Using A.I. to Build Capacity and Mobilize Resources Among Conservation Nonprofit Organizations

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ABSTRACT

Despite recent hype about Artificial Intelligence (AI), there has been a lack of systematic analysis of how nonprofit conservation organizations utilize AI to foster their organization's capacity to meet their professional practices and goals to engage the stakeholders. This study employed a large-scale text mining method of conservation organization's websites to analyze words, phrases, and topics from 25 top conservation nonprofit organizations from the EnvironHeroes to examine the roles of AI in their technology-enabled capacity-building and resource mobilization strategies. The text-mining study extracted five topical themes to demonstrate the impacts of artificial intelligence and its tools on environmental well-being, research and innovations, local communities, and climate change issues. The size and location of the non-profit conservation organizations were most predictive of artificial intelligence and tools. Discussions and implications are provided.

INTRODUCTION

In recent years, Artificial Intelligence (henceforth, AI) has become a technology that pressures organizations "to adopt it or get left behind" (Griffing, 2025, p. 12). The emphasis on AI to make accountable conservation strategic planning has long been in line with an increasing dependence on data generated from digital media (Urquhart & Carlile, 2022). Partially attributed to the growing ecological challenges (Foyet, 2024), emerging AI and its applications have been claimed to transform conservation theories and practices by creating more situation-relevant and customer-centric environmental campaign content. These AI-

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empowered applications are also instrumental to policymakers when considering the needs and priorities of their constituents (Urquhart & Carlile, 2022). Tofighi-Niaki et al. (2025) observed that AI could monitor local research systems and develop a participatory design with high transparency and accountability.

Additionally, AI can help conservation nonprofit organizations utilize chatbots to identify, develop, and manage grant and funding opportunities (Tofighi-Niaki et al., 2025). However, despite the recent hype about AI and its efficacy in conservation efforts, there has been a relative lack of systematic analysis of how conservation nonprofit organizations and professionals perceive AI and its relevance to their professional practices and goals. Among many initial studies aimed at debunking AI hyperbole in the context of conservation non-profit organizations, Tofighi-Niaki et al. (2025) identified potential organizational and structural barriers and problems associated with integrating AI into conservation non-profit organizations and other grassroots entities. For example, the lack of transparency in AI models and biases in prioritizing certain species over others, as well as dependence on Western ideologies and cultural values, can render AI-based conservation campaigns to place local indigenous peoples at a disadvantageous position (Tofighi-Niaki et al., 2025).

As an emerging technology, AI has often been considered a critical information technology and computing resource, interchangeable with similar terms such as machine learning (ML) and deep learning (DL) (Tofighi-Niaki et al., 2025). However, despite the significance of nonprofit conservation organizations' technology-enabled capacity-building and resource mobilization endeavors, research has been scant in providing a large-scale descriptive analysis of how these organizations have integrated AI into their organizational websites as resource mobilization tools. Our study employed a large-scale text mining method to analyze words, phrases, topics, and themes from the official websites of 25 top conservation nonprofit organizations, as listed on *EnvironHeroes* (https://environheroes.com/25-top-biodiversity-organizations-and-ngos/). The text mining approach helped examine the roles of AI in their technology-enabled capacity building and resource mobilization efforts.

Text mining has been gaining increasing attention among social science scholars, particularly among researchers using framing analysis (Diakopoulos et al., 2013). We employed a text-mining approach to analyze the websites of nonprofit conservation organizations to understand their resource mobilization and capacity-building strategies, approaches, and visions related to AI-enabled capacity-building activities. However, using a text mining method to analyze AI's integration as demonstrated in nonprofit conservation organizations was scarce to provide a systematic assessment of implementation success stories, challenges, and problems that these nonprofits could have encountered to address better issues such as the lack of technical expertise, infrastructure readiness, or the absence of funding to implement AI effectively. Based on these text-mining findings, we discussed AI-enabled resource mobilization strategies to enhance organizational capacities for implementing their conservation efforts. Our chapter aims to provide a state-of-the-art assessment of these challenges, as they are critical to understanding the organizational and geographical disparities in AI adoption, thereby enhancing their capacity-building and resource mobilization efforts.

Specifically, we want to answer the following two research questions:

> RQ1: Using a text mining method, what are the AI-enabled capacity-building and resource mobilization strategies adopted by nonprofit conservation organizations as represented by recurrent keywords, key phrases, and topics of their organizational websites?