become proactive advocates for the sector, provided that satisfaction is first channeled into active participation, which this study formally tests as a serial mediation process.

2.1.3. A three-dimensional model of women's empowerment

This study conceptualizes women's empowerment as a three-dimensional construct comprising economic, social, and political domains, adapting Scheyvens' (1999) foundational framework with context-adapted, expert-reviewed measurement items (detailed in Section 2). Within this model, economic empowerment measures financial autonomy and control over household resources; social empowerment reflects community standing, social networks, and capacity-building opportunities; and political empowerment denotes civic voice, rights awareness, and representation in local governance structures. Jointly, these three dimensions constitute the core empowerment framework evaluated in Hypotheses 1 through 3.

Scheyvens' (1999) original conceptualization also incorporates a fourth dimension, psychological empowerment, while recent scholarly work increasingly points to physical empowerment, encompassing spatial mobility, occupational health, safety, and bodily autonomy, as a crucial dimension in physically demanding rural environments like Kazakhstan (Boonabaana and Ochieng 2022; Tao et al. 2024). Neither dimension is operationalized in the current model. Validated measurement items for these specific constructs were unavailable for this target sample, and introducing untested scales would compromise the empirical rigor of the structural model. Accordingly, both psychological and physical empowerment are highlighted here as valuable avenues for future instrument design rather than empirical parameters of the present investigation.

2.1.4. Serial mediation logic: from empowerment to support

Informed by the integration of Social Exchange Theory and the Capability Approach, this study advances a serial (double) mediation framework of tourism support that departs from conventional resident-attitude models privileging direct, single-step relationships (Bolin 2014). Rather than treating support as a direct function of demographic background or a simple bilateral exchange, the model specifies a structured, sequential psychological chain running from empowerment, through satisfaction, through participation, to support, while also allowing satisfaction to exert a direct effect on support alongside this sequential pathway.

At the onset, women's economic, social, and political empowerment operates as parallel exogenous catalysts of satisfaction with tourism (Fig. 1, H1–H3), reflecting women's realization of expanded agency, resource access, and structural control (Boonabaana and Ochieng 2022). Satisfaction, in turn, is hypothesized to motivate active engagement in local tourism activities, translating an affective evaluation into concrete behavioral participation (H4). Participation is expected to positively affect long-term support for tourism development (H5); at the same time, satisfaction is also hypothesized to exert a direct effect on support (H6), reflecting the possibility that women's positive evaluative appraisal of tourism can independently reinforce their advocacy for its development, irrespective of their level of behavioral engagement.

This architecture positions satisfaction as the affective appraisal that empowerment gains produce, and participation as a behavioral pathway that channels part of that appraisal into durable developmental support, while satis-

faction itself retains a direct route to support. Accordingly, the model formally tests satisfaction as a mediator of the empowerment-participation link (H7–H9) and participation as a mediator of the satisfaction-support link (H10), yielding a serial (double) mediation chain – empowerment → satisfaction → participation → support, that operates in parallel with the direct satisfaction-support path (H6). Because this direct path is retained in the specified model, H10 constitutes a test of partial, rather than full, mediation: participation is expected to transmit part, but not the entirety, of satisfaction's total effect on support. This specification offers a more granular account of the underlying psychological mechanism than models linking support directly to empowerment or satisfaction alone (Nunkoo and Ramkissoon 2012), while allowing the data to reveal the relative magnitude of the direct versus the participation-mediated route.

2.1.5. Conceptual model and hypothesis development

Grounded in Empowerment Theory, Social Exchange Theory, and the Capability Approach, the conceptual model (Fig. 1) posits that multidimensional empowerment drives community support through both a direct affective pathway and a sequential affective-behavioral (satisfaction-participation) pathway. This framework yields ten specific hypotheses detailing the direct and indirect relationships connecting empowerment dimensions to resident support.

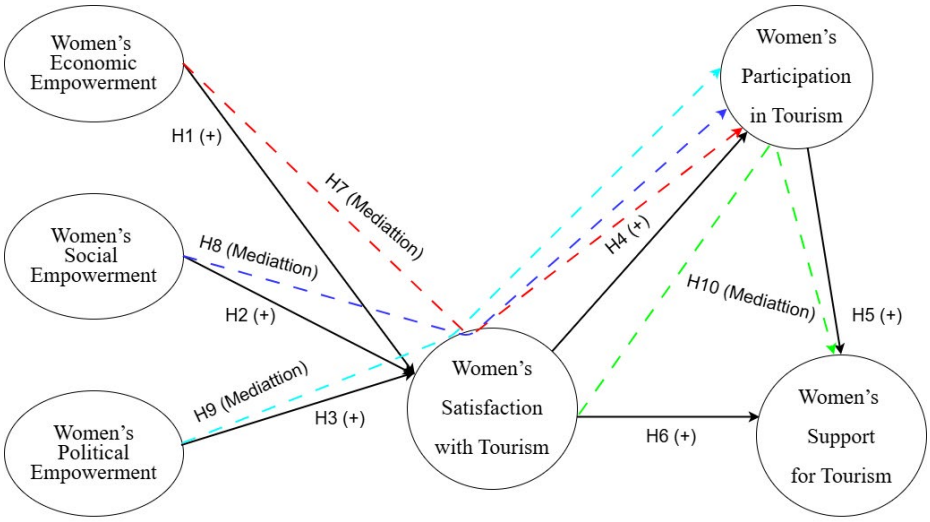

Figure 1. Conceptual model demonstrating the hypothesized mechanisms.

Consistent with the norm of reciprocity embedded in Social Exchange Theory, gains in personal capability and resource access are expected to directly inform women's evaluative appraisal of local tourism impacts. Specifically, women's economic empowerment (H1), social empowerment (H2), and political empowerment (H3) are hypothesized to exert a positive direct effect on their satisfaction with tourism. Financial independence, enhanced community standing, and civic representation allow women to shape and benefit from destination development, elevating their overall positive assessment of the sector.

Favorable cognitive-affective evaluations are subsequently hypothesized to direct behavioral actions within the destination: women's satisfaction with tourism is expected to positively influence their direct participation in tourism

activities (H4), and, because operational involvement cultivates a sense of local ownership and shared responsibility, participation is expected to positively affect support for tourism development (H5). In addition, satisfaction is hypothesized to exert a direct positive effect on support (H6), reflecting the possibility that satisfied women may advocate for tourism development even independently of their active behavioral engagement.

To capture the underlying behavioral mechanism, the model specifies two complementary sets of indirect (mediation) pathways. First, satisfaction with tourism is hypothesized to mediate the relationship between economic empowerment (H7), social empowerment (H8), and political empowerment (H9), and women's participation in tourism activities. Second, women's participation in tourism is hypothesized to mediate the relationship between satisfaction with tourism and support for tourism development (H10). Because the model retains a direct path from satisfaction to support (H6) alongside this indirect pathway, H10 constitutes a test of partial mediation: participation is theorized to transmit part of satisfaction's influence on support, while a portion of this influence is expected to persist as a direct effect. Together, H1–H6 specify the direct structural backbone of the model, while H7–H10 specify the mediating mechanisms that convert empowerment into behavioral advocacy, positioning satisfaction as the affective gateway that shapes support both directly and through the indispensable behavioral bridge of active participation (Fig. 1).

2.2. Study area: tourism ecosystem of Saty village

2.2.1. Geographical context and biodiversity significance

Saty is a strategic rural settlement situated at the foot of the Trans-Ili Alatau mountain range, approximately 66 km from the Kegen district center and 280 km east of Almaty. Positioned along the Chilyk River, the village functions as the primary gateway to Kolsai Lakes National Park. Its location within the transboundary region between Kazakhstan and the Kyrgyz Republic substantially shapes both logistical connectivity and regional tourism dynamics (Fig. 2). The ecological importance of the area gained global recognition in 2021, when the national park, initially established in 2007, was designated as a UNESCO Biosphere Reserve in recognition of its role in biodiversity conservation.

2.2.2. Demographic profile and tourism infrastructure

Based on the 2021 census, Saty village has a population of 980 (513 males and 467 females), whereas the broader Saty rural district, which includes the smaller settlement of Kurmeti, accounts for around 1,400 residents. Tourism currently serves as the foundation of the local economy, with more than half of the population directly or indirectly employed in this sector.

2.2.3. Spatial configuration and sustainable management

The spatial distribution of recreational infrastructure forms a central component of the community's sustainable management strategy. As illustrated in Fig. 3, Saty is connected to Kolsai and Kaindy lakes through a network of

established hiking trails spanning 17 km, 13 km, and 20 km. Eco-stations, campsites, ethno-villages, and observation decks are strategically positioned along these routes to enrich the visitor experience while mitigating environmental pressure. This geographic layout facilitates effective visitor flow management, balancing ecological conservation with local livelihood development.

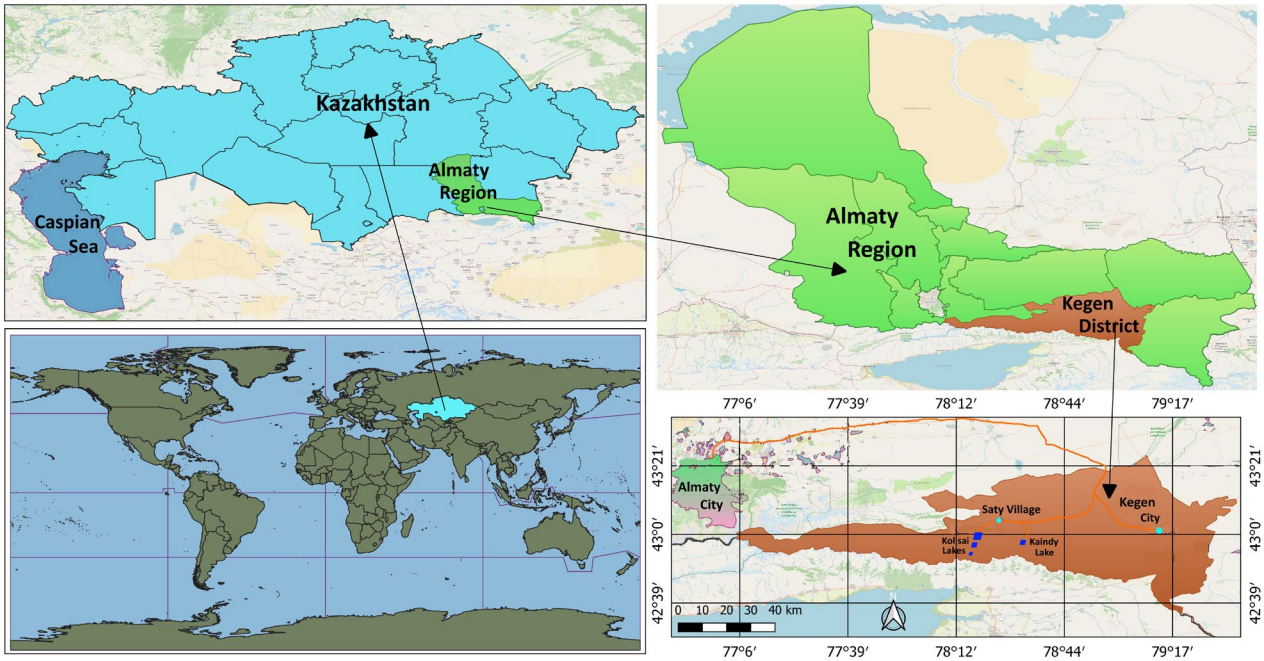

Figure 2. Geographical location of Saty village within the transboundary zone.

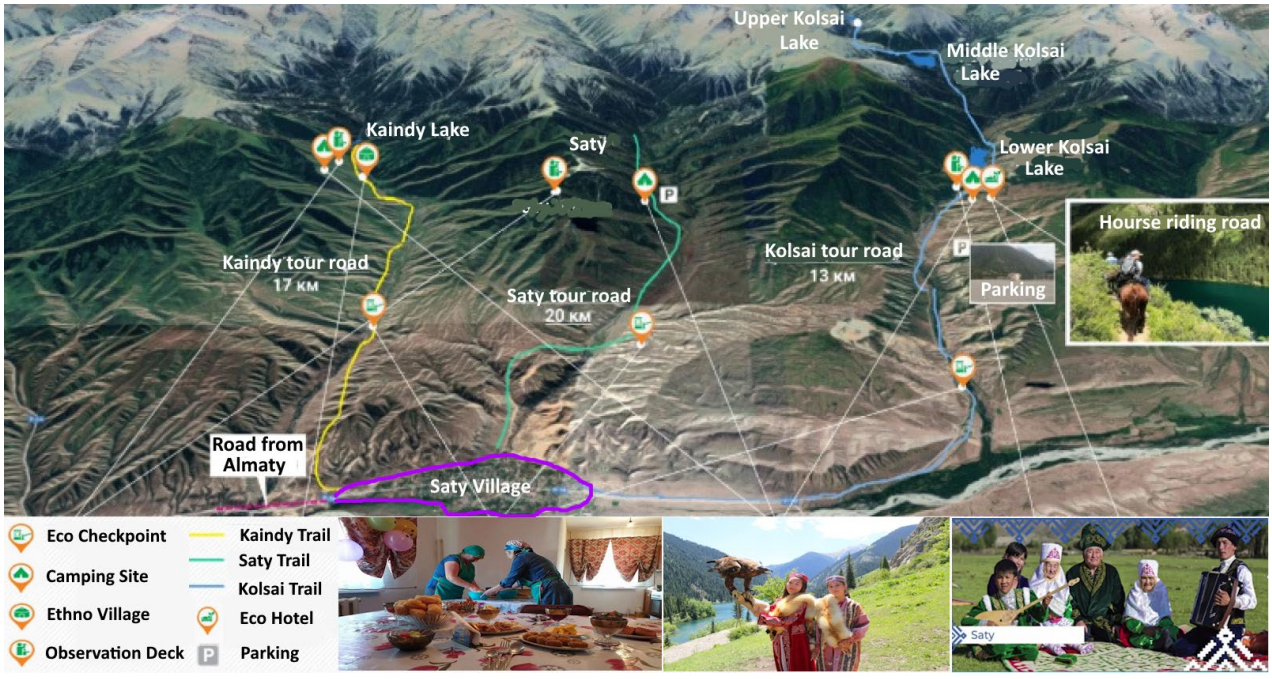

Figure 3. Spatial configuration of recreational infrastructure and tourist corridors surrounding Saty village, Kolsai Lakes National Park.

2.2.4. Strategic positioning and international recognition

Saty's development model combines geographic branding with authentic cultural experiences. Alongside hospitality operations, residents continue traditional farming and livestock husbandry, offering organic products such as honey as well as cultural services like equestrian tourism. This community-based approach has earned widespread international acclaim, including coverage in Lonely Planet (2020), the Rural Light Cup award (2021), and selection for the UN Tourism (UNWTO) Best Tourism Villages upgrade program in 2023. These accolades reinforce Saty's reputation as an exemplar of sustainable rural tourism.

2.2.5. Socio-economic transformation and gender dynamics

The evolution from a traditional pastoral settlement into a thriving tourism destination has driven substantial socio-economic changes across the region. Former agricultural practices have increasingly shifted toward sustainable tourism services, supported by infrastructure modernizations such as paved access roads and upgraded municipal water systems. In 2023 alone, 59 local farming enterprises secured over 31.9 million tenge in targeted investments across 20,530 ha of agricultural land. Crucially, this economic shift has expanded opportunities for rural women within the formal economy. By leading guesthouse management, culinary operations, and local supply network initiatives, women have assumed prominent roles in community capacity building, positioning Saty as a valuable case study for multidimensional empowerment in Central Asia.

2.3. Data collection and research instrument

2.3.1. Development of the research instrument

A structured questionnaire was developed using a multi-stage validation process to ensure the accurate measurement of latent constructs. An initial pool of over 50 indicators was synthesized from an extensive review of the literature on gender empowerment in tourism (Scheyvens 1999; Malhotra et al. 2002; Boonabaana and Ochieng 2022). To refine these items for the local context, a panel of six experts, comprising three academic tourism researchers from Kazakhstani universities and three local tourism association representatives, evaluated the indicators through a two-round Delphi process. This procedure reduced the instrument to 30 items by removing redundant or contextually inappropriate variables. Among these, 25 indicators represented the six target constructs analyzed in this study: economic, social, and political empowerment, overall satisfaction, community participation, and institutional support. The remaining items related to psychological and physical empowerment dimensions were reserved for future study extensions and excluded from the present analysis.

To further specify the instrument development procedure, expert consensus during each Delphi round was operationalized using a content validity ratio (CVR) criterion, and items falling below the corresponding critical value for a six-member panel were removed or revised. Of the initial 50 items, the five items relating to psychological and physical empowerment were removed at this content-review stage on definitional grounds, prior to any statistical variable reduction; the remaining

25 indicators, corresponding to the six analyzed constructs, were the pool carried forward into the factor-analytic evaluation reported in Section 2.4.1, rather than the 30-item pool referenced in earlier drafts of that step. Each retained item was adapted from an established source instrument (Scheyvens 1999; Malhotra et al. 2002; Boonabaana and Ochieng 2022), and the Kazakh- and Russian-language versions were produced through forward translation by two bilingual researchers followed by independent back-translation and reconciliation of discrepancies. Cognitive interviews with five pre-test respondents were conducted to verify item comprehension prior to the main survey. In light of this adaptation and expert-review process, the measurement items are more accurately described as adapted and expert-reviewed rather than independently validated in the psychometric sense.

2.3.2. Survey administration and sampling

Data collection occurred across two separate periods to capture potential seasonal fluctuations in tourism activity: a preliminary pre-test (October 12–19, 2025) and the primary survey administration (March 10–17, 2026). The study employed a census approach aiming to survey the entire eligible population to maximize coverage and reduce sampling bias. The target population included all female residents of Saty village aged 18 years and older. Although the 2021 census recorded 467 female residents of all ages in Saty village, the eligible population for this census survey, adult women aged 18 and older who were permanently resident in the village and present during the household-listing exercise conducted by the field team, was enumerated at 238; the difference chiefly reflects the exclusion of minors and of women who were temporarily absent, non-resident, or otherwise not reachable during listing. A household register compiled prior to the pre-test served as the sampling frame from which all 238 eligible women were subsequently approached. The October 2025 pre-test involved 22 of these women, drawn from the same register, to assess item clarity and questionnaire length; pre-test respondents were excluded from the 194 valid responses analyzed in the main study to avoid duplication. A comparison of mean construct scores between the pre-test and the main survey period revealed no substantial differences in reported empowerment, satisfaction, participation, or support (mean differences below 0.15 scale points across all six constructs), suggesting that the interval between the two data-collection periods did not materially influence responses. Three doctoral researchers from the Faculty of Geography and Environmental Sciences administered the survey during evening hours (17:00–20:00) when residents were most accessible. Participants completed the questionnaire in either Kazakh or Russian based on individual preference. Informed consent was obtained from all respondents, with explicit assurances regarding anonymity and voluntary involvement.

2.3.3. Ethics statement

The study protocol received institutional approval from the Institutional Research Ethics Committee of the Faculty of Geography and Environmental Sciences at Al-Farabi Kazakh National University (Approval No. 11-01-33-652). All data collection procedures adhered to the ethical standards set by the institutional committee and aligned with the guidelines of the 1964 Declaration of Helsinki and its subsequent revisions.

2.3.4. Data collection and response rate

Completed questionnaires were gathered directly by the field researchers or retrieved from designated drop-off boxes located at the local municipal office and central school. Out of 238 distributed questionnaires, 209 were recovered, yielding an initial response rate of 87.8%. Following data cleaning, 11 incomplete submissions and 4 records exhibiting straight-line response patterns were removed. Consequently, 194 valid responses were retained for structural analysis, corresponding to an effective response rate of 81.5% (Table 1).

Table 1. Sample demographic profile (N = 194 women).

Characteristics	Frequency	Percentage (%)
Age (years)		
18–34	78	40.2
35–54	84	43.3
≥55	32	16.5
Ethnicity		
Kazakh	176	90.7
Russian	10	5.2
Other	8	4.1
Education		
Secondary (school/college)	108	55.7
Higher (university or above)	86	44.3
Current occupation		
Tourism	86	44.3
Animal husbandry	38	19.6
Farming	26	13.4
Small business	28	14.4
Other	16	8.3
Tourism income share		
0%	28	14.4
1–20%	52	26.8
21–60%	64	33.0
61–100%	50	25.8

Of the 238 eligible women, 29 (12.2%) did not participate: 19 could not be reached at home during the two data-collection windows despite repeated visits, and 10 declined to participate, most commonly citing time constraints. A comparison of nonrespondents with respondents on the demographic characteristics available from the household register (age group and occupation category) did not reveal systematic differences, suggesting a limited risk of nonresponse bias, although unmeasured differences in attitudes toward tourism cannot be ruled out. To maximize participation, field researchers made up to three follow-up visits at varied times of day and offered the option of completing the questionnaire via the drop-off boxes described below.

2.3.5. Questionnaire design

The final instrument was structured into two primary sections. The first section gathered demographic variables, including age, ethnicity, educational attainment, occupational status, and the proportion of household income derived from tourism (categorized as 0%, 1–20%, 21–60%, and 61–100%). The second section evaluated the six core latent constructs using the 25 adapted and expert-reviewed indicators, each measured on a seven-point Likert scale ranging from 1 ("completely disagree") to 7 ("completely agree").

2.4. Analytical strategy and common method bias

2.4.1. Analytical strategy

Data analysis followed a three-step statistical protocol to evaluate the measurement properties and test the proposed conceptual model.

Step 1: Factor reduction. Exploratory Factor Analysis (EFA) utilizing principal axis factoring with varimax rotation was performed on the pool of 25 indicators retained for the six analyzed constructs following the a priori content-based exclusion of the psychological- and physical-empowerment items described in Section 2.3.1. Items were retained if factor loadings (λ) exceeded 0.70 and cross-loadings remained below 0.50, confirming that all 25 indicators loaded on their intended factor and were carried forward, unchanged in number, to the confirmatory analysis.

Step 2: Measurement model validation. Confirmatory Factor Analysis (CFA) was conducted on the 25-item measurement model using maximum likelihood estimation in AMOS (version 28.0). Internal consistency reliability was evaluated through Cronbach's alpha and Composite Reliability (CR), whereas convergent validity was established using the Average Variance Extracted (AVE).

Step 3: Hypothesis testing. In accordance with the analytical guidelines established by Preacher and Hayes (2008) and Hayes (2013), Structural Equation Modeling (SEM) with 5,000 bias-corrected bootstrap samples was employed to estimate the direct, indirect, and serial (double) mediation effects specified in H1–H10. Bootstrapped SEM has demonstrated strong efficacy in modeling relationships between tourism engagement and quality-of-life outcomes in previous empirical studies (Tolkach and King 2015; Woo et al. 2018).

Goodness-of-fit for the structural and measurement models was evaluated against established threshold criteria: $\chi^2/df < 3$ for acceptable fit (< 2.0 for good fit); Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Normed Fit Index (NFI) > 0.90 for acceptable fit (> 0.95 for good fit); and Root Mean Square Error of Approximation (RMSEA) < 0.08 for acceptable fit (< 0.06 for good fit). Construct reliability required Cronbach's α and CR > 0.70, while convergent validity required AVE > 0.50 (Hair et al. 2019).

2.4.2. Common method bias

Given that all variables were collected through self-reported survey measures, Harman's single-factor test was performed to evaluate potential common method variance. A single unrotated factor accounted for only 28.7% of the to-

tal variance, falling well below the critical threshold of 50%. This result confirms that common method bias does not pose a significant threat to the validity of the findings (Podsakoff et al. 2003).

3. Results

3.1. Measurement model validation

3.1.1. Reliability and validity

All six latent constructs demonstrated strong internal consistency reliability. Cronbach's alpha (α), computed from the survey data (N = 194), ranged between 0.883 and 0.944, comfortably exceeding the recommended threshold of 0.70 (Table 2). Composite reliability (CR), calculated from standardized CFA loadings using $CR = (\Sigma\lambda)^2/[(\Sigma\lambda)^2 + \Sigma\varepsilon]$, spanned from 0.886 to 0.949. These values closely aligned with the Cronbach's alpha coefficients, confirming construct reliability through two distinct metrics.

Table 2. Descriptive statistics and measurement model results (N = 194 women).

Construct / Indicator	λ	α	CR	AVE	p
Women's Economic Empowerment (WEcE)		0.899	0.900	0.693	
WEcE_1	0.852				< 0.001
WEcE_2	0.856				< 0.001
WEcE_3	0.851				< 0.001
WEcE_4 (reference)	0.768				---
Women's Social Empowerment (WSoE)		0.926	0.928	0.722	
WSoE_1	0.786				< 0.001
WSoE_2	0.911				< 0.001
WSoE_3	0.761				< 0.001
WSoE_4	0.883				< 0.001
WSoE_5 (reference)	0.895				---
Women's Political Empowerment (WPolE)		0.888	0.889	0.667	
WPolE_1	0.774				< 0.001
WPolE_2	0.869				< 0.001
WPolE_3	0.837				< 0.001
WPolE_4 (reference)	0.782				---
Women's Satisfaction with Tourism (WSatTD)		0.944	0.949	0.787	
WSatTD_1 (reference)	0.866				---
WSatTD_2	0.849				< 0.001
WSatTD_3	0.854				< 0.001
WSatTD_4	0.963				< 0.001
WSatTD_5	0.896				< 0.001
Women's Participation in Tourism (WParTA)		0.883	0.886	0.722	
WParTA_1 (reference)	0.836				---
WParTA_2	0.864				< 0.001
WParTA_3	0.847				< 0.001
Women's Support for Tourism Development (WSupTD)		0.937	0.937	0.789	
WSupTD_1 (reference)	0.912				---
WSupTD_2	0.864				< 0.001
WSupTD_3	0.889				< 0.001
WSupTD_4	0.887				< 0.001

Note: λ = standardized factor loading (CFA); α = Cronbach's alpha (N = 194); CR = Composite Reliability; AVE = Average Variance Extracted. Reference indicators had loadings fixed to 1.0 for scale identification in AMOS and therefore lack S.E., C.R., and p-values. The close alignment between α and CR values across all six constructs (e.g., WSatTD: α = 0.944 vs. CR = 0.949) confirms measurement reliability across independent methods.

Convergent validity was established through the Average Variance Extracted (AVE), computed as AVE = $\Sigma\lambda^2/n$, which ranged from 0.667 to 0.789, well above the standard 0.50 benchmark across all factors. Discriminant validity was evaluated using the Fornell-Larcker criterion, which confirmed that the square root of the AVE for each construct exceeded its inter-construct correlations with all other variables.

Finally, sampling adequacy was verified via the Kaiser-Meyer-Olkin test (KMO = 0.864), and Bartlett's test of sphericity yielded significant results [$\chi^2(300) = 3994.56$, $p < 0.001$], supporting the suitability of the data matrix for factor analysis.

3.1.2. Confirmatory factor analysis

The measurement model demonstrated satisfactory fit: $\chi^2(266) = 468.091$, $\chi^2/df = 1.760$, CFI = 0.948, TLI = 0.941, NFI = 0.888, and RMSEA = 0.063 (90% CI [0.053, 0.072]). All standardized factor loadings were statistically significant ($p < 0.001$) and ranged from 0.63 to 0.96.

Economic, social, and political empowerment were specified as distinct, correlated first-order constructs rather than a single higher-order factor. Inter-construct correlations among these dimensions were low to modest (WSoE and WPolE: $r = -0.03$, $p > 0.05$; WEcE and WPolE: $r = 0.23$, $p = 0.02$; WSoE and WEcE: $r = 0.03$, $p > 0.05$), supporting their empirical distinctiveness.

3.2. Comparative analysis of the empowerment dimensions

3.2.1. Descriptive results

Comparative analysis of the three empowerment dimensions in Table 3 indicated that social empowerment was rated highest (M = 5.53, SD = 1.00), followed by political (M = 4.65, SD = 0.92) and economic empowerment (M = 4.60, SD = 1.02).

At the item level, social empowerment constructs consistently received strong endorsement (89.2%–90.2% agreement), particularly regarding equal rights (WSoE_1: 90.2%, M = 5.20) and skill acquisition (WSoE_2: 89.7%, M = 5.76). Conversely, economic and political items revealed a structural divergence: indicators representing individual-level outcomes, such as independent savings (WEcE_4: 81.4%, M = 5.01) and policy advocacy (WPolE_4: 83.0%, M = 5.11), showed high agreement, whereas items linked to systemic structural changes generated substantially lower support. Specifically, agreement dropped to 54.6%–59.3% for direct financial contribution, decision-making, and asset accumulation (WEcE_1–WEcE_3), and 51.0%–61.3% for civic voice, rights awareness, and political engagement (WPolE_1–WPolE_3).

This pattern aligns with the structural equation modeling results, where social empowerment exerted the strongest direct effect on satisfaction ($\beta = 0.332$), surpassing economic ($\beta = 0.262$) and political empowerment ($\beta = 0.215$). Combined, these findings indicate that tourism development in Saty village primarily fosters social empowerment through skill development, recognition, and networking. However, its economic and political impacts remain uneven, delivering immediate individual benefits while exerting limited influence on deeper institutional and structural changes.

Table 3. Comparative analysis of women's economic, social, and political empowerment (N = 194).

Construct / Indicator	Agree %	Neutral %	Disagree %	Mean	SD
Women's Economic Empowerment (WEcE)					
WEcE_1: Tourism activities increase women's financial contribution to the household budget.	54.6	23.7	21.6	4.44	1.19
WEcE_2: Tourism enhances women's active participation in household financial decision-making.	57.2	21.6	21.1	4.44	1.21
WEcE_3: Income generated from tourism enables women to invest in and accumulate personal or household assets.	59.3	22.2	18.6	4.52	1.16
WEcE_4: Tourism provides women with a reliable source of independent personal savings.	81.4	3.1	15.5	5.01	1.08
Women's Social Empowerment (WSoE)					
WSoE_1: Tourism development fosters equal rights and opportunities between men and women in the community.	90.2	2.1	7.7	5.20	0.94
WSoE_2: Tourism creates opportunities for women to acquire new knowledge, skills, and professional capacity.	89.7	2.6	7.7	5.76	1.24
WSoE_3: Tourism participation enhances women's social respect and recognition within the community.	89.2	3.1	7.7	5.29	0.94
WSoE_4: Tourism strengthens women's social networks and collaborative relationships with external stakeholder groups.	89.7	2.6	7.7	5.68	1.20
WSoE_5: Tourism challenges traditional gender roles by expanding leadership opportunities for women in the community.	89.2	3.6	7.2	5.73	1.28
Women's Political Empowerment (WPolE)					
WPolE_1: Tourism development enhances women's active voice in broader community decision-making processes.	51.0	31.4	17.5	4.43	1.04
WPolE_2: Participation in tourism increases women's awareness of their legal, social, and political rights.	60.3	24.2	15.5	4.51	1.10
WPolE_3: Tourism development strengthens women's overall engagement in civic and public affairs.	61.3	23.7	14.9	4.56	1.05
WPolE_4: Tourism enables women to advocate effectively for local development policy changes that address their needs.	83.0	4.1	12.9	5.11	1.07

Note: Items were measured on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Response distributions are categorized as Agree (5–7), Neutral (4), and Disagree (1–3), computed from the complete dataset (N = 194).

3.3. Structural model and hypothesis testing

3.3.1. Overall model fit

The revised structural model, which retains a direct path from satisfaction to support alongside the serial (double) mediation chain running through participation (Fig. 1), demonstrated excellent fit to the data: $\chi^2(266) = 468.091$, $p < 0.001$, $\chi^2/df = 1.760$, CFI = 0.948, TLI = 0.941, IFI = 0.949, NFI = 0.888, RFI = 0.874, RMSEA = 0.063 (90% CI [0.053, 0.072], PCLOSE = 0.014), RMR = 0.094, GFI = 0.823, and AGFI = 0.783. Incremental fit indices robust to sample size and model complexity (CFI, TLI, IFI) and RMSEA all met or closely approached conventional "good fit" thresholds (≥ 0.90/0.95 and ≤ 0.08/0.06, respectively). Notably, because the reinstated satisfaction-support path saturates the structural relationships among the six latent constructs, the fit of the structural model is now identical to that of the measurement model ($\chi^2(266) = 468.091$ in both cases), indicating that the specified structural paths fully reproduce the covariance structure implied by the measurement model. As in the measurement model, absolute and baseline indices more sensitive to sample size (GFI, NFI, RFI, RMR) fell modestly below 0.90, a pattern typical of moderately sized samples (N = 194)

evaluated against comparatively complex structural specifications (Hair et al. 2019). Model-comparison statistics further supported the specification: the default model (AIC = 586.091; BIC = 778.895) substantially outperformed the independence model (AIC = 4243.750; BIC = 4325.446), and the Hoelter critical N (126 at α = 0.05; 134 at α = 0.01) indicated adequate statistical power for a model of this complexity.

3.3.2. Direct effects (H1–H6)

All six hypothesized direct structural paths were statistically significant in the predicted positive direction (Table 4). In support of H1–H3, economic (β = 0.262, p < 0.001), social (β = 0.332, p < 0.001), and political empowerment (β = 0.215, p = 0.003) each exerted a significant positive influence on women's satisfaction with tourism, with social empowerment again demonstrating the strongest impact. Supporting H4, satisfaction significantly and positively predicted participation (β = 0.377, p < 0.001). Supporting H5, participation exerted a significant positive effect on support for tourism development (β = 0.243, p = 0.002). Critically, and in contrast to the previously specified trimmed model, satisfaction also exerted a significant direct positive effect on support (β = 0.286, p < 0.001), supporting the newly added H6. The model explained 25.2% of the variance in satisfaction (R^2 = 0.252), 14.2% of the variance in participation (R^2 = 0.142), and 19.3% of the variance in support (R^2 = 0.193), a marked increase in explained variance for support relative to the earlier full-mediation specification (R^2 = 0.133), reflecting the additional direct pathway now captured by the model.

Table 4. Structural model and hypothesis-testing results for direct effects (N = 194 women).

Hyp.	Path	B (unstd.)	β (std.)	S.E.	C.R.	p	Result
H1	WEcE → WSatTD	0.292	0.262	0.081	3.588	< 0.001	Supported
H2	WSoE → WSatTD	0.270	0.332	0.056	4.808	< 0.001	Supported
H3	WPolE → WSatTD	0.239	0.215	0.080	2.971	0.003	Supported
H4	WSatTD → WParTA	0.339	0.377	0.069	4.920	< 0.001	Supported
H5	WParTA → WSupTD	0.336	0.243	0.110	3.047	0.002	Supported
H6	WSatTD → WSupTD	0.357	0.286	0.096	3.729	< 0.001	Supported

Note: B = unstandardized estimate (maximum likelihood); β = standardized estimate; S.E. and C.R. refer to unstandardized weights. R^2 = 0.252 (WSatTD), 0.142 (WParTA), 0.193 (WSupTD). Unlike the previously trimmed model, the final model retains a direct path from WSatTD to WSupTD (H6), alongside the indirect path through participation (Table 5, H10).

3.3.3. Mediation analysis (H7–H10)

Because the revised model retains a direct path from satisfaction to support, satisfaction's total effect on support is now decomposed into a direct component (H6) and an indirect component transmitted through participation (H10), a pattern of partial, rather than full, mediation. Similarly, each empowerment dimension's total effect on support now combines a single-step indirect route

(through satisfaction directly to support) and a two-step serial route (through satisfaction and then participation). Bias-corrected bootstrapping with 5,000 resamples (90% confidence intervals) was used to test these pathways, consolidated in Table 5.

Table 5. Bootstrap analysis of indirect (mediation) effects (5,000 bias-corrected resamples).

Hyp.	Pathway	β	CI LL	CI UL	p	Type / Result
H7	WEcE → WSatTD → WParTA	0.099	0.039	0.177	0.002	Indirect-only – Supported
H8	WSoE → WSatTD → WParTA	0.125	0.064	0.205	< 0.001	Indirect-only – Supported
H9	WPolE → WSatTD → WParTA	0.081	0.027	0.162	0.009	Indirect-only – Supported
H10	WSatTD → WParTA → WSupTD	0.091	0.036	0.163	0.005	Partial mediation – Supported
–	WEcE → WSupTD (combined indirect: via WSatTD directly and via WSatTD→WParTA)	0.099	0.048	0.169	0.001	Combined indirect effect
–	WSoE → WSupTD (combined indirect)	0.125	0.058	0.220	< 0.001	Combined indirect effect
–	WPolE → WSupTD (combined indirect)	0.081	0.027	0.160	0.009	Combined indirect effect

Note: Bootstrap estimates are bias-corrected percentile 90% confidence intervals (CI) based on 5,000 resamples in AMOS 28.0; LL = lower limit, UL = upper limit; all estimates standardized (β). H7–H9 test satisfaction as a single mediator of the empowerment-participation link. H10 tests participation as a mediator of the satisfaction-support link; because a significant direct path from satisfaction to support (H6) remains in the model, H10 constitutes partial rather than full mediation. The final three rows report each empowerment dimension's total indirect (non-direct) effect on support, combining both the single-step route through satisfaction alone and the two-step serial route through satisfaction and participation in sequence; they are reported for completeness rather than as separately numbered hypotheses.

Satisfaction significantly mediated the relationship between each empowerment dimension and participation: economic empowerment (β = 0.099, 90% CI [0.039, 0.177], p = 0.002; H7 supported), social empowerment (β = 0.125, 90% CI [0.064, 0.205], p < 0.001; H8 supported), and political empowerment (β = 0.081, 90% CI [0.027, 0.162], p = 0.009; H9 supported).

Participation significantly, but only partially, mediated the relationship between satisfaction and support (β = 0.091, 90% CI [0.036, 0.163], p = 0.005; H10 supported as partial mediation): because the direct path from satisfaction to support remains significant (β = 0.286, p < 0.001; H6), the indirect effect through participation accounts for only part (approximately one-quarter) of satisfaction's total effect on support (total standardized effect = 0.378; direct = 0.286; indirect via participation = 0.091).

Extending this logic across the complete causal chain, the combined indirect effects of economic, social, and political empowerment on support—transmitted both through satisfaction directly and, sequentially, through satisfaction and then participation—were likewise statistically significant: economic empowerment (β = 0.099, 90% CI [0.048, 0.169], p = 0.001), social empowerment (β = 0.125, 90% CI [0.058, 0.220], p < 0.001), and political empowerment (β =

0.081, 90% CI [0.027, 0.160], p = 0.009). These results confirm that empowerment's influence on sustained developmental support now operates through two complementary mechanisms—a direct affective-to-behavioral route via satisfaction, and a fully sequential route via satisfaction and active participation—rather than through participation alone, as theorized in the revised Fig. 1.

To sum up, all ten hypotheses (H1–H10) were empirically supported, validating the revised model in which satisfaction shapes support both directly and through active participation. Economic (β = 0.262), social (β = 0.332), and political empowerment (β = 0.215) independently foster women's satisfaction with tourism, with social empowerment emerging as the strongest driver. Satisfaction, in turn, significantly drives participation (β = 0.377) and directly drives support (β = 0.286), while participation also exerts a significant, independent effect on support (β = 0.243). Satisfaction's total influence on support (β = 0.378) is therefore only partially channeled through participation (β = 0.091 indirect), with the majority carried directly (β = 0.286). Collectively, these results in Fig. 4 indicate that sustaining local support for tourism operates through a dual mechanism: satisfied women can advocate for tourism development directly, and this advocacy is further reinforced, though not exclusively generated, by their active behavioral engagement.

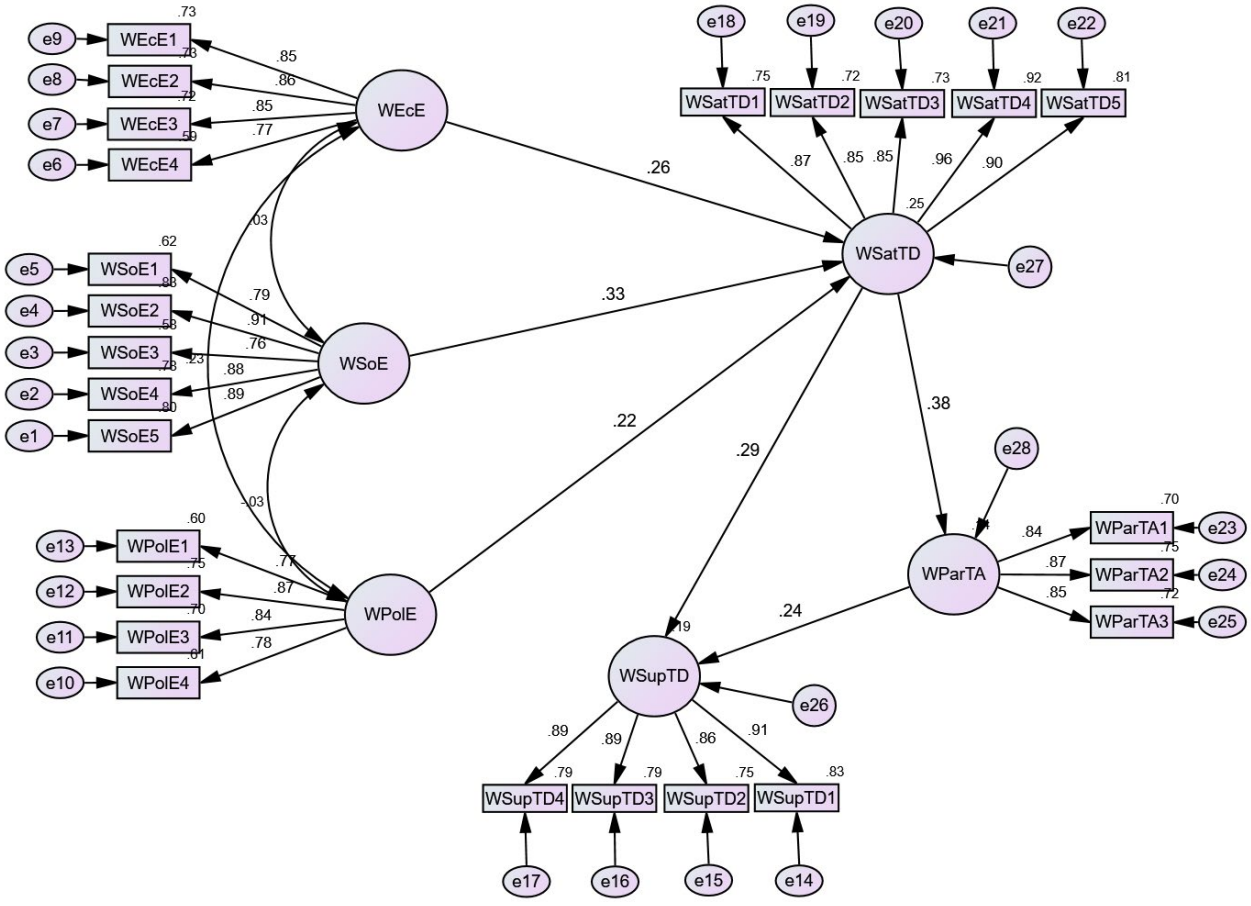

Figure 4. Empirical structural equation model of women's empowerment, satisfaction, participation, and support for rural tourism development (standardized estimates; all ten structural paths significant at p < 0.05; AMOS 28.0 output).

4. Discussion

This study evaluated how economic, social, and political empowerment influence behavioral support for tourism among rural Kazakh women, while clarifying the direct and sequential psychological mechanisms that connect the two. All ten hypotheses were supported, yielding three major theoretical and empirical insights.

First, social empowerment as a primary driver. Social empowerment exerted the strongest impact on satisfaction (β = 0.332), outperforming economic (β = 0.262) and political empowerment (β = 0.215). This indicates that for women in Saty village, tourism's psychological value stems more from social recognition, skill acquisition, and community networks than from monetary returns alone. This result aligns with the Capability Approach, which emphasizes substantive freedoms over mere resource accumulation (Nussbaum 2000). It also mirrors findings from community-based tourism in neighboring Kyrgyzstan, where collective entrepreneurship fosters social solidarity alongside income generation (Young 2021; Yousafzai and Aljanova 2025).

Second, individual gains versus structural change. Descriptive data qualify these structural findings by revealing a clear divergence within economic and political empowerment. While respondents reported strong agreement regarding individual gains, such as personal savings and policy advocacy, endorsement was substantially lower for systemic structural shifts, including asset ownership and sustained political representation. Thus, while tourism successfully builds social capital and individual agency, it has yet to fundamentally restructure broader household and governance arrangements (Scheyvens 1999). From a policy perspective, expanding women's participation in tourism is essential but insufficient on its own to resolve deeper structural inequalities.

These findings on economic and political empowerment also invite closer engagement with the psychological and physical dimensions that this model does not operationalize. In physically demanding rural settings, Tao et al. (2024) find that Chinese rural tourism workers' self-reported psychological empowerment—a sense of self-efficacy and role transition rather than purely material gain—independently predicts sustained occupational engagement, while Boonabaana and Ochieng (2022) document that Ugandan women's collective tourism entrepreneurship depended on overcoming physical-mobility and safety constraints before economic or social gains could be realized at all. Read alongside the present results, this comparative evidence suggests that psychological readiness and physical mobility may function as upstream preconditions for the economic, social, and political empowerment pathways modeled here, rather than as parallel outcomes; where such preconditions are absent, the satisfaction- and participation-based mechanisms identified in Saty village may not generalize. Incorporating validated psychological and physical empowerment measures into future serial mediation models of Central Asian rural tourism would help clarify whether these dimensions act as antecedents, moderators, or additional parallel predictors within the empowerment-to-advocacy pathway.

Third, the dual pathway from satisfaction to support. Bootstrap analysis confirms that satisfaction functions as the affective gateway that channels

all three empowerment dimensions toward participation (β = 0.081 to 0.125), while satisfaction itself exerts a significant direct effect on support (β = 0.286) alongside a smaller, but significant, indirect effect transmitted through participation (β = 0.091). Because the direct path remains significant once participation is entered into the model, participation constitutes a partial, rather than the sole, behavioral bridge between empowerment and advocacy: roughly three-quarters of satisfaction's total influence on support (β = 0.378) is carried directly, while the remaining quarter is conditional on active behavioral engagement. Unlike models that treat satisfaction as either a purely direct antecedent of support or as fully channeled through behavioral participation, the present findings indicate that in Saty village, satisfied women can become advocates for tourism development even without extensive active involvement, though their advocacy is measurably reinforced when satisfaction translates into participation. This dual-pathway pattern extends the reciprocity logic of Social Exchange Theory (Homans 1974) and refines prior empirical work that modeled satisfaction as either an exclusively direct (Han et al. 2023; Gautam and Bhalla 2024) or an exclusively indirect predictor of support, demonstrating, within a patriarchal, post-Soviet rural context, that the exchange is completed through both affective and behavioral reciprocation, with the affective route carrying the larger share.

These findings also speak to this journal's wider engagement with tourism and identity in post-socialist and transitional settings: just as Dogramadjieva (2024) shows that contested heritage in Bulgaria requires explicit attention to the social groups whose recognition is at stake, and Orsós (2026) demonstrates how tourism discourse in post-socialist Transylvania renegotiates group identity and belonging, the present study suggests that rural tourism in post-Soviet Kazakhstan cannot be assumed to empower women automatically; it does so through both a direct affective mechanism and the specific behavioral mechanism identified here.

4.1. Theoretical and practical implications

4.1.1. Theoretical implications

This study offers three key theoretical contributions. First, it empirically models women's empowerment as three distinct first-order constructs (r = -0.03 to 0.23), reinforcing Scheyvens' (1999) multidimensional conceptualization over simplistic single-factor treatments. Second, by integrating Social Exchange Theory and the Capability Approach into a mixed direct and mediation model, the research identifies satisfaction as a construct that shapes tourism support through two complementary, non-redundant mechanisms—a direct affective route and an indirect route via active behavioral participation—qualifying the assumption that support is generated exclusively through one or the other (Nunkoo and Ramkissoon 2012). Third, it expands the geographic scope of gender studies in tourism into Central Asia, a region defined by patriarchal social norms and post-Soviet economic transitions (Cytlak and Mamadaminova 2024), providing a novel theoretical counterpart to existing literature focused primarily on Southeast Asia, Africa, and Latin America.

4.1.2. Practical and policy implications

Destination managers and regional policymakers can draw three practical insights from these findings.

Prioritize social capacity building: Because social empowerment exerts the strongest influence on satisfaction (β = 0.332), local initiatives should prioritize skill acquisition, social recognition, and peer networks. Programs such as cooperative training and women-led hospitality associations may be particularly promising for improving satisfaction and, in turn, both direct and participation-mediated community support, though this study did not directly test the effect of specific interventions, and this inference should be treated as a hypothesis for future evaluation rather than an established causal claim.

Address structural gaps: Rising participation rates alone do not signal complete empowerment. Policy interventions must address the structural divide in economic and political dimensions by facilitating women's access to formal financial instruments, credit, and decision-making roles within village tourism councils.

Recognize and reinforce both pathways to support: Because satisfaction shapes support both directly (β = 0.286) and through active participation (β = 0.091), destination managers should not assume that participation is the only route to advocacy, nor that satisfied women will automatically become active participants. Concrete mechanisms—cooperative membership drives, participatory planning forums, and formal invitations to governance roles—remain valuable for converting affective satisfaction into behavioral engagement, but managers should equally invest in sustaining satisfaction itself, since a substantial share of women's advocacy appears to follow from positive appraisal even absent extensive behavioral involvement.

4.2. Limitations and future research

This study has several limitations that provide directions for future research. First, the cross-sectional design precludes causal inference, meaning directional paths cannot rule out reciprocal relationships, such as between satisfaction and participation, or between satisfaction and support. Longitudinal designs are needed to test these sequences directly. Second, while the single-village census (N = 194) maximizes representativeness within Saty, it limits statistical power and constrains generalizability across other Central Asian rural tourism contexts. Multi-site replications are recommended. Third, absolute and incremental fit indices (GFI = 0.823, NFI = 0.888, RFI = 0.874) fell slightly below the traditional 0.90 threshold due to sample-size sensitivity (Hair et al. 2019). Although indices less sensitive to sample size (CFI, TLI, IFI, RMSEA) demonstrated good fit, path-coefficient magnitudes should be interpreted with appropriate caution. Fourth, psychological and physical empowerment dimensions were omitted from the primary model; validating context-specific items for these dimensions remains an important priority (Boonabaana and Ochieng 2022; Tao et al. 2024). Fifth, because the structural model with both the direct and mediated paths specified fully reproduces the covariance structure implied by the measurement model, the structural component of the model is saturated at the level of the six latent constructs; while this confirms that no additional

structural paths are needed to account for the observed relationships among constructs, it also means that model fit indices cannot, by themselves, discriminate this specification from equivalent alternative orderings of the same variables, and future research should consider theoretically motivated equivalent models. Finally, reliance on self-reported data introduces potential bias. Although Harman's single-factor test indicated common method variance was minimal (28.7%), future research should incorporate objective behavioral or household-level metrics.

5. Conclusion

This study offers an empirical, theory-driven framework explaining how gender empowerment translates into support for tourism development among rural Kazakh women. Based on census data from Saty village, a UNWTO-recognized Best Tourism Village, the results confirm that economic, social, and political empowerment independently drive satisfaction with tourism, with social empowerment demonstrating the most pronounced influence (β = 0.332). Satisfaction serves as the pivotal affective gateway that channels empowerment toward active participation (β = 0.377) and, in addition, directly reinforces community support (β = 0.286), while participation independently contributes to support (β = 0.243) and partially mediates satisfaction's total effect (indirect β = 0.091 of a total β = 0.378). All ten hypothesized pathways (H1–H10) were empirically supported, and these findings provide a validated measurement framework and an empirical foundation for designing gender-responsive tourism policies across Central Asia.

Based on these empirical insights, three actionable recommendations complement those detailed in Section 4.1: destination managers should (i) prioritize social capacity-building initiatives given their outsized effect on satisfaction; (ii) pair participation-expanding programs with structural mechanisms, such as credit access and formal leadership roles, that close the gap between individual gains and systemic empowerment; and (iii) treat both satisfaction and active participation as complementary, rather than substitutable, levers for converting positive sentiment into durable advocacy, since satisfaction contributes to support both directly and through behavioral engagement. Future research should replicate and extend this dual-pathway model across other rural Central Asian destinations while incorporating validated measures of psychological and physical empowerment, and testing the model longitudinally to clarify the temporal ordering between satisfaction, participation, and support.

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The authors have declared that no competing interests exist.

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No ethical statement was reported.

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The authors accept full responsibility for the content of the manuscript, including the disclosure of any use of AI.

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Data availability

All of the data that support the findings of this study are available in the main text or Supplementary Information.