

From Social Media Tourism Knowledge to Tourists' Value Co-Creation Behavior: The Roles of Participation, Engagement, and Perceived Value in Chongqing

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Abstract

This study examines how social media tourism knowledge is associated with tourists' value co-creation behavior through tourist participation, tourist engagement, and perceived value in Chongqing, China. A quantitative, cross-sectional questionnaire design was used. After screening 542 responses, 475 valid questionnaires from adult nonresident domestic tourists who had visited Chongqing and used social media in relation to their trip were retained. Confirmatory factor analysis and structural equation modeling were conducted in AMOS with maximum-likelihood estimation, and indirect relationships were assessed with 5,000 bootstrap samples. The five-factor measurement model demonstrated satisfactory reliability, convergent validity, discriminant validity, and overall fit. Social media tourism knowledge was positively associated with tourist participation, tourist engagement, and perceived value, but its direct relationship with value co-creation behavior was not significant after the mediators were included. Tourist participation was positively associated with engagement and value co-creation behavior, whereas engagement was associated with value co-creation primarily through perceived value. Perceived value was the strongest direct predictor of value co-creation behavior. Significant indirect relationships were identified through tourist participation, through perceived value, and through the sequential involvement of engagement and perceived value. The findings extend the Knowledge–Attitude–Practice model by distinguishing basic participation, sustained psychological engagement, value evaluation, and higher-order contribution. They also extend Consumer Value Theory by identifying perceived value as the mechanism through which engaged tourists become willing contributors to destination experiences and knowledge. The study demonstrates that social media visibility becomes

productive for destinations only when tourism knowledge collectively supports meaningful participation, valuable engagement, and responsible resource contribution.

Keywords: Social Media Tourism Knowledge; Tourist Participation; Tourist Engagement; Perceived Value; Value Co-Creation Behavior

Introduction

Social media has become an important environment in which tourists acquire, interpret, verify, and circulate destination knowledge. Posts, short videos, reviews, comments, and discussion threads allow travelers to learn about attractions, transport, local culture, prices, risks, and appropriate conduct before, during, and after a trip. This digitally mediated knowledge is not merely promotional information. Tourist-local social media exchange can produce destination knowledge jointly rather than transmit it in only one direction (Edwards et al., 2017). Social media co-creation also depends on communication among tourists, organizations, enterprises, platform communities, and other stakeholders (Ravazzani & Hazée, 2022). Tourists therefore move between the roles of information recipient, user, evaluator, and contributor, making social media central to contemporary destination experience and value formation (Sigala, 2016).

Tourism value co-creation describes the voluntary integration of knowledge, experience, time, feedback, and social resources by tourists and other destination actors. Rather than receiving a finished tourism product passively, tourists participate in shaping itineraries, service encounters, destination meanings, and the information available to later visitors (Mohammadi et al., 2020). Digital platforms expand these opportunities by enabling real-time problem solving, peer assistance, content production, and continuing communication across the travel journey. Nevertheless, online visibility does not guarantee constructive co-creation. Repetitive content, inaccurate information, commercial influence, and concentrated attention may reduce information quality or produce value co-destruction when the interests of tourists, residents, firms, and destination managers are not balanced (Buhalis et al., 2020). A mechanism-based explanation is therefore needed to clarify when social media knowledge is associated with constructive tourist contributions.

Three gaps motivate the present study. First, tourism research has examined user-generated content, destination image, social media marketing, and visitation intention extensively, but has paid less attention to social media tourism knowledge as a distinct cognitive resource. Knowledge concerns what tourists understand about a destination; it should not be equated with exposure, perceived usefulness, or content-sharing behavior. Prior social-media research has commonly conceptualized the upstream stimulus in terms of marketing activities or platform elements such as entertainment, customization, interactivity, electronic word-of-mouth, and trendiness, and has examined their relationships with engagement and value co-creation (Cheung et al., 2020). Second, tourist participation, tourist engagement, and value co-creation behavior are sometimes used interchangeably even though they represent different forms and levels of involvement. Social media engagement involves sustained cognitive, emotional, and relational investment rather than basic information use alone

(Lim & Rasul, 2022). Value co-creation is a further form of voluntary resource contribution intended to improve experiences, services, or collective outcomes (John & Supramaniam, 2024). Third, the process through which knowledge is translated into contribution remains insufficiently integrated. In particular, the roles of participation, engagement, and perceived value require simultaneous examination within one structural model. Existing social-media models have linked marketing activities with engagement and value co-creation (Cheung et al., 2020) or examined social-media elements together with engagement and perceived brand value (Cheung et al., 2021), whereas tourism research has separately demonstrated relationships among participation, perceived value, engagement, and co-creation (Prebensen & Xie, 2017; Rather et al., 2021).

Chongqing provides a relevant context for this inquiry. Its distinctive mountainous landscape, river transport, night scenery, cuisine, neighborhood culture, and visually recognizable attractions are widely represented on Douyin, Xiaohongshu, WeChat, Weibo, and Bilibili. Tourists use these platforms to plan routes, compare experiences, solve practical problems, share evaluations, and reproduce destination narratives. At the same time, a large volume of highly similar or commercially oriented content may narrow the knowledge available to visitors and encourage attention to a limited set of locations. Chongqing therefore illustrates both the opportunities and tensions of socially mediated urban tourism.

This study develops an integrated framework based on the Knowledge–Attitude–Practice model and Consumer Value Theory. It examines social media tourism knowledge as an upstream cognitive resource, tourist participation as observable task-oriented involvement, tourist engagement as sustained psychological involvement, perceived value as an evaluation of benefits and costs, and tourists' value co-creation behavior as higher-order voluntary contribution. By separating these constructs and testing their direct and indirect relationships, the study explains why knowledge may be important even when its independent direct relationship with co-creation is limited.

Research Objectives

The study had three objectives. First, it examined the direct relationships among social media tourism knowledge, tourist participation, tourist engagement, perceived value, and tourists' value co-creation behavior. Second, it examined whether tourist participation and tourist engagement transmit the relationship between social media tourism knowledge and value co-creation behavior. Third, it examined whether perceived value functions as a direct and sequential mediating mechanism within the knowledge-to-co-creation process.

Literature Review

Theoretical Foundations

The Knowledge–Attitude–Practice model proposes that knowledge provides a cognitive basis for evaluation and action. Knowledge alone does not ensure practice because individuals must interpret information, develop motivational or evaluative responses, and

encounter opportunities to act. Tourism studies have adapted this logic to community participation and responsible behavior, demonstrating that knowledge may support practice through intervening psychological and behavioral processes (Mtapuri et al., 2021). In this model, social media tourism knowledge represents the cognitive starting point. Tourist engagement and perceived value represent motivational and evaluative states, while tourist participation and value co-creation behavior represent different levels of practice. The framework is not treated as a rigid temporal chain. Instead, it organizes a set of theoretically directional relationships that are tested with cross-sectional evidence. Accordingly, KAP provides the broad knowledge-to-action architecture of this study. It explains why destination knowledge may be associated with behavioral involvement and higher-order contribution through intermediate psychological and behavioral processes.

Consumer Value Theory explains why tourists may transform information and interaction into further contribution. The theory distinguishes functional, social, emotional, epistemic, and conditional forms of consumption value (Sheth et al., 1991). Later synthesis similarly describes perceived value as a multidimensional evaluation rather than a single judgment of price or utility (Sánchez-Fernández & Iniesta-Bonillo, 2007). In a social media tourism setting, accurate information may reduce uncertainty and search costs, interaction may create enjoyment and belonging, and recognition may strengthen the social meaning of contribution. Perceived value therefore represents an overall judgment that the benefits of knowledge and interaction are worthwhile relative to the time, effort, risk, and attention invested. Tourism research has shown that participation and co-created experience can strengthen perceived value and satisfaction (Prebensen & Xie, 2017). This study extends this logic by treating perceived value as a mechanism that connects knowledge, participation, and engagement with voluntary value co-creation behavior. Whereas KAP explains the broader progression from knowledge toward evaluation and action, Consumer Value Theory explains the evaluative mechanism that determines whether tourism knowledge and involvement are perceived as sufficiently beneficial to justify further resource contribution. From this perspective, participation or engagement alone need not result in value co-creation; their behavioral relevance depends partly on whether tourists perceive functional, informational, emotional, or social value from their involvement.

Taken together, the two theories perform complementary rather than overlapping functions in the proposed framework. KAP explains social media tourism knowledge as an upstream cognitive resource that may support subsequent involvement and action, thereby providing the general logic linking knowledge with participation, engagement, and value co-creation behavior. Consumer Value Theory complements this explanation by specifying how tourists evaluate the benefits and costs generated through knowledge and interaction, positioning perceived value as the principal evaluative mechanism linking psychological involvement with voluntary contribution. Tourist participation is therefore conceptualized as relatively observable and task-oriented involvement, tourist engagement as sustained psychological and relational involvement, perceived value as the evaluation of benefits relative to costs, and value co-creation behavior as higher-order voluntary resource contribution. Integrating the two theories allows the study to explain not only whether social media tourism

knowledge is associated with co-creation, but also why knowledge and involvement may require value evaluation before they become behaviorally consequential.

Construct Boundaries

Social media tourism knowledge refers to the level of destination-related knowledge that tourists acquire and form through social media. It concerns awareness and understanding of attractions, routes, culture, practical conditions, and tourism impacts, rather than the frequency of platform use or the perceived usefulness of specific content (Stylidis & Quintero, 2022). Tourist participation refers to direct and relatively basic actions such as using information, planning, discussing, sharing, and providing feedback. Tourist engagement refers to sustained cognitive attention, emotional involvement, and continuing relational connection with tourism content or communities (Harrigan et al., 2017). Destination-related authenticity and meaning can further stimulate continuing online engagement (Kim & Kim, 2019). Perceived value refers to an evaluation of the functional, informational, emotional, and social benefits obtained from tourism knowledge and interaction. Tourists' value co-creation behavior refers to voluntary resource contributions that improve tourism experiences and services (Andrades & Dimanche, 2018). In smart tourism settings, such contributions can also strengthen collective knowledge and destination value (Chuang, 2023). These boundaries distinguish knowing, acting, being psychologically involved, evaluating benefits, and contributing resources.

Direct Relationships and Hypotheses

Knowledge can reduce uncertainty and increase tourists' ability to use destination resources effectively. Destination knowledge also gives tourists a cognitive basis for evaluating places and communicating their evaluations to others (Stylidis & Quintero, 2022). When this knowledge is exchanged socially, informed tourists can become producers as well as recipients of travel information (Edwards et al., 2017). Information and interaction on social media have been associated with stronger tourist engagement and value co-creation (Cheung et al., 2020). Community and platform elements can additionally sustain attention and relational involvement (Cheung et al., 2021). Useful and varied tourism content can strengthen tourists' judgments that social media interaction offers practical and social benefits (Kitsios et al., 2022). Knowledge may therefore be associated with participation, engagement, perceived value, and higher-order contribution. The first four hypotheses were formulated as follows.

H1: Social media tourism knowledge is positively associated with tourists' value co-creation behavior.

H2: Social media tourism knowledge is positively associated with tourist participation.

H3: Social media tourism knowledge is positively associated with tourist engagement.

H4: Social media tourism knowledge is positively associated with perceived value.

Participation and engagement represent related but distinct transmission mechanisms. Observable participation can deepen familiarity with tourism content and communities, thereby supporting sustained attention and emotional involvement (Camilleri & Kozak, 2022). Participation can also generate value co-creation directly when tourists provide feedback,

exchange practical knowledge, or help other visitors (Mai et al., 2023). Engagement may increase perceived value because sustained attention and relational involvement allow tourists to obtain more functional, emotional, and social benefits from interaction (Lim & Rasul, 2022). Participation may similarly strengthen value when action is associated with useful outcomes and a sense of mastery (Prebensen & Xie, 2017). Finally, engagement may encourage voluntary contribution because psychologically involved tourists are more willing to invest time and effort in a destination or community (Rather et al., 2021).

H5: Tourist participation is positively associated with tourist engagement.

H6: Tourist participation is positively associated with tourists' value co-creation behavior.

H7: Tourist engagement is positively associated with perceived value.

H8: Tourist participation is positively associated with perceived value.

H9: Tourist engagement is positively associated with tourists' value co-creation behavior.

Perceived value is expected to motivate contribution because tourists are more willing to invest resources when interactions are useful, enjoyable, socially meaningful, and worth the required effort. Trust can strengthen tourists' motivation to participate in co-creation activities (Arica et al., 2023). Empowerment and psychological ownership can likewise convert valued service interaction into citizenship behavior (Zhang et al., 2024). The final direct hypothesis was therefore proposed.

H10: Perceived value is positively associated with tourists' value co-creation behavior.

Indirect Relationships and Research Model

The framework also proposes that the relevance of social media tourism knowledge is primarily transmitted through behavioral and psychological mechanisms. Knowledge can enable participation, and participation can provide an immediate route to resource contribution. Research on virtual tourist communities shows that social interaction and resource exchange can connect community participation with co-created experience (Xie et al., 2021). Knowledge can also promote engagement, although engagement may require perceived value before it becomes behaviorally consequential. Perceived value may independently transmit the relationship between knowledge and co-creation by converting cognitive resources into a judgment that contribution is worthwhile. Psychological ownership offers a related explanation for why socially engaged tourists become willing co-creators (Yang, 2024). Perceived value may therefore mediate the relationships of knowledge, participation, and engagement with co-creation.

H11: Tourist participation mediates the relationship between social media tourism knowledge and tourists' value co-creation behavior.

H12: Tourist engagement mediates the relationship between social media tourism knowledge and tourists' value co-creation behavior.

H13: Perceived value mediates the relationship between social media tourism knowledge and tourists' value co-creation behavior.

H14: Perceived value mediates the relationship between tourist participation and tourists' value co-creation behavior.

H15: Perceived value mediates the relationship between tourist engagement and tourists' value co-creation behavior.

Figure 1 presents the complete research model and identifies the direct and indirect relationships represented by H1 through H15.

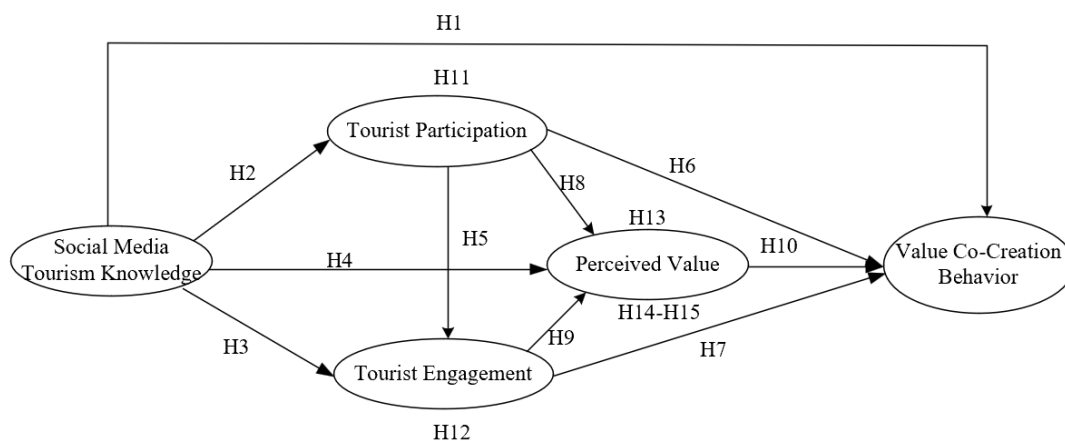


Figure 1 Research Model

Research Methodology

Scope of Research

The content scope covered five constructs and their model-consistent direct and indirect relationships. The target population consisted of mainland Chinese domestic tourists aged 18 years or older who were not residents of Chongqing, had visited Chongqing for leisure or sightseeing within the previous 12 months, and had used social media in relation to the trip. The geographical scope was Chongqing, China, and the analytical sample consisted of 475 valid respondents recruited through online and on-site channels. The temporal scope was one completed cross-sectional survey wave; the study examined associations measured at a single point rather than changes over time.

Research Design and Sample

The study adopted a quantitative, cross-sectional, questionnaire-based design grounded in the positivist paradigm. This design was appropriate for testing a theoretically specified network of relationships among latent constructs (Park et al., 2020). Convenience sampling was used because no complete sampling frame was available for the population of nonresident Chongqing visitors who had also used social media in relation to their trip. The inclusion criteria required respondents to be at least 18 years old, reside outside Chongqing, have visited

the city for leisure or sightseeing within the previous 12 months, and have used social media before, during, or after that visit.

Respondents were recruited through online circulation of a Wenjuanxing questionnaire and through QR-coded materials made available in tourism settings. The instrument began with eligibility and informed-consent items. Following Memon et al. (2021) and applying a conservative 15:1 sample-to-item ratio, the minimum required sample size was 375 respondents. A total of 542 questionnaires were received. Before model estimation, 18 cases were excluded because the respondent did not satisfy the inclusion criteria, 17 were removed because the completion time was unreasonably short, 14 displayed near-invariant responding, 10 contained logically inconsistent answers, and 8 were severe multivariate outliers based on Mahalanobis distance at p below .001. The final analytical sample contained 475 complete cases, representing 87.6% of the initially collected responses.

Measurement

All constructs were measured with five-point Likert-type items ranging from 1, strongly disagree, to 5, strongly agree. Social media tourism knowledge was measured with four items adapted from Stylidis and Quintero (2022) to assess awareness and understanding of Chongqing tourism information obtained through social media. Tourist participation was measured with four items adapted from Mai et al. (2023), focusing on the use and exchange of information, planning, feedback, and problem-related participation. Tourist engagement was measured with eight items adapted from Wongkitrungrueng and Assarut (2020), reflecting sustained attention, following, revisiting, recommendation, and continuing involvement with Chongqing tourism content. Perceived value was measured with five items adapted from Kitsios et al. (2022), assessing the usefulness, variety, practical benefits, and social value of information and interaction. Tourists' value co-creation behavior was measured with four items adapted from Rather et al. (2021), capturing the integration of knowledge and effort into tourism experience and contribution. The final measurement model therefore comprised 25 observed indicators across five latent constructs.

The adaptations were written for the Chongqing tourism and social media context while maintaining the conceptual separation among knowledge, participation, engagement, value evaluation, and higher-order contribution. The questionnaire was administered in Chinese, while the English wording is reported for documentation of the measures. The adapted items were translated and contextualized for Chongqing tourism and social-media use with the intention of retaining the conceptual meaning of the original constructs rather than reproducing the source wording literally. Because the study used adapted self-report scales, construct quality was evaluated empirically through reliability analysis and confirmatory factor analysis rather than assumed from the source instruments.

Data Analysis

Descriptive statistics were used to summarize the sample and examine item distributions. Internal consistency was assessed with Cronbach's alpha and corrected item-total correlations. Factorability was examined with the Kaiser–Meyer–Olkin statistic and Bartlett's test of sphericity. Because all focal variables were collected in one questionnaire, common method bias was assessed with an unrotated exploratory factor analysis and a confirmatory

single-factor model. The five-factor measurement model was then estimated in AMOS with maximum-likelihood estimation. Convergent and discriminant validity were first evaluated with composite reliability, average variance extracted, and the Fornell–Larcker criterion (Fornell & Larcker, 1981). The heterotrait-monotrait ratio provided an additional assessment of discriminant validity (Henseler et al., 2015).

After the measurement model had been validated, structural equation modeling was used to estimate the ten direct relationships and the explained variance of the endogenous constructs. Indirect relationships were assessed with 5,000 bootstrap samples and bias-corrected 95% confidence intervals. An indirect relationship was considered statistically significant when its confidence interval excluded zero. Sequential indirect relationships generated by the proposed model were treated as supplementary analyses rather than as hypotheses added after inspection of the results.

Ethical Procedures

Before entering the questionnaire, respondents received information about the purpose of the study, voluntary participation, research use of the data, and the right to stop responding. No names, telephone numbers, social media account identifiers, or other direct personal identifiers were collected. Responses were analyzed in aggregate and were used only for the stated research purpose.

Research Results

Data Screening and Sample Characteristics

The final sample comprised 214 men and 261 women. Respondents aged 18 to 35 accounted for 67.0% of the sample, while respondents aged 46 or older were retained to avoid restricting the study to younger social media users. More than half of the respondents held a bachelor's degree, and 26.1% held a master's degree or above. Xiaohongshu and Douyin were the most frequently reported platforms, followed by WeChat, Weibo, and Bilibili. Because platform use was a multiple-response item, its percentages exceed 100% when summed. Table 1 summarizes the sample characteristics most relevant to the analysis.

Table 1 Sample Characteristics

Variable	Category	n	%
Gender	Male	214	45.1
	Female	261	54.9
Age	18–25	142	29.9
	26–35	176	37.1
	36–45	96	20.2
	46–55	44	9.3

Variable	Category	n	%
Education	56 and above	17	3.6
	Below bachelor's degree	88	18.5
	Bachelor's degree	263	55.4
	Master's degree or above	124	26.1
	Xiaohongshu	302	63.6
Platform used	Douyin	289	60.8
	WeChat	231	48.6
	Weibo	160	33.7
	Bilibili	86	18.1

Note. N = 475. Platform use was a multiple-response item; platform percentages therefore do not sum to 100%.

At the construct level, mean scores were 3.72 for social media tourism knowledge, 3.46 for tourist participation, 3.68 for tourist engagement, 3.82 for perceived value, and 3.54 for tourists' value co-creation behavior. Knowledge and perceived value were therefore comparatively high, whereas more demanding participation and co-creation activities were less common. All absolute skewness and kurtosis values were below 1.0, indicating no serious univariate non-normality.

Measurement Model

Cronbach's alpha coefficients ranged from .834 to .907, and corrected item-total correlations exceeded .50 for every retained item. The Kaiser–Meyer–Olkin measure was .931, and Bartlett's test was significant, with chi-square equal to 6,427.58, 300 degrees of freedom, and p below .001. The correlation matrix was therefore suitable for factor analysis.

The unrotated exploratory factor analysis identified five factors that explained 68.91% of the total variance. The first factor accounted for 34.72%, which did not indicate a dominant single factor. A confirmatory model that loaded all 25 items on one latent construct also showed poor fit, with a chi-square-to-degrees-of-freedom ratio of 6.263, CFI of .706, TLI of .679, RMSEA of .105, and SRMR of .094. Common method variance was therefore unlikely to provide a sufficient alternative explanation for the five-construct structure.

The proposed five-factor measurement model demonstrated satisfactory fit: chi-square was 487.36 with 265 degrees of freedom, the chi-square-to-degrees-of-freedom ratio was 1.839, GFI was .923, AGFI was .904, CFI was .966, TLI was .961, RMSEA was .042, and SRMR was .038. Standardized loadings ranged from .69 to .84. Composite reliability values ranged from .840 to .908, while average variance extracted values ranged from .552 to .637. As shown in Table 2, all five constructs satisfied the specified reliability and convergent-validity criteria.

Table 2 Reliability and Convergent Validity of the Measurement Model

Construct	k	Loading range	α	CR	AVE
Social media tourism knowledge	4	.74–.82	.858	.860	.605
Tourist participation	4	.71–.80	.834	.840	.567
Tourist engagement	8	.69–.78	.907	.908	.552
Perceived value	5	.75–.84	.889	.891	.622
Value co-creation behavior	4	.76–.83	.875	.875	.637

Note. k = number of items; α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted. Square roots of AVE ranged from .743 to .798, and all heterotrait-monotrait ratios were below .85.

For each construct, the square root of average variance extracted exceeded its correlations with the other constructs. The highest latent correlation was .625 between perceived value and value co-creation behavior, which remained below the corresponding square roots of average variance extracted, .789 and .798. All heterotrait-monotrait ratios were below .85 and ranged from .548 to .823. These results supported discriminant validity while recognizing that the five constructs were theoretically related.

Structural Model and Direct Relationships

The structural model demonstrated satisfactory fit. Chi-square was 487.36 with 265 degrees of freedom, the chi-square-to-degrees-of-freedom ratio was 1.839, GFI was .923, AGFI was .904, CFI was .966, TLI was .961, RMSEA was .042, and SRMR was .038. Social media tourism knowledge explained 19.0% of the variance in tourist participation. Knowledge and participation jointly explained 27.7% of tourist engagement. Knowledge, participation, and engagement explained 33.6% of perceived value, and the complete model explained 35.3% of tourists' value co-creation behavior.

Table 3 presents the ten direct relationships. Social media tourism knowledge was not significantly associated with value co-creation behavior after the intermediate variables were included, so H1 was not supported. Knowledge was positively associated with tourist participation, tourist engagement, and perceived value, supporting H2, H3, and H4. Tourist participation was positively associated with engagement and value co-creation behavior, supporting H5 and H6. Tourist engagement was positively associated with perceived value, supporting H7. The relationship between participation and perceived value did not reach the conventional significance level, so H8 was not supported. The independent direct relationship between engagement and value co-creation behavior was also nonsignificant, so H9 was not supported. Perceived value had the strongest direct relationship with value co-creation behavior, supporting H10.

Table 3 Direct Structural Relationships

Hyp.	Predictor	Outcome	β	p	Decision
H1		Value co-creation behavior	.067	.139	Not supported
H2	Social media tourism knowledge	Tourist participation	.436	<.001	Supported
H3		Tourist engagement	.244	<.001	Supported
H4		Perceived value	.209	<.001	Supported
H5	Tourist participation	Tourist engagement	.372	<.001	Supported
H6		Value co-creation behavior	.188	<.001	Supported
H7	Tourist engagement	Perceived value	.404	<.001	Supported
H8	Tourist participation	Perceived value	.091	.061	Not supported
H9	Tourist engagement	Value co-creation behavior	.084	.073	Not supported
H10	Perceived value	Value co-creation behavior	.401	<.001	Supported

Note. β = standardized structural coefficient. Decisions use a two-sided significance level of .05.

Indirect and Sequential Relationships

The bootstrap results are reported in Table 4. The indirect relationship between social media tourism knowledge and value co-creation behavior through tourist participation was significant, supporting H11. The indirect relationship through tourist engagement alone was not significant, so H12 was not supported. Perceived value significantly mediated the relationship between knowledge and value co-creation behavior, supporting H13. Perceived value did not significantly mediate the relationship between tourist participation and value co-creation behavior, so H14 was not supported. In contrast, perceived value significantly mediated the relationship between tourist engagement and value co-creation behavior, supporting H15.

Table 4 Bootstrap Indirect Relationships

Test	Indirect relationship	Effect	Lower CI	Upper CI	Decision
H11	Knowledge through participation	.082	.049	.123	Supported
H12	Knowledge through engagement	.020	-.002	.049	Not supported
H13	Knowledge through perceived value	.084	.044	.135	Supported
H14	Participation through perceived value	.036	-.002	.080	Not supported
H15	Engagement through perceived value	.162	.108	.230	Supported

Test	Indirect relationship	Effect	Lower CI	Upper CI	Decision
Seq.	Knowledge through participation and engagement	.014	−.001	.033	Not significant
	Knowledge through engagement and perceived value	.040	.022	.064	Significant
	Knowledge through participation and perceived value	.016	−.001	.038	Not significant
	Knowledge through participation, engagement, and perceived value	.026	.014	.046	Significant

Note. Seq. = supplementary sequential relationship. Bias-corrected confidence intervals were estimated from 5,000 bootstrap samples. An indirect relationship was significant when its interval excluded zero.

Two supplementary sequential relationships were significant. The sequence involving social media tourism knowledge, tourist engagement, perceived value, and value co-creation behavior produced an indirect effect of .040 with a 95% confidence interval from .022 to .064. The longer sequence involving knowledge, tourist participation, tourist engagement, perceived value, and value co-creation behavior produced an indirect effect of .026 with a confidence interval from .014 to .046. Sequences that depended on the nonsignificant direct relationship between engagement and co-creation or on the nonsignificant relationship between participation and perceived value were not significant.

Although the independent direct relationship between knowledge and value co-creation behavior was nonsignificant, the total indirect effect of knowledge was .282 and its total standardized effect was .349. Tourist participation had a total effect of .316, tourist engagement had a total effect of .246, and perceived value retained the strongest direct effect at .401. These estimates show that knowledge remained relevant as an upstream resource, but its association with co-creation was mainly transmitted through intermediate mechanisms.

Discussion

The findings show that social media tourism knowledge does not automatically become value co-creation behavior. Knowledge was positively associated with participation, engagement, and perceived value, but its independent direct relationship with co-creation was nonsignificant when the intermediate variables were included. This pattern supports a resource-enablement interpretation. Knowledge gives tourists the capacity to plan, evaluate, discuss, and contribute, but higher-order contribution requires behavioral activation or a judgment that participation is valuable. Co-produced travel information similarly becomes useful when knowledge is exchanged and applied in interaction (Edwards et al., 2017). The significant total indirect effect confirms that the absence of an independent direct relationship should not be interpreted as evidence that knowledge is unimportant. Rather, knowledge operates primarily

through the mechanisms it enables, which is consistent with the view that mobile and social resources create value through their use (Buhalis & Foerste, 2015).

Tourist participation and tourist engagement played different roles. Participation was directly associated with engagement and value co-creation behavior. Observable actions such as using information, planning, sharing, and providing feedback can therefore function as an immediate bridge between knowledge and contribution. Engagement, by contrast, was not independently associated with value co-creation after perceived value was included. Its behavioral relevance was transmitted mainly through perceived value. This distinction supports the view that participation, engagement, and co-creation should not be collapsed into one broad construct. Engagement is a sustained psychological and relational state rather than a synonym for visible activity (Lim & Rasul, 2022). Value co-creation is more demanding because it involves voluntary resources whose benefits extend beyond the individual tourist (John & Supramaniam, 2024). This finding differs from prior research that has linked customer engagement more directly with value co-creation outcomes (Cheung et al., 2020; Rather et al., 2021). In the Chongqing context, however, engagement was behaviorally relevant primarily in association with perceived value.

Perceived value emerged as the central psychological mechanism. It had the strongest direct standardized relationship with value co-creation behavior, and it significantly mediated the relationships of both knowledge and engagement with co-creation. Tourists may pay attention to content or feel connected to a destination community without contributing unless the interaction is associated with benefits that are useful, enjoyable, informative, or socially meaningful. This finding extends the multidimensional logic of Consumer Value Theory to voluntary tourist contribution (Sheth et al., 1991). Value is not only an outcome of consumption; co-created experiences can also motivate tourists to return knowledge, feedback, experience, and social support to the destination system (Prebensen & Xie, 2017).

The nonsignificant relationship between tourist participation and perceived value provides an important qualification. Activity intensity does not necessarily create value. Participation may consume time and attention, expose tourists to low-quality information, or require effort without producing a visible benefit. Some participatory activities may nevertheless create value co-creation directly because sharing a solution or providing feedback constitutes a contribution even when the tourist does not report a stronger value evaluation. Destination and platform managers should therefore distinguish participation volume from value-generating participation. Counts of views, saves, comments, or posts do not demonstrate that users have received functional, emotional, or social value.

The results also refine the application of the Knowledge–Attitude–Practice model. The significant relationships from knowledge to participation, engagement, and perceived value are consistent with the proposition that knowledge supports both evaluation and action. However, the model did not operate as a simple progression in which every stage independently predicted the final behavior. The supported longer sequence indicates that knowledge can activate participation, participation can deepen engagement, engagement can increase perceived value, and value can motivate contribution. At the same time, the nonsignificant paths show that

alternative routes coexist. The present extension of KAP is therefore configurational rather than mechanically linear.

The Chongqing context demonstrates why digital visibility and constructive co-creation should be distinguished. A destination can receive extensive social media attention while visitors remain passive, repeat standardized itineraries, or circulate content that adds little practical or cultural knowledge. Constructive co-creation is more likely when online information is credible and actionable, participation is meaningful, engagement is associated with identifiable benefits, and tourists can see how their resources improve collective experience. Multi-actor communication is therefore more consequential than visibility alone (Ravazzani & Hazée, 2022). Trust can strengthen the willingness to participate in co-creation (Arica et al., 2023). Empowerment can further translate interaction into citizenship behavior and resource contribution (Zhang et al., 2024).

Conclusion

This study examined how social media tourism knowledge is associated with tourists' value co-creation behavior through tourist participation, tourist engagement, and perceived value in Chongqing. The results answer the first objective by showing that knowledge was positively associated with participation, engagement, and perceived value, but not independently with co-creation behavior. Participation was directly associated with engagement and co-creation, engagement was associated with perceived value, and perceived value was the strongest direct predictor of co-creation.

The mediation results answer the second and third objectives. Participation transmitted part of the relationship between knowledge and co-creation, while engagement alone did not. Perceived value mediated the relationships of knowledge and engagement with co-creation and supported significant sequential mechanisms. Overall, social media tourism knowledge functions as an enabling cognitive resource rather than a sufficient condition for value co-creation. Its practical significance depends on whether tourists can use that knowledge to participate, develop meaningful engagement, recognize value, and contribute resources responsibly.

Suggestion

In the short term, destination management organizations should prioritize the accuracy, timeliness, and usability of social-media tourism information. Transport guidance, opening information, crowd conditions, route alternatives, reservation procedures, cultural explanations, accessibility information, and responsible-tourism guidance should be clearly dated and easy to use. Platforms can support these tactical improvements by strengthening source cues, sponsorship disclosure, correction mechanisms, and tools that organize fragmented content into usable route or travel information. Tourism enterprises can request specific and voluntary feedback concerning queues, accessibility, route design, service communication, cultural interpretation, and product quality. Tourists and online communities

can also be encouraged to correct outdated information, report realistic waiting times, share route alternatives, and provide context-rich descriptions rather than reproducing viral images without practical information.

In the longer term, destination organizations, platforms, and tourism enterprises should develop mechanisms that convert useful participation into sustained and visible value co-creation. Destination management organizations can establish feedback loops showing how tourist reports and suggestions have informed service or information improvements. Platforms can progressively diversify recommendation systems so that users encounter a broader range of places, cultural perspectives, and practical travel information instead of repeatedly receiving the same highly visible attractions and itineraries. Tourism enterprises can build continuing contributor relationships by recognizing useful feedback and demonstrating how tourist knowledge has been adopted. These longer-term initiatives should focus on interaction quality and credible contribution rather than traffic volume alone, because the findings indicate that engagement is associated with co-creation primarily when tourists also recognize meaningful value in their involvement.

The findings should be interpreted in light of several limitations. Convenience sampling limits the statistical generalizability of the findings beyond the observed participants. The cross-sectional design does not establish temporal or causal ordering, and reciprocal relationships may exist among social media tourism knowledge, tourist participation, tourist engagement, perceived value, and value co-creation behavior. All focal constructs were measured through self-report, meaning that social desirability bias and common method variance cannot be completely excluded. The analysis also combined several social media platforms despite differences in their content formats, interaction mechanisms, and user practices. In addition, participation, engagement, and value co-creation remain conceptually related constructs despite the acceptable discriminant validity demonstrated in the measurement model. The adapted Chinese-language questionnaire was not subjected to a separate pilot study, which may limit the extent to which potential wording or contextual interpretation issues were identified before the main survey. Future research could therefore incorporate formal pretesting and more extensive cross-language validation procedures. Longitudinal studies using two or more measurement waves could examine whether the theoretically proposed relationships remain stable over time, while experimental research could manipulate factors such as information quality, interactivity, content diversity, or feedback visibility to provide stronger evidence regarding the proposed mechanisms. Future studies could also combine questionnaire responses with observable platform behaviors, such as posting, commenting, correcting information, or producing destination-related content, and compare different social media platforms and tourist subgroups. Further refinement of the distinction between basic participation and higher-order value co-creation is also warranted. Finally, future models could incorporate negative mechanisms such as misinformation, information overload, platform fatigue, perceived crowding, and value co-destruction to provide a more comprehensive explanation of social-media-mediated tourism behavior.

New Knowledge

The principal knowledge generated by this study is that the conversion of social media tourism knowledge into value co-creation is conditional and multi-stage. Knowledge provides tourists with cognitive resources, but it does not independently ensure contribution. Participation supports the use of those resources, engagement deepens psychological involvement, and perceived value determines whether continued involvement becomes worthwhile enough to motivate voluntary contribution. The empirically supported mechanism therefore separates four functions that are often blurred in digital tourism research: knowing, participating, engaging, and contributing.

The empirical results support multiple routes through which social media tourism knowledge is associated with value co-creation behavior. Among the specific indirect relationships tested, the route through perceived value showed the largest indirect effect, closely followed by the route through tourist participation. Significant sequential relationships were also identified through tourist engagement and perceived value and through tourist participation, tourist engagement, and perceived value. The model therefore indicates that knowledge can be associated with value co-creation through both relatively direct intermediary mechanisms and longer sequential processes. The common principle is that productive destination visibility depends on the quality of the conversion process, not on exposure alone.

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