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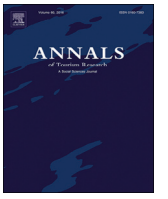

RESEARCH NOTE

Text-to-image AI tools and tourism experiences

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Introduction

Recent breakthroughs in artificial intelligence (AI) technologies have made generative AI—a machine learning technology that generates new data from training data (Houde et al., 2020)—more accessible to the general public. The implications of these tools for tourism are immediate and transformative. Tourism has experienced significant shifts in marketing, engagement, and memory-making through innovative interactions and co-creations with AI chatbots, smart room controls, and other AI-powered systems (Grundner & Neuhofer, 2021; Nicolescu & Tudorache, 2022; Yin, Li, Qiu, Bai, & Zhou, 2023). We intend this research note to be among the first to catalyze scholarly discourse on the topic of generative AI and tourism. In particular, we focus on text-to-image AI tools, such as Midjourney and Stable Diffusion, which empower the average Joe, such as tourists, destination marketers, and vendors with limited or no artistic training, to produce stunning images from textual descriptions, generate personalized visuals that embody distinct experiences, and create novel mementos of travels.

Tourism experiences and visual practice

Tourism offers complex experiences and memories related to a place (Hosany, Sthapit, & Björk, 2022). While most definitions of tourism experience refer to the experience at the destination, the tourism experience encompasses multiple distinct yet interacting stages. It begins with the planning and preparation phases (*anticipation*), continues during the trip when the tourists are physically present at the location (*on-site*), and extends beyond the trip by capturing moments to remember (*recollection*) and retrospection of the journey (*reflection*) (Cutler & Carmichael, 2010). In other words, the entire process, from planning to reminiscing, contributes to the overall tourism experience (Godovykh & Tasci, 2020).

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Fig. 1. AI-generated images versus images provided by destination marketers.

The use of imagery (e.g., films, photographs, and online visual blogging) is essential to understanding tourist experiences (Scarles, 2010) because it shapes the anticipation, on-site, recollection, and reflection of the experience (Greenberg & Knowlton, 2014). This note focuses on the impact of text-to-image AI tools on tourism experiences at each phase of the process.

Text-to-image AI tools

There has been a proliferation of text-to-image AI tools vying for greater public recognition in the market (see Lyu, Wang, Lin, and Wu (2022) for a comparison of these AI tools). Given specific textual inputs, text-to-image AI tools are capable of delineating vivid and visually rich images that align with the user's envisaged concepts. In tourism, these tools can unleash creativity, and facilitate the conjuration and visualization of evocative travel scenes (see Fig. 1).

AI tools and anticipation of tourism experiences

Before arriving at a destination, a tourist has already developed some preconceived notions about the experiences that they will have. These notions are informed by various sources, such as media, product images, and expectations (Godovykh & Tasci, 2020). Given that people look forward to the expected outcome, constant exposure to visual images can create *a sense of anticipation* that leads to increased engagement and motivation (Scarles, 2010), and the anticipation of the tourism experience can leak into the experience itself (Cutler & Carmichael, 2010).

Text-to-image AI tools have the potential for destination marketers to bypass creative workers and undertake the intention-to-realization process (Marcos, Branco, & Zagalo, 2009) independently to generate distinctive visual content quickly, easily, and inexpensively. Contemporary AI tools can generate vibrant, highly-appealing, and memorable visual images (Lyu et al., 2022), which are expected to significantly increase *sensory strength* and visual working memory capacity (Keogh & Pearson, 2014).

AI tools and on-site tourism experiences

AI tools have the potential to create tangible symbols of on-site tourism experiences. Tourism experiences are not solely confined to tourists alone—the tourism industry is also actively involved in creating, organizing, and offering experiences through the skillful presentation of future possibilities (Mistilis, Buhalis, & Gretzel, 2014). The creative act always involves the spectator, who later reacts critically to the artwork (Higgins & Scholer, 2009). Text-to-image AI tools turn tourists from spectators to (co-)creators

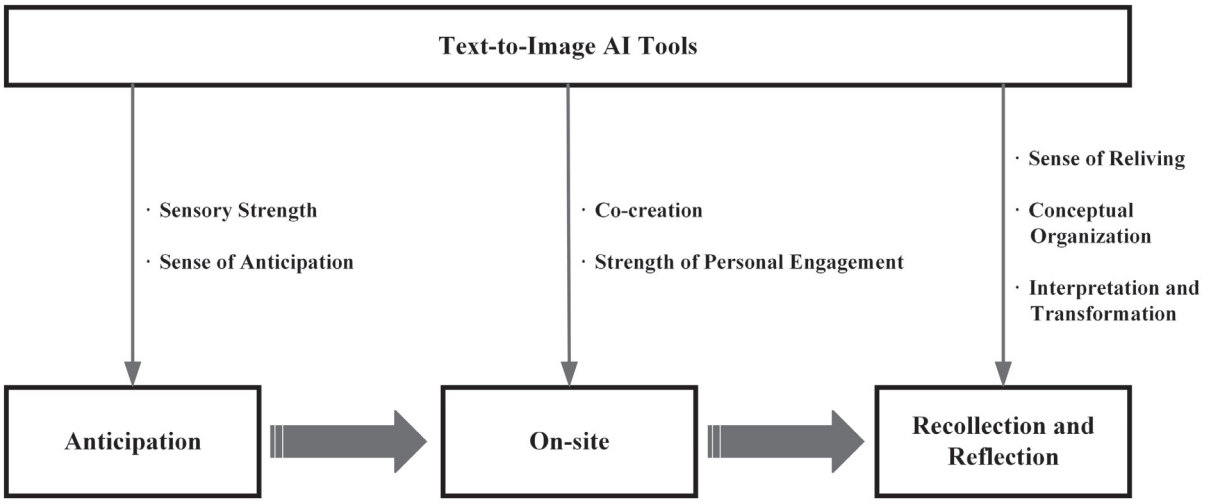

Fig. 2. Text-to-image AI tools and phasic tourism experiences.

of tourism mementos, establishing new relationships between vendors, artworks, and tourists. This co-creation can involve using a design pool provided by a destination marketer or vendor, combined with the tourist's personal interpretation using AI tools. The outcome is a one-of-a-kind digital artwork that is deeply meaningful and personally relevant thanks to the high *strength of personal engagement* in the creation process (Higgins & Scholer, 2009). Facilitated by destination marketers and vendors, text-to-image AI tools can also be employed to create augmented reality experiences and tailored itineraries that enrich on-site tourism encounters, allowing visitors to experience locations in an innovative and immersive manner.

In addition, the purchase of memorabilia has always been part of the on-site tourism experience (Ferdinand & Williams, 2010), which provides tangible symbols of the experience (Mossberg, 2007) and intensifies the experience (De Rojas & Camarero, 2008). The increase in non-fungible tokens has given rise to a new form of tourism memorabilia. Non-fungible tokens are unique and non-replicated digital assets with verifiable ownership of content, including artwork, music, and other media forms (Wang, Li, Wang, & Chen, 2021), which allow tourists to preserve their experiences in a secure, easily transferable, and appreciating digital format.

AI tools and recollection/reflection of tourism experiences

In Larsen's (2007) view, the tourism experience can be best defined as a recollective travel-related event that was significant enough to be stored in one's long-term memory. Tourists commonly record their experiences through photography. The widespread use of smartphones has dramatically expanded both the volume and range of visually documented tourism experiences (Yu, Anaya, Miao, Lehto, & Wong, 2018). However, due to the minimal conceptual organization of these records, recollection of experience via photo-taking tends to dissipate quickly (Conway, 2009).

How do text-to-image AI tools influence the recollection of a tourism experience? Utilizing generative AI tools inherently necessitates the users to input the key elements that they want to convey. During the process, they recall and reexperience the original event (Lyu et al., 2022). This strong *sense of reliving* (Greenberg & Knowlton, 2014) almost always comes with vivid visual images (Rubin, Schrauf, & Greenberg, 2003). Clearly, the use of text-to-image AI tools through textual prompts elicits a strong sense of reliving, leading to lively visuals, and thereby making a tourism experience more recollective.

Generative AI is considered to be a promising medium for meaning-making, which allows the user to accurately convey intimate personal meaning (Chen, Lee, Mindel, Elhaouij, & Picard, 2023). Therefore, compared with photos, the use of text-to-image AI tools involves interpretation of the experience on the part of tourists (i.e., composing textual descriptions), a higher level of abstraction (i.e., artistically rendered images), and representation of the tourism experience by ascribing personal meaning through narratives (Cary, 2004). Through these AI-facilitated processes, a particular tourism experience is reconstructed with *conceptual organization* and encoded in a more meaningful manner, which makes the tourism experience more recollective (Prebble, Addis, & Tippett, 2013). While not a replacement for traditional photo-taking, AI tools can complement artistic expression by enabling the interpretation and transformation of experiences through a narration-to-image process, which makes the tourism experience an ever-evolving tourist discourse.

Conclusion

We aim for this future-oriented (Young, Majchrzak, & Kane, 2021) conceptual research note to be among the first to systematically conceptualize the impact of text-to-image AI tools on tourism experiences. Specifically, our paper identifies the key

mechanisms (as illustrated in Fig. 2) through which AI-generated images may alter tourism experiences at each phase. Our research contributes to the literature on the memorability of tourism experiences (Hosany et al., 2022) and evolving relationships among tourism stakeholders (Mistilis et al., 2014) in the context of generative AI.

This research presents a promising avenue for future research. Text-to-image AI tools can improve the 'stickiness' of the tourists' anticipation and recollection of a tourism destination, and can add idiosyncratic symbolic value to the anticipated and remembered tourism experience. Future research could look into how a sense of place is shaped by AI-generated images. Other generative AI tools and non-fungible tokens form another timely topic. However, it is worth noting that AI-facilitated tourism experiences may have some drawbacks that warrant further investigation, such as inadequate technology or language skills, unpredictable content, and potential value co-destruction (Grundner & Neuhofer, 2021).

Author contributions

Li Miao: Conceptualization; methodology; writing-original draft; review and editing
Fiona X. Yang: Conceptualization; writing-original draft; review and editing

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.annals.2023.103642.

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