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Knowledge Production and Dissemination in Human-AI Collaboration: Generative AI as Travel Consultants

Jing Shu[1]

[1] Xia'men University, China

Correspondence: Jing Shu, Xia'men University, Xia'men, Fujian, China.

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Abstract

Currently, the opportunities and challenges posed by artificial intelligence (AI) in travel consulting and user experience remain underexplored. This paper takes Wanderboat, an AI-driven customized online travel platform, as the research subject. Based on the Theory of Interactive Media Effects (TIME), the study employs semi-structured interviews and grounded theory methods to explore the social impacts of AI affordances on Human-AI Interaction (HAII). The findings reveal that in the knowledge production process, there are interaction modes of "full agency," "negotiated agency," and "agency paradox" between machine agency and user agency. In the content consumption and dissemination stages, positive or negative machine heuristics, along with social interaction participation provided by online communities, become factors that either enhance or diminish user engagement. Due to users' difficulty in taming or resisting AI algorithms based on the ChatGPT model, AI travel consultants hold a dominant position in the knowledge mediation process, leading to a trust crisis and technological fear among users regarding AI-generated content. This results in a zero-sum game dynamic in the "consultant-client" relationship.

Keywords: online travel platforms, generative AI, human-AI interaction, knowledge mediation, user engagement

1. Introduction

In recent years, the rapid iteration of AI technology has brought opportunities and challenges to various industries. Human-Computer Interaction (HCI) has become an indispensable method, with ChatGPT and chatbots, as representatives of generative AI, gradually transforming the way humans interact with machines.

In July 2024, Wanderboat AI, a GPT-4-powered intelligent travel planning platform launched by the Silicon Valley startup UTA AI, officially went live with investment support from Sequoia Capital. Since its beta launch, Wanderboat AI has demonstrated unique advantages in technology and user experience compared to other AI travel assistants in the market. The platform integrates cutting-edge technologies such as large language models (LLMs) and multimodal interaction, allowing users to conduct in-depth information searches through natural conversations and receive personalized travel recommendations based on their preferences. Users can quickly find attractions, restaurants, and activities using the platform's AI tools, and even interactively search on maps. The platform not only supports generating detailed travel itineraries but also allows users to upload relevant documents or links, with the AI providing personalized suggestions based on this content.

"Consulting" is essentially a process and strategy of transferring professional knowledge and skills from one party to another[1]. Consultants provide advice to help clients achieve their goals or solve problems. As a bridge between knowledge production and consumption, "knowledge brokers" play an increasingly important role in the knowledge economy, particularly in business and management, information technology, and healthcare research. However, there is limited research on consulting in the tourism industry, especially in the context of Chinese tourism. The emergence of Wanderboat undoubtedly opens up new prospects for the application of generative AI in the travel consulting market, transforming the one-way communication between tourists and traditional travel agencies and promoting the development of AI-driven online travel platforms, enriching the forms of smart tourism.

Intelligence and agency are core functions of AI. By integrating advanced AI technologies, algorithms supported by ChatGPT have acquired the agency to make decisions in social, political, and economic contexts. However, technology is a double-edged sword. While enjoying intelligent services, we must also consider: When AI replaces humans as travel consultants, how should we examine AI's involvement in the knowledge production and dissemination process in the context of human-AI interaction? What impact will this have on user engagement and travel experiences? To address these questions, this paper draws on the Theory of Interactive Media Effects

(TIME), which focuses on the affordances of media technology, to explore the technical characteristics of generative AI and human-AI interaction behaviors on AI-driven online travel platforms.

2. Literature Review

2.1 Tourism Knowledge Production and Knowledge Mediation Process

2.1.1 Knowledge Brokers and Consulting Work

Knowledge brokering refers to the process of "seeking-providing" information exchange between two parties[3], involving skills or tasks such as information management, communication, and capacity development[4]. Other scholars describe it as knowledge identification and localization, redistribution and dissemination, and re-expansion and transformation[5]. The roles that perform consulting or service functions are called "knowledge brokers" or "consultants," who are described as approachable and patient in gaining clients' trust and respect[6].

Consulting work is a highly interactive "people work"[7], where face-to-face contact and pleasant interactions are crucial. The relationship between consultants and clients is built on mutual understanding, collaboration, and trust. Therefore, consultants are essentially knowledge workers who engage in intellectual work, requiring a high degree of tacit knowledge to generate creative, inventive, and innovative solutions. In the context of destination marketing, Wong and McKercher explained that satisfactory outcomes occur when knowledge seekers clearly articulate their needs and when brokers provide information that meets these needs. Conversely, customer satisfaction declines[8].

2.1.2 Consultant-Client Relationship

If clients are the information providers and implementers of solutions[9], consultants are not only problem identifiers and diagnosers, solution generators, and evaluators but also facilitators who shape clients' interpretations of consulting project outcomes[10]. Walsh identified three types of relationship strategies between consultants and clients[11]: (1) the expert model, which assumes that professional behavior involves solving specific client problems with the help of scientific theories and technologies; (2) the critical model, where consulting firms are seen as persuasive systems[12], communicating with clients through a series of success stories (using rhetoric, images, metaphors, and humor) that can replace the firm's ambiguous knowledge base; and (3) the social learning model, where clients and consultants share the stage, actively diagnosing and solving problems together[13].

The process of building trust between consultants and clients is complex and variable. Consultants must respond to clients' desires, tastes, and expectations, effectively "mirroring" their clients. Additionally, they need to balance interpersonal relationships to ensure that the consultant-client relationship does not become too personal. Credibility and a good track record are key factors influencing trust. In commercial transactions, consultants persuade clients to pay high fees for personalized, unique, and high-value-added services, resulting in a symbiotic relationship driven by opposing interests.

2.1.3 Development Status of the Travel Consulting Industry

China's tourism industry is characterized by both government-led and market-driven dynamics. The ever-changing landscape of tourism poses challenges for planners and developers, marketers and managers, policymakers and decision-makers, as well as educators, researchers, and knowledge brokers, requiring them to maintain innovation and knowledge-based approaches in research and practice[15]. The consulting field is an important area in the tourism industry's commercial activities, planning and development, and policy formulation. Over the past few decades, the prominence of tourism as a research and practice field in China has led to a surge in planning, development, and marketing consulting agencies. However, research on the knowledge mediation process and its impact on the travel consulting industry is lacking.

2.2 The Rise of Machine Agency on Social Media

Social media first emerged in the United States, with its most basic feature being the creation and exchange of "user-generated content (UGC)" based on Web 2.0 technology[16]. Users interactively communicate, collaborate online, and jointly solve challenging problems. An increasing number of organizations are beginning to offer services on social media platforms. Currently, "active users" or "user agency"[17] has become a key theoretical foundation for understanding users' reactions to social media and their underlying mechanisms. Research has found that agency-enhancing features on social media, such as customization, commenting, sharing, and liking, can enhance the persuasiveness of messages[18].

In recent years, the integration of AI with the underlying algorithms of social media platforms has revolutionized the way users interact and communicate with social media, featuring core functions such as "search, aggregation, monitoring, prediction, filtering, recommendation, rating, content generation, and resource allocation"[19]. Relevant empirical research primarily focuses on user perceptions and experiences as outcomes, such as user trust

in algorithm-generated information[20] or privacy concerns related to algorithm-based social media[21]. Since the various dependencies between human agency and machine agency largely determine human behavior in a given human-machine network[22], a deeper theoretical explanation of how AI impacts user experiences on social media platforms is needed.

2.3 Human-AI Interaction on Online Travel Platforms

2.3.1 Theory of Interactive Media Effects

To understand how AI technology influences user experiences in AI-driven media, Sundar proposed a framework for studying the psychological processes that shape perceptions and behavioral outcomes in Human-AI Interaction (HAII). He introduced the "Theory of Interactive Media Effects (TIME)," which suggests that AI's affordances can influence users' perceptions, engagement, trust, and experiences through two different pathways: cue and action routes[23].

The Theory of Interactive Media Effects (TIME) can effectively explain how the AI technological features of a platform influence customers' willingness to accept travel plans. The theory emphasizes that people's reactions to media are influenced by its characteristics, and the key mechanisms of customers' cognitive, emotional, and behavioral responses to technology are their engagement with it. The theory posits that media technology-driven engagement helps control the impact of media content on users' knowledge, attitudes, and behaviors, highlighting the relevance of psychological factors in media characteristics and customer engagement[24]. Currently, TIME has become an effective theory for explaining online technologies, such as virtual engagement[25], e-commerce websites[26], parallax scrolling[27], digital social reading[28], and source interactivity[29].

2.3.2 Wanderboat: A Generative AI-Driven Online Travel Platform

Online travel platforms (OTAs) are digital platforms specifically designed to provide real-time assistance and advice to travelers, typically based on AI or online customer service systems. These platforms help travelers solve travel-related issues, such as booking hotels, flight information inquiries, travel advice, and destination recommendations, through interactions with users. Many platforms use chatbots or AI technology to understand user needs through natural language processing and provide instant solutions or recommendations. Some well-known online travel platforms include Trip.com and Booking.com, which not only offer standard travel services but also help users resolve various consulting issues in real-time during their travels. However, these platforms rely on backend human customer service to mediate the knowledge process, with AI serving more as an auxiliary technical tool or communication medium. Essentially, the initiative in knowledge production remains in the hands of human consultants, rather than AI itself creating information sources, reflecting the limitations of traditional travel planning consultants transitioning to intelligent services.

Compared to other online travel platforms, Wanderboat has truly achieved the replacement of human customer service with AI in consulting work. When AI travel consultants intervene in the knowledge mediation process, what social changes will this bring to the Chinese travel market? How should we examine the relationship between AI consultants and clients? These questions form the starting point of this study. Based on this, this paper conducts an exploratory study using Wanderboat as a case, examining how HAII influences users' willingness to participate in collaboration or accept consulting, based on the Theory of Interactive Media Effects, providing insights into the symbolic and enabling effects of AI-driven online travel platforms on user perceptions and experiences. The following questions are proposed:

Q1: How do users collaborate with AI travel consultants in the knowledge mediation process on online travel platforms?

Q2: How does the "consultant-client" relationship under AI influence user engagement?

3. Research Methods

3.1 Research Subjects

This study conducted online semi-structured interviews with 25 Wanderboat users (15 females and 10 males), focusing on interface functionality usage, AI-generated travel plan content, acceptance willingness, and travel experiences. The 15 females were labeled A1-A15, and the 10 males were labeled B1-B10, with each interview lasting 30-60 minutes, resulting in over 60,000 words of interview transcripts for subsequent coding.

3.2 Data Analysis

First, in the open coding stage, two researchers independently read all transcripts line by line and assigned initial codes to the raw dialogue (e.g., "browsing habits" and "usage dependency"). This is a qualitative analysis method in grounded theory. Second, two researchers with theoretical knowledge participated in the axial/hierarchical

coding stage, discussing the codes generated from individual analyses and identifying overlapping or dominant codes, categorizing initial codes into secondary interpretive themes, such as "user agency" and "machine agency." Finally, the two researchers merged overlapping themes, excluded rarely mentioned themes, and optimized the research results.

4. Human-AI Co-Creation: The Shifting Sovereignty of Knowledge Production

4.1 Interactive Features of Chatbots in the Knowledge Mediation Process

4.1.1 Anthropomorphic Language Style

ChatGPT is a chatbot program developed by OpenAI, an AI-driven natural language processing tool based on the Transformer neural network model, which has the ability to handle long text sequences. By understanding context, it generates more accurate text, producing natural and logical sentences, making conversations between users and machines smoother.

All respondents indicated that Wanderboat's conversational style is relaxed and pleasant, with anthropomorphic language and human-like chatbot names enhancing satisfaction and positive attitudes. Powered by GPT-4, Wanderboat divides chatbots into "White Cat" for travel planning and "Black Cat" for exploring local cuisine and cultural activities. These chatbots have strong language affinity and add emojis after text in chat boxes, enriching users' anthropomorphic imagination of AI.

4.1.2 Customized Recommendations

Multi-turn conversations with chatbots allow AI to remember and reference previous interactions, maintaining contextual consistency. This feature makes the dialogue more like a real human conversation, reducing the need for repetitive information input. By analyzing user input and historical data, AI adjusts responses based on user needs, behavior patterns, or past consultations, enhancing interaction accuracy and relevance, and providing customized plan recommendations.

4.1.3 Spatial Maps Enhancing the Visibility of AI

The visible attributes of AI, such as system transparency, can trigger positive heuristics, leading to better user engagement. Wanderboat offers "Mapview" and "Nearby" options, allowing users to see the specific locations and distances of destinations, facilitating route planning and providing detailed geographical information and practical navigation functions. Spatial maps visually display the surrounding environment, terrain, and distances to other key landmarks, helping users find the best paths and plan itineraries during exploration.

I clicked on each recommended location to view its spatial position. The map marked surrounding attractions, dining, and accommodation options, making it easy for tourists to find the information they needed. (A3)

Additionally, spatial maps support real-time positioning, ensuring users can confidently navigate unfamiliar environments. Whether hiking or urban exploring, Wanderboat's spatial maps enhance users' exploration experiences.

4.2 The Trade-off and Game Between User Agency and Machine Agency

4.2.1 Full Agency: AI-Driven Customized Content Consumption

AI algorithms and users jointly construct the consumption experience on the platform[30]. Wanderboat's interface functionality relies on AI-driven content management algorithms. Through several rounds of conversation with chatbots, users can click "Generate" to produce a personalized travel plan including time, destinations, activities, and travel tips in seconds. For users looking to save time on searching, integrating, and summarizing information, this essentially delegates problem-solving and decision-making power to AI. Users attempt to exercise agency by delegating tasks to AI, granting AI proxy agency[31].

I feel like Wanderboat is my travel nanny, meeting my 'lazy' needs for creating travel guides. This way, I don't have to spend a lot of time organizing information or worrying about choosing food and accommodations. (A9)

Personalization and convenience are the main reasons users choose AI for full agency guidance. Customization empowers AI with more agency by making users the behind-the-scenes controllers of the knowledge mediation process.

4.2.2 Negotiated Agency: Users Attempt to Compete for Decision-Making Power While Collaborating with AI

Humans have an innate motivation to control their situations and environments, known as effectance motivation[32]. Therefore, humans may have ambivalent attitudes toward machines exercising decision-making power on their behalf. While users welcome the unprecedented efficiency and convenience provided by AI, they may also

perceive AI as a threat to their agency, leading to "agency tension"[33]. This indicates that the user experience with AI technology largely depends on how users reach a consensus with machine agency[34].

When Wanderboat recommends tourist attractions or restaurants, it often repeatedly suggests certain spots that I may not prefer. So, I keep conversing with it, telling it I need to reselect. Sometimes it doesn't follow my instructions, so I have to change my keywords to increase my decision-making dominance. (B6)

Most respondents indicated that ensuring they have sufficient agency in providing needs and selecting products is a necessary condition for continuing to use the platform and a prerequisite for accepting AI-generated travel consulting services. Additionally, "privacy loss" is an inevitable drawback of agency technologies that promote personalized content and experiences[35]. Without access to and control over user data, personalized algorithms cannot function. Research found that sharing personal data with Wanderboat's chatbots is acceptable, as users consider data sharing a cost for enjoying customized services, allowing AI to more accurately grasp their travel characteristics. This also serves as a bargaining chip for users to participate in negotiated content creation. Feeding AI more private data ensures the knowledge mediation process aligns with the client's ideal situation.

4.2.3 Agency Paradox: Users' Trust Dilemma in the Algorithmic "Black Box"

As a knowledge mediator, AI travel consultants possess far more information resources than users. This creates an information gap, placing users in a weak position in the knowledge mediation process.

Although I can correct the information provided by AI through dialogue, I cannot control or predict what information AI will recommend to me. In this regard, I am passive. When faced with the final travel plan generated by AI, my only active choice is whether to believe it or not. (B2)

Users use Wanderboat to have AI think for them, but during the process, they may distrust its recommendations, leading to resistance. To verify the authenticity of the information, users must spend significant cognitive effort to check the content provided by AI, which seems to contradict the original purpose of using an intelligent travel planning platform. Therefore, due to the uncontrollable autonomy of ChatGPT, users develop conflicting feelings about the knowledge production of generative AI.

People use Wanderboat for its one-stop generation feature, but when it comes to adopting the product for actual travel, doubts arise. To verify Wanderboat's authenticity, users have to gather information themselves, which defeats the purpose of using AI. Isn't using AI supposed to make life easier? (A12)

5. The Impact of Human-AI Interaction on User Engagement

5.1 The Role and Counter-Role of Machine Heuristics on Media Perception

Heuristics refer to mental shortcuts people use to make quick judgments in uncertain situations with limited cognitive resources. "Machine heuristics" refers to the phenomenon where people, upon noticing they are interacting with a machine, apply their existing stereotypes about machines to the information processing, helping them make quick decisions, such as perceiving machines as objective, accurate, and unbiased[36].

When an algorithm or robot is the source of interaction in HAII, users' positive and negative impressions of machines will be invoked, forming the basis of machine heuristics. This is a mental shortcut where users need to define the characteristics of machines through machine heuristics when making judgments about unfamiliar human-AI interactions. TIME uses AI as a 'source' cue, triggering users' cognitive heuristics about machines and shaping their perceptions of the quality and credibility of media content.

I was recommended Wanderboat by a friend. Since I often use ChatGPT on my phone to converse with AI, I thought that vertical applications leveraging similar technologies should also be reliable. I am quite optimistic about the deep integration of generative AI across various industries. (B5)

Thus, the psychological effects of heuristics depend on users' prior experiences with AI and their media literacy. TIME's cue route predicts that heuristics in AI-mediated environments can be triggered not only by the presence of AI on the interface but also by algorithmic functionalities or interface design features. These cues shape users' psychological responses to AI-mediated media. The findings of this study suggest that AI may evoke different types of heuristic thinking in users, which can have either positive or negative effects on media engagement.

5.1.1 Automation Bias Enhances User Dependence on AI

By clicking the 'Handoff' button on the left side of the dialog box and uploading flight or hotel reservation documents or any links of interest, AI can immediately generate a detailed itinerary without requiring any text input. This lazy-friendly feature makes me even more dependent on Wanderboat. (A14)

From the respondents' feedback, it is evident that AI's algorithmic capabilities are overestimated. Not all users are interested in or effective at training algorithms; instead, they believe that AI's decisions might be more scientific compared to humans. Notably, while the interactive interface facilitates human-AI collaboration, most users still view Wanderboat as a decision aid rather than a decision-maker, hoping it will enhance human decision-making capabilities.

5.1.2 Algorithmic Aversion Triggers Trust Crisis and Technological Fear

Meeting users' need for autonomy is the foundation of positive user experiences with interactive technologies. If self-determination is viewed as a psychological mechanism, "algorithmic sovereignty"[37] becomes an unavoidable topic when discussing user engagement behaviors. Humans use AI's machine agency without wanting to lose their judgment in knowledge production, as they subconsciously believe human intelligence surpasses AI, especially in mastering tacit knowledge.

I am a local, so I wanted to test what kind of food Wanderboat would recommend. To my surprise, the restaurant options it provided were all knock-offs that locals would never visit. Isn't this just scamming out-of-town tourists? (B1)

We cannot know the algorithmic logic behind Wanderboat's recommendations for accommodations, dining, and attractions. Even though its data volume is sufficient to support customized travel plans, when it comes to non-computational knowledge, the limitations of AI as a travel consultant become apparent. Additionally, even when AI provides incorrect information, it refuses to admit mistakes, which may be a form of autonomous expression but also exacerbates users' algorithmic aversion and skepticism toward AI's decision-making. Due to technological fears, some users reduce their level of human-AI interaction or even abandon AI-driven media platforms altogether.

I might find it interesting to use Wanderboat to generate travel plans, but there is still an insurmountable technical barrier between humans and AI. This is why I wouldn't adopt AI-generated content for real-world travel, as human social experience is something machines cannot yet learn.. (B4)

5.2 Infusing Online Travel Platforms with Social Interaction Features

Existing research primarily explores how user agency on social media enhances user engagement[38]. With the integration of AI into online travel platforms, we must update our understanding of user engagement by examining the relationship between machine agency and user agency. User engagement is a multidimensional construct, encompassing psychological and behavioral experiences[39], as well as the frequency of user interactions with a given technology or interface[40]. Additionally, social-interactive engagement is an important dimension of online participation[41].

Some respondents indicated that their experience on Wanderboat was addictive because the platform built a community of travel enthusiasts, a feature lacking in many travel planning platforms. Emphasizing social interaction allows users to share their successful or failed travel experiences, which also helps increase engagement among other community members.

Compared to Ctrip or Mafengwo, Wanderboat allows users to share experience posts combining videos, images, and text, specifically tailored to AI-generated customized plans. This makes it easier for us to find targeted information within the community. (A9)

The study found that Wanderboat's HAII primarily promotes social-interactive engagement by supporting niche and fluid communities. Users' posts, travel plans, and notes are centralized on their personal profiles, accessible by clicking the "Collection" tab on the left. Since the algorithm recommends content aligned with users' interests, they can easily discover creators with similar interests, forming social networks. By following each other, users can incorporate others' itineraries into their own plans and use AI to ask questions about unfamiliar aspects.

Sharing experiences is an essential part of traveling. I enjoy posting my travel reflections on social media, and people with similar interests often add me as a friend. As the number grows, a community forms. Wanderboat's built-in community feature makes it convenient for us to build such groups without switching to another platform. (A11)

Products "planted" by community members can stimulate other users' purchasing desires, manifesting as more frequent media usage. However, there are also instances of reverse recommendations, with some respondents stating they prefer to see critical feedback, such as when AI travel consulting services fail to deliver satisfactory travel experiences. Whether tourism destination marketing is related to AI algorithms remains unclear, making experience sharing a way for users to exercise their agency.

When traveling, I fear 'stepping on landmines.' Whether consulting human customer service or AI, the goal is to reduce the likelihood of unpleasant experiences during the trip. For marketing purposes, some may excessively embellish their experiences. If I don't see genuine feedback, I wouldn't dare to adopt AI-generated travel plans. (B3)

6. Conclusion and Reflection

Leveraging deep search and the ChatGPT-4 language model, Wanderboat intelligently plans personalized travel routes, promptly responds to customer needs, and provides travel consulting services. This study expands the theoretical understanding of HAII, focusing on the relationship between user agency and machine agency on AI-driven online travel platforms. Based on the HAII-TIME theoretical framework, it summarizes the human-AI interaction behaviors in the knowledge mediation process and their impact on user engagement. As shown in Figure 1.

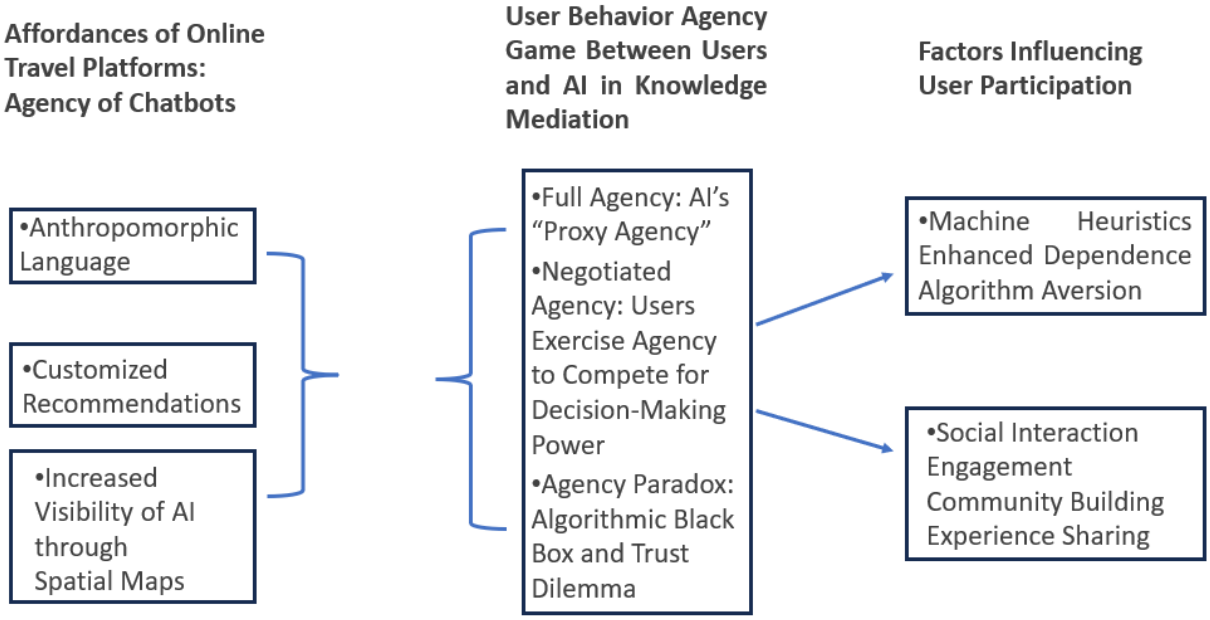

Figure 1. Conceptual Flow of AI and User Agency and Their Impact on Wanderboat User Engagement

The application value of human-AI interaction in the tourism industry far exceeds the possibilities mentioned in this paper and is by no means static. Instead, it is a knowledge production practice that optimizes through adjustments. Therefore, the mechanisms of these interactive behaviors need to be discussed more deeply within the context of computational mediation and the smart tourism market environment.

6.1 From CMC to AIMC: Knowledge Production and Dissemination in the Context of Human-AI Interaction

In existing media effects research, most theories focus on the information content carried by media while neglecting the exploration of media technology affordances. However, what distinguishes communication studies from other social sciences is the "mediation" effect of media[42], which focuses on how mediation processes lead to changes. The shift from "communicating through technology" to "communicating with technology" marks a transformation in Computer-Mediated Communication (CMC) research, which began by studying human interactions with technology itself, classifying this field as Human-Computer Interaction (HCI).

Typically, the two are distinguished based on the "source" attribute. In CMC, the source is still human, while in HCI, it is the computer. What blurs the line between CMC and HCI is "source interactivity," which refers to the agency of users as communication sources[43]. This allows them not only to customize information for themselves but also to curate and create content for others. When individuals influence others' proxy agency in desirable and self-fulfilling ways, the importance of individual agency increases[44], which is why User-Generated Content (UGC) is widely used on social media platforms. With the further development of machine learning and generative AI, AI has begun to replace users in exercising agency and gradually develops autonomous consciousness. Thus, AI-Mediated Communication (AIMC) has emerged, questioning the intentionality, authenticity, and credibility of human senders and profoundly impacting interpersonal communication and relationships[45].

This paper describes a study on human-AI interaction within the AIMC framework, treating the AI technology behind Wanderboat as a communication source and exploring how users achieve human-machine dialogue in the knowledge production and dissemination process. The findings show that AI travel consultants providing consulting and customization services represent machine agency, while actively engaging in dialogue training with chatbots or sharing AI-related cognitive insights and personal travel experiences on the platform's community represent user agency. Following the Theory of Interactive Media Effects, the study identifies that HAII on online travel platforms primarily manifests as a trade-off and game between the two agencies, involving full agency, negotiated agency, and the agency paradox.

The paper also clarifies how AI's technological affordances influence user engagement, with machine heuristics and social-interactive engagement being the main factors. Previous research on social media user engagement primarily focused on the user agency provided by customization or self-expression features[46]. However, this study expands our understanding of the intelligent development of social media platforms. When AI serves as a travel consultant, users delegate some decision-making power, which in turn enhances the dominant role of machine agency in the knowledge mediation process. Most users find it difficult to tame or resist AI algorithms based on the ChatGPT model, leading to a trust dilemma in accepting AI technology and conflicting psychological states regarding user agency. This highlights the complexity of the "consultant-client" relationship in current AI-driven online travel platforms.

6.2 The Practical Significance of AI for the Tourism Industry

Wanderboat, an AI-powered travel planning platform, is bringing numerous opportunities and challenges to the tourism industry. The findings of this study provide insights for users, platform companies, and market regulators to reflect on the future development of online travel platforms. On the one hand, Wanderboat offers personalized travel recommendations, leveraging user preferences and historical data to help them create tailored travel plans. This personalized experience can attract more tourists and enhance customer loyalty. On the other hand, Wanderboat can help tourism suppliers better manage resources, optimize pricing strategies, and improve operational efficiency, thereby increasing profit margins.

Given the highly competitive nature of the tourism industry, Wanderboat will face challenges from emerging platforms with more mature functionalities in the future. How to maintain differentiation and sustain user stickiness is an urgent issue, and the study's findings may offer some suggestions. First, AI algorithms should not overly restrict user agency. For example, optimizing the design of chatbot-client dialogue interfaces can allow users' knowledge resources to intervene in the knowledge production process, better enabling human-AI co-creation and enhancing user engagement. Second, when collecting and analyzing user data, platforms must ensure data privacy and security, comply with relevant laws and regulations, and avoid legal risks and brand damage caused by data breaches. Finally, generative AI must continuously improve users' trust in AI-generated content, as this is a key factor in promoting end-market consumer behavior. Enhancing user agency or altering machine heuristics can improve the affordances of media technology.

6.3 Limitations and Future Research

This study has several limitations. In terms of research methods, certain variables were not operationalized, leading to a lack of discussion on the causal relationships between specific variables in the context of technological affordances and user engagement. This is because the study's purpose was not to verify experimental and control variables but to examine the process and impact of AI-driven online travel platforms on user experiences from a macro perspective, focusing on the dynamic relationship between user agency and AI agency in human-AI interaction.

Guided by the research findings, future studies could attempt to use experimental methods to test the role of online travel platforms in the knowledge production and dissemination process. For example, designing experiments to compare scenarios where AI travel consultants can collaboratively generate higher-trust content with users. Alternatively, from a knowledge sociology perspective, comparing the differences in the impact of human customer service and AI as knowledge mediators on clients' travel experiences could be explored.

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