Present and Future Digital Technology Use in Ecotourism: Understanding Tourists’ Acceptance

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ABSTRACT

Digital technology has the potential to enhance the tourist experience, particularly in the context of ecotourism. This study aims to investigate tourists’ acceptance of digital technology for ecotourism activities using the technology acceptance model (TAM) and to assess their future usage intentions. The motivation behind this research stems from the increasing interest of tourists in eco-friendly nature experiences, the rise of movements focused on enjoying the natural environment, and advancements in technology for the tourism industry. A survey methodology was employed, and the data were analyzed using Partial Least Square Structural Equation Modeling (PLS-SEM). The findings indicate that perceived ease of use and perceived value significantly predict tourists’ attitude toward digital technology. Moreover, attitude plays a significant role in influencing the behavioral use of digital technology. Additionally, both perceived value and behavioral use are significant factors in explaining tourists expected future use of digital technology. Furthermore, the assessment of future technology use reveals the top five choices of ecotourists, namely location-based services, wireless and mobile technology, destination management systems, climate information management, and intelligent transport systems. Thus, this study concludes that digital technology has a profound impact on the ecotourism industry and has the potential to foster enduring connections between humans and nature.

Keywords: Technology for Ecotourism; Technology Acceptance; Ecotourism; Digital Technology; Malaysia

RESEARCH HIGHLIGHTS

The study aims to investigate tourists’ acceptance of digital technology for ecotourism activities using the technology acceptance model (TAM) and examines their future usage intentions. The findings reveal a significant relationship between TAM criteria and expected future use, indicating that tourists hold a positive attitude towards using digital technology to enhance their travel experiences. These findings provide valuable insights for ecotourism stakeholders, highlighting the potential of digital technology to support long-term operations. By leveraging digital technology, the tourism industry can offer trendy, up-to-date, and user-friendly services and products. Furthermore, to gather feedback on smart tourist experiences, tourism operators, managers, and organizations should employ effective strategies such as interactive communication, providing trendy news, and facilitating engaging debates. These methods enable them to effectively communicate with their tech-savvy consumers. The factors examined in this study support the integration of digital technology into long-term sustainability plans, demonstrating that users and customers are embracing digital technology to enhance their overall satisfaction and access various dimensions of their tourism activities.
**Research Objectives**

This study aims to investigate ecotourists’ acceptance of digital technologies using the technology acceptance model (TAM) and assess their acceptance towards expected future use. Previous studies applying TAM in ecotourism research have identified attitude and perceived usefulness as determinants of intention (Ulfy et al., 2021; Legiawan & Sutoni, 2021; Sadiq & Adil, 2021; Sánchez et al., 2021). However, the relationship between behavior and expected future use of digital technology has not been thoroughly investigated, leading to a lack of clear policy and practical recommendations for ecotourism service providers. This study seeks to fill this research gap by examining the connection between behavior and expected future use of digital technology in the context of ecotourism.

**Methodology**

The study employed a quantitative research approach using a correlational design. Data was collected through a survey, utilizing a 5-point Likert scale to measure five constructs: attitude, perceived ease of use, perceived value, behavioral use, and expected future use. The items for each construct were adapted from Davis (1989) and modified to align with the study's context. Responses for attitude and perceived ease of use ranged from "not true" to "very true," while behavioral use was assessed based on frequency. Perceived value and expected use were rated on a scale from "very low" to "very high." Additionally, demographic information including gender, age, employment status, and previous ecotourism experiences was collected. Prior to data collection, the instrument and items underwent validation and pre-testing. Expert examination ensured face validity, and a pilot test assessed item quality and internal consistency. The internal consistency scores met
acceptable values. Ethical approval was obtained, and purposive sampling was employed at ecotourism sites. The study achieved the recommended sample size of 100 to 107, with 225 valid responses included in the analysis. Data screening procedures were implemented to address missing values, common method bias, and multivariate normality, resulting in satisfactory outcomes.

Results

The research indicates that the top five digital technologies for measuring perceived value, based on the highest scores, are location-based services, wireless and mobile technology, destination management system, climate information management, and community informatics. These technologies are also the ones respondents expected to use the most. Furthermore, when comparing perceived value and expected use, it was found that Intelligent transport systems had the largest gap, followed by carbon calculators, gamification, augmented realities, and virtual tourism.

Additionally, we conducted tests to validate our hypotheses and discovered several significant relationships. The strongest relationship was observed between perceived ease of use and attitude. This was followed by perceived value and expected future use, as well as attitude and behavioral use. Moreover, the relationship between behavioral use and expected future use also yielded significant results.

Findings

In line with Sadiq and Adil (2021), the results of this study reveal a significant relationship between perceived ease of use and attitude among ecotourists. This implies that when digital technology is perceived as easy to use, ecotourists are more inclined to utilize it. Moreover, ecotourists prioritize trendy, user-friendly, up-to-date, easily operable, and reliable information when adopting digital technology. Furthermore, the study found a positive association between perceived value and attitude. This suggests that if ecotourists perceive digital technologies as reliable, beneficial, and capable of enhancing their experiences, they are more likely to embrace these technologies. Essentially, ecotourists who perceive digital technology-facilitated services as compatible with their values and beliefs demonstrate a higher propensity for adoption. Similarly, the anticipated future use of digital technology heavily relies on behavioral use and the perceived value derived from the current usage experience. While both factors are significant predictors, perceived value exerts a stronger influence and provides a more compelling rationale for future usage of digital technology.

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