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RESEARCH ARTICLE

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Gender and technology in urban tourism: a systematic literature review

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ABSTRACT

Digital systems, from mobile navigation and platform-based accommodation to broader smart-city infrastructure, are increasingly shaping urban tourism. Although these technologies influence how visitors access and experience urban environments, their gendered implications have not been systematically examined. This study addresses this gap by systematically reviewing the existing research on the intersection of gender and technology in urban tourism. Through an analysis of 31 relevant English journal articles from the Scopus and Web of Science databases using the theories, contexts, characteristics, and methods (TCCM) framework, the paper sheds light on what has been studied about gender and technology in urban tourism and how it has been approached. This paper provides insight into gender differences in technology adoption in tourism and how technology presents both risks and opportunities for women and marginalised groups. The paper contributes to the literature by identifying three salient themes in the research field and proposing five key research propositions. Our study advocates for participatory planning that actively considers gender in the design of safety algorithms and infrastructure. Furthermore, it calls for a shift in methodologies to address contextual differences and for intersectional approaches that recognise how gender interacts with other factors in shaping the experience of urban tourism.

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Urban tourism; gender; technology; systematic literature review

1. Introduction

Technology and gender have a long and contested relationship. The dominant narrative for decades positioned technology as a masculine domain, with computers considered 'male machines', engineering as a masculine profession, and women as slower adopters, less confident, or more anxious users of digital tools (N. Gupta, 2015). As of 2024, 70% of men globally use the internet compared to 65% of women, which translates to 189 million more men than women online. This gender digital divide has widened in the least developed countries, where only 29% of women use the internet compared to 41% of men (International Telecommunication Union, 2024). Sociocultural norms, caregiving burdens, digital literacy, and economic constraints are some primary factors driving this divide and do not seem to disappear even when connectivity improves (Acilar & Sæbø, 2023). At the macro level, women represent only 28.2% of the global STEM workforce, with artificial intelligence (AI) and big data, programming, and networks and cybersecurity all falling short of gender parity (World Economic Forum, 2024).

Yet the relationship between gender and technology is not static or universal. Evidence from India and Malaysia shows that computing/computer science is perceived as women-friendly or women-dominated. The growing participation of women in these fields is driven by a complex interplay of patriarchal family structures, economic opportunity, and shifting sociocultural norms (N. Gupta, 2015; Mellström, 2009). Gender tends to interact with contextual factors such as technology type, domain, national context, social influence, or individual factors such as effort expectancy in shaping intentions to adopt new technologies. As such, examining differences in adoption pathways, rather than simple differences in adoption rates, offers a stronger basis for understanding gender and technology. The key insight from global evidence is that the gender-technology relationship appears to be strongly grounded in contexts. What holds in one setting does not necessarily hold in others, and frameworks developed in one context should be applied to

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others with considerable caution (N. Gupta, 2015; Mellström, 2009). The emergence of Generative AI (GenAI) adds further complexity, particularly in issues concerning privacy, trust, and perceived risks of GenAI (Aldasoro et al., 2024; Deloitte, 2025).

Gender has been part of tourism scholarship since at least the early 1990s, progressively moving from treating gender as a demographic variable towards more critical feminist perspectives that examine the structural conditions shaping women's experiences as employees, entrepreneurs, and travellers (Webster & Farmaki, 2025). From the industry workforce participation perspective, women make up 56% of the hospitality workforce but remain concentrated in lower-skilled, lower-paid and often informal employment (UN Tourism [UN], 2024). Despite their numerical majority, women are significantly underrepresented in senior leadership and technology-related management roles in the industry. There exists a technology double gender gap in tourism – not only are women underrepresented in tourism leadership generally, but the higher the technological level of a tourism organisation, the lower women's representation on its boards of directors and management teams (Figueroa-Domecq, Palomo, et al., 2020). From a consumer perspective, evidence shows that gender differences and inequalities persist across multiple dimensions of tourism experience. Women consistently show greater sensitivity to physical and safety-related risks, which are attributed to socially constructed gender norms and the masculinised nature of tourism space (Yang et al., 2017). From a research perspective, this literature is still dominated by positivist quantitative studies treating gender as a variable rather than a social relation and by a disproportional focus on the Global North and rural contexts, leaving urban women's experiences significantly underexamined (Figueroa-Domecq, de Jong, et al., 2020). Urban tourism warrants separate consideration from tourism more broadly because cities concentrate both the technologies that mediate contemporary travel and the gendered conditions under which those technologies are experienced. Smart-city infrastructure, platform economies, surveillance and security systems, shared mobility services, and AI-driven recommendation and pricing systems are deployed most densely in urban settings, making cities the primary sites where tourists encounter technology-mediated experiences (Boes et al., 2016; Coca-Stefaniak & van Zyl, 2025; Do Lago & Allis, 2026). At the same time, feminist urban scholarship has long established that cities are not gender-neutral spaces: fear, safety, and mobility in urban environments are strongly shaped by gender (Pain, 2001), and critical smart-city research shows that smart urban development remains largely inattentive to gender inequalities (Listerborn & de Neergaard, 2021). Urban tourism sits at the meeting point of these two conditions. When women and gender-diverse tourists navigate cities, they do so through technologies embedded in gendered urban systems – negotiating ride-hailing and shared mobility against safety concerns, encountering surveillance technologies at mass events, or relying on algorithmic recommendations of urban night-time spaces. These dynamics are configured differently in rural or nature-based tourism, where technological infrastructure is sparser and gendered risk takes different forms. The density, anonymity, and technological saturation of cities therefore make urban tourism theoretically distinct, rather than merely convenient, setting for examining how gender and technology intersect.

Recent tourism research has moved beyond isolated digital tools towards broader questions of transformation, adoption, and inclusion. Digital transformation in hospitality encompasses technology adoption, stakeholder outcomes, online purchasing, and platform-mediated review practices (Peng et al., 2024). Recent smart-tourism research likewise conceptualises visitor satisfaction as multidimensional and calls for closer examination of technological features and their antecedents (Yap et al., 2025). At the organisational level, technology adoption among tourism employees is shaped by technological readiness, perceived usefulness, and perceived ease of use (Cimbaljević et al., 2024). Inclusive tourism scholarship, meanwhile, emphasises representation, participation, co-creation, and the distribution of tourism benefits (Kraff et al., 2025). These streams remain insufficiently integrated: digital transformation and adoption research rarely treats gender as a structuring condition, while inclusive tourism research has paid limited attention to the gendered effects of urban digital infrastructures.

Despite the globally recognised digital gender divide, there is a relative lack of scholarship examining how urban tourism technologies specifically shape or are shaped by gender. Existing reviews have examined risk and gender in tourism (Yang et al., 2017), gender and tourism entrepreneurship (Figueroa-Domecq, de Jong, et al., 2020; Kareem et al., 2025), and the gender digital divide beyond tourism (Acilar & Sæbø, 2023), while Webster and Farmaki (2025) called for greater attention to the tourism-technology-gender nexus without systematically mapping the existing evidence. What remains absent is a systematic review of how

gender and technology intersect specifically within urban tourism where these dynamics are most concentrated. This study addresses that gap through a systematic review of 31 peer-reviewed articles guided by three research questions:

(1) What do we know about gender and technology in urban tourism?
(2) How do we know about gender and technology in urban tourism?
(3) Where should research about gender and technology in urban tourism be heading?

Our systematic review contributes to the literature by identifying three salient themes in the research field. We further propose five research propositions to advance this research area. The remainder of the paper proceeds as follows. Section 2 describes the methodology. Section 3 presents the findings through the TCCM lens and a set of five propositions for future research. Section 4 concludes with contributions, limitations, and implications for research and practice.

2. Methodology

Our study conducted a systematic literature review (SLR) using the SPAR-4-SLR protocol (Paul et al., 2021) to address the research objectives (Figure 1). The SPAR-4-SLR approach offers clear guidance on conducting a comprehensive review by detailing the key assembling, arranging, and assessing stages. SPAR-4-SLR has also been used in extant tourism SLRs related to gender (Kareem et al., 2025) and technology (Mukherjee et al., 2023).

During the assembly phase, English-language journal articles were identified in the Scopus and Web of Science (WoS) databases. These two databases were chosen over others based on three key reasons. First, both Scopus and WoS are quality, multidisciplinary databases recommended by systematic review specialists in the research field such as Paul et al. (2021) and hence are suitable for capturing the multifaceted contexts surrounding gender and technology in urban tourism. Second, Scopus and WoS have also been used in previous tourism systematic reviews across a variety of different research areas (Tran et al., 2023; Trinh Ngo et al., 2022). Third, the use of only Scopus and WoS databases has also been supported in interdisciplinary studies on gender and technology (Acilar & Sæbø, 2023; Verdugo-Castro et al., 2022). Subsequently, articles which contained the keywords 'gender*' OR 'woman' OR 'women*' OR 'female*' OR 'male' OR 'femini*' OR 'masculin*' AND 'touris*' AND 'urban' OR 'city' OR 'cities' OR 'metropolitan' AND 'tech*' OR 'digit*' OR 'smart' OR 'AI' OR 'artificial intelligence' OR 'algorithm*' OR 'mobile' OR 'app*' OR 'social media' OR 'platform*' OR 'virtual reality' OR 'augmented reality' OR 'ICT' in the title, abstract and keywords were acquired from both databases. In Scopus, this meant using the 'search within article title, abstract, keywords' search field while in WoS, the equivalence was to use the 'search within topic' field. Hence, articles that address gender, technology, and the urban tourism context but may not contain the term 'urban tourism' specifically could still be captured using our comprehensive search string if they included the terms 'touris*' with 'city' OR 'cities' OR 'metropolitan'. A search period of 10 years, from 2016 to the end of the data collection period of 2025, was used to manage the volume of literature (Paul et al., 2021). This resulted in 348 Scopus articles and 252 from the WoS.

In the arranging stage, articles were organised using the Theories, Contexts, Characteristics, and Methods (TCCM) framework (Paul & Rosado-Serrano, 2019). The TCCM framework allows for a comprehensive extraction and clear classification of data (Paul et al., 2021) and has been used in past tourism SLRs (Fakfare et al., 2022; Zhang et al., 2025). The arranging stage further involved the purification of data, with 164 duplicates removed. In addition, 405 articles that were outside the scope of the study and did not study the role of gender and technology in urban tourism contexts were also excluded from the study. For instance, while the systematic review by Iskender et al. (2024) was insightful in providing a summary of the state of technology adoption and acceptance in tourism post COVID-19, their article did not focus on urban tourism and gender and was thus excluded in the screening process. In addition, while our list of related keywords (e.g., 'city', 'metropolitan') meant that articles which were related to urban tourism but may not contain the exact phrase 'urban tourism' could still be captured, the full text of the articles was carefully reviewed to ensure that articles related to urban tourism were still included in our review. Using the above protocol, all authors were involved in the screening stage in which articles were

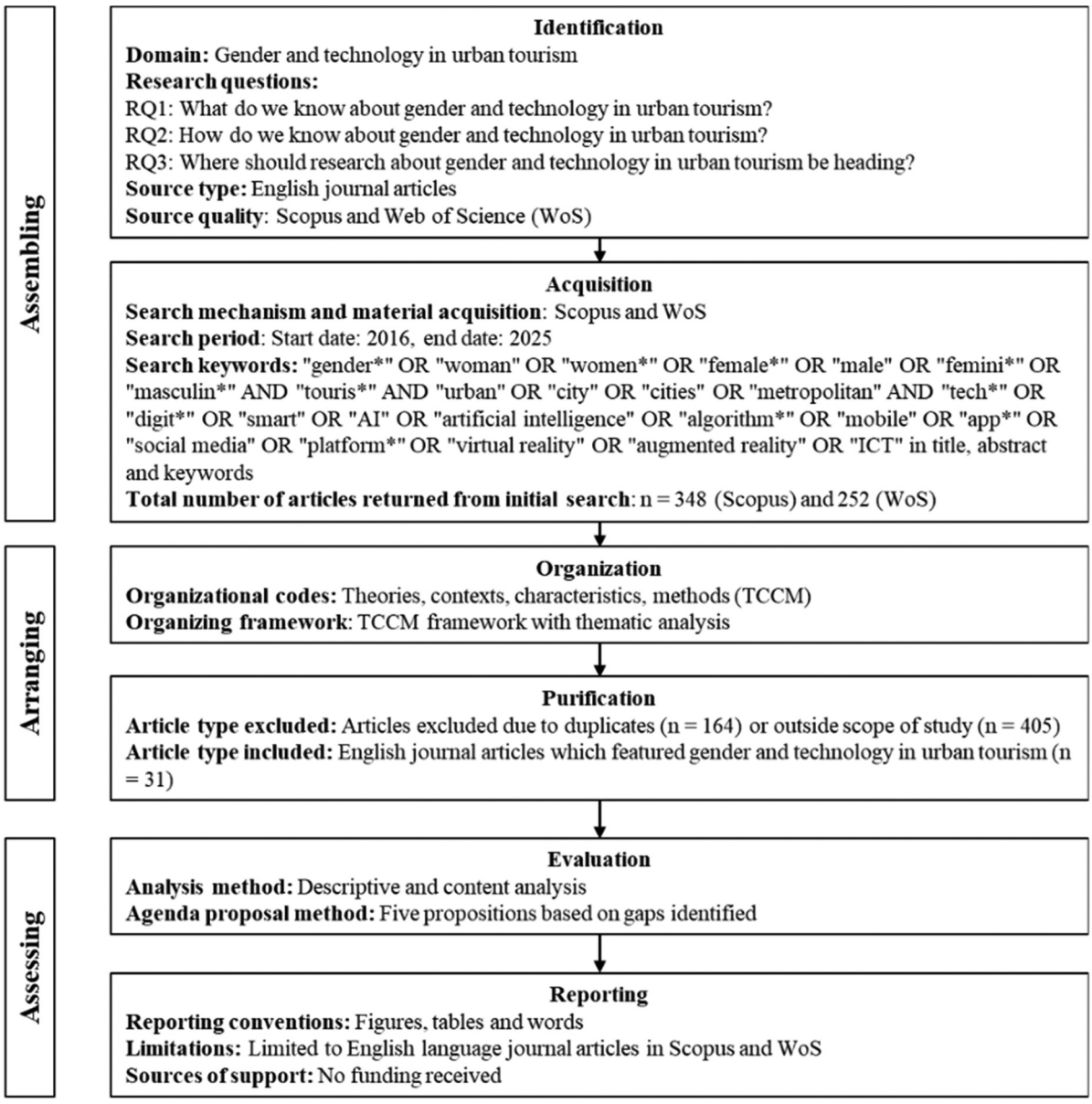


Figure 1. SPAR-4-SLR protocol followed in this research.

checked to verify their suitability for exclusion to ensure quality in the purification process. This resulted in a total of 31 relevant articles for the final assessment, with Table 1 summarising our inclusion and exclusion criteria.

The final assessing stage involved an analysis of the data obtained from the 31 articles in review. Guided by the TCCM framework, the study will report on the findings based on our research questions. The following section discusses the results of our SLR.

3. Results

3.1. General information

This section presents the descriptive overview of the articles included in the systematic literature review. Examining the publication years helps identify the growth trajectory and emerging scholarly interest in the field, while the journal outlet analysis demonstrates the multidisciplinary nature of the topic across tourism, technology, gender, urban studies, and social science disciplines. These findings establish the general profile

Table 1. Inclusion and exclusion criteria in this research.

Inclusion criteria	Exclusion criteria
• English journal articles • Found in Scopus and Web of Science (WoS) databases • Published from 2016 to 2025 • Containing "gender*" OR "woman" OR "women*" OR "female*" OR "male" OR "femini*" OR "masculin*" AND "touris*" AND "urban" OR "city" OR "cities" OR "metropolitan" AND "tech*" OR "digit*" OR "smart" OR "AI" OR "artificial intelligence" OR "algorithm*" OR "mobile" OR "app*" OR "social media" OR "platform*" OR "virtual reality" OR "augmented reality" OR "ICT" in the title, abstract and keywords	• Non-English language articles • Not peer-reviewed journal articles • Duplicate articles between Scopus and Web of Science (WoS) databases • Articles that did not study the role of gender and technology in urban tourism contexts. For example, studies by Cui (2025) and X. Li et al. (2025) featured technology and urban tourism contexts but did not examine the role of gender. Others such as Khoo and Guan (2025) focus on the role of women but in cultural and heritage tourism contexts and without a closer look at the role of technology.

of existing literature before the subsequent discussions on the thematic characteristics, theoretical foundations, research contexts, methodological approaches, and future research directions.

3.1.1. Publication year

The publication-year distribution in Figure 2 shows that research on gender and technology in urban tourism is a relatively recent and emerging area of scholarship. Across the 31 articles included in the final review, the earliest publication appeared in 2016, followed by one article in 2017. No relevant articles were recorded in 2018 and 2019, suggesting that the intersection between gender, technology, and urban tourism had not yet developed as a sustained research stream during the earlier part of the review period.

From 2020 onwards, publication activity became more consistent. Two articles were published in 2020, followed by four articles in each of 2021, 2022, and 2023. This indicates a gradual consolidation of scholarly interest, likely reflecting the growing importance of digital platforms, mobile technologies, smart tourism systems, and data-driven urban tourism experiences (Lim & Bouchon, 2021; Palos-Sánchez et al., 2021; Tian et al., 2023). The COVID-19 period may also have accelerated interest in technology-mediated tourism, as digital tools became increasingly central to tourist mobility, destination communication, and service delivery (Palos-Sánchez et al., 2021; Tian et al., 2023).

The strongest growth occurred in the most recent two years of the review period. The number of publications increased to eight in 2024, representing the highest annual output in the dataset, followed by seven articles in 2025. Together, 2024 and 2025 account for 15 out of 31 articles, or 48.39% of the reviewed studies. This concentration of nearly half of the literature in the last two years confirms that the topic is gaining strong momentum. It also suggests that gendered perspectives on technology use in urban tourism are becoming more visible in recent academic debates (Bakas & Salman, 2024; Wang et al., 2026; Wu et al., 2025).

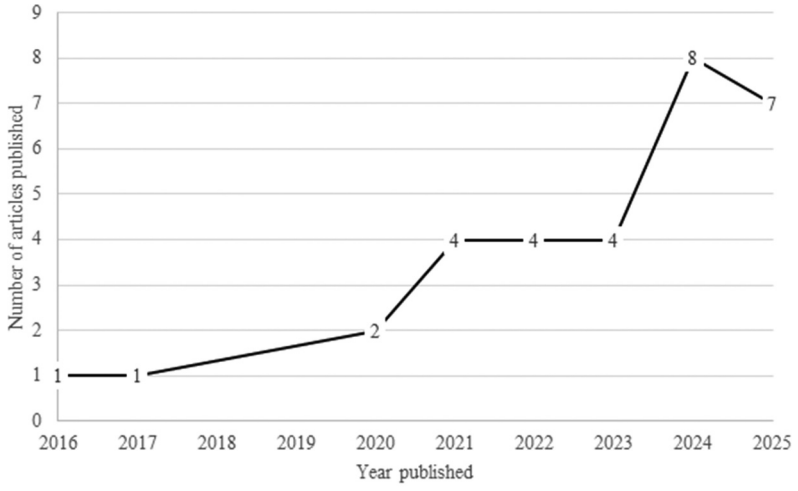


Figure 2. Number of articles published each year.

Overall, the publication trend demonstrates that this field remains at an early but rapidly expanding stage. The limited number of studies before 2020 indicates that the topic was previously underexplored, while the sharp increase after 2023 shows growing recognition of the need to examine how technological systems shape tourism experiences differently across gender groups. This pattern supports the relevance of conducting a systematic literature review at this point, as the field has accumulated enough studies for meaningful synthesis but remains sufficiently new to benefit from conceptual clarification and future research directions.

3.1.2. Journal outlet

As presented in Table 2, the 31 reviewed articles were published across 30 journal outlets, indicating a highly dispersed publication landscape. Only one journal, Tourism Recreation Research, published more than one article, with two articles representing 6.45% of the dataset. All other journals contributed one article each, equivalent to 3.23% per journal. This shows that research on gender and technology in urban tourism has not yet become concentrated within a small number of specialised journals.

The journal distribution reflects the multidisciplinary nature of the topic. Several articles appeared in tourism and hospitality journals, including Tourism Recreation Research, Current Issues in Tourism, Tourism Geographies, International Journal of Tourism Cities, Journal of Travel & Tourism Marketing, Journal of Destination Marketing & Management, Tourism and Hospitality, and Tourism & Management Studies. This confirms that the topic is clearly situated within tourism scholarship, particularly in relation to destination management, urban tourism experiences, and technology-enabled travel behaviour (Lim & Bouchon, 2021; Wang et al., 2026; Wu et al., 2025).

At the same time, the inclusion of journals such as Gender, Place and Culture, Gender, Technology and Development, and Communication and Critical/Cultural Studies shows that the topic also connects with gender studies, cultural studies, and critical social inquiry. These outlets suggest that some studies move beyond technology adoption or destination management to examine broader issues such as gendered mobility, digital inequality, representation, and socio-cultural power relations in tourism spaces (Bakas & Salman, 2024; Street & Norma, 2016).

Table 2. Journal publication distribution.

Journal title (n = 31)	# articles	% articles
Tourism Recreation Research	2	6.45
Africa Journal of Management	1	3.23
AI	1	3.23
Applied Geography	1	3.23
Buildings	1	3.23
Cities	1	3.23
Cogent Social Sciences	1	3.23
Communication and Critical/ Cultural Studies	1	3.23
Current Issues in Tourism	1	3.23
Ecological Economics	1	3.23
European Research on Management and Business Economics	1	3.23
Frontiers in Psychology	1	3.23
Gender, Place and Culture	1	3.23
Gender, Technology and Development	1	3.23
International Journal of Hospitality and Tourism Systems	1	3.23
International Journal of Human-Computer Interaction	1	3.23
International Journal of Tourism Cities	1	3.23
Journal of China Tourism Research	1	3.23
Journal of Destination Marketing & Management	1	3.23
Journal of Environmental Management and Tourism	1	3.23
Journal of Sensors	1	3.23
Journal of Travel & Tourism Marketing	1	3.23
Land	1	3.23
PLOS ONE	1	3.23
Quality and Quantity	1	3.23
Sustainability	1	3.23
Tourism and Hospitality	1	3.23
Tourism & Management Studies	1	3.23
Tourism Geographies	1	3.23
Transportation Planning and Technology	1	3.23

The dataset also includes journals from technology, urban studies, geography, management, environmental studies, and social science fields, such as AI, International Journal of Human-Computer Interaction, Applied Geography, Cities, Buildings, Land, PLOS ONE, Ecological Economics, Quality and Quantity, and European Research on Management and Business Economics. This spread demonstrates that gender and technology in urban tourism are not confined to one disciplinary domain. Instead, it is being studied through multiple lenses, including artificial intelligence, digital platforms, urban infrastructure, mobility systems, environmental management, and consumer behaviour (Andreev et al., 2025; Tian et al., 2023).

The lack of concentration in leading tourism journals may indicate that this research stream is still fragmented. While the breadth of outlets highlights the richness and interdisciplinary potential of the field, it also suggests that theoretical development may remain uneven. The findings, therefore, point to a need for stronger integration between tourism studies, gender studies, and technology research. Future studies could benefit from positioning their contributions more explicitly within this intersection, rather than treating gender merely as a demographic variable or technology merely as a functional tourism tool.

In summary, the journal outlet analysis confirms that gender and technology in urban tourism is an emerging, multidisciplinary, and fragmented field. The widespread coverage across 30 journals demonstrates growing scholarly interest, but the limited concentration also suggests that the field has not yet developed a clearly established publication home. This reinforces the importance of the present systematic review in consolidating existing knowledge and identifying future research directions.

3.2. How do we know about gender and technology in urban tourism?

3.2.1. Theories

The theoretical framework within the reviewed literature appears notably limited. As shown in Table 3, 20 of the 31 articles (64.52%) do not specify a guiding theoretical framework. Among the 11 studies that declare a theory, no identical theoretical configuration recurs, and only the technology acceptance family (TAM and UTAUT) appears in more than one study. Table 3 reports theories per article, so a study that combines several theories is listed once under that combination; counted individually, the UTAUT family (UTAUT and UTAUT2) appears in three studies and TAM in two. This suggests that the field has not yet converged on shared conceptual foundations. The applied theories fall into three loose clusters. The first comprises technology adoption models, including the Technology Acceptance Model (TAM) (Mandal et al., 2024), the Unified Theory of Acceptance and Use of Technology and its extension UTAUT2 (Dayour et al., 2020; Hassaan & Yaseen, 2026), Diffusion of Innovation and Perceived Risk Theory (Dayour et al., 2020), and the Expectation-Confirmation Model (S. K. Gupta et al., 2026). These frameworks are typically combined in multi-theory studies and reflect a behavioural orientation focused on individual decision-making in technology-mediated tourism.

The second cluster engages directly with gender and identity, including Feminist Theory (Bakas & Salman, 2024) and Queer Theory (Neves & Silveira, 2024), which interrogate power, embodiment, and representation rather than predicting use. The third draws on broader social and cognitive theories: Attribution Theory (Zhou et al., 2022), Cognitive Appraisal Theory (Wu et al., 2025), Coping Theory

Table 3. List of theories.

Theory (n = 31)	# articles	% articles
Attribution Theory	1	3.23
Brand Personality Theory	1	3.23
Cognitive Appraisal Theory	1	3.23
Feminist Theory	1	3.23
Hofstede's Cultural Framework	1	3.23
Queer Theory	1	3.23
Technology Acceptance Model (TAM)	1	3.23
Uses and Gratification Theory	1	3.23
Unified Theory of Acceptance and Use of Technology (UTAUT), Coping Theory	1	3.23
Unified Theory of Acceptance and Use of Technology 2 (UTAUT2), Diffusion of Innovation (DOI) Theory, Perceived Risk Theory	1	3.23
Unified Theory of Acceptance and Use of Technology 2 (UTAUT2), Technology Acceptance Model (TAM), Expectation-Confirmation Model (ECM)	1	3.23
Unspecified	20	64.52

(Hassaan & Yaseen, 2026), Uses and Gratification Theory (Palos-Sánchez et al., 2021), Brand Personality Theory (Calderón-Fajardo et al., 2024), and Hofstede's Cultural Framework (Lorenzo-Romero et al., 2024). The predominance of adoption models in the reviewed literature warrants closer examination. Frameworks such as TAM and the UTAUT family provide parsimonious, empirically validated constructs for predicting usage intentions, and their ubiquity facilitates a degree of comparability across studies. Yet these models were designed around an implicitly gender-neutral user and, when gender is considered at all, it is positioned as a moderating variable rather than an integral social condition. Their value therefore lies in demonstrating that gendered differences in adoption exist, but their limitation is an inability to account for why such differences endure or to incorporate the safety concerns, prior experiences, and sociocultural norms that this review identifies as central to women's engagement with technology.

A similar absence marks the treatment of intersectionality within this theoretical landscape. Although Crenshaw's (1991) framework has been influential in tourism gender studies more broadly, the engagement with intersectionality was partial and largely disconnected from theory. Törnberg (2022) tested interaction effects between host gender and race, and King (2023) critically analysed the co-constitution of gender, race, and sexuality, yet neither within a guiding theoretical framework; Street and Norma (2016) substantively analysed the co-constitution of gender and ethnicity through a radical feminist lens without invoking intersectionality; and Neves and Silveira (2024) cited intersectional theory in their theoretical background without applying it empirically. Intersectional concepts, and even intersectional data, thus circulate in this literature ahead of any theoretical consolidation.

This theoretical dispersal has real consequences for knowledge advancement. With no theoretical configuration recurring across studies – and nearly two-thirds of the studies lacking any explicit theoretical grounding – findings present as isolated empirical observations rather than as integrated, theory driven insights. The absence of shared constructs constrains replication, inhibits cross-study comparison, and prevents the formation of a coherent evidence base, leaving the field ill-equipped to inform theory, policy, or practice. Purposeful theoretical consolidation is therefore necessary for the field's development.

We summarise the significant relationships between the variables found in the quantitative studies in review into a conceptual framework, as shown in Figure 3. This framework maps what the quantitative literature has tested and, in doing so, makes the theoretical gap concrete: safety, prior experience, and sociocultural norms around gender as structural conditions are not examined. This gap directly informs Propositions 1 and 5 in Section 3.4.

3.2.2. Contexts

The research contexts are mapped across four dimensions: country, sector, technology, and gender role. Table 4 reveals a geographic concentration of studies, with China accounting for nine articles (29.03%), followed by Spain with three (9.68%), and India and Poland with two each (6.45%). The remaining studies are distributed across Australia, Croatia, Finland, Ghana, Hong Kong, Malaysia, the Netherlands, Pakistan, the Slovak Republic, Turkey, and the United States, with three multi-country studies (Andreev et al., 2025; Mandal et al., 2024; Törnberg, 2022). Several urban-tourism-intensive regions remain notably absent, including most of Southeast Asia, Latin America, the Middle East, and Sub-Saharan Africa beyond Ghana. This skew suggests current understanding is shaped predominantly by Chinese and European contexts, limiting transferability to destinations with different digital infrastructures, gender norms, and tourism profiles. The prominence of China in this research domain appears to stem from several intersecting structural conditions: a highly digitalised tourism sector, the widespread adoption of super-apps and mobile payment ecosystems, the sheer scale of its domestic travel market, and sustained state investment in smart-tourism infrastructures and big-data innovation (Wang et al., 2026). Concurrently, these factors produce both the volume of data and the institutional resourcing that make such studies feasible. This concentration has significant implications for how gender and technology are theorised. As much of the empirical evidence is generated within a single, platform-dense, high-surveillance environment shaped by distinctive gender norms and state-led tourism governance, the prevailing explanations of gendered mobility, safety, and platform use are implicitly tailored to Chinese conditions and cultural lens. These studies should therefore be treated as context-specific rather than generalisable until they are validated in substantially different cultural, regulatory, and infrastructural settings.

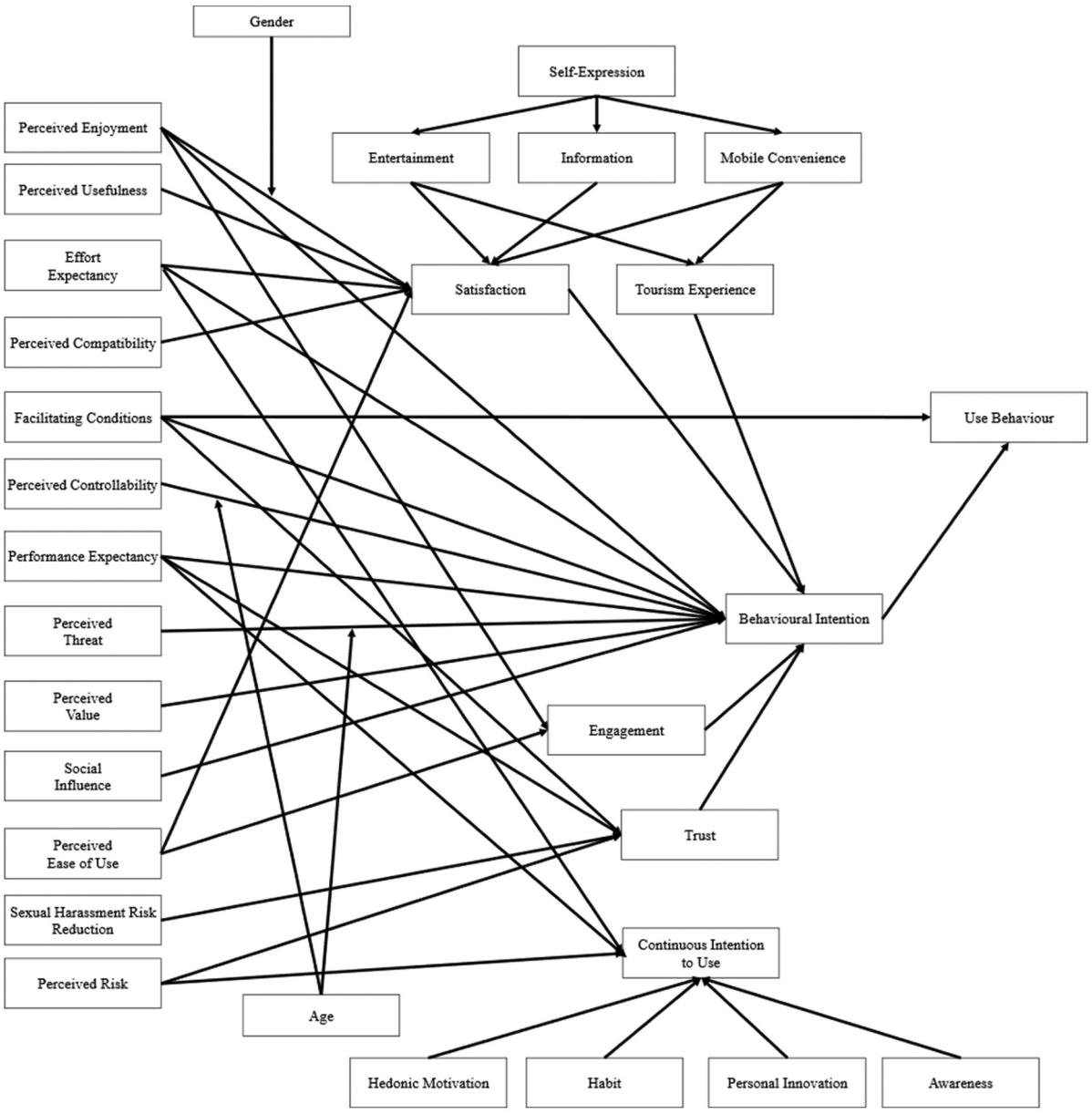


Figure 3. Conceptual framework of significant relationships in our study.

Geographical concentration is not merely a limitation in coverage but also influences how theory develops in this field. Models derived mainly from Chinese and European destinations may assume relatively mature digital infrastructures, individual smartphone ownership and institutional and gender arrangements. Constructs such as usefulness, trust, facilitating conditions and perceived safety may operate differently where internet access is uneven, devices are shared, tourism employment is informal, institutional protection is limited, or women's mobility is more restricted. Consequently, the current evidence may understate the structural conditions shaping technology engagement and produce theories that are insufficiently sensitive to context. From a policy perspective, transferring smart-tourism systems from data-rich destinations without local validation may reproduce exclusion through unrepresentative data, unsuitable interfaces and safety mechanisms that do not reflect local conditions. Locally grounded and comparative research is therefore required to support context-sensitive theory and gender-responsive digital-tourism policy.

Table 5 reports on the distribution by tourism sector. Destination-level studies dominate with 15 articles (48.39%), followed by attractions and transportation with six each (19.35%), and accommodation with three

Table 4. List of contexts by country.

Context: Country (n = 31)	# articles	% articles
China	9	29.03
Spain	3	9.68
India	2	6.45
Poland	2	6.45
Australia	1	3.23
Croatia	1	3.23
Finland	1	3.23
Ghana	1	3.23
Hong Kong	1	3.23
Malaysia	1	3.23
Netherlands	1	3.23
Pakistan	1	3.23
Slovak Republic	1	3.23
Turkey	1	3.23
United States	1	3.23
Multiple	3	9.68
Unspecified	1	3.23

Table 5. List of contexts by sector.

Context: Sector (n = 31)	# articles	% articles
Destination	15	48.39
Attraction	6	19.35
Transportation	6	19.35
Accommodation	3	9.68
Multiple	1	3.23

(9.68%). The destination focus aligns with the urban-tourism framing of the review, but the limited accommodation representation is notable given the prominence of platform-based lodging in gendered debates about tourism labour and host–guest dynamics (Lim & Bouchon, 2021; Törnberg, 2022).

Table 6 details the technological contexts. Mobile and social media are the most frequently studied, with six articles each (19.35%), followed by online platform services with five (16.13%). Artificial intelligence, autonomous vehicles, and virtual reality appear in only two articles each (6.45%). Beyond the categories captured in Table 6, several emerging technologies that are rapidly reshaping urban tourism are almost entirely absent from the reviewed papers. Generative AI tools, algorithmic recommendation and pricing systems, smart voice assistants, digital twins and metaverse environments receive minimal attention despite their growing role in mediating how tourists search, plan, navigate, and experience cities. This is a notable blind spot, because these systems increasingly oversee visibility, personalisation, and access in ways that can amplify gendered assumptions, as the single GenAI bias study in this review already demonstrates (Andreev et al., 2025). Their limited representation marks a particularly pressing demand for future inquiry (Z. Li et al., 2024; Mandal et al., 2024; Wu et al., 2025).

Table 7 categorises studies by how gender is positioned in the research design. To ensure transparency and reproducibility, and similar to Noor et al. (2026), the three categories were distinguished by the analytical role gender plays in each study rather than by the mere presence of female participants. Studies were coded as gender-as-a-variable when gender was designed as a measured demographic attribute,

Table 6. List of contexts by technology.

Context: Technology (n = 31)	# articles	% articles
Mobile	6	19.35
Social media	6	19.35
Online platform service	5	16.13
Artificial intelligence	2	6.45
Autonomous vehicle	2	6.45
Virtual reality	2	6.45
Bicycle-sharing	1	3.23
Big data	1	3.23
Security technology	1	3.23
Website	1	3.23
Multiple	4	12.90

Table 7. List of contexts by gender role.

Context: Gender role (n = 31)	# articles	% articles
Gender as a variable	19	61.29
Gender-focused	5	16.13
Women-focused	7	22.58

control, or moderator without being theorised; as women-focused when the focus was on the experiences of women participants but gender itself was not framed as a relational construct; and as gender-focused when gender was treated as a central conceptual category and examined as a social relation. The defining boundary is therefore not whether female participants are present, but whether gender is measured (variable), centred as a population (women-focused), or theorised as a structuring relation (gender-focused). The majority (19 articles, 61.29%) treat gender as a variable, typically as a demographic control or moderator within broader models of technology use. Seven articles (22.58%) are women-focused, examining female tourists, workers, or residents in technology-mediated urban settings. A further five articles (16.13%) are gender-focused, engaging with gender as a central conceptual construct, including non-binary and relational perspectives.

Cutting across these three categories, however, gender was operationalised almost exclusively as a male–female binary. Twenty-nine of the 31 studies either compared men and women or focused solely on women, with only two extending beyond binary categories: Andreev et al. (2025), whose audit personas included non-binary identities, and Neves and Silveira (2024), which centred LGBTQIA+ communities. Neither, however, engaged transgender or gender-diverse tourists directly: the non-binary identities in Andreev et al. (2025) were simulated personas rather than actual travellers, while Neves and Silveira (2024) addressed the LGBTQIA+ community collectively through the lens of sexuality and space rather than gender identity. As such, no study in the sample examined the experiences of transgender or gender-diverse tourists themselves, despite evidence from the broader tourism literature that technologies such as airport body scanners produce distinct and often distressing travel experiences for transgender and gender-nonconforming travellers (Olson & Reddy-Best, 2019). This binary skew is consistent with wider observations that tourism gender scholarship has been slow to engage marginalised gender identities and the feminist approaches needed to study them (Pritchard, 2018).

Taken together, the four context dimensions show a field that is geographically narrow, sector-concentrated at the destination level, technologically conventional, and inclined to treat gender as a measurable attribute rather than a structuring condition of urban tourism experience.

3.2.3. Methods

The methodological profile is reported across two dimensions: research approach and sample type. As shown in Table 8, quantitative research dominates with 21 articles (67.74%), followed by qualitative research with nine (29.03%) and only one mixed-methods study (Andreev et al., 2025). The strong quantitative tilt is consistent with the field's reliance on adoption frameworks (Table 3), which lend themselves to survey-based hypothesis testing. However, the limited use of qualitative and mixed-methods designs constrains the field's capacity to capture the lived, embodied, and relational dimensions of gendered technology use in urban tourism, where meaning-making, safety negotiations, and identity performance often demand interpretive depth (Bakas & Salman, 2024; King, 2023; Lim & Bouchon, 2021).

Table 9 reports the distribution of sample types. Non-student samples dominate with 24 articles (77.42%), reflecting an appropriate emphasis on actual tourists, urban residents, and industry stakeholders rather than student proxies. Only one study (3.23%) relies on a student sample (Z. Li et al., 2024), while two studies (6.45%) use mixed samples. A further four articles (12.90%) are conceptual or rely on secondary data. The strong non-student orientation strengthens ecological validity, but the small number of

Table 8. List of methods by approach.

Method: Approach (n = 31)	# articles	% articles
Quantitative	21	67.74
Qualitative	9	29.03
Mixed-methods	1	3.23

Table 9. List of methods by sample type.

Method: Sample type (n = 31)	# articles	% articles
Non-student	24	77.42
Mixed	2	6.45
Student	1	3.23
N/A (Conceptual)	4	12.90

conceptual contributions reinforces the theoretical thinness observed in Table 3. Overall, the methodological landscape is empirically grounded but narrow. The field would benefit from greater methodological pluralism, including more qualitative, mixed-methods, longitudinal, and conceptual work that can both deepen explanations and consolidate the theoretical foundations of gender and technology in urban tourism (King, 2023; Y. Li & Gan, 2021).

Considered collectively, the four TCCM dimensions highlight an interconnected pattern rather than separate limitations. The lack of theoretical underpinnings documented in Section 3.2.1 is not independent of the methodological conformity identified in Section 3.2.3 but partly contributes to it. A reliance on adoption models such as TAM and UTAUT influences the field towards survey-based, quantitative designs that treat gender as a measurable attribute (S. K. Gupta et al., 2026; Mandal et al., 2024), which in turn reproduces the geographic and sectoral concentration observed in Section 3.2.2 by favouring contexts where such data are readily generated (Wang et al., 2026). The result creates a cycle in which descriptive, variable-based studies dominate while the critical, context-sensitive questions raised concerning why gendered differences persist (Wajcman, 2010), whose interests technological systems serve (Figueroa-Domecq, de Jong, et al., 2020), and how digital infrastructures contribute to inequality (Bakas & Salman, 2024; Törnberg, 2022), remain under-theorised and under-examined. Synthesising the dimensions in this way shifts the review from cataloguing the field's characteristics to identifying the structural conditions that have shaped the discourse (Paul et al., 2021). This directly motivates the integrated research agenda developed in Section 3.4.

3.3. What do we know about gender and technology in urban tourism?

Studies on gender and technology in tourism cover an impressively wide range of technologies, from mobile payments and social media to autonomous vehicles, AI-powered chatbots, big data, smart cities, and metaverse environments. Across this literature, three broad patterns emerge: (1) gender differences in technology adoption and usage are consistently shaped by sociocultural assumptions and contextual factors rather than capability and interests alone; (2) technology carries both opportunities and challenges for women and marginalised communities in tourism; and (3) structural gender inequality and bias persists across tourism's digital landscape.

Gender differences in technology adoption, perceptions, usage patterns, and experiences are the most common themes in this literature. Gender moderates the pathways through which tourists arrive at the mobile and digital payment adoption intentions, including effort expectancy, continuous intention, enjoyment, and satisfaction (Dayour et al., 2020; S. K. Gupta et al., 2026). The pattern is similar in shared bicycle loyalty, where ease of access and rule adherence predict women's loyalty, while psychological benefit and managerial quality predict men's (Zhou et al., 2022).

Mobile data from tourism destinations indicate that female tourists are more spatially exploratory, visiting more locations and showing higher temporal and spatial variability, while male tourists cover wider geographic territory (Tian et al., 2023). In the social media space, women emerge as more active and purposeful users in tourism settings, more likely to seek information before travel, share experiences during it, and respond to personalised marketing (Hysa et al., 2022; Zavišić et al., 2025). Women's social media sharing skews towards food, nightscapes, and cultural atmosphere while men gravitate towards leisure, entertainment, and heritage (Ding et al., 2021; Su et al., 2025). Gendered patterns, however, appear to vary significantly by context, for instance, in metaverse tourism (Mandal et al., 2024).

Across this theme, prior experiences, personal safety, and risk perceptions emerge as salient gendered considerations that shape how women engage with technology. Digital car sharing's viability for women, for

instance, hinges largely on being perceived as safe (Singh, 2017). Women's greater tolerance for speed variation in autonomous buses may reflect their pre-existing reliance on public transport, not a preference for the technology itself (Ariza-Álvarez et al., 2023). Two studies on security and surveillance technologies found that men are more tolerant of data-sharing trade-offs in airport screening (Chung et al., 2026), while women at mass events place greater value on the human dimension of security, specifically the presence of trained staff, over technology alone (Vainio et al., 2024). Women show greater discomfort in VR architectural environments, which raises accessibility questions as the industry moves towards immersive experiences (Z. Li et al., 2024). Wu et al. (2025) reinforce these findings and emphasise that sexual harassment reduction and perceived risk significantly shape female tourists' technology decisions through trust.

Taken together, studies in this theme reveal two analytically distinct sources of gender difference that literature rarely separates. Some differences are socially constructed behavioural patterns: preferences in what content is shared and sought (Ding et al., 2021; Su et al., 2025), how social media is used across travel stages (Hysa et al., 2022; Zavišić et al., 2025), and how adoption pathways are weighted (Dayour et al., 2020; Zhou et al., 2022). Others, however, arise from structural inequalities: women's safety concerns with car sharing and autonomous vehicles reflect unequal exposure to gendered risk rather than technological preference (Singh, 2017; Wu et al., 2025), their tolerance of autonomous bus limitations reflects pre-existing reliance on public transport (Ariza-Álvarez et al., 2023), and their valuation of human security presence at events reflects differentiated experiences of vulnerability (Vainio et al., 2024). The distinction matters because the two call for different responses: behavioural differences can inform design and marketing, whereas structural differences demand changes to the conditions that produce them. Yet because most studies stop at documenting differences, the two sources remain conflated, and women's technology choices risk being read as preferences when they are, in part, adaptations to unequal conditions.

Two other themes that co-exist and are deeply intertwined in this literature are *how technology in tourism brings both opportunities and challenges to women, and how it simultaneously addresses or reinforces structural inequality and bias*. Digital technology use increases women's family status in China, with tourism expenditure acting as a partial mediator (Wang et al., 2026). Yet in the platform economy, a gender gap persists even in ostensibly open digital markets. Female Airbnb hosts earn around 12% less revenue than their male counterparts across 97 markets (Törnberg, 2022). Interestingly, this inequality seems to exist in the system rather than in consumer behaviour, as no gender differences were found in user segments (Lorenzo-Romero et al., 2024).

Whether platforms translate into opportunity or constraint appears to depend less on the technology than on the gender regime into which it is deployed. In Malaysia, Airbnb-style platforms generate genuine entrepreneurial opportunities and a visible empowerment trend for women as hosts (Lim & Bouchon, 2021). Yet this is not the case in Turkey, where Istanbul's conservative gender politics reproduce gendered divisions in gig economy labour regardless of what the platform technically permits (Bakas & Salman, 2024).

The same duality recurs in representational spaces. Platforms like Instagram can function as a tool of cultural preservation and tourism diversification for LGBTQIA+ communities (Neves & Silveira, 2024). Yet social media behaviour can simultaneously reinforce racial fantasies and gender stigma, as seen in the case of Nashville's bachelorette tourism economy (King, 2023). In a very different context, digital advertising is used to reproduce the racialised and gendered perceptions of Asian sex tourism within Melbourne's legal sex industry (Street & Norma, 2016).

This duality now extends to algorithmic systems themselves. In the era of GenAI, common tools such as ChatGPT and DeepSeek produced measurably gender-biased results across multiple categories, with moderate gender gaps for binary users and extreme divergence for non-binary personas (Andreev et al., 2025). Both models seem to display a 'protective' tendency towards non-binary users by steering them towards LGBTQIA+-accepting destinations. This is both reassuring and unsettling, as it suggests that AI is making consequential assumptions about user vulnerability without being explicitly programmed to do so.

Although presented separately, the three themes are closely connected and appear to reinforce one another. Women and men do not start from the same place when they encounter urban tourism technologies. As the first theme shows, safety concerns, prior experiences, and socio-cultural norms shape how women approach these technologies well before any adoption decision is made (Singh, 2017; Wu et al., 2025). These different starting points then lead to different

outcomes. The same platform can create opportunities for women in Malaysia (Lim & Bouchon, 2021) and raise their family status in China (Wang et al., 2026), yet burden women in Istanbul with gendered divisions of labour and the responsibility for their own safety (Bakas & Salman, 2024). Over time, such differences settle into the structures themselves. They appear as revenue gaps built into platform architectures (Törnberg, 2022), as stereotyped representations of women (King, 2023; Street & Norma, 2016), and as algorithmic assumptions about who is vulnerable (Andreev et al., 2025). And these structures, in turn, feed back into the safety concerns and constrained choices where the cycle began. The gender–technology–tourism relationship is therefore two-fold. It is not just about how different genders use technology, but also about what technology does to gender. This is also why documenting gender differences alone cannot resolve them and why a future research agenda is needed.

3.4. *Where should research about gender and technology in urban tourism be heading?*

The preceding sections have mapped what we know and how we know about gender and technology in urban tourism. Drawing on the patterns identified across Section 3, this part proposes five directions for future research, each accompanied by a proposition to guide subsequent inquiry. Each proposition responds to a specific finding of this review. Propositions 1 and 5 address the theoretical thinness shown in Table 3 and Figure 3 and the self-reinforcing cycle identified in Section 3.3; Propositions 2 and 3 address the contextual gaps documented in Tables 4 to 7; and Proposition 4 addresses the methodological narrowness shown in Tables 8 and 9. Figure 4 at the end of this section maps these links.

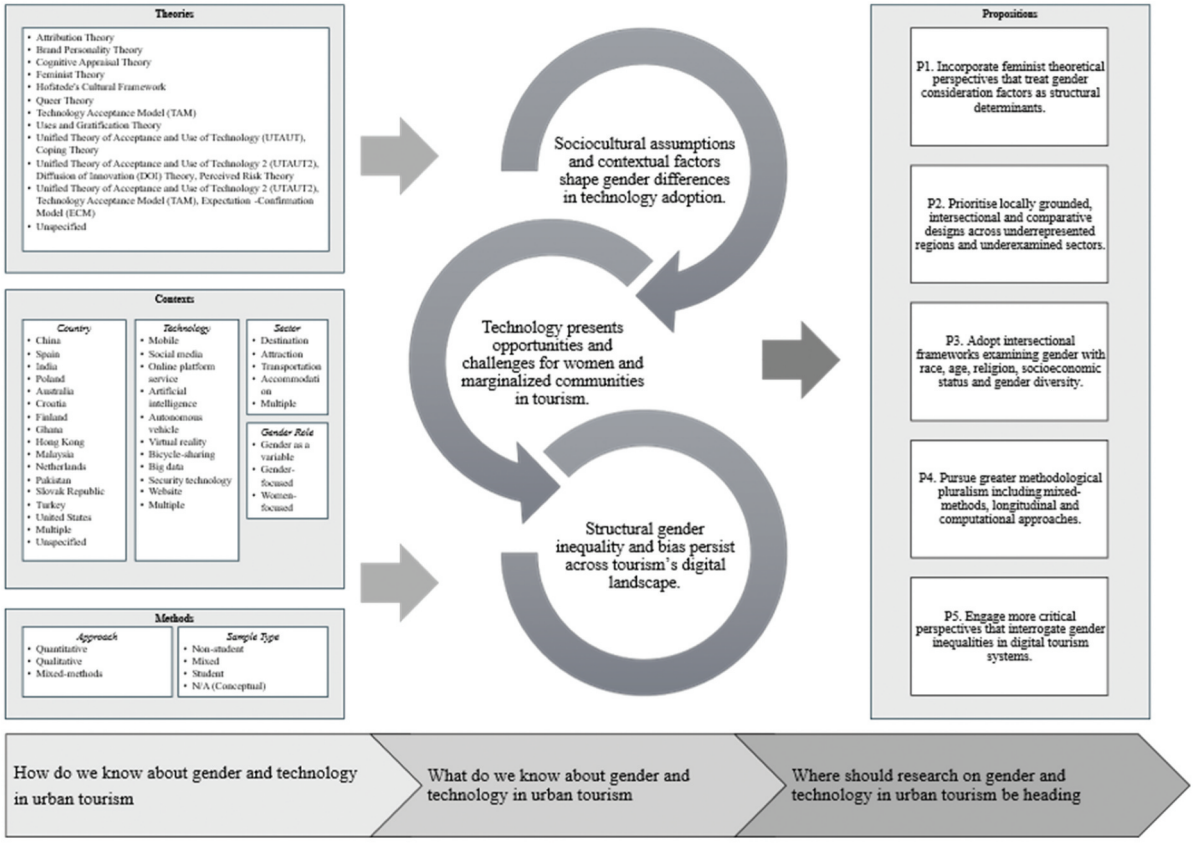


Figure 4. Conceptual map for research on gender and technology in urban tourism.

3.4.1. Theory: incorporating feminist perspectives and updating adoption frameworks with gender-specific considerations

Section 3.2.1 indicates 64.52% of studies in this field lack a guiding theoretical framework, and among those that do declare at least one, technology adoption models such as TAM and UTAUT dominate. While these frameworks are useful for predicting adoption intentions, they were not designed to account for gendered lived experiences, risk perceptions, safety concerns, or the sociocultural contexts that this review has consistently shown to shape how women engage with tourism technologies. This is a significant gap. Figure 3 makes it visible: the constructs tested to date do not treat safety, prior experience, or sociocultural norms as structural conditions. Feminist scholars have long argued that dominant technology frameworks reproduce androcentric assumptions by treating the technology-adopting subject as gender-neutral (Wajcman, 2010). More recently, calls have been made for tourism research to engage more seriously with feminist theories to interrogate not just whether gender differences exist, but why they persist and whose interest technological systems serve (Figueroa-Domecq, de Jong, et al., 2020). Incorporating frameworks such as TechnoFeminist approach (Wajcman, 2010) or Intersectional feminist approach (Crenshaw, 1991) would allow future research to treat gender not as a moderating variable but as a structuring condition of technology experience.

Operationalising these perspectives requires more thoughtful designs. A TechnoFeminist approach (Wajcman, 2010) would treat the technology itself, not only its users, as the object of analysis. This could involve auditing algorithmic systems for gendered assumptions, as Andreev et al. (2025) demonstrate for travel recommendations, examining how safety features are designed and by whom, and studying the procurement and governance decisions through which urban tourism technologies are deployed. Feminist standpoint approaches would ground data collection in women's and gender-diverse tourists' lived experiences, through methods such as travel diaries and walking interviews, rather than pre-specified constructs. Critically, constructs such as safety should enter research designs as structural conditions rather than individual-level moderators – for example, through comparative designs that hold the platform constant while varying the gender regime, as the contrast between platform work in Malaysia (Lim & Bouchon, 2021) and Turkey (Bakas & Salman, 2024) illustrates. Practical guidance for such designs, including intersectional operationalisation, is available within tourism scholarship (Mooney, 2018).

We propose:

Proposition 1: *Future research on gender and technology in urban tourism should extend beyond adoption-oriented frameworks by incorporating feminist theoretical perspectives that treat gender consideration factors such as safety perceptions, prior experiences, and sociocultural norms as structural determinants of gendered technology engagement rather than individual-level moderators*.3.4.2 Context: Expanding geographic and sectoral coverage

Section 3.2.2 reveals that China accounts for nearly 30% of studies in this literature, and together China and Europe dominate the geographic landscape. Large regions – much of the Global South, including Southeast Asia, Latin America, the Middle East, and Africa, are almost absent. This matters because, as Section 3.3 demonstrates, context is essential in gender and technology research as the explanation lies not in the technology but in the gender norms, institutional structures, and cultural contexts in which it operates. This geographic narrowness is compounded by sectoral skewness. Destination-level studies dominate (48.39%), while accommodation accounts for only three studies (9.68%), and food and beverage and events do not appear as distinct sectors at all (Table 5). The growing role of AI in pricing and recommendation systems, the use of biometric and surveillance technologies at urban events and attractions, and the rapid expansion of platform-based accommodation all represent high-stakes sites where gendered dynamics are likely to be significant but currently under-examined.

Concrete designs can make this agenda actionable. One option is to pair cities that share similar platform infrastructures but differ in gender norms or regulatory environments, extending the Malaysia–Turkey contrast in our corpus (Bakas & Salman, 2024; Lim & Bouchon, 2021). Cities in Southeast Asia, Latin America, and the Middle East, where platform tourism is expanding quickly but research remains scarce, are natural candidates. The evidence base in these regions is remarkably thin. Dayour et al. (2020) is the only Sub-Saharan African study in our review and Hassaan and Yaseen (2026) the only Pakistani one, and both

focus on mobile payments, leaving how women in these regions experience surveillance technologies, AI-driven pricing, or platform accommodation entirely unstudied. As such,

> ***Proposition 2***: *Future research should use locally grounded, intersectional, and comparative designs to examine how digital infrastructure, institutional capacity, cultural norms, and gendered mobility shape technology engagement across underrepresented regions and underexamined sectors, including accommodation platforms, transport, events, and AI-enabled services.*

3.4.2. Context: intersectionality and technology-gender-identity in tourism

As shown in Section 3.2.2, the current literature operationalises gender almost exclusively in binary terms, making it impossible to understand how non-binary, queer, or gender-diverse tourists and workers experience technology in urban tourism settings and whether their experience would change in favourable and unfavourable contexts (Özbilgin & Grasyon, 2026). This binary operationalisation also masks how gender intersects with other characteristics such as race, age, religion, socioeconomic status, and disability in shaping technology experiences.

Our review provides direct evidence of how thin this intersectional engagement is. As Section 3.2.1 showed, no study in the sample adopted an explicit intersectionality framework as a guiding lens, and only three engaged with identity intersections empirically in any form (King, 2023; Street & Norma, 2016; Törnberg, 2022). In every case, the intersecting dimension was race. Sexuality and gender diversity featured in only two studies (Andreev et al., 2025; Neves & Silveira, 2024), while age, education, and income appeared in roughly a third of the corpus but exclusively as parallel demographic variables rather than as categories intersecting with gender. Disability was entirely absent from the reviewed literature, and socioeconomic status was never examined as a structuring condition of gendered technology access. Notably, the field appears aware of this gap. Bakas and Salman (2024) and Andreev et al. (2025) both identify the absence of an intersectional lens as a limitation of their own studies. This absence is not a limitation of tourism scholarship at large. Guidance on applying intersectionality in tourism research is readily available (Mooney, 2018), and recent empirical studies demonstrate its analytical value, such as the intersectional marginalisation of female Muslim tourists (Nisha et al., 2025). That intersectional approaches have gained traction in adjacent areas of tourism research yet remain absent from research on technology indicates that gender cannot be understood in isolation from other aspects of identity and power, and that the analytical tools to correct this are already within the field's reach. Therefore,

> ***Proposition 3***: *Future research on gender and technology in urban tourism should adopt intersectional frameworks that examine how gender interacts with race, age, religion, socioeconomic status, and gender diversity in shaping technology experiences, moving beyond binary gender operationalisation towards a more inclusive and structurally nuanced understanding of digital inequality in tourism.*

3.4.3. Methods: diversifying research approaches

The discussion in Section 3.2.3 shows that the literature on gender and technology in tourism is dominated by quantitative studies treating gender as a demographic variable. While quantitative approaches are well-suited to identifying patterns and testing hypotheses across large samples, they become limiting when they dominate other approaches. Questions that our review found most pressing, such as why do men and women navigate tourism technologies differently, what does safety mean for women in the context of technology in tourism, how do platform structures reproduce inequality, and what do non-binary tourists experience in smart tourism environments, are the questions that quantitative methods are not well equipped to answer. Although scarce in number, studies with qualitative and interpretive approaches have already demonstrated their value in the most theoretically rich studies in this field.

Future research should use a wider range of methods to explain why gender differences occur, rather than merely identifying them. Sequential mixed-methods studies could first identify gendered patterns through surveys, app-use data, or mobility traces, and then use interviews, travel diaries, or walking interviews to examine the cultural, safety-related, and structural factors underlying these patterns. Longitudinal studies could follow the same participants through pre-trip planning, in-destination experiences, and post-trip evaluation to assess changes in trust, perceived safety, digital confidence, and data-

disclosure preferences. Comparative studies of cities with different levels of digital development, transport systems, gender norms, and regulatory environments could further reveal how local contexts shape technology engagement. Future studies should also recruit diverse samples to examine how gender intersects with age, disability, ethnicity, sexuality, and socioeconomic status. Computational and digital-trace methods could complement self-reported data by capturing gendered patterns at a larger scale.

> ***Proposition 4****: Future research should pursue greater methodological pluralism that combines sequential mixed-methods, longitudinal, comparative, and computational approaches to explain how and why gendered engagement with urban tourism technologies varies across travel stages, social groups, and institutional contexts.*

3.4.4. Themes: towards critical perspectives

As Section 3.2.1 shows, the majority of studies in this review remain within a positivist paradigm, treating gender as a variable to be measured rather than a social relation to be interrogated. The result is a literature that is good at documenting that gender differences exist but limited in its ability to explain why they persist, whose interests technology serves, and what kinds of inequalities digital tourism infrastructure reproduces or entrenches. The self-reinforcing cycle described at the end of Section 3.3, in which unequal starting points produce unequal outcomes that then settle into platform structures and algorithms, is what a variable-based approach cannot capture. Moving towards such critical perspectives does not require starting from scratch, as three studies in this review already show what critical work looks like in this field. Andreev et al. (2025) audited travel recommendations using personas that varied in gender identity, age, and origin, an approach that could be extended to pricing, visibility, and safety functions. Bakas and Salman (2024) studied fear and safety as structural conditions of platform work rather than individual perceptions. King (2023) read tourism marketing and social media for the racialised and gendered fantasies they trade on. Applying these approaches to the technologies identified as blind spots in Section 3.2.2, including generative AI, digital twins, and smart assistants, would give critical inquiry both its questions and its methods. Tourism technology research needs to engage more meaningfully with critical enquiry and women's perspectives rather than treating them as an afterthought to innovation agendas. As AI, platforms, and immersive technologies become more deeply embedded in how tourism is produced and consumed, the stakes of getting this right for women and marginalised groups are high. We propose:

> ***Proposition 5****: Future research on gender and technology in urban tourism should pursue critical perspectives that interrogate why gender inequalities persist in digital tourism systems, whose interests those systems serve, and how tourism technology research can move from documenting differences to challenging the structural conditions that produce and reproduce them.*

Figure 4 synthesises the findings from our review of the 31 articles as well as the five propositions presented above in the form of a conceptual map. Reading from left to right, the TCCM profile (Section 3.2) feeds into the three interlocking themes (Section 3.3), which in turn give rise to the five propositions (Section 3.4), so that each proposition can be traced back to the descriptive and thematic findings from which it was derived.

4. Conclusions, implications and future research

The rising positive tide of greater gender inclusion, coupled with advances in technological innovation, can both affect urban tourism. This, along with the interplay between gender and technology, in which technology can be an enabler while diverse voices need to be part of technological design, and how this can influence the sustainability of urban tourism, necessitates our systematic review to understand this field better.

4.1. Theoretical contributions

The primary theoretical contribution of this review is a reciprocal and context-sensitive perspective of gender and technology in urban tourism. Rather than treating gender solely as a demographic predictor or

moderator of adoption, the synthesis shows that gendered norms, safety concerns, access to resources, and structural inequalities shape how urban tourism technologies are encountered and used. Simultaneously, platforms, algorithms and smart-city infrastructures can reproduce opportunity, visibility, mobility and risk in gendered ways. Urban context functions as a critical conditioning layer because dense mobility systems, surveillance, platform-mediated services and digitally coordinated public spaces intensify these reciprocal effects. This dual-pathway understanding provides a conceptual bridge between adoption-oriented models and feminist and intersectional perspectives.

Second, we propose five key research directions based on the insights from our systematic review. These include the need for more theoretical application and development, greater representation of regions to account for unique gender considerations and technological limitations in the development of urban tourism, greater investigation of the role of emerging technologies, including agentic AI, and the need for more exploratory and multi-method study approaches to flesh out and confirm insights. Our research agenda provides a ready blueprint for researchers to advance the field.

4.2. Managerial implications

The findings indicate that gender-responsive tourism technology requires coordinated action across the digital visitor journey. Destination management organisations should audit pre-trip, in-destination, and post-trip touchpoints for differences in access, task completion, privacy, and perceived safety. Diverse user panels, including women and gender-diverse travellers of different ages, abilities, and socioeconomic backgrounds, should be involved in testing navigation, booking, payment, recommendation, and emergency-support systems before and after deployment.

Smart-city planners and urban policymakers should require gender and accessibility impact assessments for mobility applications, biometric systems, public Wi-Fi, wayfinding, and emergency infrastructure. Three notable findings from this review suggest where these assessments should start. First, women at mass events value trained staff over technology alone (Vainio et al., 2024), so city event-security plans should pair surveillance systems with visible, staffed help points rather than substitute one for the other. Second, women's willingness to use shared and autonomous mobility depends heavily on perceived safety (Singh, 2017; Wu et al., 2025), so licencing conditions for ride-hailing, bike-sharing, and autonomous-vehicle pilots should require safety features to be designed with women users and monitored through gender-disaggregated usage and incident data. Finally, the same platform can open up opportunities for women hosts in one city and add to their burdens in another (Bakas & Salman, 2024; Lim & Bouchon, 2021), so rules for platform accommodation and gig work need to be adapted to local gender norms and paired with host-safety provisions rather than imported wholesale. Procurement criteria should include data minimisation, accessible interface standards, non-digital alternatives, and clear complaint and redress procedures. These safeguards are particularly important where unreliable connectivity, shared devices, or limited digital literacy may restrict access.

Tourism platform providers and AI developers should document gaps in training data and test whether recommendation, pricing, identity-verification, and safety functions produce unequal outcomes across intersectional user profiles. Users should be informed when personalisation is applied and be able to control data collection and automated recommendations. Tourism operators should retain trained human support when automated systems fail. Implementation should be monitored through disaggregated indicators, including task-completion rates, perceived safety and trust, accessibility performance, incident-response time, complaint-resolution rates, and exposure to recommendations.

4.3. Limitations and future research directions

Several limitations of our study provide opportunities for future research. First, our systematic review was based on English-language journal articles only from two main journal databases. Given the cultural diversity of the urban tourism industry as shown in our study, the inclusion of non-English language articles and other databases can provide richer nuances on how the cultural context can affect urban tourism. The use of more advanced AI to analyse non-English sentiments may result in new perspectives previously undetected with traditional English-language study analysis.

Second, while our systematic review highlights gaps in the literature, we could only postulate the reasons due to our single-method study approach. The inclusion of qualitative interviews with key stakeholders, such as policymakers, industry professionals, and travellers themselves, can provide richer insights into the reasons behind the current state of research on gender, technology, and urban tourism. Thus, we advocate for future SLRs in this field to adopt a more mixed methods approach to shed further light on the importance of gender, technology and urban tourism.

The principal contribution of this review is therefore to reposition gender from a static demographic attribute to a relational force that both shapes and is shaped by digitally mediated urban tourism.

Author contributions

CRediT: **Tien Nguyen:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Supervision, Validation, Writing – original draft, Writing – review & editing; **Nurhafihz Noor:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing; **Zahirah Zainol:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing; **Ashley Tong:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing.

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