

INNOVATING CULTURAL PRESERVATION: THE STRATEGIC ROLE OF DIGITAL ENTREPRENEURSHIP

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Abstract: *The convergence of digital entrepreneurship and cultural preservation offers a transformative pathway to safeguarding cultural heritage while fostering innovation and economic growth. This paper investigates how digital tools and platforms, including virtual reality (VR), augmented reality (AR), 3D scanning, e-commerce, crowdfunding, and social media, are reshaping the documentation, promotion, and commercialization of cultural assets.*

Digital entrepreneurship, defined by its integration of technology to create value, complements cultural preservation by enhancing the longevity and accessibility of tangible and intangible heritage. Cultural entrepreneurs utilize these tools to achieve economic sustainability and cultural enrichment, reaching global audiences, fostering inclusivity, and adapting traditional practices to contemporary markets.

However, this synergy also poses challenges such as market saturation, ethical concerns over cultural appropriation, and the digital divide impacting underserved communities. Overcoming these requires ethical frameworks, innovative strategies, and improved access to digital education and infrastructure.

This paper highlights key trends and challenges in integrating digital entrepreneurship with cultural preservation, emphasizing its potential to promote cultural sustainability, global connectivity, and innovation. By aligning technological advancements with preservation principles, digital entrepreneurship ensures heritage remains relevant in the digital era. The study offers insights for practitioners, policymakers, and researchers on leveraging entrepreneurial innovation to amplify cultural significance.

Keywords: Digital entrepreneurship, cultural preservation, cultural heritage, innovation

JEL classification: M11, M14, M15

Introduction

The intersection of digital entrepreneurship and cultural preservation represents a dynamic and transformative convergence that leverages technology to protect and promote cultural heritage while fostering innovation and economic growth. In an era characterized by rapid technological advancements, digital tools and platforms have become integral to entrepreneurial practices, offering unprecedented opportunities to document, replicate, and commercialize both tangible and intangible cultural assets. This synergy enables cultural entrepreneurs to address the dual objectives of economic development and cultural sustainability, ensuring that heritage remains relevant and accessible in an increasingly globalized world (Nambisan, 2017; Wu et al., 2020).

Digital entrepreneurship, broadly defined as the creation and management of ventures that integrate digital technologies to innovate and create value, has reshaped the landscape of traditional business practices. Entrepreneurs now have access to a suite of tools, including e-commerce platforms,

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social media, and crowdfunding, that allow them to expand market reach, streamline operations, and engage with consumers more effectively (Rodrigues, 2023). These technologies also provide powerful mechanisms for collaboration and innovation, enabling the integration of cultural preservation into business models. Cultural preservation, which focuses on safeguarding the historical, artistic, and social values embedded in cultural heritage, benefits immensely from these technological advancements. Tools such as 3D scanning, augmented reality (AR), and virtual reality (VR) are now employed to document and restore cultural artifacts, while digital platforms make traditional practices, oral histories, and art forms accessible to global audiences, ensuring their longevity and relevance (Huggins et al., 2016; Lanzolla et al., 2020).

The integration of cultural preservation into digital entrepreneurship goes beyond economic imperatives; it fosters a deeper appreciation of cultural identity and collective memory while addressing key global challenges such as inclusivity, sustainability, and the digital divide. Cultural entrepreneurs, who operate at the intersection of art, culture, and commerce, are uniquely positioned to use these tools to bridge gaps between tradition and innovation, heritage and commerce. By doing so, they not only contribute to the preservation of cultural legacies but also create opportunities for communities to engage with and benefit from their cultural assets in meaningful ways (Wu et al., 2020). However, this convergence is not without challenges. Market saturation, ethical considerations surrounding cultural appropriation, and the persistent digital divide pose significant barriers to fully realizing the potential of digital entrepreneurship in cultural preservation. Addressing these challenges requires innovative strategies, inclusive practices, and a commitment to preserving the integrity of cultural heritage while embracing technological progress (Tarekegne & Gelaneh, 2019).

This paper seeks to explore the rich interplay between digital entrepreneurship and cultural preservation, highlighting how technological tools and platforms are revolutionizing both fields. It will examine key trends, such as the use of AR and VR in cultural heritage management, the role of e-commerce in democratizing access to cultural products, and the impact of social media on fostering community engagement. Additionally, this study will delve into key aspects that illustrate successful integrations of these domains, providing insights into the opportunities and challenges of leveraging digital entrepreneurship for cultural preservation. By understanding this intersection, we can uncover pathways to ensure that cultural heritage is not only preserved but also thrives as a vital part of contemporary and future societies.

Methodological framework and research objectives

This study employs a qualitative research approach, combining an extensive literature review with theoretical analysis to explore the intersection of digital entrepreneurship and cultural preservation. The primary research objective is to examine how digital tools, such as virtual reality (VR), augmented reality (AR), 3D scanning, and artificial intelligence (AI), contribute to the documentation, promotion, and commercialization of cultural heritage. To achieve this, relevant academic literature, industry reports, and case studies were analyzed to identify key trends, challenges, and opportunities in leveraging digital technologies for cultural sustainability. The study also aims to highlight ethical considerations, including cultural appropriation and the digital divide, while providing actionable insights for policymakers, practitioners, and researchers. This approach ensures a comprehensive understanding of the transformative potential of digital entrepreneurship in safeguarding cultural heritage within a globalized and technology-driven context.

2. Conceptual framework

2.1 Definitions and characteristics of entrepreneurship

Entrepreneurship has been a pivotal element in the development of societies, industries, and economies throughout history and also has become a cornerstone of modern economies, driving innovation, job creation and economic growth. In recent years, the definition of entrepreneurship has expanded to include social and cultural dimensions. Social entrepreneurship focuses on creating social value alongside economic returns, addressing societal challenges through innovative solutions. Entrepreneurship is traditionally defined as the process of identifying, creating, and pursuing opportunities to establish new ventures. It encompasses a range of activities, including innovation, risk-taking, and resource management (Audretsch et al., 2015). Schumpeter (1934) famously characterized entrepreneurs as innovators who disrupt existing markets, emphasizing the role of creativity and change in driving economic growth (Muhith et al., 2023). The concept of entrepreneurship is multifaceted, with definitions varying depending on the context and era. At its core, entrepreneurship involves identifying and capitalizing on opportunities to create value, often under conditions of uncertainty (Pittaway & Cope, 2007).

Early interpretations of entrepreneurship stem from the French term *entreprendre*, meaning "to undertake." Jean-Baptiste Say, one of the earliest theorists, characterized entrepreneurs as individuals who allocate resources from areas of lower to higher productivity, creating value. Later, Joseph Schumpeter introduced the idea of entrepreneurs as innovators, emphasizing their role in "creative destruction", disrupting existing systems through the introduction of new products, services, or methods (Bruton et al., 2008). In the modern context, entrepreneurship extends beyond economic activities. It includes social and cultural dimensions, where creativity, risk-taking, and opportunity recognition are pivotal (Audretsch et al., 2015). Entrepreneurs today are seen as agents of change, shaping industries and addressing societal challenges. Later, Joseph Schumpeter introduced the idea of entrepreneurs as innovators, emphasizing their role in "creative destruction", disrupting existing systems through the introduction of new products, services, or methods (Malecki, 2018). The term "entrepreneurship" has been defined in various ways, reflecting the complexity of the concept. At its core, entrepreneurship is the process of identifying, creating, and pursuing opportunities to establish new ventures. Schumpeter (1934) famously characterized entrepreneurs as innovators who disrupt existing markets through new combinations of resources, thereby driving economic development. This definition emphasizes the role of innovation and risk-taking in entrepreneurship (Wu et al., 2020). In recent years, the definition of entrepreneurship has expanded to encompass social and cultural dimensions. For instance, social entrepreneurship focuses on creating social value alongside economic returns, addressing societal challenges through innovative solutions (Sassmannshausen & Volkmann, 2018). The evolution of entrepreneurship can be traced through several historical phases, each characterized by different economic and social contexts. In the pre-industrial era, entrepreneurship was primarily associated with trade and craftsmanship, where artisans and merchants played key roles in local economies. The rise of industrialization in the 18th and 19th centuries marked a significant shift, as entrepreneurs began to focus on mass production and the establishment of large-scale enterprises (Rodrigues, 2023). The 20th century saw the emergence of the modern entrepreneur, characterized by a focus on innovation and technological advancement. The post-World War II economic boom created fertile ground for entrepreneurial ventures, leading to the establishment of Silicon Valley as a global hub for technology and innovation. This period also witnessed the rise of venture capital, which provided essential funding for startups and contributed to the growth of entrepreneurial ecosystems.

2.2 Understanding cultural entrepreneurship and its distinct features

Cultural entrepreneurship, similarly, emphasizes the integration of cultural assets and community engagement in entrepreneurial practices, highlighting the importance of cultural context in shaping entrepreneurial activities (Huggins et al., 2016). Cultural entrepreneurship can be defined as the process of leveraging cultural resources to create economic value while promoting social and cultural objectives (Stuetzer et al., 2018). This form of entrepreneurship often involves the commercialization of artistic endeavors, the preservation of cultural heritage, and the development of community-based initiatives (Kreiser et al., 2010). Cultural entrepreneurs operate at the intersection of art, culture, and commerce, seeking to create value that transcends mere profit (von Briel et al., 2018). Cultural entrepreneurship represents a dynamic intersection between cultural innovation and entrepreneurial activity, focusing on the creation and management of ventures that leverage cultural assets for economic and social impact (Huggins & et al., 2014). Also, cultural entrepreneurship involves the process of identifying, developing, and exploiting cultural resources to create economic value while simultaneously preserving and promoting cultural heritage. It encompasses activities that bridge the gap between cultural expression and market dynamics, emphasizing creativity, innovation, and sustainability (Stuetzer et al., 2018). According to (Ratten, 2017), cultural entrepreneurship is "an important type of entrepreneurship due to it focusing on cultural forms of business innovation." Cultural entrepreneurship is broadly defined as the process of leveraging cultural resources, such as traditions, heritage, arts, and creativity, to create value. This value is often economic, but it also encompasses the preservation of cultural identity and the enrichment of societal norms (Lounsbury et al., 2001). Unlike conventional entrepreneurship, cultural entrepreneurship prioritizes the integration of cultural expression into economic activities, emphasizing creativity, innovation, and sustainability. Cultural entrepreneurs are often described as visionaries who navigate the delicate balance between market demands and cultural preservation. They identify opportunities within the cultural sector, transforming intangible cultural values into tangible economic outputs (Kusio & Fiore, 2020). For example, ventures in areas like art exhibitions, film production, or digital storytelling often exemplify cultural entrepreneurship by blending artistic creativity with entrepreneurial acumen.

2.3 Key differences and similarities between entrepreneurship and cultural entrepreneurship

Entrepreneurship is traditionally defined as the process of identifying, creating, and pursuing opportunities to establish new ventures. It involves risk-taking, innovation, and resource management aimed at generating profit (Huggins et al., 2016). Schumpeter (1934) famously characterized entrepreneurs as innovators who disrupt existing markets through new combinations of resources, thereby driving economic development (Wu et al., 2020). (Lounsbury & et al., 2001) emphasize that cultural entrepreneurship involves storytelling and crafting new venture identities that resonate with cultural narratives, facilitating resource acquisition and legitimacy (Huggins et al., 2014). Entrepreneurship and cultural entrepreneurship, despite their distinct domains, share several fundamental similarities. Both forms emphasize innovation and creativity as central pillars. Traditional entrepreneurs strive to develop new products or services that address market needs, driving progress through inventive solutions. Similarly, cultural entrepreneurs innovate within the context of cultural expression, crafting unique cultural products or experiences that resonate deeply with audiences (Fayolle & Gailly, 2015). Opportunity recognition is another shared characteristic. Entrepreneurs excel at identifying market gaps that can be transformed into profitable ventures (Pittaway & Cope, 2007), while cultural entrepreneurs focus on uncovering cultural needs or emerging trends that can inspire new projects or initiatives. As (Kusio & Fiore, 2020) explain, this ability to perceive and act upon opportunities is essential for both groups, as it lays the foundation for their respective endeavors. Both entrepreneurship and cultural

entrepreneurship also involve significant risk-taking. Entrepreneurs face the financial and operational risks associated with launching and sustaining a new business (Pittaway & Cope, 2007). On the other hand, cultural entrepreneurs navigate a different spectrum of risks, often related to their artistic vision or the cultural integrity of their work. (Harms & Groen, 2017) observe that this willingness to take risks is a hallmark of entrepreneurial activity, driving both innovation and resilience.

Finally, value creation serves as a common objective. Traditional entrepreneurs primarily focus on economic value, seeking to maximize profits and market share (Bruton et al., 2008). Cultural entrepreneurs, however, balance this economic goal with a strong emphasis on social and cultural value. Their work contributes not only to economic growth but also to community well-being and the preservation of cultural heritage. As (Yoshioka-Kobayashi, 2019) notes, cultural entrepreneurship extends beyond profit-making, fostering a deeper connection between cultural identity and societal development. In essence, these shared characteristics underscore the interconnectedness of entrepreneurship and cultural entrepreneurship, despite their differing emphases. Both play critical roles in fostering innovation, addressing societal needs, and creating value in their respective spheres.

Table no. 1

Comparison of key characteristics: entrepreneurship vs. cultural entrepreneurship

Characteristics	Entrepreneurship	Cultural Entrepreneurship
Main objective	Generating profit	Preserving cultural heritage
Focus	Economic growth and market innovation	Social and cultural impact
Value created	Economic	Social and cultural
Examples	Launching new products or services	Artistic or traditional projects

Source: Bruton et al., 2008; Fayolle & Gailly, 2015; Huggins & et al., 2016; Lounsbury & et al., 2001; Yoshioka-Kobayashi, 2019

3. The evolution of entrepreneurship in the digital era

3.1 Historical overview of entrepreneurship and the impact of technological revolutions

The evolution of entrepreneurship can be traced through several historical phases, each characterized by different economic and social contexts (Stephan & Uhlaner, 2010). In the pre-industrial era, entrepreneurship was primarily associated with trade and craftsmanship, where artisans and merchants played key roles in local economies. The rise of industrialization in the 18th and 19th centuries marked a significant shift, as entrepreneurs began to focus on mass production and the establishment of large-scale enterprises (Kollmann et al., 2022). The 20th century saw the emergence of the modern entrepreneur, characterized by a focus on innovation and technological advancement. The post-World War II economic boom created fertile ground for entrepreneurial ventures, leading to the establishment of Silicon Valley as a global hub for technology and innovation. This period also witnessed the rise of venture capital, which provided essential funding for startups and contributed to the growth of entrepreneurial ecosystems (Fayolle & Gailly, 2015).

Entrepreneurship has experienced profound transformations over the centuries, adapting to shifts in technology, economic structures, and societal demands (Stam, 2015). In pre-industrial societies, entrepreneurship was closely linked to trade and craftsmanship (Kollmann et al., 2022). Merchants, traders, and artisans were among the earliest entrepreneurs, driving local economies by exchanging goods and services. This period laid the groundwork for entrepreneurial activity, with individuals leveraging their skills and resources to meet local market needs (Kuratko, 2005). The 20th century ushered in an era of diversification and globalization. Following the post-war boom, entrepreneurial activity expanded

across various sectors, from manufacturing to services. The emergence of venture capitalism played a pivotal role, fostering innovation and supporting the growth of startups (Roundy, 2017). Additionally, globalization enabled entrepreneurs to access international markets, collaborate across borders, and build interconnected ecosystems (Stephan & Uhlaner, 2010). In the 21st century, the digital age has redefined entrepreneurship. The proliferation of the internet, artificial intelligence, and digital platforms has created opportunities for entrepreneurs to disrupt traditional industries and operate on a global scale (Peterman & Kennedy, 2003). Companies such as Amazon, Google, and Airbnb illustrate how technology can drive transformative change, enabling businesses to scale rapidly and connect with a worldwide audience (Harms & Groen, 2017). This period underscores the increasing importance of adaptability and innovation in entrepreneurial success. These transformations highlight the dynamic nature of entrepreneurship, illustrating its ability to evolve in response to changing technological, economic, and societal contexts. Each era has built upon the foundations of the previous one, paving the way for the innovative and interconnected entrepreneurial landscape of today (Acs, 2006).

3.2 Key trends and shifts in entrepreneurial practices driven by digital tools and platforms

The advent of digital tools and platforms has profoundly reshaped entrepreneurial practices across diverse sectors. This transformation is particularly evident in the ways traditional business models, cultural entrepreneurship, and the broader entrepreneurial ecosystem have adapted to the demands and opportunities of the digital era (Mann et al., 2022). By examining the trends and implications of digital technologies, it becomes clear how entrepreneurship has evolved in response to a rapidly changing landscape. Digital entrepreneurship refers to the establishment and management of ventures that integrate digital technologies to drive innovation, create value, and engage customers (Mahboub & Sadok, 2022). It encompasses a variety of activities, including e-commerce, online services, and the utilization of digital platforms for marketing and distribution. According to Nambisan (2017), digital entrepreneurship signifies a departure from traditional entrepreneurial approaches by embedding digital tools at the heart of operations (Nambisan, 2017). This digital integration enables entrepreneurs to tap into global markets, streamline business processes, and enhance the customer experience. Digital entrepreneurship is shaped by several transformative trends that stem from technological advancements and evolving consumer behavior (Carroll et al., 2021). A notable trend is the exponential growth of e-commerce, which has redefined traditional retail models. The ability to conduct transactions online allows businesses to transcend geographical barriers and reach a broader audience. This shift was significantly accelerated by the COVID-19 pandemic, which compelled brick-and-mortar businesses to adopt online sales strategies to remain viable (Amankwah-Amoah et al., 2021). As a result, e-commerce has become an indispensable element of entrepreneurial success in the digital age. Cultural entrepreneurship, which emphasizes the use of cultural assets to generate economic and social value, has similarly undergone significant changes due to digitalization (tom Dieck et al., 2018). One prominent development is the innovation seen in cultural product creation. Digital technologies, such as virtual reality (VR) and augmented reality (AR), are being employed to develop immersive cultural experiences that enhance audience engagement. These innovations not only enrich cultural offerings but also attract diverse and broader audiences, making culture more accessible and appealing (Al-Dajani & Marlow, 2013). Despite the many opportunities afforded by digitalization, it also presents significant challenges for entrepreneurs. One pressing issue is market saturation. The low barriers to entry in digital markets have led to intense competition, making it difficult for new ventures to establish themselves. Entrepreneurs must craft distinct value propositions and adopt innovative strategies to differentiate their businesses in such crowded spaces (Bird, 1988).

4. The digital transformation of cultural entrepreneurship

4.1 The role of technology in preserving, promoting, and commercializing cultural heritage

Cultural heritage can be broadly divided into two main categories: tangible and intangible. Tangible cultural heritage includes physical objects such as monuments, buildings, artifacts, and artworks that carry historical, artistic, or cultural significance (Kirkman et al., 2006). On the other hand, intangible cultural heritage encompasses non-physical elements, including traditions, oral histories, performing arts, rituals, and social practices (Higgs & Cunningham, 2008). Both forms are vital for preserving cultural identity and fostering community engagement. Maintaining this heritage ensures that cultural values and knowledge are transmitted across generations, fostering a sense of belonging and historical continuity (Ratten, 2017). Advancements in technology have revolutionized the preservation of cultural heritage, offering innovative methods to safeguard both tangible and intangible forms. Digital tools such as 3D scanning, photogrammetry, and virtual reality (VR) provide precise documentation and replication of cultural artifacts and sites, allowing for their conservation without causing physical deterioration (Lanzolla et al., 2020; Li, 2021). In the realm of intangible cultural heritage, technology also plays a crucial role. Digital platforms facilitate communication and collaboration among stakeholders, enabling communities to document, share, and promote their cultural practices. By leveraging these tools, intangible cultural heritage can be safeguarded and transmitted to future generations, ensuring its vitality in the modern era (Huggins & et al., 2016). Digital platforms have transformed how cultural heritage is promoted, making it more accessible and engaging for global audiences. Social media, online exhibitions, and e-commerce platforms allow cultural organizations and entrepreneurs to reach diverse communities, fostering interaction and participation (Mahboub & Sadok, 2022). Digital marketing strategies also empower cultural entrepreneurs to effectively brand and promote their offerings. By showcasing cultural heritage through virtual tours, interactive content, and digital storytelling, organizations can build a stronger connection with audiences and cultivate cultural pride within communities (Mukesh, 2022). The commercialization of cultural heritage presents opportunities for cultural entrepreneurs while requiring careful consideration to maintain authenticity and respect for cultural values. Digital technologies have enabled entrepreneurs to monetize heritage through various means, such as virtual experiences, online sales, and digital content creation. For instance, the digitization of cultural artifacts can lead to merchandise such as prints, replicas, and digital downloads that generate revenue while promoting cultural appreciation (von Briel et al., 2018). However, commercialization must be approached ethically to ensure cultural integrity. Practices should prioritize respect for cultural values and maintain a balance between economic benefits and cultural preservation.

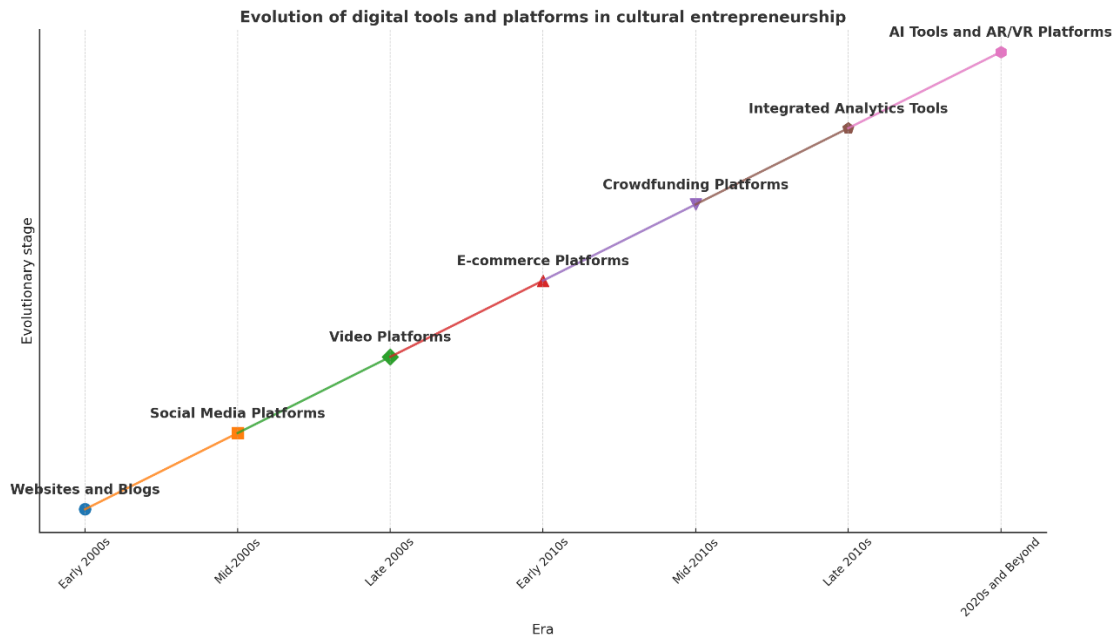
4.2 Digital platforms and tools for cultural entrepreneurs

Digital platforms and tools have revolutionized the landscape of entrepreneurship, particularly within the realm of cultural entrepreneurship. These technologies facilitate the preservation and promotion of cultural heritage while providing innovative avenues for commercialization. The integration of tools such as crowdfunding, social media, and e-commerce has transformed how cultural entrepreneurs connect with audiences, showcase their products, and engage in collaborative ventures (Kirkman et al., 2006; Nambisan, 2017). Social media platforms like Instagram, Facebook, and TikTok have become indispensable for cultural entrepreneurs seeking to promote their work and interact with audiences. These platforms enable the sharing of visual content, storytelling, and direct consumer engagement, fostering a sense of community around cultural products (Wu et al., 2020). By leveraging social media, cultural entrepreneurs can build their brand, share their narratives, and access a global audience, significantly enhancing visibility and impact (Kirkman et al., 2006). E-commerce platforms, including Etsy and Amazon, provide cultural entrepreneurs with the tools to sell their products directly

to consumers. This direct-to-consumer approach eliminates intermediaries, allowing entrepreneurs to retain a greater share of profits while reaching a broader market (Huggins et al., 2016; Li, 2021). The democratization of market access through e-commerce has empowered artisans and cultural creators to monetize their work effectively, enabling sustainable business practices within cultural entrepreneurship. Crowdfunding platforms enable entrepreneurs to present their ideas to potential backers, who can contribute financially in exchange for rewards or equity. Beyond funding, crowdfunding serves as a marketing tool, helping entrepreneurs gauge public interest and build a community around their cultural projects (Rodrigues, 2023). The integration of technology into cultural practices has also brought about key trends in digital cultural entrepreneurship. Increased accessibility is one such trend, as digital tools enable cultural products to reach global audiences. This development fosters a more inclusive cultural landscape, allowing diverse voices and perspectives to gain recognition (Tarekegne & Gelaneh, 2019). Enhanced collaboration is another significant trend, with online platforms enabling cultural entrepreneurs, artists, and communities to share resources, knowledge, and skills. This collaborative approach drives innovation in cultural production and strengthens the collective impact of cultural entrepreneurship (Klamer, 2011). Additionally, data-driven decision-making has become a cornerstone of digital cultural entrepreneurship. Digital tools allow entrepreneurs to gather insights into consumer preferences, market trends, and engagement metrics, enabling them to tailor their offerings and strategies to better align with audience needs (Malecki, 2018).

Despite these opportunities, cultural entrepreneurs face challenges in the digital era. Market saturation is a prominent issue, as the low barriers to entry in digital markets result in intense competition. To stand out, cultural entrepreneurs must develop unique value propositions and innovative strategies (Roundy, 2017). Ethical considerations also pose challenges, particularly concerning cultural appropriation and the commodification of cultural practices. Cultural entrepreneurs must ensure their work respects and honors the traditions they represent, navigating these complexities with sensitivity and integrity (Gehman & Soublière, 2017). Additionally, the digital divide remains a significant barrier, as limited access to technology and digital literacy disproportionately affects cultural entrepreneurs in underserved communities. Addressing these disparities is crucial for fostering an inclusive and equitable cultural entrepreneurship landscape (Naudin, 2018). The impact of digital platforms and tools on cultural entrepreneurship highlights both the opportunities and challenges of operating in a rapidly evolving digital landscape. By effectively navigating these dynamics, cultural entrepreneurs can preserve and promote cultural heritage while engaging with broader audiences and fostering sustainable innovation (Higgs & Cunningham, 2008; Li, 2021).

Figure 1 Evolution of digital tools and platforms in cultural entrepreneurship



Source: Haenlein & Kaplan, 2019; Klamer, 2011; Naudin, 2018.

4.3 The impact of technologies such as virtual reality, augmented reality, and AI on cultural products and experiences

The integration of advanced technologies, including Virtual Reality (VR), Augmented Reality (AR), and Artificial Intelligence (AI), has brought transformative changes to the landscape of cultural products and experiences. These technologies have redefined how cultural heritage is presented, experienced, and commercialized, offering new opportunities for engagement and preservation (Li, 2021). By enabling immersive and interactive experiences, they provide audiences with deeper connections to cultural narratives while opening avenues for innovative cultural entrepreneurship (Nambisan, 2017). Virtual Reality (VR) creates immersive digital environments that simulate real-world settings, allowing users to explore cultural heritage sites and artifacts in virtual spaces. This sense of presence enables a more engaging and interactive way to connect with cultural history. Augmented Reality (AR), by contrast, overlays digital information onto real-world environments, enhancing users' perception through interactive experiences accessible via smartphones or AR glasses. Such technologies enrich cultural narratives by providing new layers of context and interactivity (Jung & Dieck, 2017). Artificial Intelligence (AI) further extends this transformation by automating tasks like data analysis, personalization, and natural language processing. AI-driven tools, such as chatbots and recommendation systems, improve visitor engagement and enable the customization of cultural experiences, ensuring relevance and resonance with diverse audiences (tom Dieck et al., 2018). Technologies like AR and VR are particularly effective in enhancing visitor experiences at cultural heritage sites (Li, 2021). They provide interactive elements and contextual information that deepen the understanding of artifacts and historical events. Studies have shown that wearable AR devices can significantly enhance learning by offering insights directly tied to exhibited artworks, fostering a more profound connection with the material (tom Dieck et al., 2018). VR similarly allows visitors to visualize historical events or explore

reconstructions of cultural sites, co-creating value by making the experience more educational and engaging (Jung & tom Dieck, 2017). The commercialization of cultural products has also been transformed by digital technologies. E-commerce platforms provide cultural entrepreneurs with direct access to consumers, eliminating intermediaries and enabling creators to retain greater profits. This model not only enhances financial viability but also fosters stronger relationships between creators and their audiences (Pisoni et al., 2021). Additionally, crowdfunding platforms such as Kickstarter allow cultural entrepreneurs to present their projects to potential backers, offering an avenue to secure funding while building a supportive community around their initiatives. This approach serves dual purposes by raising necessary capital and increasing visibility for cultural projects (Rodrigues, 2023), (Jung & tom Dieck, 2017).

Artificial Intelligence has become an essential tool in cultural heritage management and preservation. By analyzing large datasets, AI helps curators and researchers identify patterns that inform strategies for artifact conservation (Pisoni et al., 2021). AI also plays a crucial role in the digitization process, automating tasks such as image recognition and cataloging, which streamlines documentation efforts and ensures cultural heritage is preserved for future generations (Li, 2021). Furthermore, AI-driven chatbots enhance visitor engagement by providing personalized information and real-time interaction, enriching the cultural experience (Tarekegne & Gelaneh, 2019). Despite these opportunities, the integration of VR, AR, and AI into cultural entrepreneurship presents significant challenges and ethical considerations. The digital divide remains a critical issue, as unequal access to technology limits the ability of underserved communities to engage fully with these tools (Li, 2021; Pisoni et al., 2021). Additionally, the commercialization of cultural heritage through digital platforms raises concerns about cultural appropriation and the potential erosion of authenticity (Harms & Groen, 2017). Cultural entrepreneurs must navigate these challenges carefully, ensuring that their work respects and honors the cultural traditions they represent. Ethical considerations in the use of technology are paramount to maintaining the integrity of cultural heritage while leveraging its innovative potential for engagement and preservation (Kreiser et al., 2010).

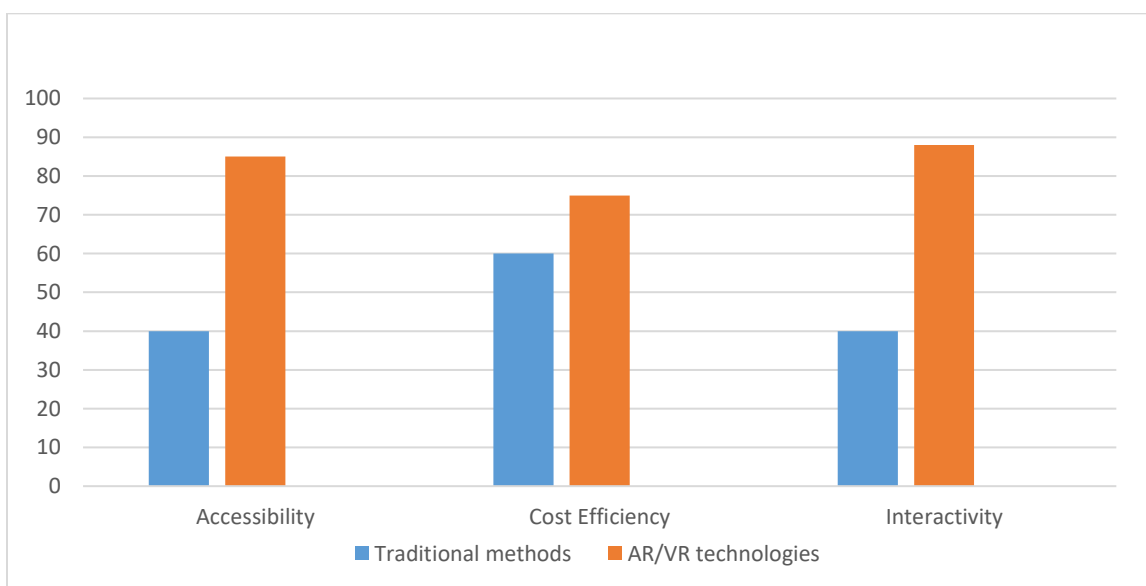


Figure 2 Comparative analysis of traditional methods vs AR/VR technologies in cultural preservation

Source: Ibiş & Alp, 2024; Zhang, 2024

The figure compares traditional methods and AR/VR technologies in cultural heritage preservation, highlighting accessibility, cost efficiency, and interactivity. AR/VR significantly enhances accessibility, enabling broader audiences to explore cultural sites (85% vs. 40%). These technologies also improve cost efficiency (75% vs. 60%) through scalable digital solutions. In interactivity, AR/VR excels with dynamic, user-centered experiences (88% vs. 40%). This analysis emphasizes the transformative role of AR/VR in making cultural heritage more engaging, accessible, and sustainable for future generations (Ibiş & Alp, 2024; Zhang, 2024).

5. Intersections between entrepreneurship and cultural entrepreneurship

5.1 How cultural entrepreneurs adopt traditional entrepreneurial strategies in the digital era

The emergence of digital platforms and tools has significantly transformed the landscape of cultural entrepreneurship. These technologies not only facilitate the preservation and promotion of cultural heritage but also provide innovative avenues for commercialization. Cultural entrepreneurs in the digital era adopt traditional entrepreneurial strategies, such as market research, networking, and branding, while utilizing tools like crowdfunding, social media, e-commerce, and augmented reality (AR) technologies to enhance their practices (Wilson et al., 2007).

Cultural entrepreneurship is defined as the process of leveraging cultural assets to create economic value while promoting social and cultural objectives. It involves activities ranging from the commercialization of artistic endeavors to the development of community-based initiatives that enhance cultural heritage (Wu et al., 2020). Operating at the intersection of art, culture, and commerce, cultural entrepreneurs aim to create value that transcends mere profit (Gehman & Soublière, 2017). Traditional entrepreneurial strategies are essential in navigating the complexities of the digital landscape. Market research helps cultural entrepreneurs identify trends, target audiences, and competitive landscapes, informing their decisions and enabling them to tailor their offerings to customer needs. Digital tools such as analytics software and social media insights enhance these efforts (Lanzolla et al., 2020). Networking remains crucial, with digital platforms facilitating connections among entrepreneurs, artists, and cultural organizations. Online communities and forums provide spaces for collaboration and knowledge sharing, fostering partnerships and the exchange of ideas (Rodrigues, 2023). Branding, too, is vital for differentiation in competitive markets. Digital marketing strategies, such as social media campaigns and content marketing, enable cultural entrepreneurs to communicate their values and engage effectively with audiences. By leveraging storytelling and visual content, they can create compelling narratives that resonate with consumers (Tarekegne & Gelaneh, 2019). Digital tools and platforms play a pivotal role in the success of cultural entrepreneurs. Crowdfunding platforms serve not only as sources of capital but also as marketing tools, enabling entrepreneurs to gauge interest in their work. Social media platforms such as Instagram, Facebook, and TikTok have become indispensable for promoting work, sharing narratives, and fostering direct interaction with audiences, thereby enhancing visibility and impact (Malecki, 2018). E-commerce platforms, including Etsy and Amazon, provide cultural entrepreneurs with the ability to sell directly to consumers, democratizing market access and allowing creators to monetize their work effectively (Roundy, 2017). Despite these advancements, cultural entrepreneurs face significant challenges in the digital era. Market saturation, driven by the ease of entry into digital markets, increases competition and necessitates unique value propositions to stand out (Tarekegne & Gelaneh, 2019). Ethical concerns, including cultural appropriation and the commodification of cultural practices, require entrepreneurs to ensure that their work respects and honors cultural traditions (Nambisan, 2017). Additionally, the digital divide poses barriers for entrepreneurs in underserved communities, where limited access to technology and digital literacy hinder the effective use of digital tools (Kuratko, 2005).

Addressing these challenges is essential for fostering inclusive and sustainable cultural entrepreneurship in the digital age.

5.2 Collaborative opportunities between the two domains in globalized digital markets

The globalization of digital markets has created unprecedented opportunities for both traditional entrepreneurship and cultural entrepreneurship. As digital tools and platforms continue to evolve, they enable collaboration between these two domains, allowing entrepreneurs to leverage cultural assets while pursuing economic objectives. In globalized digital markets, this intersection fosters unique opportunities for innovation and shared value creation (Docquier & Rapoport, 2011). Entrepreneurship is broadly defined as the process of creating, developing, and managing new business ventures to generate profit, encompassing activities such as innovation, risk-taking, and resource management (Wu et al., 2020). Cultural entrepreneurship, in contrast, emphasizes leveraging cultural assets to create economic value while simultaneously promoting social and cultural objectives. It often involves the commercialization of artistic endeavors and the development of community-based initiatives aimed at enhancing cultural heritage (Lounsbury et al., 2001).

Digital platforms play a vital role in fostering collaboration between traditional entrepreneurs and cultural entrepreneurs by facilitating access to global markets and enabling connections with diverse audiences and partners. Platforms such as e-commerce, social media, and crowdfunding have democratized access to resources and opportunities, creating an environment conducive to collaborative ventures (Rodrigues, 2023). Crowdfunding platforms like Kickstarter and Indiegogo provide essential tools for entrepreneurs to finance projects by presenting their ideas to potential backers who contribute financially in exchange for rewards or equity. Beyond providing access to capital, crowdfunding also functions as a marketing tool, allowing entrepreneurs to gauge interest and build a community around their initiatives. This model encourages partnerships between entrepreneurs from diverse backgrounds, fostering innovation and creativity (Kollmann et al., 2022). Social media platforms, including Instagram, Facebook, and TikTok, serve as crucial tools for entrepreneurs to promote their work and engage with audiences. These platforms support the sharing of visual content, storytelling, and direct consumer interaction, fostering community-building around cultural products (Malecki, 2018). Cultural entrepreneurs can use social media to build their brands, share narratives, and reach a global audience, enhancing their visibility and impact. Such digital engagement creates collaborative opportunities for cultural and traditional entrepreneurs, enabling the sharing of resources, knowledge, and networks (Tarekegne & Gelaneh, 2019). Digitalization has further transformed the entrepreneurial landscape by introducing new business models and practices that foster collaboration. Digital entrepreneurship ecosystems (DEEs) are characterized by diversified resources and collaborative practices across sectors. These ecosystems connect entrepreneurs with investors, mentors, and other stakeholders, fostering innovation and value co-creation (Huggins & et al., 2016). The collaborative nature of DEEs allows cultural entrepreneurs to access resources and expertise that enhance their ventures while enabling traditional entrepreneurs to benefit from the unique cultural perspectives and creativity of their counterparts (Huggins et al., 2014). Cross-sector collaborations have also emerged as a defining feature of the digital era. Partnerships between cultural institutions, businesses, and technology providers have facilitated the development of immersive experiences that enhance visitor engagement through AR and VR technologies. Such collaborations promote cultural heritage while generating new revenue streams for both cultural and traditional entrepreneurs (Jung & tom Dieck, 2017). Despite the significant opportunities for collaboration enabled by digitalization, challenges persist. Market saturation remains a concern, as the ease of entry into digital markets has increased competition, making it difficult for entrepreneurs to differentiate themselves. Both cultural and traditional entrepreneurs must craft unique

value propositions and develop innovative strategies to succeed in crowded markets (Audretsch et al., 2015). Ethical considerations are equally important, as the commercialization of cultural heritage raises concerns about cultural appropriation and the commodification of cultural practices. Entrepreneurs must navigate these issues to ensure that their work respects and honors the cultural traditions they represent (Nambisan, 2017). Additionally, the digital divide poses a significant barrier for some entrepreneurs, particularly those in underserved communities. Limited access to technology and digital literacy can hinder their ability to utilize digital tools effectively, highlighting the need for inclusive efforts to bridge this gap (Kuratko, 2005).

Table 2 Technological methods and their impact on cultural heritage preservation

Technology	Cultural heritage category	Primary use	Key impact	Examples
3D scanning	Tangible heritage	Precise documentation and digital replication	Preservation without physical deterioration	Scanning historical monuments
Augmented Reality (AR)	Tangible and Intangible heritage	Interactive presentation of artifacts or traditions	Enhanced public engagement and interactive learning	Virtual reconstructions of archaeological sites
Virtual Reality (VR)	Tangible heritage	Virtual tours of heritage sites	Global accessibility and immersive experience	Virtual exploration of museums
Artificial Intelligence (AI)	Intangible heritage	Personalization of cultural experiences and analysis of historical data	Increased relevance and efficiency in preservation	Personalized recommendations for visitors
Crowdfunding platforms	Tangible and Intangible heritage	Fundraising for cultural projects	Sustainable development of cultural initiatives	Financing monument restoration through Kickstarter
E-commerce platforms	Intangible heritage	Commercialization of cultural products (crafts, art, etc.)	Increased income for cultural entrepreneurs and artists	Selling crafts on Etsy

Sources: Huggins et al., 2016; Jung & tom Dieck, 2017; Lanzolla et al., 2020; Pisoni et al., 2021; Rodrigues, 2023; Zhang, 2024

6. The future of entrepreneurship and cultural entrepreneurship

6.1 Emerging trends: sustainability, inclusivity, and digital nomadism

The landscape of entrepreneurship is continually evolving, influenced by various socio-economic factors and technological advancements. Among the most significant emerging trends are sustainability, inclusivity, and digital nomadism. These trends are reshaping entrepreneurial practices and presenting unique opportunities for cultural entrepreneurs in the globalized digital market (Pinillos & Reyes, 2011). Sustainability has become a central focus in contemporary entrepreneurship, reflecting an increased awareness of environmental and social issues (Kibler et al., 2014). Entrepreneurs are recognizing the importance of sustainable practices not only for ethical reasons but also as a way to enhance competitiveness and meet growing consumer demand for responsible products and services (Akuegwu & Nwi-ue, 2016). Sustainable entrepreneurship is defined as the process of creating economic value while simultaneously addressing social and environmental challenges. This approach integrates sustainability into the core business model, ensuring that entrepreneurial activities positively impact society and the environment (Huggins et al., 2016). Recent studies suggest that sustainable entrepreneurship is characterized by innovative practices that prioritize resource efficiency, waste reduction, and social equity. Inclusivity has also emerged as a critical trend in entrepreneurship, driven by the increasing diversity of societies and the recognition of the need to support individuals from all backgrounds (Harms & Groen, 2017). Inclusive entrepreneurship is the practice of fostering entrepreneurial opportunities for individuals regardless of socio-economic status, gender, or cultural background. It aims to remove barriers to entry and create environments where diverse entrepreneurs can thrive (Tarekegne & Gelaneh, 2019). The digital era has significantly advanced inclusivity by providing previously inaccessible resources and networks to underrepresented groups. Online platforms and social media enable marginalized entrepreneurs to showcase their products and connect with global customers, while mentorship programs and incubators focused on supporting diverse entrepreneurs have gained prominence (Rodrigues, 2023).

Digital nomadism, reflecting the changing nature of work, is another growing trend in entrepreneurship. Digital nomads are individuals who leverage technology to work remotely while traveling or living in various locations. This lifestyle, characterized by flexibility, mobility, and a desire for experiential living, has significant implications for entrepreneurship, particularly for cultural entrepreneurs (Jung & tom Dieck, 2017). The rise of digital nomadism provides cultural entrepreneurs with opportunities to engage with diverse communities and markets. By traveling to different regions, they can explore local traditions, collaborate with artists, and create culturally relevant products that appeal to global audiences. Additionally, the demand for co-working spaces and community hubs tailored to digital nomads fosters collaboration and networking among entrepreneurs (Kirkman et al., 2006).

The convergence of sustainability, inclusivity, and digital nomadism presents unique opportunities for cultural entrepreneurs to develop innovative business models that prioritize social and environmental responsibility while fostering diverse and inclusive communities (Terjesen et al., 2016). Digital platforms facilitate collaboration among entrepreneurs, artists, and organizations with shared values. For instance, crowdfunding platforms can finance sustainable cultural projects, and social media can promote partnerships and community engagement (Nambisan, 2017). This collaborative approach not only increases the visibility of cultural initiatives but also builds a sense of shared purpose. The digital era also empowers cultural entrepreneurs to reach global audiences, promoting their products and initiatives across borders. By embedding sustainability and inclusivity into their practices, cultural entrepreneurs can create a positive local and global impact, contributing to sustainable development and enhancing the cultural significance of their work (Kuratko, 2005).

6.2 Potential synergies between digital entrepreneurship and cultural preservation efforts

The intersection of digital entrepreneurship and cultural preservation offers unique collaborative opportunities that enhance the sustainability and visibility of cultural heritage. As digital tools and platforms become integral to entrepreneurial practices, they provide innovative solutions for preserving, promoting, and commercializing cultural assets (von Briel et al., 2018). These synergies enable cultural entrepreneurs to leverage technology for the documentation, replication, and dissemination of cultural heritage, ensuring its protection and appreciation by future generations (Gehman & Soublière, 2017). Digital entrepreneurship involves creating and managing ventures that utilize digital technologies to innovate and generate value. This broad concept encompasses activities such as e-commerce, online services, and digital marketing (Nambisan, 2017). In parallel, cultural preservation focuses on safeguarding both tangible and intangible cultural heritage to ensure its transmission to future generations. These efforts include documenting traditional practices, protecting cultural artifacts, and fostering awareness and appreciation for cultural heritage (Wu et al., 2020).

Digital tools have become pivotal in preserving cultural heritage. Technologies like 3D scanning, virtual reality (VR), and augmented reality (AR) allow for the documentation and replication of cultural artifacts and sites, protecting them against degradation or loss (Li, 2021; Pisoni et al., 2021). Digitizing intangible cultural heritage, such as traditional music and dance, enables the recording and sharing of these practices, ensuring their survival and wider accessibility (Kreiser et al., 2010). For instance, Isa et al. highlight the necessity of advancing digital preservation methods to effectively capture the essence of cultural practices, making them accessible to broader audiences. This approach not only safeguards cultural heritage but also promotes its global appreciation and understanding (Wu et al., 2020).

Despite these opportunities, challenges persist in the integration of digital entrepreneurship and cultural preservation. Market saturation, driven by the low barriers to entry in digital markets, results in heightened competition and difficulty in differentiation (Mukesh, 2022). Entrepreneurs must develop unique value propositions and innovative strategies to stand out in crowded markets (Fayolle & Gailly, 2015). Ethical concerns also arise, particularly regarding cultural appropriation and the commodification of cultural practices. Entrepreneurs must navigate these complexities to ensure their work respects and honors cultural traditions (Tarekegne & Gelaneh, 2019). Furthermore, the digital divide presents a significant barrier for cultural entrepreneurs, especially in underserved communities (Naudin, 2018). Limited access to technology and digital literacy hampers the ability of these entrepreneurs to effectively leverage digital tools. Addressing this divide is essential for fostering inclusive and equitable cultural entrepreneurship (Malecki, 2018).

Conclusion

This research provides a novel framework by integrating digital tools into cultural entrepreneurship, bridging gaps between tradition and innovation. The intersection of digital entrepreneurship and cultural preservation embodies a transformative potential that addresses both the preservation of cultural heritage and the demands of a rapidly evolving digital economy. By leveraging innovative technologies such as virtual reality, augmented reality, and 3D scanning, cultural entrepreneurs have access to powerful tools for documenting, replicating, and promoting tangible and intangible heritage. These technologies enable the safeguarding of cultural assets while making them accessible to global audiences, fostering a deeper appreciation for cultural diversity and history. Moreover, digital platforms such as crowdfunding, e-commerce, and social media provide cultural entrepreneurs with novel avenues to finance projects, engage with communities, and market their offerings, bridging the gap between tradition and innovation. This convergence not only creates

economic opportunities but also promotes social and cultural sustainability. Cultural entrepreneurs play a pivotal role in integrating heritage into modern entrepreneurial practices, ensuring its relevance and fostering community empowerment. By embracing inclusivity and sustainability, they address broader global challenges while contributing to the cultural enrichment of societies. However, the journey is not without obstacles. Challenges such as market saturation, ethical considerations surrounding cultural appropriation, and the digital divide highlight the complexities of this domain. Overcoming these barriers requires thoughtful strategies that balance innovation with respect for cultural integrity, as well as efforts to enhance digital literacy and access in underserved communities. As this paper has shown, the interplay between digital entrepreneurship and cultural preservation offers significant opportunities for innovation, collaboration, and shared value creation. By aligning technological advancements with the principles of cultural preservation, entrepreneurs can build models that not only generate economic growth but also contribute to the longevity and vitality of cultural heritage. The insights presented here underline the importance of this convergence and its potential to shape the future of cultural entrepreneurship in meaningful and impactful ways. By fostering dialogue, inclusivity, and ethical practices, the fusion of these fields can ensure that cultural heritage remains a vibrant and integral part of our globalized digital society.

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