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Achieving Digital Excellence in Cultural Tourism: The Digital Maturity Assessment Model

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Abstract

Purpose: The relevance of digital transformation (DT) is acknowledged across industries, including cultural tourism. However, existing frameworks for digital maturity in this sector are limited and fragmented. This lack of a comprehensive framework hampers the ability of cultural tourism organizations to effectively assess their digital maturity, address challenges related to DT, and formulate strategic roadmaps for digital initiatives. Therefore, this paper develops a Digital Maturity Model (DMM) tailored specifically for cultural tourism organisations, to drive them in their DT journey, towards digital excellence.

Design/Methodology/Approach: The study conducts a comparative analysis of existing DMMs across various sectors to identify key dimensions and sub-dimensions relevant to

the context of cultural tourism. This analysis set up the foundations for developing a comprehensive model for assessing digital maturity in cultural tourism organizations.

Findings: The comparative analysis reveals seven principal dimensions consistently emerging across existing DMMs and crucial for cultural tourism organisations, specifically: Strategy, Organization, Culture, Employee, Tourists, Technology, and Operations. Each dimension is further divided and characterized into twenty sub-dimensions, providing a comprehensive framework for assessing digital maturity in cultural tourism sector.

Originality/Value: This study contributes to the literature by providing a tailored DMM specifically designed for cultural tourism organizations, addressing the unique challenges and requirements of the sector. It offers a foundation for developing DT strategic roadmaps and advancing the maturity model field further, particularly in the cultural tourism sector.

Practical Implications: The proposed DMM offers practical support for managers, employers, and other stakeholders involved in strategic decision-making within cultural tourism organizations.

Keywords: Digital Maturity Model, Cultural Tourism, Digital Transformation, Comparative Analysis, Digital Excellence.

Type of paper: Academic research paper

1 Introduction

In current society, the integration of digital tools and technologies transcends being merely advantageous; it has become a requisite for the survival and growth of organisations across manifold sectors, including cultural tourism (Teichert, 2019). However, fulfilling this requirement goes beyond just adopting technology; but necessitates a comprehensive digital transformation (DT) that entails reimagining business models to harness emerging technologies and align with evolving trends like sustainability, co-creation, and prosumerization (Gimpel and Westerman, 2012).

As the cultural tourism sector attempts to adapt to the challenges of digital transformation (DT), the pivotal role of innovation, particularly through digital initiatives, becomes undeniable (Aras and Büyüközkan, 2023; Haryanti et al, 2023; Valdez-de-Leon, 2016).

Innovation is a universally acknowledged foundation in the ever-evolving landscape of global industries, and digital innovation is perceived as a catalyst for growth, cost reduction, and enhanced customer satisfaction. However, its integration could be more linear and often presents formidable challenges and risks. These challenges are particularly conspicuous within the cultural tourism sector, known for its labor-intensive nature, reliance on differentiated products, and the imperative of providing personalised experiences for competitive advantage. Consequently, there is a palpable resistance to DT in cultural tourism, fueled by apprehensions about potential standardisation and a perceived loss of

customer appeal (Carlucci et al., 2023; Santarsiero et al., 2023; Fereidouni and Kawa, 2019; Guimont and Lapointe, 2016).

Frequently, this resistance stems from the lack of a defined roadmap for integrating emerging technologies into their current workflows (Aras and Büyüközkan, 2023; Haryanti et al, 2023; Valdez-de-Leon, 2016).

Therefore, cultural tourism organisations must identify and map their digital maturity to effectively address these challenges (Cantoni, 2020; Guarino et al., 2020). This process lays the groundwork for understanding the current state of affairs and formulating a roadmap for the future, ensuring resilience and competitiveness in the digital era. Despite the topic's relevance, in the cultural tourism sector there are sporadic attempts to develop frameworks for digital maturity (Ryan et al., 2020; De Andrade et al., 2020). Nevertheless, these frameworks tend to be highly specialised and closely linked to specific sub-sectors such as resorts, mountain hospitality, smart destinations, or tourists. They often lack a comprehensive perspective that encompasses the entire cultural tourism industry (Marín Díaz et al., 2023; Ka and Tang, 2023; Imboden et al, 2022; Fux et al., 2020; Blaser, 2019).

In such scenario, this research attempts to answer the following research question *"How can we assess the level of digital maturity of cultural tourism organizations?"* To achieve this objective, the research delves into an examination and comparison of existing Digital Maturity Models (DMMs) already developed both in tourism and in other productive sectors. The main aim is to develop a comprehensive DMM specifically tailored for cultural tourism organisations to assess their level of digital maturity.

Assessing their own digital maturity is fundamental for organizations, as it enables them to make informed decisions, drive growth, and navigate the complexities of the digital landscape effectively.

The paper is structured as follows. First it provides a theoretical background regarding digital transformation and maturity, with a specific focus on cultural tourism industry. Then, the research methodology is described. Afterward, the study proposes a Digital Maturity Model (DMM) for cultural tourism organizations. Finally, it concludes by summarizing key findings and suggesting avenues for future research.

2 Theoretical background

Digital Transformation is redefining operational procedures across various industries, presenting both opportunities and challenges. However, many organizations struggle to navigate DT wave, lacking a clear roadmap to easily integrate cutting edge digital technologies into their current workflows (Aras and Büyüközkan, 2023; Haryanti et al, 2023; Valdez-de-Leon, 2016). This issue is particularly pronounced in the cultural tourism sector. This industry is mainly labor-intensive and has a certain level of hesitancy towards the adoption of

emerging technologies. The reluctance stems from the concern that these technologies may undermine the human touch and direct customer interaction inherent in the sector (Cantoni, 2020; Guarino et al., 2020; Martin-Fuentes et al., 2020). Therefore, often cultural tourism organizations show a lack of initiative in developing and implementing comprehensive roadmaps to navigate the complexities of DT (see e.g., Ryan et al., 2020; De Andrade et al., 2020).

To address this lack, a crucial initial step involves assessing the organization's own digital maturity. Such an assessment provides organizations a comprehensive understanding of their digital knowledge, capabilities, and areas needing improvement. This facilitates strategic planning and informed decision-making, empowering them to embark on successful digital transformation endeavors.

In the context of cultural tourism, the term "digital maturity" extends beyond the visitor experience to encompass the holistic digital evolution of organizations and stakeholders (Marín Díaz et al., 2023; Imboden et al., 2022; Blaser, 2019). It denotes the seamless incorporation of digital technologies into every facet of organizational operations, ranging from efficient internal processes to collaborative efforts with local communities and partners. It represents a 360-degree transformation that enhances not only the visitor experience but also the overall sustainability and effectiveness of cultural tourism initiatives (Williams et al., 2019).

By assessing its current digital maturity state, a cultural tourism organization can ensure technological integration aligns with the unique characteristics and demands of the industry. This would establish a solid foundation for successful DT initiatives.

Management literature suggests digital maturity model (DMM) as valuable guiding framework that helps assess an organization's progress on its digital transformation journey (Haryanti et al., 2023; Valdez-de-Leon, 2016).

DMMs typically encompass dimensions and criteria that elucidate actions or indicators of progress towards maturity. Dimensions represent specific components that elucidate various facets within the field of action, while maturity levels entail specific and general practices tied to diverse dimensions (Berghaus and Back, 2016; de Bruin et al., 2005).

The analysis of management literature reveals that within the cultural tourism sector, sporadic attempts have been made to formulate frameworks for digital maturity (Ryan et al., 2020; De Andrade et al., 2020). Building upon an analysis and comparison of existing DMMs developed within both the tourism industry and other productive sectors, this research endeavors to propose a new, comprehensive DMM specifically tailored for cultural tourism organizations.

3 Methodology

Drawing inspiration from the approaches proposed by Haryanti et al. (2023) and Maier et al. (2012), this study involves some steps detailed in the following.

The initial step is a comprehensive analysis of existing literature. This aims to discern the underlying principles and compelling dimensions that distinguish prominent Digital Maturity Models (DMMs), along with understanding their organizational strengths and weaknesses. The initial search utilized the Scopus platform for articles and Google Scholar for theses, dissertations, and technical reports. The keyword search incorporated the research string: "Digital Transformation," OR "Digital Maturity" OR "Digital Maturity Model" AND ("Cultural Tourism" OR "Tourism Sector" OR "Cultural Heritage").

This approach allows for a holistic examination of DMMs, considering their general applicability to digital transformation, and subsequently, their potential refinement for the unique requirements of the cultural tourism sector.

Following the literature review, the second step involves the evaluation of the models identified, based on four criteria (Table 1) with the aim to verify the existence of a reference model applicable to cultural tourism. The evaluation criteria are adapted from Maier et al., (2012), and provide a framework for selecting a reference model.

After the assessment of the criteria, a new comprehensive framework has been developed through a comparative analysis of the identified models, aimed at identifying and characterize the distinctive dimensions to incorporate into A DMM for cultural tourism organization. The comparative analysis of DMMs delved into a diverse array of frameworks, each offering distinctive perspectives and methodologies to guide organizations through the intricate landscape of DT. The analysis initiated with a discursive exploration extending beyond conventional models of digital maturity, digital transformation, and readiness assessment. This broader perspective serves as a foundation for understanding the holistic context within which digital maturity operates.

The findings of this analysis are presented in the following paragraph.

Table 1. Criteria used in the evaluation of existing models (adapted from Maier et al., 2012)

Criterion	Description
Criterion 1 Field of analysis	Cultural tourism; The dimensions of the maturity model capture the peculiarity of the cultural tourism industry
Criterion 2 Design process	Theory-driven; the maturity model is published in scientific papers that are indicators of academic approaches
Criterion 3 Design Product	A detailed description of each supporting component is available
Criterion 4 Application Method	Easy to implement, with the availability of tools/dashboards that can be accessed independently

4 The Digital Maturity Assessment Model for Cultural Tourism – a pilot version

The literature review provided a comprehensive exploration of existing knowledge on DMMs. Specifically, the review yielded 47 documents, encompassing models related to digital maturity and readiness assessment across various sectors. This approach distinguishes the critical dimensions to consider when constructing a new maturity model (Aslanova and Kulichkina, 2020; De Carolis et al., 2017).

The examined models were not limited to the cultural tourism but drew on insights from different fields, such as tourism as well as manufacturing, telecommunications, education, and transport. Incorporating DMMs from various sectors in this review was indispensable for implementing a holistic approach and gain a broader understanding of digital maturity and innovation practices. This approach allowed for a more comprehensive analysis of relevant factors and dimensions essential in a DMM (Aras and Büyüközkan, 2023; Carrijo et al., 2022).

The subsequent phase entailed evaluating the models based on the four criteria provided in Table 1, to determine the existence of an appropriate reference model applicable to cultural tourism. The examination of the appropriateness of maturity measurement criteria has unveiled a significant gap, as none of the existing maturity measurement models align with all the criteria proposed in this study (Table 1). In relation to the first criterion, which specifically emphasizes the unique dimensions of the cultural tourism industry, the findings reveal a significant scarcity of DMMs explicitly crafted to capture the distinctive attributes of cultural tourism. This deficiency is particularly pronounced when examining models associated with the tourism sector, as the identified few are often confined to specific niches within the broader tourism domain. Fux et al. (2020), for instance, proposed a maturity model tailored for mountain resorts. On the other hand, Ka et al. (2023) introduced a DMM for Hospitality Micro and Small Enterprises (SMEs), encompassing four dimensions: strategy and organizational readiness, digital technology preparedness, digital capabilities assessment, and integrated business strength. Finally, Díaz et al. (2023) focused on developing a personalized recommendation model for tourists, based on the Technology Acceptance Model, highlighting dimensions such as Frequency of Mobile Use, Mobile App Usage, Digital Competence, Attitude towards Technology, Perceived Usefulness and Perceived Ease of Use, Social Media Usage, and Previous Experience. Notably, these models lack a direct and comprehensive reference to the unique intricacies and dimensions inherent in cultural tourism. The absence of a tailored focus on cultural tourism within existing DMMs accentuates the critical need for a dedicated framework that can effectively account for the specialized requirements of this specific sector.

This framework should synthesize the relevant dimensions identified in the literature and adapt them to the cultural tourism sector. In this vein, the

comparative analysis of the identified DMMs has been undertaken to discern distinctive dimensions to incorporate into the DMM for cultural tourism organisations.

The examination of the dimensions of the 47 analysed models revealed approximately 100 dimensions. From these, 7 principal dimensions emerged consistently in various maturity frameworks. Core dimensions, especially for the tourism sector, derived from the comparative analysis of the maturity model dimensions, include: Technology (Connectivity) (31), Organization (28), Strategy (24), Customer (20), Employee (18), Culture (18) and Operations (10).

The identified dimensions are proposed as components of the Digital Maturity Model (DMM) tailored specifically for the cultural tourism sector. These sub-dimensions, illustrated in Figure 1 and succinctly outlined in Table 2, stem from the insights gathered from the extensive literature review, comparisons with existing models, and sector-specific literature analysis.



Figure 1. The Digital Maturity Model for Cultural Tourism Organisations

Table 2. The Digital Maturity Assessment Model for Cultural Tourism Organisations: sub-dimensions

DIMENSIONS	SUB-DIMENSIONS
STRATEGY	The “strategy” dimension involves brand management, relationship management, and portfolio ideation & innovation (Ka et al., 2023; Imboden et al., 2022; Fux et al., 2020). It denotes formulating a robust overarching strategy that guides vision, governance, and planning to support the execution of digital strategies.
ORGANISATION	The “organisation” dimension focuses on organizational structure management, sustainable learning management, and organizational change management (Anderson and William, 2018; Haryanti et al.,

	2023; Valdez-de-Leon, 2016). This includes defining and managing roles, responsibilities, and relationships, fostering a culture of continuous learning, and effectively navigating digital organizational changes.
CULTURE	The "culture" dimension includes digital & innovation mindset, agile & lean management , and talent management (Marx and Arens, 2022; Moi and Cabiddu, 2021; Simić and Matović, 2018). These sub-dimensions foster an organizational culture that encourages innovation, agility, continuous learning, and managing talent to drive digital innovation.
EMPLOYEE	The "employee" dimension focuses on digital capabilities & skills, awareness , and continuous learning (Haryanti et al., 2023; Katsoni and Spyriadis, 2020; Valdez-de-Leon, 2016). This includes ensuring employees possess the necessary digital skills, promoting digital awareness, and providing opportunities for continuous learning to adapt to technological changes.
TOURISTS	The "tourists" dimension prioritizes digital customer experience, customer relationships and engagement (Marín Díaz et al., 2023; Aras and Büyüközkan, 2023). It involves enhancing the overall tourist experience through personalized digital interactions, fostering strong customer relationships, and encouraging active engagement.
TECHNOLOGY	The "technology" dimension focuses on information system, technological infrastructure , and security & privacy (Gökalp and Martinez, 2021; Newman, 2020; Ponsignon and Derbaix, 2020). It involves leveraging advanced digital technologies to support operational efficiency, enhance customer experiences, and ensure robust security measures to protect digital assets and information.
OPERATIONS	The "operations" dimension of cultural tourism includes, real-time insight, analytics and KPIs and resource management automation (Berger, 2015; Deloitte Switzerland, ACSC and Chen, 2018). These subdimensions are essential for leveraging technology to gain real-time insights for informed decision-making and automating resource management processes to enhance efficiency and customer experience.

The proposed DMM for Cultural Tourism Industries provides cultural organizations with a structured framework to assess their current level of digital maturity. The assessment has several implications. First, it offers valuable insights, enabling organisations to pinpoint strengths, weaknesses, and areas requiring improvement on their journey towards digital excellence. Second, the DMM is the foundation for developing a strategic roadmap for organizations, guiding them through their digital transformation journey by delineating progressive stages towards digital maturity and establishing clear strategic goals and priorities (Haryanti et al., 2023; Valdez-de-Leon, 2016).

Third, the proposed DMM may serve as a benchmarking tool, allowing organizations to compare their digital maturity against industry standards or competitors. This benchmarking enables organizations to identify best practices and areas where they can excel or differentiate themselves digitally. Overall, the DMM empowers organizations to make informed decisions, prioritize digital investments, and adeptly navigate the complexities of DT (Khan et al., 2019).

5 Conclusions

In the ever-changing world of cultural tourism, embracing DT is paramount for organizations to maintain competitiveness. However, features like labor intensity and the demand for personalized experiences often engender resistance to digital solutions in cultural tourism organisations. Additionally, digital innovation necessitates collaborative efforts both within and beyond organizational boundaries to propel digital change. Therefore, cultural tourism organizations face unique challenges in integrating digital technologies while preserving the essence of human-centric experiences.

In light of these challenges, this paper introduced a DMM, specifically crafted to address the distinctive requirements and peculiarities of the cultural tourism organizations. This model is deemed essential for facilitating the establishment of the strategic foundations required to embark on a successful journey of DT, ultimately leading to the accomplishment of digital excellence.

To develop the model, a comparative analysis of existing DMMs across various sectors was conducted. Through this analysis, seven principal dimensions consistently emerged, specifically: i) Strategy; ii) Organization; iii) Culture; iv) Employee; v) Tourists; vi) Technology, and vii) Operations. Each dimension is further divided into specific sub-dimensions, tailored to the context of cultural tourism. The result is a holistic framework for assessing digital maturity in this sector.

This study delivers both theoretical and practical implications. Concerning the theoretical insights, this study contributes to the growing body of literature on DT in cultural tourism sector and provides the foundation for developing a DT strategic roadmap. Additionally, the paper contributes to the existing literature by providing a comprehensive model tailored and designed specifically for cultural tourism organisations to advance the maturity model field further.

Concerning the practical implications, managers, employers, business developers, and other stakeholders involved in strategic level decision-making in cultural tourism organisations would benefit from the proposed "Digital Maturity Model for Cultural Tourism Organisations". The model, in fact, serves as a crucial framework, enabling cultural organizations to comprehensively assess their digital maturity, tracking progressive stages towards the achievement of high maturity levels, strategizing their digital transformation journey, and benchmarking their progress against industry standards and competitors. Consequently, this model provides support for innovation, data-driven insights, and effective risk management.

Additionally, it empowers employees and ensures that the organization remains attuned to emerging digital trends. Mapping digital maturity facilitates informed decision-making, strategic planning, and the maintenance of a competitive advantage. It enhances the tourist experience, streamlines operations, and adapts to market trends.

However, it is important to acknowledge the limitations of this study. While the comparative analysis yielded valuable insights, the generalizability of the findings may be limited by the diverse nature of cultural tourism organizations and their specific contexts. Additionally, the proposed DMM serves as a comprehensive framework and may require further refinement and validation through empirical testing and real-world application.

Future research directions could explore the implementation and validation of the proposed DMM in cultural tourism organizations, assessing its effectiveness in guiding DT initiatives.

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